

Contract Name: Queen Bee Stewardship

KT-CT.3.0.1# - PROTECTED AREAS (06/2009)

Notwithstanding the designations for cutting under CT.3.1, CT.3.3, CT.3.4, and CT.3.5, trees within the area to be protected in Payment Unit PROTECTED AREAS. PU 017 (Outside northeast boundary) shall be left uncut. Boundary trees along the perimeter of Protected Areas have been identified by 3 ORANGE paint slashes and "PA" at eye level (facing AWAY from the Protected Area), and painted at the stump. Boundary trees are not to be cut. Contract Area Map indicates with the symbol "PA" units within which Protected Areas are identified on the ground and are to be left uncut.

KT-CT.3.5.2# - DESIGNATION BY SPECIES AND DIAMETER (09/2004)

Trees that meet Utilization Standards are designated for cutting, as shown on the Tree Designation Table and Sale Area Map, except trees Marked with orange (see Tree Designation Table) paint or described to be left uncut.

See Tree Designation Table.

Additional trees to be cut, if any, are Marked with blue paint in units 1-6, 9, 11-15, 17, & 19 at eye level with stump mark paint.

All N/A shall be left as leave trees, unless Marked with N/A paint. Leave N/A trees of the designated cut species, N/A inches stump diameter or greater, to avoid leave tree spacing greater than N/A feet. Cutting unit boundaries and other trees that shall be left uncut are Marked with orange (see Tree Designation Table) paint.

Distances are measured horizontal distance, outside bark stump height to outside bark stump height. Stump diameter is measured outside bark at stump height in a horizontal and is the average of a measurement across the short axis through the true center of the stump and a second measurement at right angles to the short axis.

Contractor and Forest Service shall agree to skid trail location under BT6.422. Skid trails shall be no greater than N/A feet wide with a N/A foot spacing. Quantities of trees located in skid trails ARE NOT Included Timber under AT2.

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WO KT-FT.3.5.2# – DESIGNATION BY SPECIES AND DIAMETER. (09/04)

Tree Designation Table

Payment Unit(s) or Cutting Unit(s)	Designated Species ^{1/}	More Than Stump Diameter (inches) ^{2/}	Less Than Stump Diameter (inches) ^{2/}
8, 10, 16, 18	All species EXCEPT hemlock, cedar, elm, red oak, white pine and red pine	>=6.0"	
6	All aspen, jack pine, balsam fir, white spruce and paper birch. EXCEPT hemlock, cedar, elm, red oak, white pine and red pine	>=6.0"	
7	All species EXCEPT hemlock, cedar, elm, red oak, white pine, red pine and paper birch.	>=6.0"	

Additional trees to be cut, if any, are Marked with 4/ blue paint [Payment Unit 6].

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KT-CT.3.5.5# - 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 Units. Areas of Cut Tree Marking are shown on the Contract Area Map with the symbol "CTM."

PAYMENT UNIT(S)

PAINT COLOR

R9 KT-CT.3.5.5# - INDIVIDUAL TREES. (11/2007)

Cut Tree Marking Table

Payment Units	Paint Color
1,2,3,4,5,9,11,12,13,14,15,17,19	Blue
20 (ROW)	Yellow

[Note: there is no Orange-Painted payment unit boundary associated with Payment Unit 20 (ROW)]

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KT-ET.4 - PAYMENTS NOT RECEIVED (08/2012)

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

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

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

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

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

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

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

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

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

- (i) A bona fide dispute exists as to Contractor's obligation to make such payment and
- (ii) Contractor files and prosecutes a timely Claim.

KT-FT.1.0.3# - APPROACHES TO SURFACED ROADS (06/2009)

Contractor shall apply and maintain Payment Unit 1 temporary "linear landing": 15 CY crushed aggregate; Payment Unit temporary road [FR5260]: 15 CY crushed aggregate; Payment Unit 4 temporary "back-in": 45 CY pit run borrow; Payment Unit 6 temporary road: 15 CY crushed aggregate. inches of as directed by Forest Service on all Temporary Road approaches to surfaced roads for a distance of as directed by Forest Service feet back from the surfaced road. Surfaced roads include those with: gravel - FR5260 and Old Highway 45

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KT-FT.1.2# - USE OF ROADS BY CONTRACTOR (09/2004)

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

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

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

See Restricted Road List Table.

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WO-KT-FT.1.2# – USE OF ROADS BY CONTRACTOR. (09/04)

Restricted Road List

Road Number	Road Name	Termini		Map Legend	Description of Restrictions
		From	To		
5230	FR 5230	Old 45	Sleepy Hollow	X	Hauling Prohibited
5250	FR 5250	5250-B	East	X	Hauling Prohibited
5241	FR 5241	US-45	5243	U	Unsuitable for Hauling Prior to Completion of Reconstruction
5242	FR 5242	US-45	MP 0.02	U	Unsuitable for Hauling Prior to Completion of Reconstruction
5245	FR 5245	US-45	End	U	Unsuitable for Hauling Prior to Completion of Reconstruction
5246	FR 5246	US-45	MP 0.03	U	Unsuitable for Hauling Prior to Completion of Reconstruction
5246	FR 5246	MP 0.64	MP 1.02	U	Unsuitable for Hauling Prior to Completion of Reconstruction
5243	FR 5243	Old 45	End	R	Use as a Haul Road Subject to Agreement
5235	North Jaybird Pit Rd	5230	End	R	Gate shall be kept closed when hauling gravel.
Old 45	LL Route OHV Trail	Guardrail	Guardrail	P	Use Prohibited

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KT-FT.1.3# - ROAD COMPLETION DATE (09/2004)

Construction of Specified Roads shall be completed no later than 12/01/2016; except for earlier construction completion dates for roads listed below:

Road Number	Road Name	Station		Completion Date
		From	To	

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

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

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

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

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

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

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

(a) Contractor constructs Specified Roads and Forest Service furnishes Contractor with written notice of acceptance under GT.3.6 or

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

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

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KT-FT.2.2.1# - MATERIAL SOURCES (09/2004)

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

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

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

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

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

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

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

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

See Material Source Table.

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

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

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

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Contractor shall be responsible for making arrangements for storage on other than Forest Service administered lands.

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

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WO-KT-FT.2.2.1# - MATERIAL SOURCES. (09/04)

Material	Type of Purchase	Owner(s)	Unit of Measure	Unit Price	Estimated Quantity	Total
Pit Run	N/A	USFS	CY	NA	642	642

NOTE: Pit restoration (per specifications) in the North Jaybird Pit shall be accomplished no later than the end of each operating season.

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KT-FT.3.1# - ROAD MAINTENANCE REQUIREMENTS (09/2004)

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

See Contract Road Maintenance Requirements Summary Table.

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WO-KT-FT.3.1# – ROAD MAINTENANCE REQUIREMENTS. (09/04)

Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable Prehaul Road Maintenance Specifications									
	From	To		T-8030	T-8110	T-8130	T-8310	T-8340	T-8350	T-8360	T-8420	T-8620	
5241	0.03	0.15	0.12				P	P		P			
5242	0.02	0.24	0.22			P	P	P		P		P	
5242-A	0.0	0.17	0.17				P	P		P			
5245	0.08	0.37	0.29				P	P		P			
5245-A	0.0	0.33	0.33			P	P	P		P			
5245-B	0.0	0.13	0.13				P	P		P		P	
5246	0.03	0.64	0.61			P	P	P		P			
5246-A	0.0	0.21	0.21				P	P		P			
5246-C	0.0	0.19	0.19				P	P		P		P	
5250-A	0.0	0.17	0.17			P	P	P		P			
5250-B	0.0	0.10	0.10			P	P	P		P			
5261	0.0	0.16	0.16			P	P	P		P			

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

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications									
	From	To		T-8030	T-8110	T-8130	T-8310	T-8340	T-8350	T-8360	T-8420	T-8620	
5241	0.0	0.15	0.15				P	P		P			
5242	0.0	0.24	0.24				P	P		P			
5242-A	0.0	0.17	0.17				P	P		P			
5245	0.0	0.37	0.37				P	P		P			
5245-A	0.0	0.33	0.33				P	P		P			
5245-B	0.0	0.13	0.13				P	P		P			
5246	0.0	1.02	1.02			P	P	P		P			
5246-A	0.0	0.21	0.21				P	P		P			
5246-C	0.0	0.19	0.19				P	P		P			
5250-A	0.0	0.17	0.17				P	P		P			
5250-B	0.0	0.10	0.10				P	P		P			
5261	0.0	0.16	0.16				P	P		P			
5250	5250-B	US-45	0.30		D		D	D			D		
5260	Old 45	US-45	0.50		D		D	D			D		

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

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Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications									
	From	To		T-8030	T-8110	T-8130	T-8310	T-8340	T-8350	T-8360	T-8420	T-8620	
5241	0.0	0.15	0.15				P	P	P	P		P	
5242	0.0	0.24	0.24				P	P	P	P		P	
5242-A	0.0	0.17	0.17				P	P	P	P		P	
5245	0.0	0.37	0.37				P	P	P	P		P	
5245-A	0.0	0.33	0.33				P	P	P	P			
5245-B	0.0	0.13	0.13				P	P	P	P			
5246	0.0	1.02	1.02				P	P	P	P		P	
5246-A	0.0	0.21	0.21				P	P	P	P		P	
5246-C	0.0	0.19	0.19				P	P	P	P		P	
5250-A	0.0	0.17	0.17				P	P	P	P		P	
5250-B	0.0	0.10	0.10				P	P	P	P		P	
5261	0.0	0.16	0.16				P	P	P	P		P	
5250	5250-B	US-45	0.30		D		D	D			D		
5260	Old 45	US-45	0.50		D		D	D			D		

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

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KT-FT.3.2# - ROAD MAINTENANCE DEPOSIT SCHEDULE (09/2004)

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

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

The Required Deposits for Forest Service work in lieu of Contractor performance and for deferred maintenance is: \$.06 per CCF.

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

Deposit Made To	Rate	Unit of Measure
N/A		

KT-GT.3.1.3# - CUTTING SCHEDULE (06/2009)

Unless changed by written agreement, only N/A Payment Units may be released for operations at one time, and the sequence of cutting Payment Units shall be : The northern portion of Payment Unit 12 shall be harvested prior to, or concurrent with the harvest of Payment Unit 13.

Unless there is agreement in writing to postpone specific requirements, all contractual requirements on a Payment Unit shall be accepted by Forest Service prior to the release of an additional Payment Unit.

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KT-GT.3.1.4# - OPERATING RESTRICTIONS (06/2009)

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

Restricted operations/activities:

Within Payment Units 1-5, 10-15, 17 and 19: Harvest operations are restricted during the period of 3/16 through 7/14 (due to soils and protection of residual stems).

Within Payment Units 6-9, 16 and 18: Harvest operations are restricted during the period of 3/16 through 5/31 (due to soils).

Within the Contract Area, decked pine and other conifer material must be removed from the Contract Area within 30 days of cutting to minimize the potential breeding areas for pine beetles during the period of May 1 thru September 30.

Prohibited operations/activities:

N/A

KT-GT.4.1.2 - STUMP MARKS (06/2009)

Trees designated for cutting under CT.3.5 have been marked with paint at breast height and below stump height. Trees shall be felled so as to leave paint on stump.

KT-GT.4.2# - SKIDDING AND YARDING REQUIREMENTS (06/2009)

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

Within Payment Unit(s), as shown on Contract Area Map with symbol "SYR": SYR[1]: All Included Timber shall be skidded/forwarded out of Payment Unit 13 through the eastern portion of Payment Unit 12 to a landing location designated by the Forest Service.

Within portions of Payment Unit(s), as shown on Contract Area Map with symbol "SYR" and cross-hatching: SYR[2]: All Included Timber shall be skidded/forwarded out of Payment Unit 12 through the southwestern portion of Payment Unit 11 to a landing location designated by the Forest Service.

KT-GT.6.2# - SITE SPECIFIC WETLANDS PROTECTION MEASURES (09/2004)

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

All logging slash, equipment, and vehicles are prohibited within these areas. Any slash resulting from the Contractor's Operations shall be removed immediately or treated as directed by the Forest Service.

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KT-GT.6.3# - TEMPORARY ROAD CLOSURE (06/2009)

In addition to GT.6.3, measures to effectively block temporary roads to normal vehicular traffic shall consist of the following:

At approaches to Old Highway 45 and FR 5260 for the Temporary Roads into Payment Units 1, 4, 6, and 7; closure of this exit consists of restoring the ditchline and shoulders of Gogebic County Road 206. Beyond the clearing limits of Gogebic County Road 206, Contractor shall restore the road to slope of surrounding terrain and cover it with logging slash to obliterate the road.

For the Temporary Roads exiting Payment Units 1, 4, 6, and 7 onto Old Highway 45 and FR 5260; a berm will be placed at an angle of 30 to 45 degrees, relative to the road (Payment Unit 1 will require closure at both end of linear landing). Dig a trench, 12 to 18 inches below the surface of the road or trail, and extend it to both sides of the road to prevent runoff from bypassing the berm/waterbar. The uphill end should extend beyond the side ditch of the road and into the earth berm to intercept any ditchflows. The outflow end is to be fully open and extended far enough beyond the edge of the road or trail to safely disperse runoff onto the undisturbed forest floor. When placement of the closure device does not require the berm to function as a waterbar for drainage, the trench will not be required. Height of the berm will be approximately 4 feet. Rocks/boulders, logging slash, cull logs, and stumps may be incorporated into the ridge of earth during construction as long as proper drainage is maintained and the road is completely blocked; unless otherwise agreed in writing. (See Typical Drawing)

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KT-GT.7# - SLASH DISPOSAL MEASURES (06/2009)

Slash resulting from Contractor'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 KT-GT.6#.

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

Other specific slash disposal requirements are as follows:

SDZ - Slash resulting from construction clearing (such as from landings and right-of-way clearing associated with pre-haul maintenance requirements listed in Special Provision CT5.31#), Specified Road Construction and Specified Road Reconstruction, shall be lopped and scattered to lie within 3 feet of the ground. All root wads shall be severed from the stem and righted on the ground or otherwise disposed of as directed by the Forest Service, concurrent with operations.

SDZ(1) - as shown on the Sale Area Map in Payment Units 1, 2, 3, 4, 6, 7, 16, 17, & 18 within a strip 25 feet in width, measured from the forested edge of the road along PR 5250, PR 5260 and Old Highway 45, all slash resulting from the Purchaser's operations shall be removed; within an adjacent strip 25 feet in width, all slash shall be lopped and scattered to lie within 3 feet of the ground. SDZ(1) shall be performed concurrent with operations.

SDZ(2) - Within the Sale Area, except as specified elsewhere in this Contract, all debris/slash resulting from the use of slashers/processors or similar equipment shall be removed from landings and roadsides and scattered to lie within 3 feet of the ground or otherwise disposed of as directed by the Forest Service, concurrent with operations.

Material described above used in the construction of closure berms is excluded from this requirement.

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

KT-GT.9# - STEWARDSHIP PROJECTS (09/2004)

Performance of stewardship projects shall be in accordance with the following specifications.

Stewardship Projects

KT-GT.9# - STEWARDSHIP PROJECTS. (09/2004)

Stewardship Projects

Mandatory Stewardship Projects		
Project Number	Project Description	Specification Pages
SP-010	Aspen Regeneration Site Preparation	SP-2 thru SP-3
SP-016	Aspen Regeneration Site Preparation	SP-2 thru SP-3
SP-018	Aspen Regeneration Site Preparation	SP-2 thru SP-3

Optional Stewardship Project		
Project Number	Project Description	Specification Pages
AC-006	Site Preparation – Anchor Chaining	SP-6 thru SP-7
AC-007	Site Preparation – Anchor Chaining	SP-6 thru SP-7
AC-008	Site Preparation – Anchor Chaining	SP-6 thru SP-7
AC-009	Site Preparation – Anchor Chaining	SP-6 thru SP-7

Optional Stewardship Project		
Project Number	Project Description	Specification Pages
SC-01	Slash Closure – Road Decommissioning	SC-8 thru SC-15
SC-02	Slash Closure – Road Decommissioning	SC-8 thru SC-15
SC-03	Slash Closure – Road Decommissioning	SC-8 thru SC-15
SC-04	Slash Closure – Road Decommissioning	SC-8 thru SC-15
SC-05	Slash Closure – Road Decommissioning	SC-8 thru SC-15
SC-06	Slash Closure – Road Decommissioning	SC-8 thru SC-15

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KT-HT.2 - FIRE PRECAUTIONS (06/2009)

Unless otherwise agreed in writing between the Contractor and the Contracting Officer, the following are specific precautionary measures applicable during Contractor's Operations in Fire Precautionary Period as indicated in AT.9:

1. Contractor shall maintain Forest Service-approved spark arresting devices 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 one-pound multipurpose fire extinguisher readily available.
2. Contractor shall require that smoking and the building of lunch or warming fires by Contractor's employees, contractors, or subcontractors be confined to designated safe places where flammable debris has been cleared away and where, at the option of the Contractor, 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. Contractor shall furnish serviceable firefighting tools. Location, numbers, and types of tools shall be specified in the Fire Prevention and Control Plan in accordance with HT.1.

KT-IT.2.1.2 - MARKET-RELATED CONTRACT TERM ADDITION (11/2008)

The term of this contract may be adjusted when a drastic reduction in wood product prices has occurred in accordance with 36 CFR 223.52. The Producer Price Index used to determine when a drastic reduction in price has occurred is stated in AT.17. Contractor will be notified whenever the Chief determines that a drastic reduction in wood product prices has occurred. If the drastic reduction criteria specified in 36 CFR 223.52 are met for 2 consecutive calendar quarters, after contract award date, Contracting Officer will add 1 year to the contract term, upon Contractor's written request. For each additional consecutive quarter such a drastic reduction occurs, Contracting Officer will, upon written request, add an additional 3 months to the term during Normal Operating Season, except that no single 3-month addition shall extend the term of the contract by more than one year. Contracting Officer must receive Contractor's written request for a market-related contract term addition before the expiration of this contract.

No more than 3 years shall be added to a contract's term by market-related contract term addition unless the following conditions are met:

- (i) The contract was awarded after December 31, 2006; and
- (ii) A drastic reduction in wood product prices occurred in at least ten of twelve consecutive quarters during the contract term, but not including the quarter in which the contract was awarded.

For each qualifying quarter meeting the criteria in paragraphs (i) and (ii) of this provision, the Forest Service will, upon the Contractor's written request, add an additional 3 months during the normal operating season to the contract, except no single 3-month addition shall extend the term of a contract by more than 1 year.

In no event shall a revised contract term exceed 10 years as a result of market-related contract term addition.

Additional contract time may not be granted for those portions of the contract that have a required completion date or for those portions of the contract where Contracting Officer determines that the timber is in need of urgent removal or that timber deterioration or resource damage may result from delay.

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS
FS-2400-13T Contracts (09/04)
WO-KT-FT.3.1# Special Provisions

SECTION 1. GENERAL

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

The Purchaser shall maintain roads, commensurate with the Purchaser's use, in accordance with the Road Maintenance Requirements Summary and Road Maintenance Specifications. Performance of road maintenance work by the Purchaser may be required prior to, during, or after each period of use. The timing of work accomplishment shall be based on the Purchaser's operating schedule under Standard Provision **GT.3.1**.

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 **IT.3.3**.

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.

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS

FS-2400-13T Contracts (09/04)

WO-KT-FT.3.1# Special Provisions

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.

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.

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS
FS-2400-13T Contracts (09/04)
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Surface Course. The Material placed on the Base Course or Subgrade to enhance traction, distribute concentrated wheel loads and resist abrasion and the effects of climate. Surface Course may be referred to as surfacing.

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

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

SECTION 3. ROAD MAINTENANCE REQUIREMENTS SCHEDULE

See WO-KT-FT.3.1# Summary Table, Page 56 & 56-2

SECTION 4. ROAD MAINTENANCE SPECIFICATIONS

INCLUDED SPECIFICATIONS

<u>Specification No.</u>	<u>Specification Title</u>
T-8110	Maintenance Blading/Grading
T-8130	Spot Surface Course Placement/Replenishment
T-8310	Ditch Cleaning
T-8340	Drainage Structure Maintenance
T-8350	Roadway Drainage Maintenance
T-8360	Composite High Clearance Road Maintenance
T-8420	Cutting Roadway Vegetation
T-8620	Miscellaneous Maintenance

T-8110 Maintenance Blading/Grading

DESCRIPTION

1.1 Maintenance Blading/Grading is keeping an aggregate surfaced Roadbed in a condition to facilitate traffic and provide proper drainage. It includes maintaining the Crown, Inslope or Outslope of the Traveled Way, Turnouts, and Shoulder; repairing Berms; blending approach road intersections; and cleaning Drainage Dips and Lead-off Ditches.

EQUIPMENT

2.1 The equipment required to shape, spread, and compact surfacing is listed below.

<u>Road Number</u>	<u>Road Termini - From</u>	<u>Road Termini - To</u>	<u>Equipment Description</u>
5250	US-45	5050-B	Motor-grader (or equivalent)
5260	US-45	Old US-45	Motor-grader (or equivalent)

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS
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WO-KT-FT.3.1# Special Provisions

REQUIREMENTS

- 3.1** Maintenance Blading/Grading shall be performed to facilitate traffic and proper drainage before, during, or after Purchaser's use as required by Section 3. Road Maintenance Requirements Schedule.
- 3.2** The surface blading shall preserve the existing cross-section. Surface irregularities shall be eliminated and the surface left in a smooth, free-draining state needed to facilitate traffic. Surface Course Material which has been displaced to the Shoulders or Turnouts shall be returned to the Traveled Way. The blading operation shall be conducted to conserve Surface Material and to provide for a thorough mixing of the Material being worked.
- 3.3** On aggregate surfaced roads Material generated from back slope Sloughing and ditch cleaning shall not be blended with Surface or Base Course Material unless agreed otherwise
- 3.4** Roadway back slopes shall not be undercut.
- 3.5** Drainage Dips and Lead-off Ditches shall be cleaned and maintained to retain the existing line, grade, and cross-section.
- 3.6** Intersecting roads shall be bladed for a distance of 50 feet to assure blending of the surfaces.
- 3.7** Rocks or other Material remaining on the Traveled Way after the final pass that are 4 inches in diameter or larger shall be removed. The unsuitable Material shall be disposed of by side casting unless agreed otherwise. Side casting into streams, lakes, or water courses will not be permitted.
- 3.8** Material resulting from this activity shall not remain on or in structures, such as Culverts, cattle guards, ditches, bridges, and Drainage Dips.
- 3.9** Material resulting from this activity, plus any accumulated debris, shall be removed from roadway structures, such as concrete low-water crossings or fords.

T-8130 Spot Surface Course Placement/Replenishment

DESCRIPTION

- 1.1** Spot Surface Course Placement/Replenishment includes Subgrade preparation, furnishing, hauling, spreading and shaping materials in accordance with the requirements.

MATERIALS

- 2.1** Surface Course Material will be in accordance with the subsection 3.2 of these specifications. Only commercial sources of aggregate will be accepted, except surfacing material may also be purchased from the government, where available, by filling out a form 2600, paying the required fees, and obtaining a permit.

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS
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WO-KT-FT.3.1# Special Provisions

REQUIREMENTS

3.1 Subgrade Preparation. Prepare Subgrade to receive Surface Course Material at locations as designated on-the-ground by the Forest Service on roads listed below. Prepare the Subgrade by shaping the Roadbed to approximately the original cross-section and consistent with adjacent sections.

3.2 Furnish, haul and spread Material at locations designated on the ground by the Forest Service (FS). Compact the aggregate by operating spreading and hauling equipment over the full width of each layer of the aggregate, or by other methods as specified below.

Road Number	Type Material	Finished Compacted Thickness Specified	Total Quantity (Tons or cu.yds.)	Compaction Method
5242 (MP 0.07)	Pit Run Gravel ^{1/}	50'L x 12'W x 8"D	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5242 (MP 0.20 – 0.22)	Pit Run Gravel ^{1/}	100'L x 13'W x 12"D	48 CY (62 CY) ^{2/}	See 3.2 Above
5245-A (MP 0.06 – 0.09)	Pit Run Gravel ^{1/}	150'L x 12'W x 8"D	45 CY (58.5 CY) ^{2/}	See 3.2 Above
5245-A (MP 0.11)	Pit Run Gravel ^{1/}	50'L x 12'W x 8"D	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5246 (MP 0.39 – 0.42)	Pit Run Gravel ^{1/}	150'L x 12'W x 8"D	45 CY (58.5 CY) ^{2/}	See 3.2 Above
5246 (MP 0.00 – 1.02)	Pit Run Gravel ^{1/}	To Be Placed as Directed by USFS (During Haul Road Maintenance).	60 CY (78 CY) ^{2/}	See 3.2 Above
5250-A (MP 0.00 – 0.01)	Crushed Aggregate ^{3/}	Surface Entrance	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5250-A (MP 0.08 – 0.10)	Pit Run Gravel ^{1/}	100'L x 12'W x 8"D	30 CY (39 CY) ^{2/}	See 3.2 Above
5250-A (MP 0.12 – 0.13)	Pit Run Gravel ^{1/}	50'L x 12'W x 8"D	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5250-A (MP 0.17)	Pit Run Gravel ^{1/}	Surface Turnaround	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5250-B (MP 0.00 – 0.02)	Local Excavation	Excavate Left for cover over pipe arch	30 CY	See 3.2 Above
5250-B (MP 0.01– 0.02)	Pit Run Gravel ^{1/}	50'L x 12'W x 8"D	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5250-B (MP 0.00 – 0.01)	Crushed Aggregate ^{3/}	Surface Entrance	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5261 (MP 0.00 – 0.01)	Crushed Aggregate ^{3/}	Surface Entrance	15 CY (19.5 CY) ^{2/}	See 3.2 Above
5261 (MP 0.01– 0.02)	Pit Run Gravel ^{1/}	50'L x 12'W x 8"D	15 CY (19.5 CY) ^{2/}	See 3.2 Above

^{1/} North Jaybird Pit (as shown on Contract Area Map).

^{2/} Quantity of material in () is the approximate loose volume.

^{3/} Furnish, Haul, Place. Must meet M-DOT Designation 22A.

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3.3 Variations. The Purchaser will be required to furnish weight tickets to the FS for each load of commercially obtained crushed aggregate prior to the final inspection. For aggregate purchased from the government, a count of truck loads will be required in addition to finished depth checks for the placed and compacted aggregate. Widths and lengths will be as staked or from schedule. When it is mutually agreed that all or part of the Surface Course Material is not needed, the estimated cost of surfacing not placed shall be charged to the Timber Sale Account in accordance with **IT.3.3**.

T-8310 Ditch Cleaning

DESCRIPTION

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

REQUIREMENTS

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

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

3.3 Roadway back slopes shall not be undercut.

T-8340 Drainage Structure Maintenance

DESCRIPTION

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

MATERIALS

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

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REQUIREMENTS

- 3.1** Drainage Structures and related items shall be cleared of all foreign Material deposited above the bottom of the structure and all vegetative growth which interferes with the water flow. Material removed that cannot be incorporated into maintenance work shall be uniformly placed on fill slopes unless agreed otherwise.
- 3.2** Perform maintenance to insure the proper functioning of the head walls, aprons, inlet assemblies, riprap, trash racks and other facilities related to the Drainage Structure.
- 3.3** Install/remove ditches, drainage dips, rock crossings and/or culverts as shown below, and as marked on the ground. Installation of structures shall not begin without the presence of a FSR unless agreed to in writing by the FSR.

	Location	Remove/Install	Type of Structure	Size	Quantity
5245-A	MP 0.05	Install	Lead Off Ditch, Right	15'	One
5246	MP 0.38– 0.40	Install	Ditch, Left	100'	One
5250-B	MP 0.00– 0.01	Install	Ditches, Left & Right	^{1/}	One
5250-B	MP 0.00– 0.01	Install	Pipe Arch ^{2/,3/}	17" x 13" x 34'	One

^{1/} Per Typical Drawing.

^{2/} Pipe Arch shall be one piece riveted 16 gauge corrugated metal, unless agreed otherwise.

^{3/} Lower pipebed and ditches 12" prior to setting pipe arch.

- 3.4** Installation shall be in accordance with construction industry standards and practices.
- 3.5** Culverts designated for removal/disposal shall become the property of the Purchaser and shall be disposed of properly.
- 3.6** Temporary culverts provided by the USFS shall remain the property of the government.
- 3.7** Bridges. Any miscellaneous parts needing repair or replacement during normal use of any bridge during haul shall be considered maintenance. This includes minor items such as object markers, running planks that have loosened or cracked deck boards, or drainage structures which may become plugged. Bridge decks that are dirt and dust covered shall be cleaned to allow for proper drainage and for safety of the user.

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS
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WO-KT-FT.3.1# Special Provisions

T-8350 Roadway Drainage Maintenance

DESCRIPTION

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

MATERIALS

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

REQUIREMENTS

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

3.2 Any of the following methods are acceptable for use at eroded or rutted locations:

(a) Method A: Outsloping the roadbed at not less than ½ inch per yard of width.

(b) Method B: Insloping the roadbed at not less than ½ inch per yard of width.

(c) Method C: Water bar roadbed at locations staked on the ground and construct as shown on the enclosed detail.

(d) Method D: Crown the roadbed as shown in the attached detail as the typical section for that length of road.

3.3 Drainage structures located in roadbed through fills and natural watercourses shall be fully functional without obstructions, including inlet and outlet channel within 20 feet of the structure. **(All structures within termini indicated in WO-KT-FT.3.1# Summary Table).**

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

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

T-8360 Composite High Clearance Road Maintenance

DESCRIPTION

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

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MATERIALS

2.1 Required materials are listed in subsection **3.2**.

REQUIREMENTS

3.1 Traveled Way

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

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

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

3.3 Slough and Slides

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

3.4 Slumps, Eroded areas, and Washouts

1. Drain the roadbed immediately upgrade of Slumps and longitudinal cracks to prevent water from entering Slump area.

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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.

T-8420 Cutting Roadway Vegetation

DESCRIPTION

- 1.1 This work includes removal of brush, trees and other vegetative growth from within the clearing limits. This may include brush mowing of shoulders to prevent larger growth which would inhibit travel in the future.

EQUIPMENT

- 2.2 Equipment use may include farm tractor mounted mowing or brushing equipment. If brushing equipment is required it must be of a size and power to cut off and masticate stems up to four inches in diameter. Larger growth may require hand clearing with a chainsaw or mechanized equipment able to handle larger trees.

REQUIREMENTS

- 3.1 Vegetative matter within the Roadway which impedes vehicular travel, and/or interferes with road maintenance operations, such as surface blading and ditch and culvert cleaning shall be removed. Downed timber meeting utilization standards shall be cut in appropriate lengths and decked in locations where agreed upon and the Traveled Way or sight distances will not be impaired.

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FS-2400-13T Contracts (09/04)
WO-KT-FT.3.1# Special Provisions

- 3.2** Vegetative matter removed from the clearing limits shall be scattered outside the clearing limits at least 3 (and lopped to within 3 feet of ground) feet perpendicular to the road surface.
- 3.3** Trim tree branches that extend over the road surface and shoulders to attain a clear height of 14 feet. Trim branches flush with the tree or as close as possible without causing damage or scarring to the bole. Area shall be left neatly trimmed.
- 3.4** Any stump removed shall be placed in an upright position out of the clearing limits.
- 3.5** Area shall not be left in an unsightly condition. The FSR shall have the final say over how the area is left.

T-8620 Miscellaneous Maintenance

DESCRIPTION

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

MATERIALS

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

REQUIREMENTS

- 3.1** Cattle guards. Loose rails shall be welded or bolted back in place. Excess Material carried into the cattle guard shall be removed when drainage is blocked or when it reaches six inches from the bottom of the cattle guard frame. Drainage into and from the cattle guard shall be kept open.
- 3.2** Gates (and other closure devices). Gates shall be kept in good repair and made to swing easily. Hinges or latches shall be repaired if not operating properly. Brush and debris shall be removed from within the swinging radius. Weathered berms or wood piles shall be reconstructed to a height which discourages use and blocks the road.
- 3.3** Signs. Any signs needing repair or replacement shall be installed per sign placement detail or MUTCD direction. All roads shall have legible sign numbers. ML 3-5 roads shall have horizontal numbering and ML 1-2 roads shall have vertical numbers. The material used shall be as directed by the Forest Service Representative. All new signs must meet retroreflectivity requirements.

QUEEN BEE STEWARDSHIP ROAD MAINTENANCE REQUIREMENTS

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Road Number	Road Name	Location	Remove/Install	Type of Item	Size	Quantity
5241	5241	1/, 2/	Install	Berm	4/	1
5242	5242	1/, 2/	Remove/Install	Berm ^{3/}	4/	1
5242-A	5245-A	1/, 2/	Install	Berm	4/	1
5245	5245	1/, 2/	Install	Berm	4/	1
5245-B	5245-B	1/, 2/	Remove	Berm	4/	1
5246	5246	1/, 2/	Remove/Install	Berm ^{3/}	4/	1
5246-A	5246-A	1/, 2/	Install	Berm ^{3/}	4/	1
5246-C	5246-C	1/, 2/	Remove/Install	Berm	4/	1
5250-A	5250-A	1/, 2/	Install	Berm ^{3/}	4/	1
5250-B	5250-B	1/, 2/	Install	Berm	4/	1
5261	5261	1/, 2/	Install	Berm	4/	1

1/ Shown on Contract Area Map

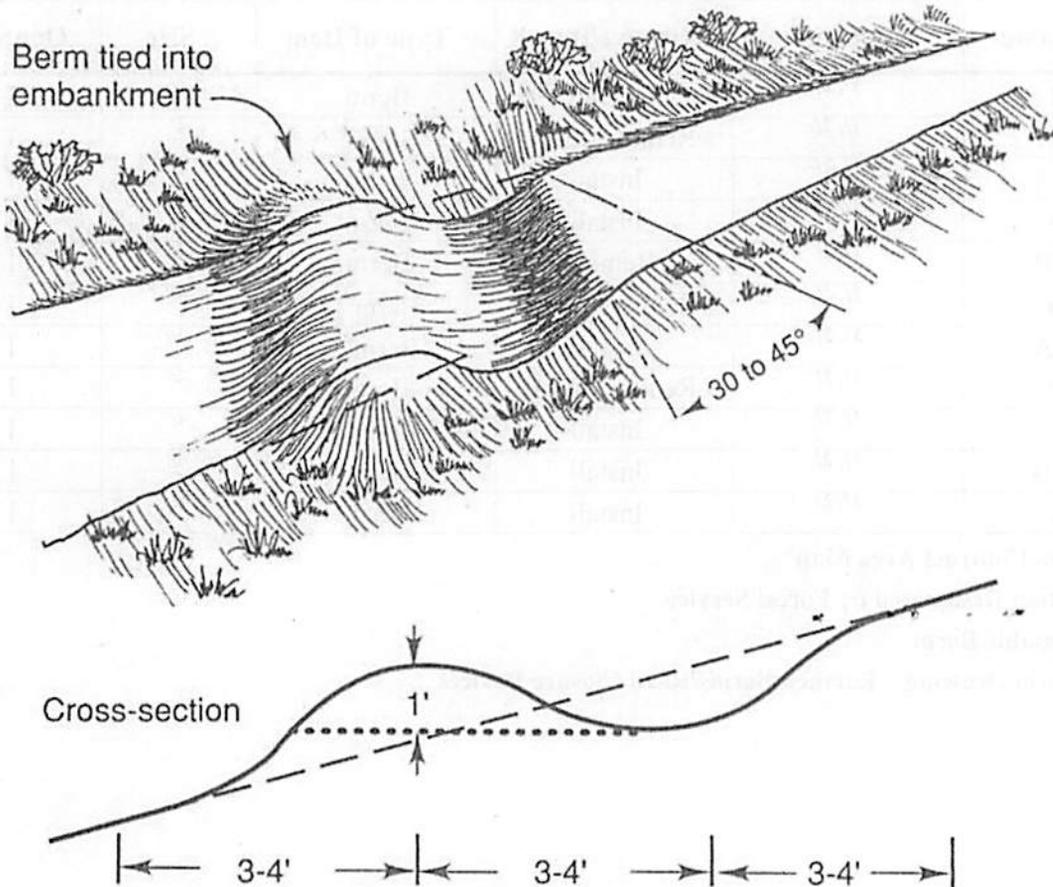
2/ At Location Designated by Forest Service

3/ ATV Passable Berm

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

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Earthen Berms/Road Closure Devices (Typical Drawing)



Earth berm/water bars are narrow, earthen ridges built across roads or trails. They divert water off and away from roads or trails into vegetated areas before it causes erosion. When properly built, they prevent exposed soil from moving, protecting the area until grass vegetation is firmly established.

As shown in the above drawing, the berm/water bar should be placed at an angle of 30 to 45 degrees, relative to the road, to allow for runoff to drain from the inlet, through the trench, and into the adjacent forest floor or vegetation.

Dig a trench, 12 to 18 inches below the surface of the road or trail, and extend it beyond both sides of the road or trail to prevent runoff from bypassing the water bar. The uphill end of the water bar should extend beyond the side ditch of the road and into an earth-berm to fully intercept any ditch flows. The outflow end of the water bar is to be fully open and extended far enough beyond the edge of the road or trail to safely disperse runoff water onto the undisturbed forest floor. When placement of the closure device does not require the berm to also function as a water bar for drainage, the trench will not be required.

Height of the berm will be approximately 4 feet. Rocks/boulders, logging slash, cull logs, and stumps may be incorporated into the ridge of earth during construction of the berm as long as proper drainage will be maintained and the road is completely blocked, unless otherwise agreed in writing.

QUEEN BEE STEWARDSHIP

Supplemental Specifications to Special Provision KT-GT.9# - Stewardship Projects

Aspen Regeneration Site Preparation

Supplemental Specifications to Special Provision KT-GT.9# - Stewardship Projects

Mandatory Stewardship Project: Aspen Site Preparation

Objective: To prepare the site for natural aspen regeneration.

Stewardship Credits Earned: Will be based on the Unit of Measure listed below:

Project #	Payment Unit	Acres	Mandatory/Optional
SP-010	010	8	Mandatory
SP-016	016	14	Mandatory
SP-018	018	28	Mandatory

A. Site Preparation for Aspen Natural Regeneration

- 1) Cut all tree species over 4 feet tall and less than 5 inches DBH, except do not cut any aspen less than 2 inches DBH OR any black spruce or white spruce less than 5 inches DBH, and do not cut any RED PINE, WHITE PINE, HEMLOCK, CEDAR, RED OAK, ELM, SERVICEBERRY (Amelanchier spp.) or ORANGE PAINT-BANDED TREES.
- 2) When available, retain two to three small clumps per acre of dense conifer saplings with live limbs within one foot of the ground (approximately 100 to 1000 square feet in size). Clumps selected for retention should be those with no, or minimal, logging related damage, i.e. broken and damaged crowns, de-barked stems.
- 3) Leave good quality spruce, removing damaged trees (leaning, logging-scarred, etc.) and trees with less than 20% crowns.
- 4) Shrubs, such as alder, are not required to be cut unless specified in the supplemental specifications.
- 5) Annuals such as grasses, sedges, ferns, etc. are not required to be cut.
- 6) Do not cut dead trees.

B. Felling Specifications

- 1) All trees required to be cut shall be cut below the lowest live limb except when prevented by rocks, existing downed logs, or other existing obstacles to felling.
- 2) Trees required to be cut shall be completely severed from the stump and lie flush to the ground. No tops shall be left hanging in standing trees.
- 3) The stump height of cut trees shall not exceed 6 inches above the ground level on the high side of the stump, or 4 inches above rocks, existing downed logs, or other existing obstacles to felling.

QUEEN BEE STEWARDSHIP

Supplemental Specifications to Special Provision KT-GT.9# - Stewardship Projects

Aspen Regeneration Site Preparation

- 4) The cut angle of such stumps shall not exceed 20 degrees measured from a horizontal plane extending from the stump at ground level.
- 5) No boundary trees or Reserve Trees shall be cut or damaged. Boundary trees (KT-CT.3) are defined by 3 ORANGE paint slashes at eye level, with stump mark, for exterior boundaries or 2 ORANGE paint slashes at eye level, with stump mark, for interior boundaries. Reserve Trees (KT-CT.3#) are ringed with a single band of ORANGE paint at eye level, with stump mark.
- 6) All snags shall not be cut.

C. Equipment Requirements.

- 1) The Contractor will provide cutting tools and equipment that are suitable for the job.
- 2) All power tools shall be equipped with Forest Service approved spark arrestors and in good working condition.
- 3) Heavy equipment (such as processors used in logging) is permitted to do this work when ground conditions support the equipment. Site preparation work may be performed concurrent with logging operations. (Reference Special Provision KT-GT.3.1.4# for operating restrictions)

D. Road Use and Maintenance.

- 1) All roads, excepting temporary roads, leading into each project area are to be kept open and free of any debris that may occur as a result of the work.
- 2) All roads used by the Contractor will comply with Special Provisions KT-FT.1.2# - Use of Roads by Contractor and KT-FT.3.1# - Road Maintenance Requirements of this Contract.

E. Slash Treatment.

- 1) All slash/felled stems that fall outside of the boundary for Contractor's site preparation slash shall be pulled back into the unit.
- 2) Contractor shall treat all slash from site preparation activities which lies within a designated Slash Disposal Zone (SDZ), with the same removal or slash height requirements which apply to slash produced by timber harvest activities.
- 3) In addition, all slash resulting from the Contractor's site preparation activities shall be removed from the cleared edge of any numbered Forest Service System Road, any road authorizing use under a special use permit, or any road maintained by another ownership or governmental unit other than the Forest Service.
- 4) All slash shall be removed from all road ditches, leadout ditches or any other drainage structures.

QUEEN BEE STEWARDSHIP

Supplemental Specifications to Special Provision KT-GT.9# - Stewardship Projects

Site Preparation for Jack Pine Regeneration – Anchor Chaining

Objective: Site preparation is to be done utilizing cable skidder and anchor chain. Site preparation activity is intended to supply ground scarification to prepare the seed bed for natural regeneration. Activity will also break up slash concentrations and reduce potential fire hazards.

Stewardship Credits Earned: Will be based on the acres of the Payment Unit(s) listed below.

Project #	Payment Unit	Unit of Measure	# of Acres*	Mandatory/Optional
AC-006	6	Acres	13	Optional
AC-007	7	Acres	9	Optional
AC-008	8	Acres	28	Optional
AC-009	9	Acres	17	Optional

Definitions:

These specifications will pertain to all bid items contained within this contract.

1. Operations may be delayed during periods of heavy rainfall which would result in soil damage (excessive compaction or rutting) from operation of equipment. Additional time would be granted for completion date if rain delays exceed 3 days.

2. Contractor will have to transport anchor chain assembly from present location at Kenton Ranger District “boneyard” or Watersmeet Ranger District “boneyard” (see vicinity map) to work site. (Total weight of chain assembly is estimated at 4000 pounds or more.) Chain assembly can be transported intact or with chains removed from drawbar. Chain assembly to be returned to “boneyard” following completion of project. Chain assembly would be transported by truck since forest roads do not connect the bid items. When trucked, utilize a solid bed truck since chains can fall through open frame logging truck in transport. Upon completion of the project, chains must be returned to their original location.

3. The chains will have to be transported between the bid items since there are not forest system roads connecting the bid items.

4. Skidder must have blade on front, preferably a “V” blade to break up slash concentrations. Horsepower rating should be approximately 128 HP or higher (e.g. JD 640) and be equipped with arch type cable system which will allow drawbar and chain to be elevated during road travel between sites. (Cable system is sometimes needed in site prep work to allow skidder to move beyond an obstruction and then winch chain assembly back to skidder.) There is a clevis on the drawbar, approximately 6 inches long with a 1-inch pin. Drawbar also has choker cable connections. Contractor should carry an additional clevis and replacement pins for chain assembly in case of breakage.

QUEEN BEE STEWARDSHIP

Supplemental Specifications to Special Provision KT-GT.9# - Stewardship Projects

Site Preparation for Jack Pine Regeneration – Anchor Chaining

5. Site conditions are variable from almost flat to rolling conditions with some short, steeper slopes. Sites are generally dry but may have some minor wet inclusions and drain areas that will not be treated.

There are standing residual trees on most sites. Residuals, especially larger oak, hemlock, birch and red and white pines, are to be worked around to the extent possible to prevent damage to root systems and debarking. Small (2-4 inch DBH) saplings of these tree species may also be left standing. Other hardwood saplings, mostly red maple, and small balsam should be run over and flattened to the extent possible during chaining.

Slash should be left broken up and scattered throughout the unit, not left in piles or concentrations. There should be bare soil exposed in areas throughout the unit from the scarification, exposing at least 60% of the surface area.

Where reasonably possible, line of travel should cross over existing slash concentrations to break up slash and scatter cones in slash. **In areas, multiple passes may be required to achieve the proper soil scarification and knock down saplings. Passes perpendicular to one another are most effective.**

6. Item unit boundaries are usually designated by existing road systems or painted cutting unit boundary lines.

7. Roads are to remain open and slash free. Forest system roads within the units will not be dragged. Equipment used for this project must be able to lift chains over woods roads.

8. Bids are on a per acre basis, which include the total cost of performing the site preparation. It should include such costs as the operator, skidder, fuel, routine maintenance of skidder and chain assembly, removing/reinstalling berms, and transport of chain assembly between work sites and to and from the “boneyard”. **It may also include taking multiple passes in areas to achieve the proper soil scarification and to knock down saplings.**

C.4 EQUIPMENT

The Government will provide, to the contractor, an anchor chain assembly which consists of a 10-foot long drawbar with skid plate, 3 spiked anchor chains with swivels and 3 “torpedo” weights to maintain tension on chains. Contractor will provide all other materials, equipment, and transportation needed to complete the work in a safe, responsible, and satisfactory manner while complying with all National Forest Regulations.

Supplemental Specifications to Special Provision KT-GT.9# - Stewardship Projects**Stewardship Project: Slash Closure – Road Decommissioning**

Objective: Permanently make unauthorized roads impassable.

Stewardship Credits Earned: Will be based on the Unit of Measure listed below.

Optional Service Projects

Project Number	Road #	Location of Slash Closure Work	Unit of Measure	Estimated Quantity
SC-01	06056001	North end off of FR5243	Each	1
SC-02	06056001	South end as it turns into FR 5241	Each	1
SC-03	06056004	West end in from Old US-45	Each	1
SC-04	06056004	East end past end FR5245	Each	1
SC-05	06056012	North end jct with FR 5250	Each	1
SC-06	06056012	South end as it turns into FR5246-A	Each	1

Material and Placement Requirements

- Debris material including stumps, trees, logging slash, rocks, and brush should be used to obstruct the travel way on the nine (9) road sections designated by Forest Service for decommissioning, as listed in the above table. This material may have to be hauled or moved from locations agreed to with Forest Service and placed on designated road segments.
- Material must be scattered across travel way with a minimum of 100% of the road surface covered with material for a distance of 150 feet and an average depth of 36 inches on each road section.
- Material shall be placed parallel, diagonal, and perpendicular to motorized travel direction.

SUPPLEMENTAL SPECIFICATIONS (KT-GT.9#)**Statement of Work**

The Contractor shall provide any and all equipment, labor, supplies, tools, supervision, transportation, materials including safety and other incidentals necessary to perform all work activities located within the boundaries of the Contract Area, in accordance with the specifications, exhibits and clauses contained or referenced herein.

Schedule of Work

Project No.	Spec. No.	Road #Location/ Milepost	Work Description	Unit of Measure & M of M ¹	Quantity
Mandatory					
SC-01		06056001	Slash Closure		
	650	0.00-0.03	Haul and place stumps, slash, tops and debris in roadbed for the first 150' from FR 5243	EA	1
SC-02		06056001	Slash Closure		
	650	0.00-0.03	Haul and place stumps, slash, tops and debris in roadbed for the first 150' from the end of FR 5241.	EA	1
SC-03		06056004			
	650	0.02-0.05	Haul and place stumps, slash, tops and debris in roadbed after the first 100' From Old US-45 for 150'.	EA	1
SC-04		06056004			
	650	0.00-0.03	Haul and place stumps, slash, tops and debris in roadbed for the first 150' from end of FR 5245.	EA	1
SC-05		06056012	Slash Closure		
	650	0.02-0.05	Haul and place stumps, slash, tops and debris in roadbed after the first 100' from FR 5250 for 150'.	EA	1
SC-06		06056012	Slash Closure		
	650	0.00-0.03	Haul and place stumps, slash, tops and debris in roadbed for the first 150' from North end of FR 5246-A.	EA	1

QUEEN BEE STEWARDSHIP**Road Decommission Stewardship Notes**

Note: Logging slash, stumps, rocks and debris placed on road surface on the designated sections by the Forest Service with materials placed on an average of 36 inches in depth and 150 feet in length. Material must be scattered across travel way width with a minimum of 100% of the road surface covered with material. Material shall be placed parallel, diagonal and perpendicular to motorized travel direction.

Note: The decommissioning material may have to be hauled and placed on certain road segments.

Note: Additional debris materials will be generated for use during the clearing and grubbing of roads throughout project. This material may also be used for slash closure of decommissioned roads.

**QUEEN BEE STEWARDSHIP
SCHEDULE OF ITEMS**

Item Number	Item Description & Milepost	C or R ¹	Unit & M of M ²	Quantity	Road Std. (W,D,S) ³	Unit Allowance	Estimated Allowance
	FR 5241	R			S	DATE:	7/7/2015
	M.P. 0.0-0.03			0.03			
249(03)	Composite Road Construction Work includes preparing bed for installation. Shape road to crown to match typical drawing.		LS LSQ	1		\$ 150.00	\$ 150.00
	M.P. 0.00-0.01						
203(04)	Removal/ reinstall safety end section left end of pipe extension upon pipe bed preparation.		EA AQ	1		\$ 150.00	\$ 150.00
602(50)	Furnish & install 18"x14' round corrugated metal pipe with 2' band. (Riveted 16 Gauge)		LF AQ	14		\$ 22.00	\$ 308.00
301(01)	Untreated Aggregate Courses Furnish / Haul and place 15 C.Y. Crushed aggregate, surfacing (19.5 CY loose material) at milepost 0.00- 0.01.		CY DQ	15		\$ 25.00	\$ 375.00
	M.P. 0.01- 0.03						
249(03)	Widen entrance to left to transition road bed to US-45 and shape to crown. For local borrow excavate 20 C.Y. additional material by cutting road bed past the buried cable. And use as fill to cover pipe extension.		LS LSQ	20		\$ 5.00	\$ 100.00
204(52)	Unclassified borrow. Work includes hauling and placing 45 C.Y. (58.5 C.Y. loose) pit run borrow from North Jay Bird Pit all the way up to the top of the hill.		CY DQ	45		\$ 12.00	\$ 540.00
	FR 5241 Total Specified Road						\$1,623.00
	FR 5242	R			S		
	M.P. 0.00-0.02			0.02			
204(52)	Unclassified borrow. Work includes hauling and placing 30 C.Y. (39 C.Y. loose) pit run borrow from North Jay Bird Pit to increase right radii of the entrance to a total of 30' wide. Shape and crown road bed.		CY DQ	30		\$ 12.00	\$ 360.00

¹C = Construction; R = Reconstruction²Method of Measure³W = Winter; D = Dry Summer; S = Summer

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Prepared by Mary T. Zelinski
Civil Engineering Technician

**QUEEN BEE STEWARDSHIP
SCHEDULE OF ITEMS**

Item Number	Item Description & Milepost	C or R ¹	Unit & M of M ²	Quantity	Road Std. (W,D,S) ³	Unit Allowance	Estimated Allowance
	M.P. 0.00-0.01						
301(01)	Untreated Aggregate Courses Furnish / Haul and place 15 C.Y. Crushed aggregate surfacing (19.5CY loose material) at milepost 0.00-0.01.		CY DQ	15		\$ 25.00	\$ 375.00
	FR 5242 Total Specified Road						\$ 735.00
	FR 5245	R			S		
	M.P.0.00-0.08			0.08			
249(03)	Composite Road Construction Work includes preparing bed for installation. Shape road to ditch match typical drawing.		LS LSQ	1		\$ 150.00	\$ 150.00
	M.P. 0.00-0.01						
203(04)	Removal/ reinstall safety end section left end of pipe extension upon pipe bed preparation.		EA AQ	1		\$ 150.00	\$ 150.00
602(50)	Furnish & install 18"x 20' corrugated metal pipe with 2' band. (Riveted 16 Gauge)		LF AQ	20		\$ 22.00	\$ 440.00
301(01)	Untreated Aggregate Courses Furnish / Haul and place 15 C.Y. Crushed aggregate surfacing (19.5 CY loose material) at milepost 0.00-0.01.		CY DQ	15		\$ 25.00	\$ 375.00
	M.P. 0.01- 0.08						
249(03)	Widen entrance to left to transition road bed to US-45 and shape to crown 0.00-0.08. For local borrow excavate 40 C.Y. left side (0.06-0.08) for additional material and use as fill to cover pipe extension.		LS LSQ	40		\$ 8.00	\$ 320.00
204(52)	Unclassified borrow. Work includes hauling and placing 30 C.Y. (39 C.Y. loose) pit run borrow from North Jay Bird Pit		CY DQ	30		\$ 12.00	\$ 360.00
	FR 5245 Total Specified Road						\$ 1,795.00
	FR 5246				S		

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**QUEEN BEE STEWARDSHIP
SCHEDULE OF ITEMS**

Item Number	Item Description & Milepost	C or R ¹	Unit & M of M ²	Quantity	Road Std. (W,D,S) ³	Unit Allowance	Estimated Allowance
	M.P. 0.00 - 0.03	R		0.03			
249(03)	Composite Road Construction Work includes preparing bed for installation. Shape road to crown to match typical drawing.		LS LSQ	1		\$ 150.00	\$ 150.00
	M.P. 0.00-0.01						
203(04)	Removal/ reinstall safety end section right end of pipe extension upon pipe bed preparation.		EA AQ	1		\$ 150.00	\$ 150.00
602 (50)	Furnish & install 18"x 20' corrugated metal pipe with 2' band. (Riveted 16 Gage)		LF AQ	20		\$ 22.00	\$ 440.00
301(01)	Untreated Aggregate Courses Furnish / Haul and place 15 C.Y. Crushed aggregate surfacing (19.5 CY loose material) at mile post 0.00-0.01.		CY DQ	15		\$ 25.00	\$ 375.00
	M.P. 0.01- 0.03						
249(03)	Widen entrance to right to transition road bed to US-45 and shape to crown 0.00-0.03. For local borrow excavate 40 C.Y. additional material left and use as fill to cover pipe extension.		LS LSQ	40		\$ 5.00	\$ 200.00
204(52)	Unclassified borrow. Work includes hauling and placing 30 C.Y. (39 C.Y. loose) pit run borrow from North Jay Bird Pit.		CY DQ	30		\$ 12.00	\$ 360.00
	M.P. 0.64-1.02	R			S		
249(03)	Composite Road Construction, reconstruct road to crown or out slope. Clearing and grubbing road and restoring ditches to all culverts to match typical drawings as directed by the Forest Service . Construct L turnaround to the right at poe.		DQ Mile	0.38		\$ 3,800.00	\$ 1,444.00
	M.P. 0.64- 0.66						
203(01)	Remove Beaver dam by increments to allow water to flow out without washing away US-45 and other roads down stream.		LS LSQ	1		\$ 450.00	\$ 450.00

¹C = Construction; R = Reconstruction

²Method of Measure

³W = Winter; D = Dry Summer; S = Summer

**QUEEN BEE STEWARDSHIP
SCHEDULE OF ITEMS**

Item Number	Item Description & Milepost	C or R ¹	Unit & M of M ²	Quantity	Road Std. (W,D,S) ³	Unit Allowance	Estimated Allowance
	M.P. 0.65						
203(04)	Remove existing culvert and dispose of culvert off of Government land.		EA AQ	1		\$ 250.00	\$250.00
249(03)	Prepare culvert bed. For pipe installation. Shape ditch to pipe inlet.		LS LSQ	1		\$ 200.00	\$ 200.00
602(75)	Furnish and install 36" x 30' high density polyethylene dual walled drainage pipe at milepost 0.65.		LF AQ	30		\$ 52.00	\$ 1,560.00
157 02	Soil Erosion Control, silt fence. Work includes furnishing and installing at the culvert as directed by the Forest Service.		Lin/Ft DQ	200		\$ 3.00	\$ 600.00
	M.P. 0.64 - 0.67						
249(03)	For local borrow excavate 78 C.Y. from hillside West(right) and East(left) of culvert 0.61-0.70 (150'L x 14' W x 1'D) to be placed under pipe and around muddy ground.		CY DQ	78		\$ 8.00	\$ 624.00
204(52)	Unclassified borrow, haul and place 69 C.Y. (90 C.Y. loose) pit run borrow from North Jay Bird pit for pipe installation and surfacing. (200'L x 14'W x 8"D) M.P. 0.64		CY DQ	69		\$ 12.00	\$ 828.00
	M.P. 0.71						
203(04)	Remove existing culvert and dispose of off of government land.		EA AQ	1		\$ 100.00	\$ 100.00
249(03)	Shape road to match typical drawing and shape ditch to pipe outlet.		LS LSQ	1		\$ 200.00	\$ 200.00
602(75)	Furnish and install 12" x 24' high density polyethylene dual walled drainage pipe .		LF AQ	24		\$ 11.00	\$ 264.00
249(03)	Local borrow excavate 30 C.Y. left at M.P. 0.66-0.70 and place a transitioning lift over pipe location . (100'L x 12'W x 8"D)		C.Y. DQ	30		\$ 8.00	\$ 240.00
204(52)	Unclassified borrow, haul and place 15 C.Y. (19.5 C.Y. loose) pit run borrow from North Jay Bird pit for pipe installation and surfacing. (50'L x 12'W x 8"D)		C.Y. DQ	15		\$ 12.00	\$ 180.00

¹C = Construction; R = Reconstruction²Method of Measure³W = Winter; D = Dry Summer; S = Summer

**QUEEN BEE STEWARDSHIP
SCHEDULE OF ITEMS**

Item Number	Item Description & Milepost	C or R ¹	Unit & M of M ²	Quantity	Road Std. (W,D,S) ³	Unit Allowance	Estimated Allowance
	M.P. 0.84- 0.89						
204(01)	Excavation 74 C.Y. right at M.P. 0.82-0.85 And place over low area 250'L x 12'W x 8"D.		C.Y. DQ	74		\$ 7.00	\$ 518.00
	M.P. 0.93						
203(04)	Removal of Culvert at M.P. 0.93. Remove and dispose of culvert off of government land.		EA AQ	1		\$ 100.00	\$100.00
249(03)	Composite Road Reconstruction Work includes preparing culvert bed for installation. Shape road to match typical drawing and shape ditch to pipe outlet.		LS LSQ	1		\$ 200.00	\$ 200.00
602(75)	Furnish and install 12" x 24' high density polyethylene dual walled drainage pipe .		LF AQ	24		\$ 11.00	\$ 264.00
204(52)	Unclassified borrow, haul and place 15 C.Y. (19.5 C.Y. loose) pit run borrow from North Jay Bird pit for pipe installation and surfacing. (50'L x 12'W x 8"D)		C.Y. DQ	15		\$ 12.00	\$ 180.00
	FR 5246 Total Specified Road						\$ 9,877.00
	Grand Total Specified Roads						\$ 14,030.00

¹C = Construction; R = Reconstruction

²Method of Measure

³W = Winter; D = Dry Summer; S = Summer

QUEEN BEE STEWARDSHIP SPECIFIED ROAD NOTES

- NOTE:** The construction requirements for composite road construction slash disposal shall be Method A as described in the Supplemental Specification Item 249.
- NOTE:** Construct the road bed to conform to the typical detail as noted in the narrative description.
- NOTE:** There may be underground utility lines in unknown locations on this project. Call **MISS DIG three full working days** before any work begins. (1-800-482-7171).
- NOTE:** The entrances of FR's 5241, 5242, 5245, and 5246 have work related requirements explained by diagrams and notes included on **MDOT Permits 66031-32289-15-06315, 66031-032293-15-063015, 66031-032295-15-063015, and 66031-032297-15-063015.** *Work shall be completed to meet State Permit Requirements.*
- NOTE:** Additional lead-off ditches may be required at road segment locations to Allow for proper drainage needs and are included under typical blading and shaping requirements. Locations for placement shall be determined by the Forest Service.
- NOTE:** During gravel hauling operations safety signs shall be placed and hauling shall not commence until all signs have been put in place as directed by the Forest Service.
- NOTE:** **60 CY of crushed aggregate** is required for specified segments of this project. The normal compaction factor of 130% computes to a **loose volume of 78 CY.** *There is no government source available for this material.* Purchaser furnished material shall meet gradation requirements for the Michigan Department of State Highway Transportation designation 22A. Compact aggregate by operating spreading and hauling equipment over the full width of material.
- NOTE:** **234 CY of pit run borrow** is required for the specified road segments on this project. The normal compaction factor of 130% computes to a **loose volume of 304 CY.** This material shall be taken from the **North Jay Bird pit**, located at T46N, R39W, Sections 30 unless authorized by the Forest Service to change the pit run source. *Some pit development may be required and is considered incidental to associated items.*
- NOTE:** **282 CY of local excavation** is required for the specified road segments on this project. Road work designating local excavation shall be built to conserve and redistribute topsoil to help prevent erosion after excavation has occurred. Borrow area cut slopes at excavation locations need to be tapered to a minimum of 2:1.
- NOTE:** Purchaser is required to **place top soil, adjacent/ overburden material** on all culvert extension slopes.
- NOTE:** High Density polyethylene drainage pipes shall be dual walled and have a smooth interior. **Minimum cover shall be 1.5 feet, as shown on typical drawing.**

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

Specification List

Project Name QUEEN BEE STEWARDSHIP TIMBER SALE

Date Prepared 07/07/2015

Road Number			FR5241	FR5242	
FR 5241 FR 5242					
Road Name		Termini.....	Miles	Miles	
		Const. Reconstruction	0.03	0.02	
Spec. No.	Title				Latest Revised Edition
101 thru 109	General Requirements		X	X	2003
203	Removal of Structures and Obstructions		X		2003
204	Unclassified Borrow		X	X	2003
301	Untreated Aggregate Courses		X	X	2003
602	Culverts and Drains		X		2003

NOTE: The Forest Service, US Department of Agriculture has adopted FP-03 for Construction of National Forest System Roads.

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

Specification List

Project Name QUEEN BEE STEWARDSHIP TIMBER SALE

Date Prepared 07/07/2015

Road Number		FR5245	FR5246	
FR5245 FR 5246				
Road Name		Termini..... Const. Reconstruction	Miles	Miles
		0.08	0.41	
Spec. No.	Title			Latest Revised Edition
101 thru 109	General Requirements	X	X	2003
157	Soil Erosion Control		X	2003
203	Removal of Structures and Obstructions	X	X	2003
204	Unclassified Borrow	X	X	2003
301	Untreated Aggregate Courses	X	X	2003
602	Culverts and Drains	X	X	2003

NOTE: The Forest Service, US Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

QUEEN BEE STEWARDSHIP
SUPPLEMENTAL SPECIFICATIONS

Section 101-109 General Requirements

Section 157 Soil Erosion Control

Section 203 Removal of Structures and Obstructions

Section 204 Excavation and Embankment

Section 249 Composite Road Construction

Section 301 Untreated Aggregate Courses

Section 602 Culverts and Drains

Section 650 Road Closure Devices

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Preface

Preface_wo_03_15_2004_m

Delete all but the first paragraph and add the following:

The Forest Service, US Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

101 - Terms, Format, and Definitions

101.00_nat_us_07_25_2005

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

Delete all references to the TAR (Transportation Acquisition Regulations) in the specifications.

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

Delete all references to the FAR (Federal Acquisition Regulations) in the specifications.

101.03_nat_us_06_16_2006

101.03 Abbreviations.

Add the following to (a) Acronyms:

AFPA	American Forest and Paper Association
MSHA	Mine Safety and Health Administration
NIST	<u>National Institute of Standards and Technology</u>
NESC	National Electrical Safety Code
WCLIB	West Coast Lumber Inspection Bureau

Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04_nat_us_03_29_2007

101.04 Definitions.

Delete the following definitions and substitute the following:

Bid Schedule--The Schedule of Items.

Bridge--No definition.

Contractor--The individual or legal entity contracting with the Government for performance of prescribed work. In a timber sale contract, the contractor is the "purchaser".

Culvert--No definition.

Right-of-Way--A general term denoting (1) the privilege to pass over land in some particular line (including easement, lease, permit, or license to occupy, use, or traverse public or private lands), or (2) Real property necessary for the project, including roadway, buffer areas, access, and drainage areas.

Add the following:

Adjustment in Contract Price--"Equitable adjustment," as used in the Federal Acquisition Regulations, or "construction cost adjustment," as used in the Timber Sale Contract, as applicable.

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

Design Quantity--"Design quantity" is a Forest Service method of measurement from the FS-96 *Forest Service Specifications for the Construction of Roads and Bridges*. Under these FP specifications this term is replaced by the term "Contract Quantities".

Forest Service--The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

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

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

Purchaser--The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through agents, employees, or subcontractors.

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

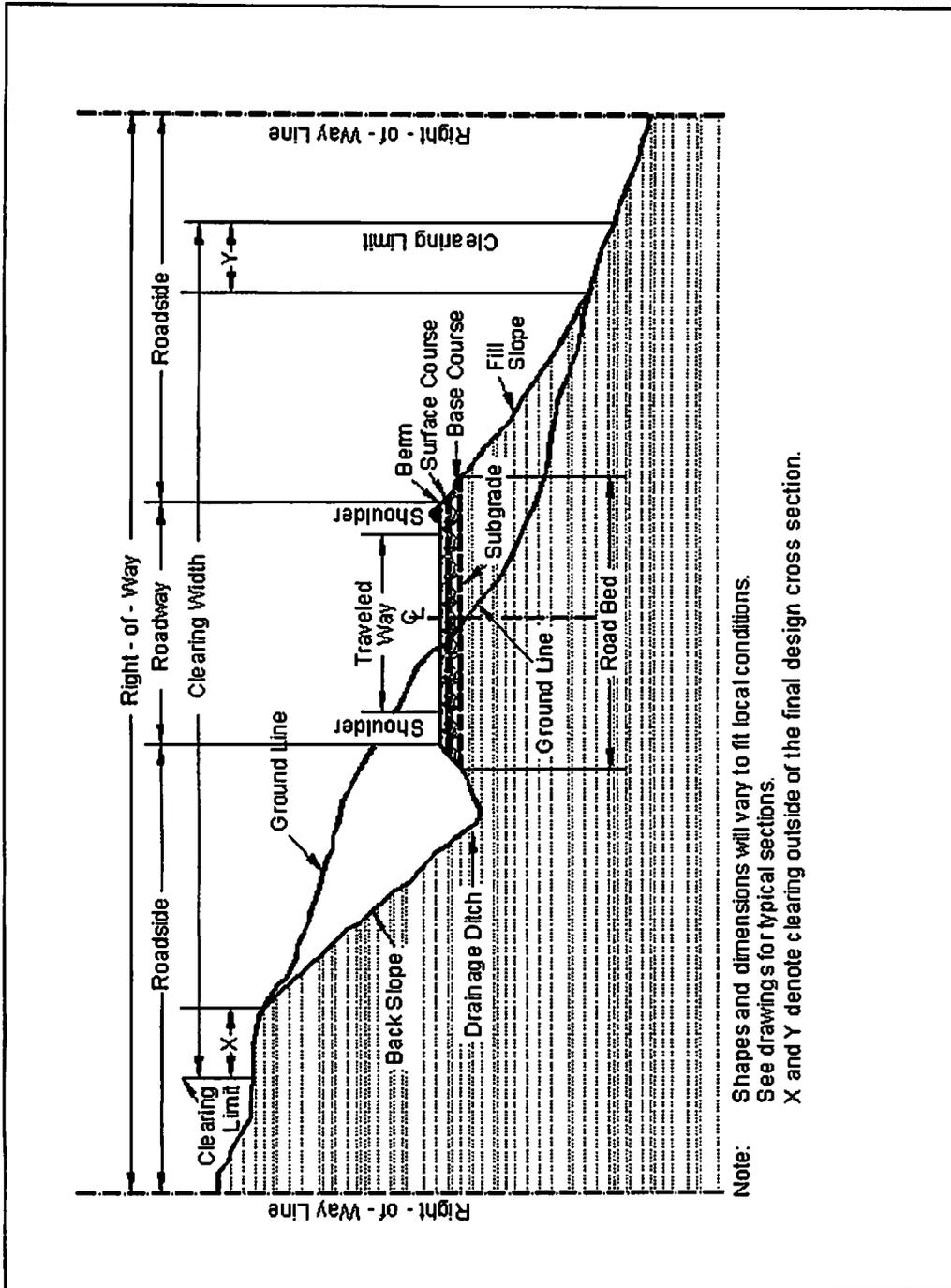
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

Schedule of Items--A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, unit price, and amount.

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

Add Figure 101-1—Illustration of road structure terms:

Figure 101-1—Illustration of road structure terms.



101.04 Definitions.

Delete the following definitions:

Contract Modification

Day

Notice to Proceed

Solicitation

102 - Bid, Award, and Execution of Contract

102.00_nat_us_02_16_2005

102 Bid, Award, and Execution of Contract

Delete Section 102 in its entirety.

103 - Scope of Work

103.00_nat_us_02_16_2005

Deletions

Delete all but subsection 103.01 Intent of Contract.

104 - Control of Work

104.00_nat_us_06_16_2006

Deletions

Delete Sections 104.01, 104.02, and 104.04.

104.03_nat_us_02_22_2005

104.03 Drawings and Specifications

Delete subsection 104.03

104.03_nat_us_01_22_2009

104.03 Specifications and Drawings.

Delete 104.03.

104.03_nat_us_02_22_2005

104.06 Use of Roads by Contractor

The Contractor is authorized to use roads under the jurisdiction of the Forest Service for all activities necessary to complete this contract, subject to the limitations and authorizations designated in the Road Order(s) or described in the contract, when such use will not damage the roads or national forest resources, and when traffic can be accommodated safely.

104.07_nat_us_02_17_2005

Add Subsection.

105 - Control of Material

105.02_nat_us_01_18_2007

105.02 Material Sources.

105.02(a) Government-provided sources.

Add the following:

Comply with the requirements of 30 CFR 56, subparts B and H. Use all suitable material for aggregate regardless of size unless otherwise designated. When required, re-establish vegetation in disturbed areas according to section 625.

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

Material is available for use as (Borrow/pitrun surfacing material) as needed for the project from North Jay Bird Pit T46N, R39W, Sec 30.

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

105.05 Use of Material Found in the Work.

Delete 105.05 (a) and (b) and the last sentence of the second paragraph and substitute the following:

Materials produced or processed from Government lands in excess of the quantities required for performance of this contract are the property of the Government. The Government is not obligated to make reimbursement for the cost of producing these materials.

106 - Acceptance of Work

106.01 Conformity with Contract Requirements.

Delete Subsection 106.01 and substitute the following:

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown on the plans or specified in the contract.

Incorporate manufactured materials into the work according to the manufacturer's recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor

upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove and replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted, at no cost to the Government.

(a) Disputing Government test results. If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

- (1) Sampling method;
- (2) Number of samples;
- (3) Sample transport;
- (4) Test procedures;
- (5) Testing laboratories;
- (6) Reporting;
- (7) Estimated time and costs; and
- (8) Validation process.

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory's accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution.

The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor

will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

(b) Alternatives to removing and replacing non-conforming work. As an alternative to removal and replacement, the Contractor may submit a written request to:

- (1) Have the work accepted at a reduced price; or
- (2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

106.07_nat_us_05_11_2004

106.07 Delete

Delete subsection 106.07.

107 - Legal Relations and Responsibility to the Public

107.05_nat_us_05_11_2004

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.06_nat_us_06_16_2006

107.06 Contractor's Responsibility for Work.

Delete the following from the first paragraph.

“except as provided in Subsection 106.07”.

107.08_nat_us_03_29_2005

107.08 Sanitation, Health, and Safety

Delete the entire subsection.

107 - Legal Relations and Responsibility To the Public

107.08_nat_us_05_11_2004

107.08 Sanitation, Health, and Safety.

Add the following:

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

107 - Legal Relations and Responsibility to the Public

107.09_nat_us_06_16_2006

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

107.10_nat_us_06_16_2006

107.10 Environmental Protection.

Add the following:

Design and locate equipment repair shops, stationary refueling sites, or other facilities to minimize the potential and impacts of hazardous material spills on Government land.

Before beginning any work, submit a Hazardous Spill Plan. List actions to be taken in the event of a spill. Incorporate preventive measures to be taken, such as the location of mobile refueling facilities, storage and handling of hazardous materials, and similar information. Immediately notify the CO of all hazardous material spills. Provide a written narrative report form no later than 24 hours after the initial report and include the following:

- Description of the item spilled (including identity, quantity, manifest number, and other identifying information).
- Whether amount spilled is EPA or state reportable, and if so whether it was reported, and to whom.
- Exact time and location of spill including a description of the area involved.
- Containment procedures.
- Summary of any communications the Contractor had with news media, Federal, state and local regulatory agencies and officials, or Forest Service officials.
- Description of clean-up procedures employed or to be employed at the site including final disposition and disposal location of spill residue.

When available provide copies of all spill related clean up and closure documentation and correspondence from regulatory agencies.

The Contractor is solely responsible for all spills or leaks that occur during the performance of this contract. Clean up spills or leaks to the satisfaction of the CO and in a manner that complies with Federal, state, and local laws and regulations.

108 - Prosecution and Progress

108.00_nat_us_02_16_2005

108 Delete.

Delete Section 108 in its entirety.

109 - Measurement and Payment

109.00_nat_us_02_17_2005

109 Deletions

Delete the following entire subsections:

109.06 Pricing of Adjustments.

109.07 Eliminated Work.

109.08 Progress Payments.

109.09 Final Payment.

109.02_nat_us_06_16_2006

109.02 Measurement Terms and Definitions.

(b) Contract quantity.

Add the following:

Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

Change the following:

“(b) Cubic yard” to “(c) Cubic yard”.

Add the following definition:

(p) Thousand Board Feet (Mbf). 1,000 board feet based on nominal widths, thickness, and extreme usable length of each piece of lumber or timber actually incorporated in the job. For glued laminated timber, 1,000 board feet based on actual width, thickness, and length of each piece actually incorporated in the job.

109.03_nat_us_02_17_2005

157 - Soil Erosion Control

157.03_nat_us_02_24_2005

157.03 General

Delete the entire subsection and replace with the following:

Remove structures and obstructions in the roadbed to 12 inches below subgrade elevation.
Remove structures and obstructions outside the roadbed to 12 inches below finished ground or to the natural stream bottom.

203.05_nat_us_02_24_2005

203.05 Disposing of Material.

Add the following:

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

203.05_nat_us_02_18_2005

203.05 Disposing of Material.

(b) Burn.

Delete the last sentence and add the following:

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

203.05_nat_us_02_18_2005

203.05 Disposing of Material.

Add the following:

(e) Windrowing Construction Slash. Place construction slash outside the roadway in neat, compacted windrows approximately parallel to and along the toeline of embankment slopes. Do not permit the top of the windrows to extend above subgrade. Use construction equipment to matt down all material in a windrow to form a compact and uniform pile. Construct breaks of at least 15 feet at least every 200 feet in a windrow. Do not place windrows against trees. Obtain approval for pioneer roads. A pioneer road may be constructed to provide an area for placement of windrows, provided the excavated material is kept within the clearing limits and does not adversely affect the road construction.

(f) Scattering. Scatter construction slash outside the clearing limits without damaging trees. Limb all logs. Place logs and stumps away from trees, positioned so they will not roll, and are not on top of one another. Limb and scatter other construction slash to reduce slash concentrations.

(g) Chipping or Grinding. Use an approved chipping machine to grind slash and stumps greater than 3 inches in diameter and longer than 3 feet. Deposit chips or ground woody material on embankment slopes or outside the roadway to a loose depth less than 6 inches. Minor amounts of chips or ground woody material may be permitted within the roadway if they are thoroughly mixed with soil and do not form a layer.

(h) Debris Mat. Use tree limbs, tops, cull logs, split stumps, wood chunks, and other debris to form a mat upon which construction equipment is operated. Place stumps upside down and blend stumps into the mat.

(i) Decking Firewood Material. Remove brush from decks. Limb and deck logs that do not meet Utilization Standards according to Subsection 201.04 as directed by the CO. Cut logs to lengths less than 30 feet. Ensure that logs stacks are stable and free of brush and soil.

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

(k) Piling. Pile construction slash in designated areas. Place and construct piles so that if the piles are burned, the burning will not damage remaining trees. Keep piles free of dirt from stumps. Cut unmerchantable logs into lengths of less than 20 feet.

(l) Placing Slash on Embankment Slopes. Place construction slash on completed embankment slopes to reduce soil erosion. Place construction slash as flat as practicable on the completed slope. Do not place slash closer than 2 feet below subgrade. Priority for use of available slash is for: (1) through fills; (2) insides of curves; and (3) ditch relief outlets.

(m) Hydrological Sensitive Placement. Where required use this method in combination with other designated methods to dispose of material to reduce erosion and to aid in re-vegetation:

1. Place windrow segments on contours, wrap in type I geotextile.
2. Place logs as log erosion barriers on contours. Place logs so that 80% of their length is on the ground surface.
3. Scatter slash on bare or disturbed areas within or outside the clearing limits as directed.
4. Scatter chips or ground woody material on bare or disturbed areas within or outside the clearing limits as directed.

Place stumps in swales or on sites to form planting pockets. Place windrow segments on contours, wrap in type I geotextile.

203.08_nat_us_02_24_2005

203.08 Payment

Add the following:

Disposal of construction slash will be compensated under the designated pay item in Section 201.

204 - Excavation and Embankment

204.00_nat_us_03_26_2009

Replace Section 204 in its entirety with the following:

Description

204.01 This work consists of excavating material and constructing embankments. This includes furnishing, hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earthen and rocky material.

204.02 Definitions.

(a) **Excavation.** Excavation consists of the following:

(1) **Roadway excavation.** All material excavated from within the right-of-way or easement areas, except subexcavation covered in (2) below and structure excavation covered in Sections 208 and 209. Roadway excavation includes all material encountered regardless of its nature or characteristics.

(2) **Subexcavation.** Material excavated from below subgrade elevation in cut sections or from below the original groundline in embankment sections. Subexcavation does not include the work required by Subsections 204.05, 204.06(b), and 204.06(c).

(3) **Borrow excavation.** Material used for embankment construction that is obtained from outside the roadway prism. Borrow excavation includes unclassified borrow, select borrow, and select topping.

(b) **Embankment construction.** Embankment construction consists of placing and compacting roadway or borrow excavation. This work includes:

- (1) Preparing foundation for embankment;
- (2) Constructing roadway embankments;
- (3) Benching for side-hill embankments;
- (4) Constructing dikes, ramps, mounds, and berms; and
- (5) Backfilling subexcavated areas, holes, pits, and other depressions.

(c) **Conserved topsoil.** Excavated material conserved from the roadway excavation and embankment foundation areas that is suitable for growth of grass, cover crops, or native vegetation.

(d) **Waste.** Excess and unsuitable roadway excavation and subexcavation that cannot be used.

Material

204.03 Conform to the following Subsections:

Backfill material	704.03
Select borrow	704.07
Select topping	704.08
Topping	704.05
Unclassified borrow	704.06
Water	725.01

Construction Requirements

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

204.05 Reserved.

204.06 Roadway Excavation. Excavate as follows:

(a) General. Do not disturb material and vegetation outside the construction limits. Incorporate only suitable material into embankments. Replace any shortage of suitable material caused by premature disposal of roadway excavation. Dispose of unsuitable or excess excavation material according to Subsection 204.14.

At the end of each day's operations, shape to drain and compact the work area to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

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

(b) Rock cuts. Blast rock according to Section 205. Excavate rock cuts to 6 inches below subgrade within the roadbed limits. Backfill to subgrade with topping or with other suitable material. Compact the material according to Subsection 204.11

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

(d) Pioneer Roads. Road pioneering, slash disposal, and grubbing of stumps may proceed concurrently with excavation. Conduct excavation and placement operations so material to be treated under Section 201 will not be incorporated into the roadway unless specified in the slash treatment method. Maintain drainage during pioneering operations.

Remove snow and ice in advance of the work and deposit beyond the roadway limits in a manner that will not waste material or generate sediment. Do not incorporate snow and ice into embankments. Place snow or ice in a manner to prevent resource damage.

204.07 Subexcavation. Excavate material to the limits designated by the CO. Take cross-sections according to Section 152. Prevent unsuitable material from becoming mixed with the backfill. Dispose of unsuitable material according to Subsection 204.14. Backfill the subexcavation with topping, or other suitable material. Compact the material according to Subsection 204.11.

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

Obtain borrow source acceptance according to Subsection 105.02. Develop and restore borrow sources according to Subsection 105.03. Do not excavate beyond the established limits. When applicable, shape the borrow source to permit accurate measurements when excavation is complete.

204.09 Preparing Foundation for Embankment Construction. Prepare foundation for embankment construction as follows:

(a) **Embankment less than 4 feet high over natural ground.** When designated, remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

(b) **Embankments over an existing asphalt, concrete, or gravel road surface.** Scarify gravel roads to a minimum depth of 6 inches. Scarify or pulverize asphalt and concrete roads to 6 inches below the pavement. Reduce all particles to a maximum size of 6 inches and produce a uniform material. Compact the surface according to Subsection 204.11.

(c) **Embankment across ground not capable of supporting equipment.** Dump successive loads of embankment material in a uniformly distributed layer to construct the lower portion of the embankment. Limit the layer thickness to the minimum depth necessary to support the equipment.

(d) **Embankment on an existing slope steeper than 1V:3H.** Cut horizontal benches in the existing slope to a sufficient width to accommodate placement and compaction operations and equipment. Bench the slope as the embankment is placed and compacted in layers. Begin each bench at the intersection of the original ground and the vertical cut of the previous bench.

204.10 Embankment Construction. Incorporate only suitable roadway excavation material into the embankment. When the supply of suitable roadway excavation is exhausted, furnish unclassified borrow to complete the embankment. Obtain written approval before beginning construction of embankments over 6 feet high at subgrade centerline. Construct embankments as follows:

(a) General. At the end of each day's operations, shape to drain and compact the embankment surface to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

During all stages of construction, route and distribute hauling and leveling equipment over the width and length of each layer of material.

Compact embankment side slopes flatter than 1V:1.75H with a tamping type roller or by walking with a dozer. For slopes 1V:1.75H or steeper, compact the slopes as construction of the embankment progresses.

Where placing embankment on one side of abutments, wing walls, piers, or culvert headwalls, compact the material using methods that prevent excessive pressure against the structure.

Where placing embankment material on both sides of a concrete wall or box structure, conduct operations so compacted embankment material is at the same elevation on both sides of the structure.

Where structural pilings are placed in embankment locations, limit the maximum particle size to 4 inches.

(b) Embankment within the roadway prism. Place embankment material in horizontal layers not exceeding 12 inches in compacted thickness. Incorporate oversize boulders or rock fragments into the 12-inch layers by reducing them in size or placing them individually as required by (c) below. Compact each layer according to Subsection 204.11 before placing the next layer.

Material composed predominately of boulders or rock fragments too large for 12-inch layers may be placed in layers up to 24 inches thick. Incorporate oversize boulders or rock fragments into the 24-inch layer by reducing them in size or placing them individually according to (c) below. Place sufficient earth and smaller rocks to fill the voids. Compact each layer according to Subsection 204.11 before placing the next layer.

(c) Individual rock fragments and boulders. Place individual rock fragments and boulders greater than 24 inches in diameter as follows:

- (1) Reduce rock to less than 48 inches in the largest dimension.
- (2) Distribute rock within the embankment to prevent nesting.
- (3) Place layers of embankment material around each rock to a depth not greater than that permitted by (b) above. Fill all the voids between rocks.
- (4) Compact each layer according to Subsection 204.11 before placing the next layer.

(d) Embankment outside of roadway prism. Where placing embankment outside the staked roadway prism, place material in horizontal layers not exceeding 24 inches in compacted thickness. Compact each layer according to Subsection 204.11.

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

(a) **Compaction A.** Use AASHTO T 27 to determine the amount of material retained on a Number 4 sieve. If there is more than 80 percent retained on the No. 4 sieve use procedure (1). If there is 50 to 80 percent retained on the No. 4 sieve use procedure (2). If there is less than 50 percent retained on the No. 4 sieve use procedure (3).

(1) Adjust the moisture content to a level suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Use compression-type rollers at speeds less than 6 feet per second and vibratory rollers at speeds less than 3 feet per second. Compact each layer of material full width with one of the following and until there is no visible evidence of further consolidation.

(a) Four roller passes of a vibratory roller having a minimum dynamic force of 40,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.

(b) Eight roller passes of a 20-ton compression-type roller.

(c) Eight roller passes of a vibratory roller having a minimum dynamic force of 30,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.

Increase the compactive effort for layers deeper than 12 inches as follows:

- For each additional 6 inches or fraction thereof, increase the number of roller passes in (a) above by four passes.
- For each additional 6 inches or fraction thereof, increase the number of roller passes in (b) and (c) above, by eight passes.

(2) Use AASHTO T 99 to determine the optimum moisture content of the portion of the material passing a No. 4 sieve. Multiply this number by the percentage of material passing a No. 4 sieve, and add 2 percent to determine the optimum moisture content of the material. Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type rollers at speeds less than 6 feet per second and vibratory rollers at speeds less than 3 feet per second. Compact each layer of material full width according to (1) above.

(3) Classify the material according to AASHTO M 145. For material classified A-1 or A-2-4, determine the maximum density according to AASHTO T 180, method D. For other material classifications, determine the optimum moisture content and maximum density according to AASHTO T 99, method C.

Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type or vibratory rollers. Compact each layer of material full width to at least 95 percent of the maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures. When required, use AASHTO T 224 to correct for coarse particles.

(b) **Compaction B.** Place material by end dumping to the minimum depth needed for operation of spreading equipment. Adjust the moisture content of the material to obtain a mass that will not visibly deflect under the load of the hauling and spreading equipment. Operate compaction equipment over the full width of each layer until there is no visible evidence of further consolidation or, if when a sheepsfoot roller is used, the roller "walks out" of the layer. Make at least three complete passes.

(c) **Compaction C.** Place material by end dumping to the minimum depth needed for operation of spreading equipment. Level and smooth each embankment layer before placing the next layers. Operate hauling and spreading equipment uniformly over the full width of each layer. Construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids, and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

204.12 Ditches. Slope, grade, and shape ditches. Remove all projecting roots, stumps, rock, or similar matter. Maintain all ditches in an open condition and free from leaves, sticks, and other debris.

Form furrow ditches by plowing or using other acceptable methods to produce a continuous furrow. Place all excavated material on the downhill side so the bottom of the ditch is approximately 18 inches below the crest of the loose material. Clean the ditch using a hand shovel, ditcher, or other suitable method. Shape to provide drainage without overflow.

204.13 Sloping, Shaping, and Finishing. Complete slopes, ditches, culverts, riprap, and other underground minor structures before placing aggregate courses. Slope, shape, and finish as follows:

(a) **Sloping.** Leave all earth slopes with uniform roughened surfaces, except as described in (b) below, with no noticeable break as viewed from the road. Except in solid rock, round tops and bottoms of all slopes including the slopes of drainage ditches. Round material overlaying solid rock to the extent practical. Scale all rock slopes. Slope rounding is not required on tolerance class D though M roads.

If a slide or slipout occurs on a cut or embankment slope, remove or replace the material, and repair or restore all damage to the work. Bench or key the slope to stabilize the slide. Reshape the cut or embankment slope to an acceptable condition.

(b) Stepped slopes. Where required by the contract, construct steps on slopes of 1½V:1H to 1V:2H. Construct the steps approximately 18 inches high. Blend the steps into natural ground at the end of the cut. If the slope contains nonrippable rock outcrops, blend steps into the rock. Remove loose material found in transitional area. Except for removing large rocks that may fall, scaling stepped slopes is not required.

(c) Shaping. Shape the subgrade to a smooth surface and to the cross-section required. Shape slopes to gradually transition into slope adjustments without noticeable breaks. At the ends of cuts and at intersections of cuts and embankments, adjust slopes in the horizontal and vertical planes to blend into each other or into the natural ground.

(d) Finishing. Finish the roadbed to be smooth and uniform, and shaped to conform to the typical sections. Remove unsuitable material from the roadbed and replace it with suitable material. Finish roadbeds to the tolerance class shown in table 204-2. Ensure that the subgrade is visibly moist during shaping and dressing. Scarify to 6 inches below the bottom of low sections, holes, cracks, or depressions and bring back to grade with suitable material. Maintain proper ditch drainage.

For surfaced roads, remove all material larger than 6 inches from the top 6 inches of the roadbed.

For unsurfaced roads, use one of the following methods to finish the roadbed:

- (1) Method A.** Remove all material larger than 6 inches from the top 6 inches of the roadbed and replace with suitable material.
- (2) Method B.** Use a vibratory grid roller or approved equal with a minimum weight of 10 tons. Roll at least 5 full-width passes or until there is no visible evidence of further consolidation.
- (3) Method C.** For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.

204.14 Disposal of Unsuitable or Excess Material. Dispose of unsuitable or excess material at designated sites or legally off of the project.

When there is a pay item for waste, shape and compact the waste material in its final location. Do not mix clearing or other material not subject to payment with the waste material.

204.15 Acceptance. See Table 204-1 for sampling and testing requirements.

Material for embankment and conserved topsoil will be evaluated under Subsections 106.02 and 106.04.

Excavation and embankment construction will be evaluated under Subsections 106.02 and 106.04.

Clearing and removal of obstructions will be evaluated under Sections 201 and 203.

Measurement

204.16 Measure the Section 204 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

(a) Roadway excavation. Measure roadway excavation in its original position as follows:

(1) Include the following volumes in roadway excavation:

- (a)* Roadway prism excavation;
- (b)* Rock material excavated and removed from below subgrade in cut sections;
- (c)* Unsuitable material below subgrade and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;
- (d)* Ditches, except furrow ditches measured under a separate bid item;
- (e)* Topsoil;
- (f)* Borrow material used in the work when a pay item for borrow is not shown in the bid schedule;
- (g)* Loose scattered rocks removed and placed as required within the roadway;
- (h)* Conserved material taken from stockpiles and used in Section 204 work; and
- (i)* Slide and slipout material not attributable to the Contractor's method of operation.

(2) Do not include the following in roadway excavation:

- (a)* Overburden and other spoil material from borrow sources;
- (b)* Overbreakage from the backslope in rock excavation;
- (c)* Water or other liquid material;
- (d)* Material used for purposes other than required;
- (e)* Roadbed material scarified in place and not removed;
- (f)* Material excavated when stepping cut slopes;
- (g)* Material excavated when rounding cut slopes;
- (h)* Preparing foundations for embankment construction;
- (i)* Material excavated when benching for embankments;
- (j)* Slide or slipout material attributable to the Contractor's method of operation;
- (k)* Conserved material taken from stockpiles constructed at the option of the Contractor; and
- (l)* Material excavated outside the established slope limits.

(3) When both roadway excavation and embankment construction pay items are shown in the bid schedule, measure the following as roadway excavation only:

- (a)* Unsuitable material below subgrade in cuts and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;
- (b)* Slide and slipout material not attributable to the Contractor's method of operations; and
- (c)* Drainage ditches, channel changes, and diversion ditches.

(b) Unclassified borrow, select borrow, and select topping. When measuring by the cubic yard measure in its original position. If borrow excavation is measured by the cubic yard in place, take initial cross-sections of the ground surface after stripping overburden. Upon completion of excavation and after the borrow source waste material is returned to the source, retake cross-sections before replacing the overburden.

Do not measure borrow excavation used in place of excess roadway excavation.

(c) Embankment construction. Measure embankment construction in its final position. Do not make deductions from the embankment construction quantity for the volume of minor structures.

(1) Include the following volumes in embankment construction:

- (a)* Roadway embankments;
- (b)* Material used to backfill subexcavated areas, holes, pits, and other depressions;
- (c)* Material used to restore obliterated roadbeds to original contours; and
- (d)* Material used for dikes, ramps, mounds, and berms.

(2) Do not include the following in embankment construction:

- (a)* Preparing foundations for embankment construction;
- (b)* Adjustments for subsidence or settlement of the embankment or of the foundation on which the embankment is placed; and
- (c)* Material used to round fill slopes.

(d) Rounding cut slopes. Measure rounding cut slopes horizontally along the centerline of the roadway if a pay item for slope rounding is included in the bid schedule. If a pay item for slope rounding is not included in the bid schedule slope rounding will be considered subsidiary to excavation.

(e) Waste. Measure waste by the cubic yard in its final position. Take initial cross-sections of the ground surface after stripping 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 204-1
Sampling and Testing Requirements**

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Topping (704.05) & unclassified borrow (704.06)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type	Processed material before incorporating in work	Yes, when requested	Before using in work
		Moisture- density	—	AASHTO T 180, method D ⁽¹⁾ or T 99, method C ⁽¹⁾	1 per soil type but not less than 1 per "	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 6000 yd ² but not less than 1 per layer	In-place	—	Before placing next layer
Select borrow (704.07 & Select topping (704.08)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type but not less than 1 for each day of production	Processed material before incorporating	Yes, when requested	Before using in work
		Gradation	—	AASHTO T 27	"	"	"	"
		Liquid limit	—	AASHTO T 89	"	"	"	"
		Moisture- density	—	AASHTO T 180, method D ⁽¹⁾ or T 99, method C ⁽¹⁾	1 per soil type but not less than 1 per	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 6000 yd ² but not less than 1 per layer	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor

SR-34

Sample Contract

SR-35

**Table 204-1 (continued)
Sampling and Testing Requirements**

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Earth embankment (204.11, Compaction A)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type	Source of Material	Yes, when requested	Before using in work
		Moisture-density	—	AASHTO T 180, method D ⁽¹⁾ or T 99, method C ⁽¹⁾	1 per soil type but not less than 1 per 13,000 yd ³	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 3500 yd ² but not less than 1 per layer	In-place	—	Before placing next layer
Top of subgrade (204.11 Compaction A)	Measured and tested for conformance (106.04)	Compaction	—	AASHTO T 310 or other approved procedures	1 per 2500 yd ²	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor.

****Sample Contract****

**Table 204-2
Construction Tolerances**

	Tolerance Class ^(a)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Roadbed width (ft)	+0.5	+0.5	+1.0	+1.0	+1.0	+1.0	+1.5	+1.0	+2.0	+2.0	+2.0	+2.0	+2.0
Subgrade elevation (ft)	±0.1	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±2.0	±3.0	±2.0	±3.0	(c)
Centerline alignment (ft)	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±1.5	±2.0	±3.0	±3.0	±5.0	(c)
Slopes, excavation, and embankment (% slope ^(b))	±3	±5	±5	±5	±5	±5	±10	±10	±10	±10	±20	±20	±20

(a) Maximum allowable deviation from construction stakes and drawings.

(b) Maximum allowable deviation from staked slope measured from slope stakes or hinge points.

(c) Unless otherwise shown the centerline alignment and subgrade elevation, as built, have no horizontal curves with a radius of less than 80 feet, and no vertical curves with a curve length of less than 80 feet when the algebraic difference in the grade change is less than 10 percent, or a curve length of less than 100 feet when the algebraic difference of the grade change is greater than or equal to 10 percent. The centerline grade is not to exceed 20 percent in 100 feet of length.

204.05_nat_us_02_18_2005

204.05 Conserved Topsoil

Delete the entire paragraph.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation

(a) General.

Add the following:

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

204.06_nat_us_03_02_2005

204.06 Roadway Excavation.

Add the following:

d) Pioneer Roads. Road pioneering, slash disposal, and grubbing of stumps may proceed concurrently with excavation. Conduct excavation and placement operations so material to be treated under Section 201 will not be incorporated into the roadway unless specified in the slash treatment method. Maintain drainage during pioneering operations.

Remove snow and ice in advance of the work and deposit beyond the roadway limits in a manner that will not waste material or generate sediment. Do not incorporate snow and ice into embankments. Place snow or ice in a manner to prevent resource damage.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation

(b) Rock Cuts.

Add the following:

When blasting rock, use blasting methods according to Subsection 205.08

204.09_nat_us_03_02_2005

204.09 Preparing Foundation for Embankment Construction.

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

(a) Embankment less than 4 feet high over natural ground. When designated, remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

204.10_nat_us_03_02_2005

204.10 Embankment Construction.

Add the following:

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

(a) General.

Delete the third paragraph and add the following:

Compact embankment side slopes flatter than 1V:1.75H with a tamping type roller or by walking with a dozer. For slopes 1V:1.75H or steeper, compact the slopes as construction of the embankment progresses.

204.11_nat_us_04_11_2005

204.11 Compaction.

Delete the first paragraph and replace it with the following:

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

Add the following compaction methods:

(d) Layer Placement Method (Hauling and Spreading Equipment). Place material by end dumping to the minimum depth needed for operation of spreading equipment. Level and smooth each embankment layer before placing the next 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.

(e) Layer Placement (Roller Compaction) Method. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Adjust the moisture content of the material to obtain a mass that will not visibly deflect under the load of the hauling and spreading equipment. Operate compaction equipment over the full width of each layer until visible deformation of the layer ceases or, in when a sheepsfoot roller is used, the roller "walks out" of the layer. Make at least three complete passes.

204.13 Sloping, Shaping, and Finishing.

Delete section (d) and add the following:

(d) **Finishing.** For surfaced roads, remove all material larger than 6 inches from the top 6 inches of the roadbed. For all roads, finish the roadbed to be smooth and uniform, and shaped to conform to the typical sections. Remove unsuitable material from the roadbed and replace it with suitable material. Finish roadbeds to the tolerance class shown in table 204-2.

Ensure that the subgrade for both surfaced and unsurfaced roads is visibly moist during shaping and dressing. Scarify to 6 inches below the bottom of low sections, holes, cracks, or depressions and bring back to grade with suitable material. Maintain proper ditch drainage.

For unsurfaced roads, use one of the following methods to finish the roadbed:

- (1) Method A. Remove all material larger than 6 inches from the top 6 inches of the roadbed and replace with suitable material.
- (2) Method B. Use a vibratory grid roller or approved equal with a minimum weight of 10 tons. Roll at least 5 full-width passes or until visible displacement ceases.
- (3) Method C. For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.

Add Table 204-2—Construction Tolerances:

Table 204-2 Construction tolerances.

	Tolerance Class ^(a)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Roadbed width (ft)	+0.5	+0.5	+1.0	+1.0	+1.0	+1.0	+1.5	+1.0	+2.0	+2.0	+2.0	+2.0	+2.0
Subgrade elevation (ft)	±0.1	±0.2	±0.2	±0.5	+0.5	±1.0	±1.0	±1.5	±2.0	±3.0	±2.0	±3.0	(c)
Centerline alignment (ft)	±0.2	+0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±1.5	±2.0	±3.0	±3.0	±5.0	(c)
Slopes, excavation, and embankment (% slope ^(b))	±3	±5	±5	±5	±5	±5	±10	±10	±10	±10	±20	±20	±20

a. Maximum allowable deviation from construction stakes and drawings.

b. Maximum allowable deviation from staked slope measured from slope stakes or hinge points.

c. Unless otherwise shown the centerline alignment and subgrade elevation, as built, have no horizontal curves with a radius of less than 80 feet, and no vertical curves with a curve length of

less than 80 feet when the algebraic difference in the grade change is less than 10 percent, or a curve length of less than 100 feet when the algebraic difference of the grade change is greater than or equal to 10 percent. The centerline grade is not to exceed 20 percent in 100 feet of length.

204.13_nat_us_03_02_2005

204.13 Sloping, Shaping, and Finishing.

(a) Sloping.

Add the following:

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

204.14_nat_us_03_02_2005

204.14 Disposal of Unsuitable or Excess Material.

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

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

204.15_nat_us_02_07_2007

204.15 Acceptance

Table 204-1 Sampling and Testing Requirements.

Add the following note to the table:

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

249 - Composite Road Construction

249.01 Description

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

249.02 Clearing and Disposal

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

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

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

- (c) Large Construction Slash. Treat construction slash larger than 3 inches in diameter and longer than 3 feet by one or more of the following methods.
 - (1) Method A. Construction slash shall be scattered outside the clearing limits without damaging trees outside the clearing area. Logs shall be placed away from trees,

positioned so that they will not roll, not placed on top of one another or left leaning on other trees. Scattered stumps shall be placed in an upright position

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

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

Immediately remove slash deposited in stream courses.

249.03 Pioneering

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

249.04 Grubbing.

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

249.05 Excavation and Embankment.

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

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

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

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

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

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

249.06 Erosion Control.

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

249.07 Method.

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

Payment

249.08 Basis.

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

301 - Untreated Aggregate Courses

301 Title Change.

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

301.01_nat_us_03_03_2005

301.01 Work.

Add the following:

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

301.02_nat_us_05_16_2005

301.02 Material.

Add the following:

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

301.03_nat_us_02_28_2013

301.03 General.

Add the following:

Written approval of the roadbed is required before placing aggregate.

For pit run or grid-rolled material, furnish material smaller than the maximum size. No gradation other than maximum size will be required for pit-run or grid-rolled material. For grid rolling, use all suitable material that can be reduced to maximum size. After processing on the road, remove all oversize material from the road and dispose of it as directed by the CO.

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

Develop and use Government furnished sources according to Section 105.

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

301.04_nat_us_03_03_2005

301.04 Mixing and Spreading.

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

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

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

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

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

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

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

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

301.05_nat_us_05_17_2005

301.05 Compacting

Delete and replace with the following:

Compact each layer full width. Roll from the sides to the center, parallel to the centerline of the road. Along curbs, headers, walls, and all places not accessible to the roller, compact the material with approved tampers or compactors.

Compact the aggregate using one of the following methods as specified:

Compaction A. Operating spreading and hauling equipment over the full width of the travelway.

Compaction B. Operate rollers and compact as specified in Subsection 204.11(a)(1).

Compaction C. Moisten or dry the aggregate to a uniform moisture content between 5 and 7 percent based on total dry weight of the mixture. Operate rollers and compact as specified in Subsection 204.11(a)(1).

Compaction D. Compact to a density of at least 95 percent of the maximum density, as determined by AASHTO T 99, method C or D.

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

Compaction F. Compact to a density of at least 95 per-cent of the maximum density, as determined by AASHTO T 180, method C or D.

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

For all compaction methods, blade the surface of each layer during the compaction operations to remove irregularities and produce a smooth, even surface. When a density requirement is specified, determine the in place density and moisture content according to AASHTO T 310 or other approved test procedures.

301.05_nat_us_10_14_2011

301.05 Compacting

Delete and replace with the following:

Compact each layer full width. Roll from the sides to the center, parallel to the centerline of the road. Along curbs, headers, walls, and all places not accessible to the roller, compact the material with approved tampers or compactors.

Compact the aggregate using one of the following methods as specified:

Compaction A. Operate spreading and hauling equipment over the full width of the travelway.

Compaction B. Operate rollers and compact as specified in Subsection 204.11(a)(1).

Compaction C. Moisten or dry the aggregate to a uniform moisture content between 5 and 7 percent based on total dry weight of the mixture. Operate rollers and compact as specified in Subsection 204.11(a)(1).

Compaction D. Compact to a density of at least 95 percent of the maximum density, as determined by AASHTO T 99, method C or D.

Compaction E. Removed.

Compaction F. Compact to a density of at least 95 per-cent of the maximum density, as determined by AASHTO T 180, method C or D.

Compaction G. Removed.

For all compaction methods, blade the surface of each layer during the compaction operations to remove irregularities and produce a smooth, even surface. When a density requirement is specified, determine the in place density and moisture content according to AASHTO T 310 or other approved test procedures.

301.06_nat_us_03_03_2005

301.06 Surface Tolerance.

Add the following:

Thickness and Width requirements:

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

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

Table 301-1: Add the following:

Table 301-1—Acceptance Sampling and Testing Requirements.

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Subbase & Base Courses L, M, N, O, P, Q, R	Measured and tested conformance (Subsection 106.04)	Plastic Limit	-	AASHTO T 90	1 per each 1,000 T	From the windrow or roadbed after processing	Yes	4 Hours

Table 301-1—Acceptance Sampling and Testing Requirements.

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate Width	Measured and tested conformance (Subsection 106.04)	Width	-	-	4 per each 0.5 mi	Roadbed after processing	-	4 Hours
Aggregate Thickness	Measured and tested conformance (Subsection 106.04)	Thickness	-	-	4 per each 0.5 mi	Roadbed after processing	-	4 Hours
Additive	Measured and tested conformance (Subsection 106.04)	Amount of Additive	-	-	1 per each 1,000 T	From the windrow or roadbed after processing	No	4 Hours

Table 301-1 Field Density Requirements.

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

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

301.08_nat_us_03_30_2005

301.08(b) Plasticity Index.

Add the following to the first sentence:

“and under 703.05(c)(1)”.

301.09_nat_us_07_07_2005

301.09 Measurement.

Replace the second paragraph with the following:

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

301.10_nat_us_03_03_2005

301.10 Payment

Delete the following:

adjusted according to Subsection 106.05

602 - Culverts and Drains

602.03_nat_us_09_06_2005

602.03 General.

Add the following:

Ensure that the final installed alignment of all pipe allows no reverse grades, and does not permit horizontal and vertical alignments to vary from a straight line drawn from center of inlet to center of outlet by more than 2 percent of pipe center length or 1.0 feet, whichever is less.

602.06_nat_us_08_05_2009

602.06 Laying Plastic Pipe.

Delete the second paragraph and substitute the following:

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

SUPPLEMENTAL SPECIFICATION

Section 650— ROAD CLOSURE DEVICES

Description

650.01 Work. Furnish and install, or install only, road closure devices using fabricated gates and accessories, combination post and rail barriers, concrete barriers, earth mound barriers, and other devices.

Materials

650.02 Requirements.

Furnish concrete that meets the requirements of Subsection 601.03, method B or C.

Construct earth mound barriers from excavated material adjacent to the barrier location, or from other designated locations. Slash, stumps, rocks, large down wood debris, and other materials may be used to prevent travelway usage and placed as described in general requirements KT-GT.9# .

Construction

650.03 Performance. Place road closure devices at designated locations. Construct all devices to the required dimensions. In assembling gates, perform required welding in accordance with the best modern practice and the applicable requirements of AWS D1.1.

After assembly, clean non-galvanized steel pipe gates and paint them with one coat of zinc-rich primer and two coats of exterior enamel of the required type and color.

Set all posts vertically and embed them to the required depth. Place concrete for embedment against undisturbed earth within an excavation sized to achieve the embedment dimensions. Compact the backfill in 6 inch layers to finished grade.

Install all signs and/or reflective warning markers accessory to the road closure device as shown on DRAWINGS.

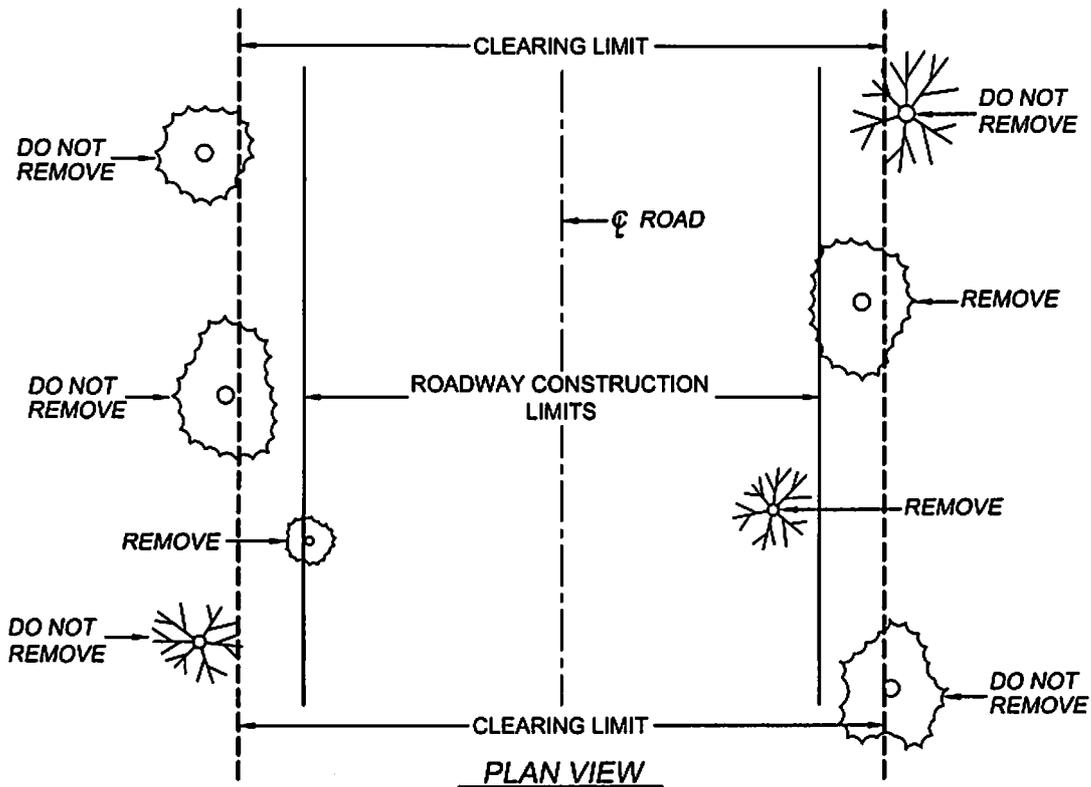
650.04 Acceptance. Construction of road closure devices will be evaluated under Subsections 106.02 and 106.04.

650.05 Measure the items listed in the bid schedule according to Subsection 109.02.

Measurement Payment

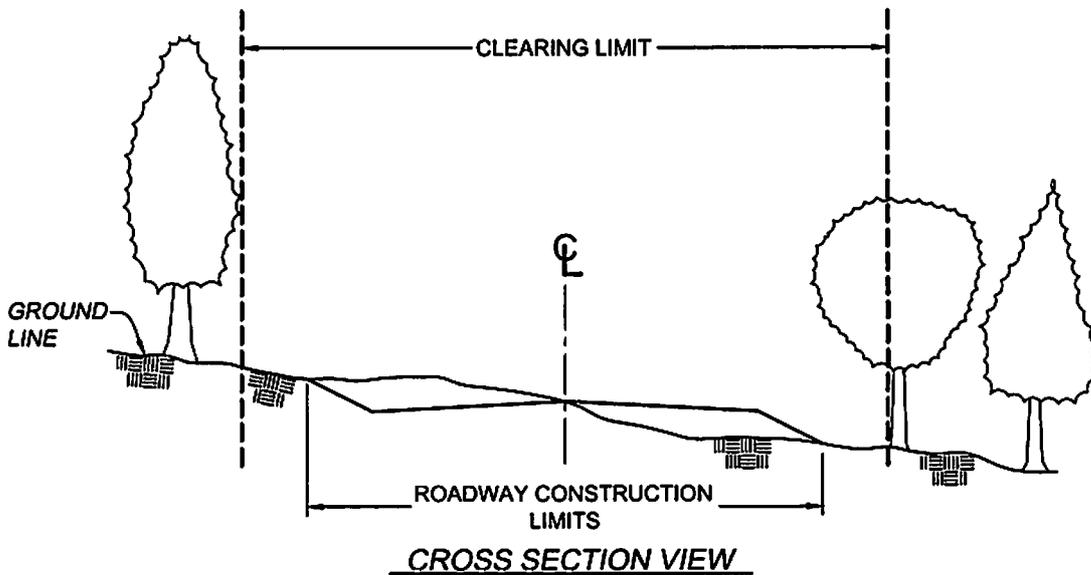
650.06 The accepted quantities, measured as provided in Subsection 109.02 and above, will be paid at the contract price per unit of measurement for the Section 650 pay item listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

When materials are produced and furnished by the Forest Service, the note "Government furnished materials" will be added to the description of the pay item.

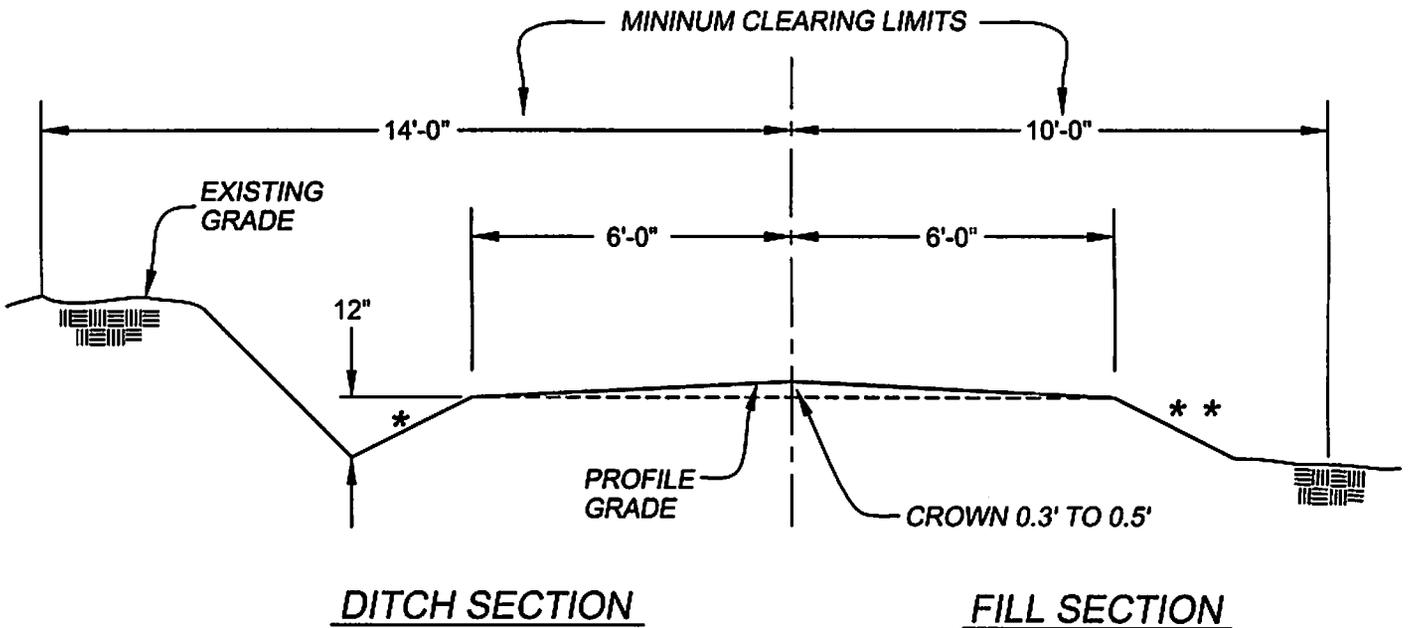


NOTE: TREES ON THE CLEARING LIMIT LINE ARE TO REMAIN UNLESS OTHERWISE DESIGNATED BY THE ENGINEER.

NOTE: YELLOW PAINT INDICATES TREES TO BE REMOVED.



CONSTRUCTION STAKING
NOT TO SCALE

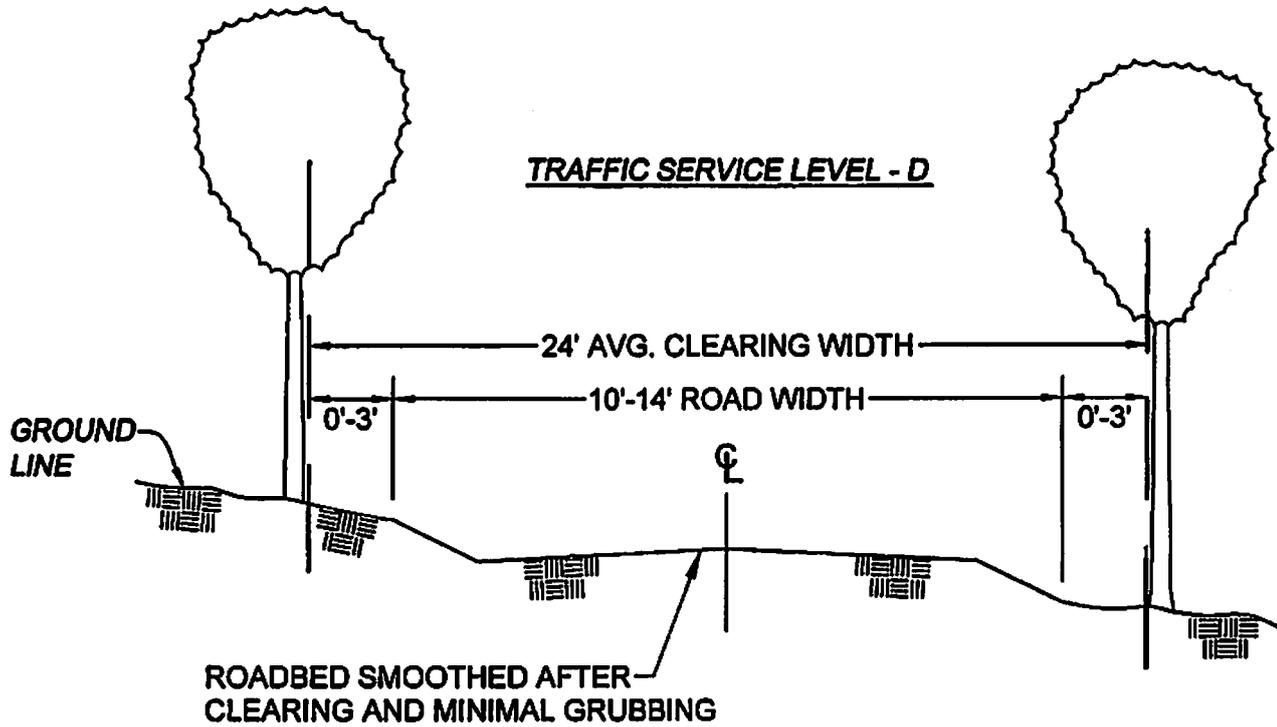


*BACKSLOPE AND DITCH SLOPES MAY VARY FROM 1H:1V TO 2H:1V WHEN CUTS ARE UNDER 2 FT. CUTS OVER 2 FT. SHALL HAVE SLOPES OF 2H:1V

**FILL SLOPES MAY VARY FROM 1-1/2H:1V TO 3H:1V

(SEE NARRATIVE FOR LOCATION)

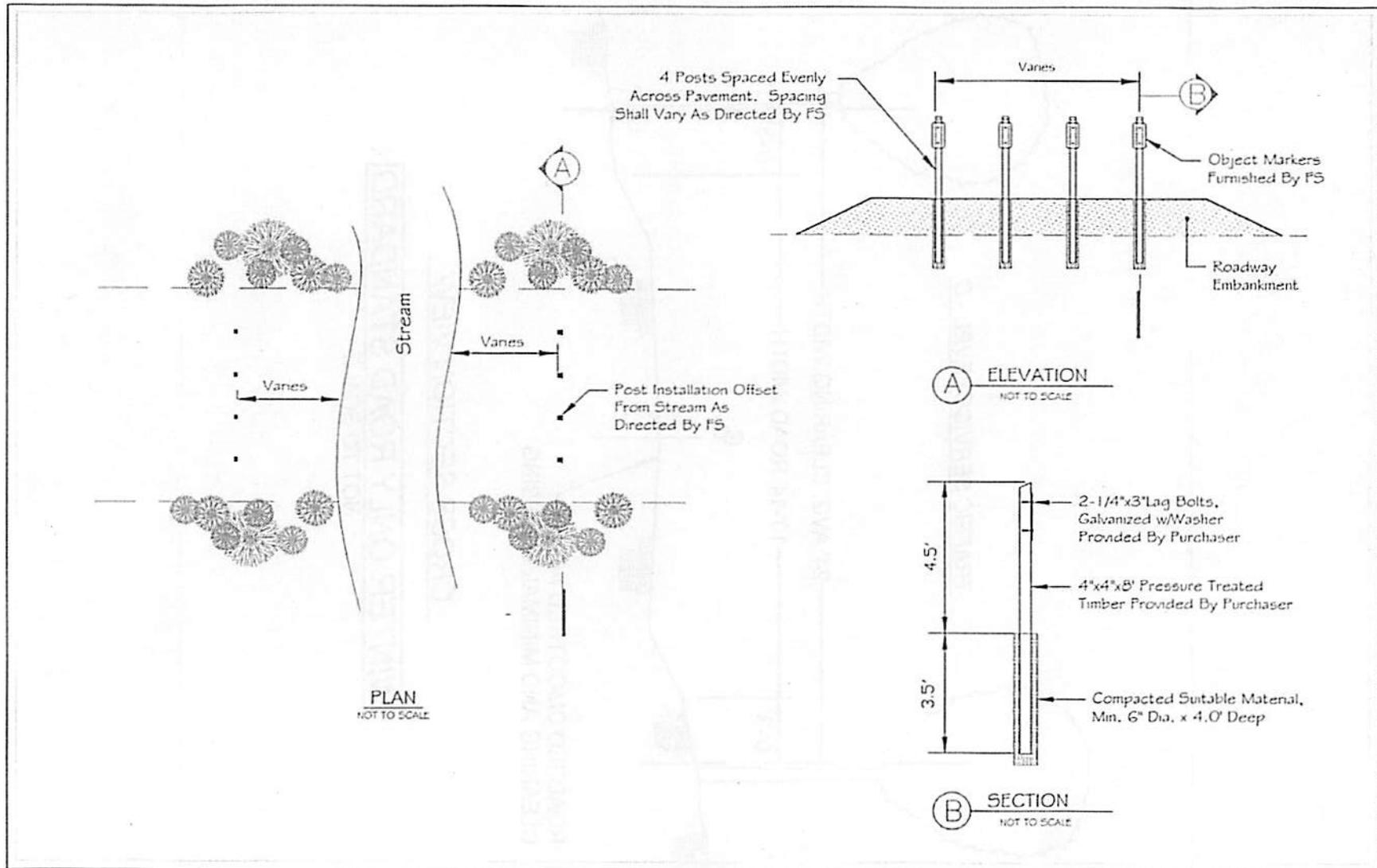
TYPICAL CROSS SECTION WITH 1 FOOT DITCH
NOT TO SCALE



CROSS SECTION VIEW

WINTER ONLY ROAD STANDARD
NOT TO SCALE

Queen Bee Spaced Roadwork

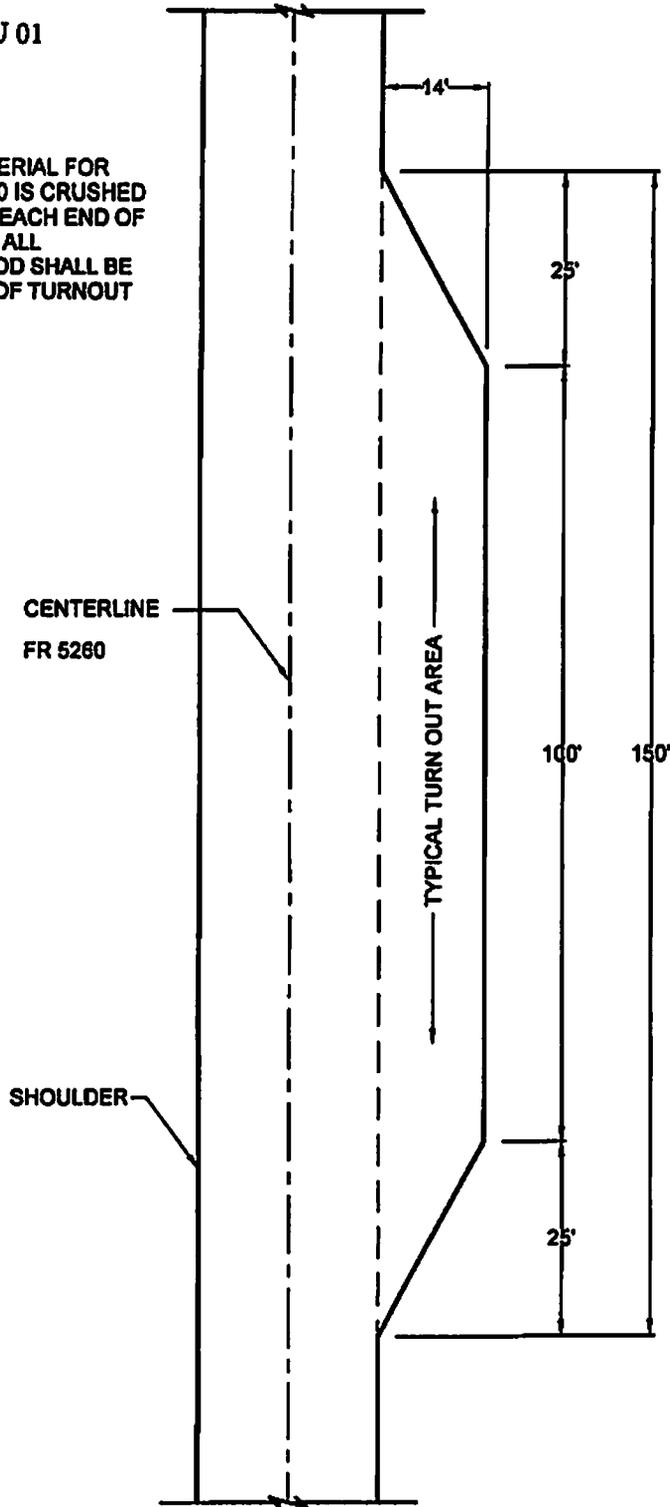


DATE	BY	CHKD	APP'D
STATE OF ARIZONA FOREST SERVICE			
STATIONERY FOR COACH CREEK OBJECT MARKER/ROAD CLOSURE			
NO.	REV.	DATE	BY

TEMP ACCESS PU 01

NOTE:
SURFACING MATERIAL FOR
TAPER TO FR5260 IS CRUSHED
AGGREGATE ON EACH END OF
TURNOUT LANE.. ALL
HARVESTED WOOD SHALL BE
PLACED NORTH OF TURNOUT
LANE

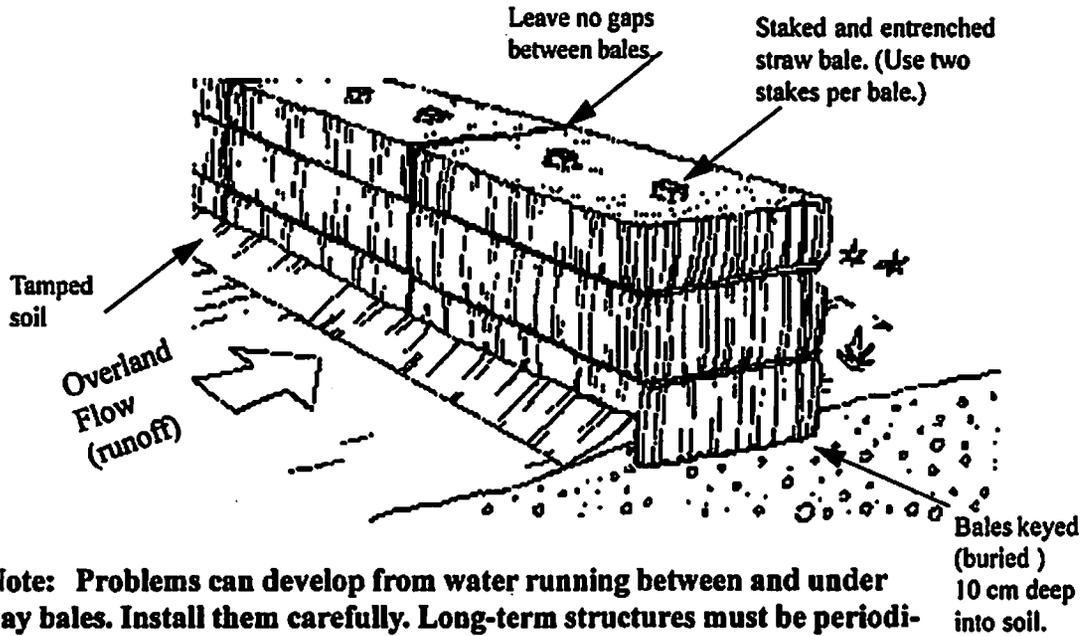
TURN OUT AREA
DIMENSIONS MAY
VARY ACCORDING TO
SITE CONDITIONS.
ACTUAL WIDTH AND
LENGTH AS DIRECTED
BY FOREST SERVICE.



TYPICAL TURN OUT

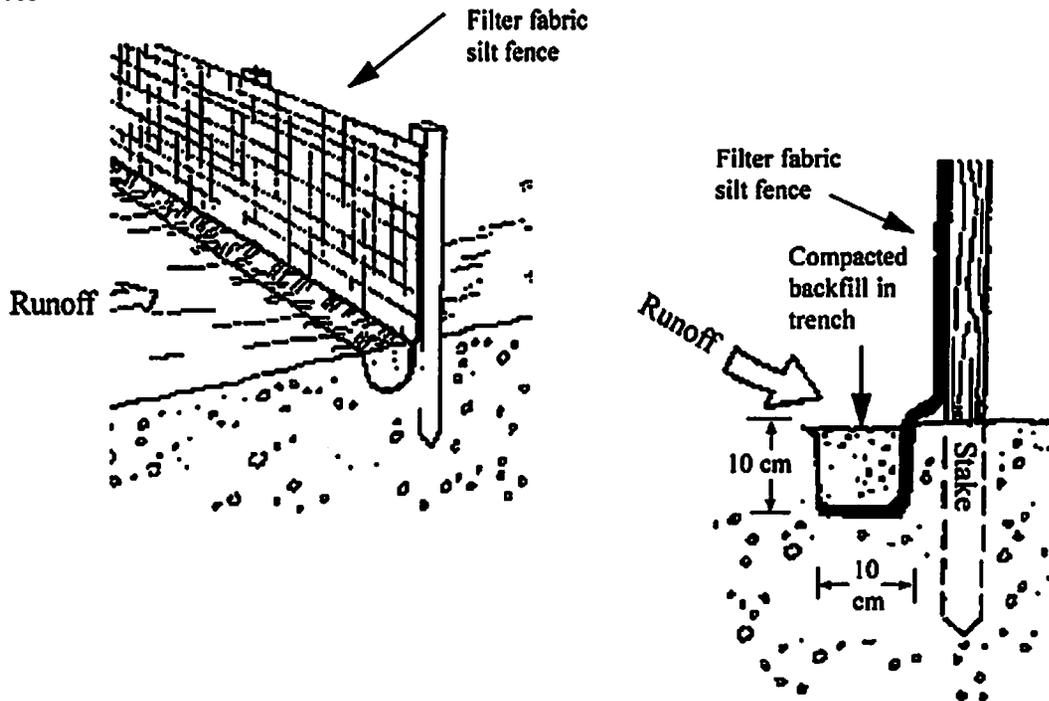
NOT TO SCALE

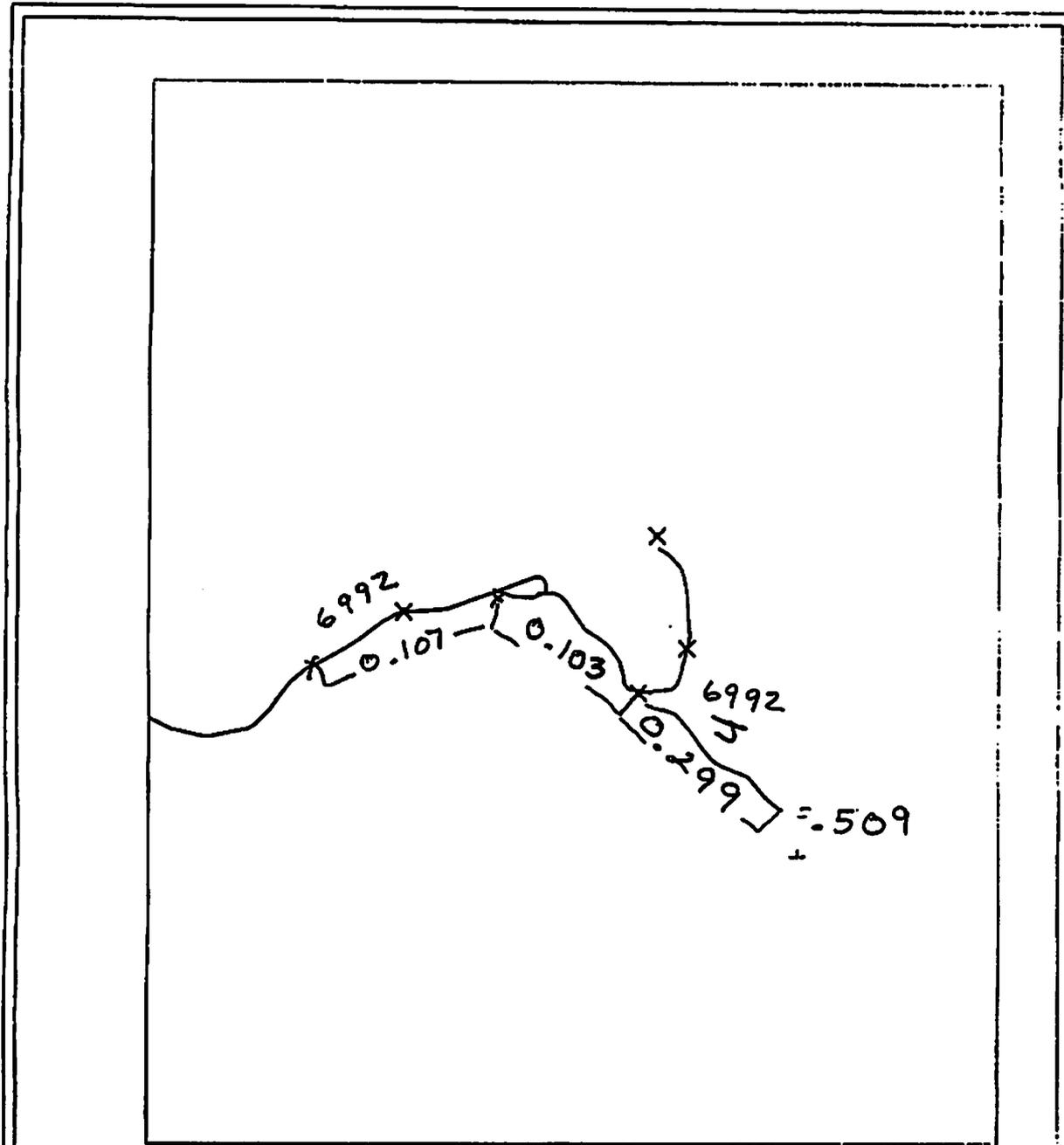
Queen Bee Specified Roadwork
a. Hay Bales (or bundles of grass)



Note: Problems can develop from water running between and under hay bales. Install them carefully. Long-term structures must be periodically cleaned and maintained.

b. Silt Fences





6992

Lat/Long
WGS 1984



Scale 1:5,000



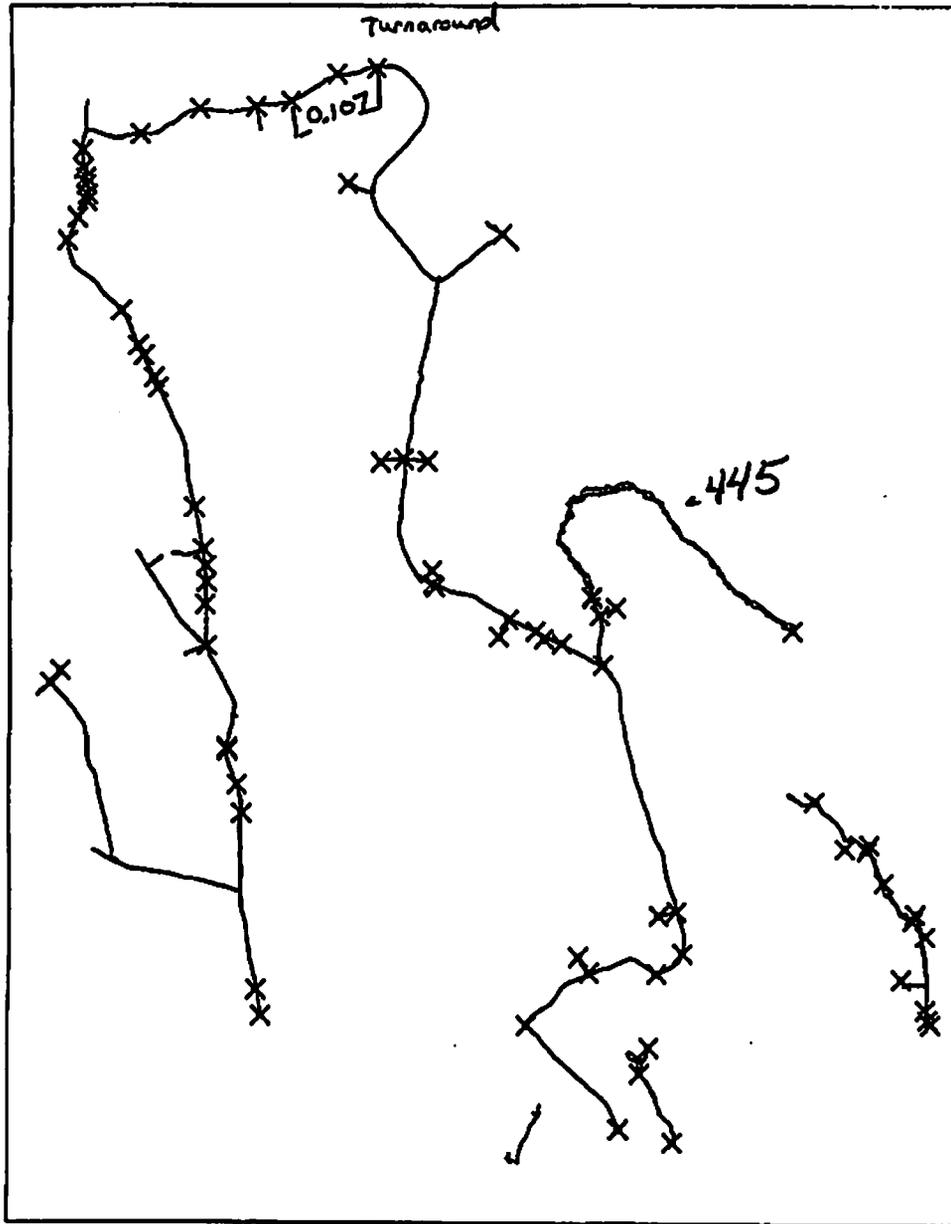
Miles

COMP25 FINAL 11 2 2010.SSF

7/15/2015

GPS Pathfinder[®]Office





Sleepy Hollow

Lat/Long
WGS 1984



Scale 1:12,500

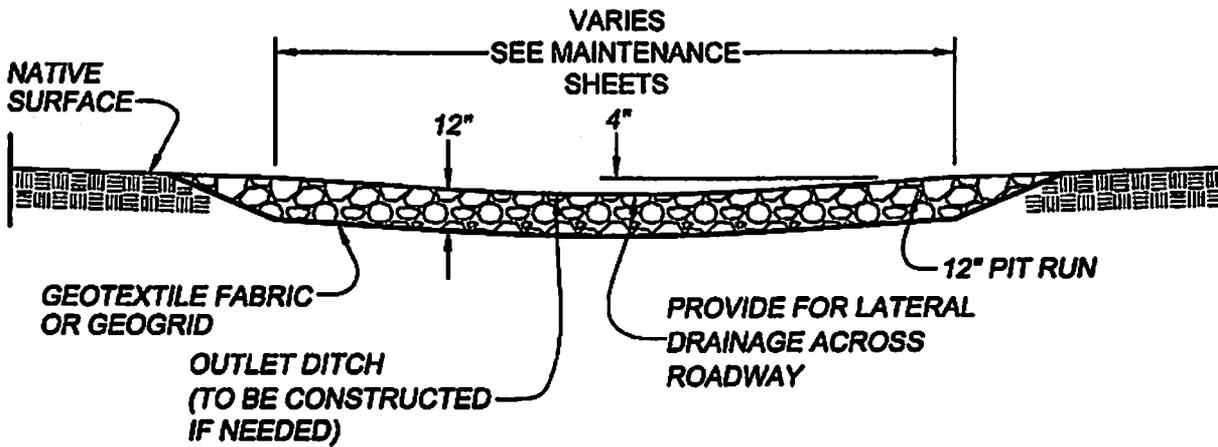
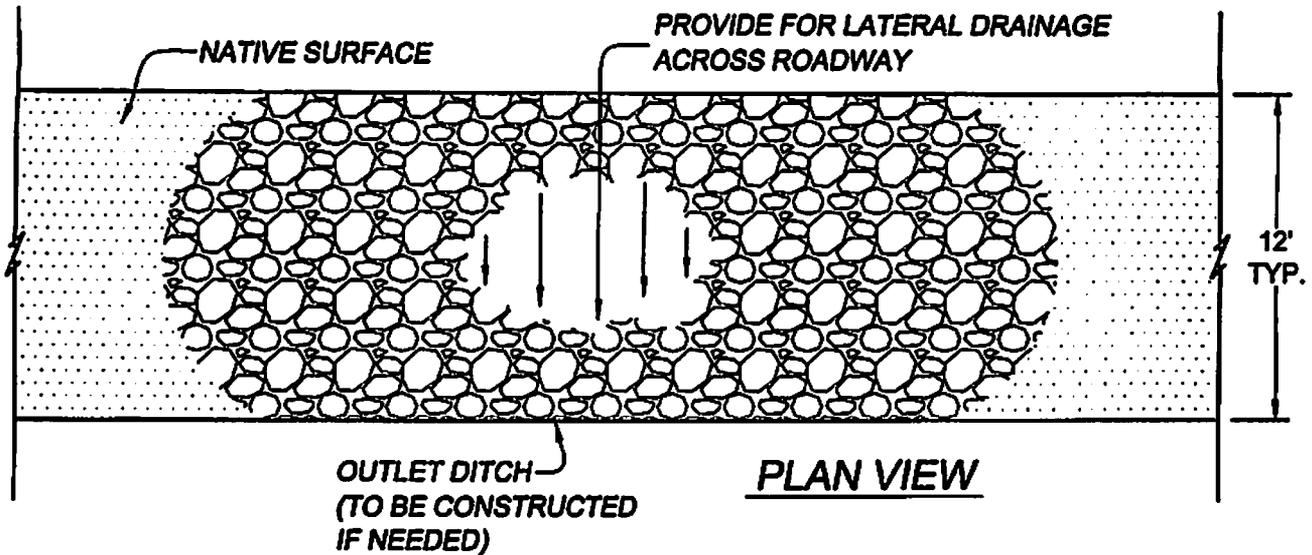


sleep Hol combo.sst

7/15/2015

GPS Pathfinder[®] Office

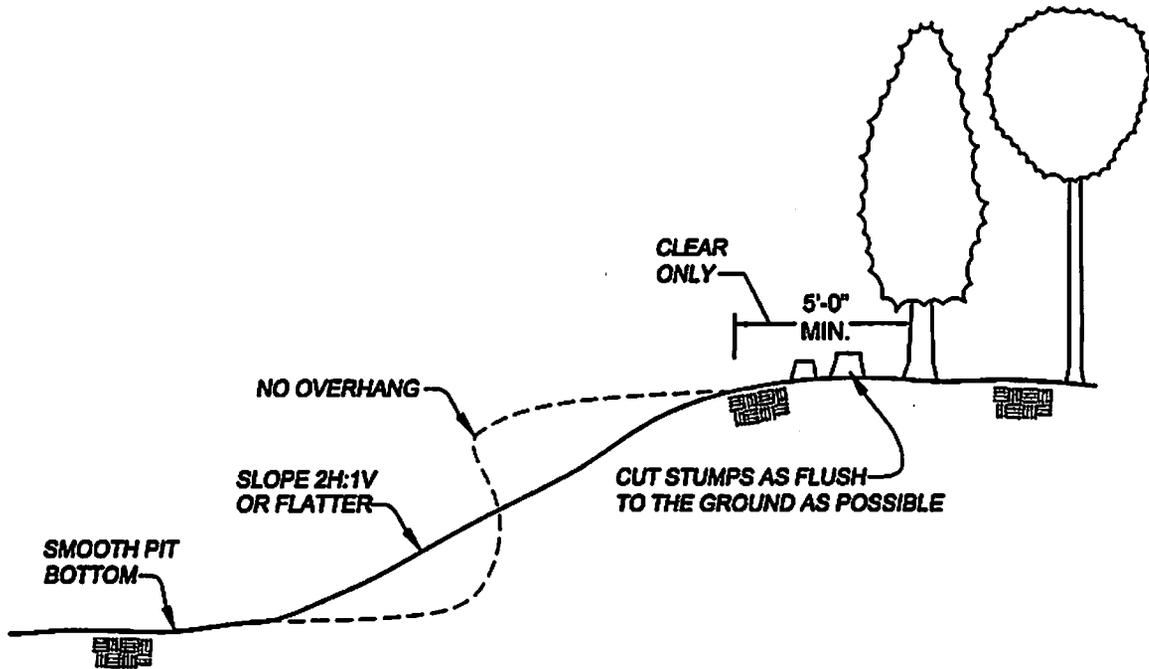




NOTE:
HARDENED DIPS WILL BE EXCAVATED 16" DEEP
AND BACKFILLED WITH 12" OF PIT RUN. GEOTEXTILE
OR GEOGRID SHALL BE PLACED UNDER PIT RUN
MATERIAL AS DIRECTED BY THE FOREST SERVICE.

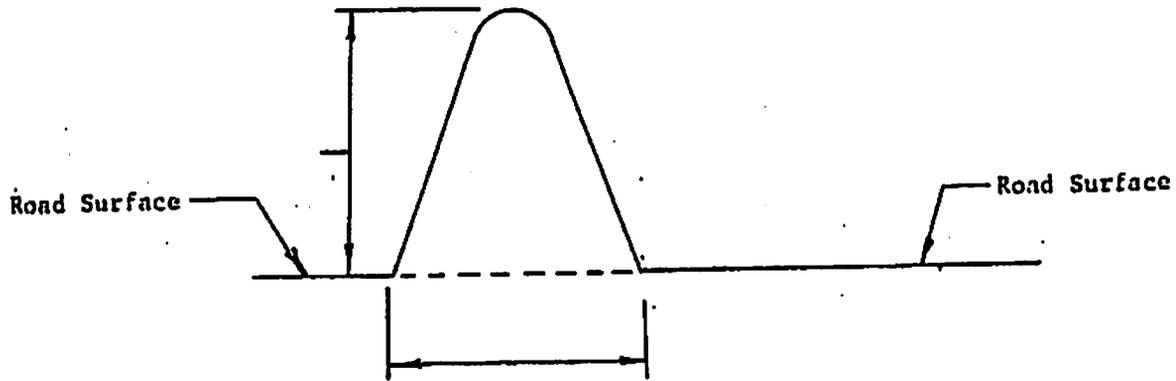
TYPICAL HARDENED DIP

NOT TO SCALE



NOTE: TOPS, STUMPS AND TRUNKS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. STUMPS SHALL BE SEVERED FROM ALL TREES. ALL TIMBER SHALL REMAIN PROPERTY OF THE GOVERNMENT. OVERSIZED ROCK SHALL BE DISPOSED OF IN EXISTING PILES OR AS DIRECTED BY THE ENGINEER. SMOOTH PIT BOTTOM TO REDUCE THE COLLECTION OF WATER. HAUL ROADS SHALL BE MADE SMOOTH AND REPAIRED OF DAMAGE CAUSED BY THE CONTRACTORS HAULING OPERATION OR EQUIPMENT.

BORROW PIT CLEAN UP



NOTE: Berm to be constructed with available boulders from road construction after sale is completed. If enough boulders are not available the berm shown above will be constructed.

NOTE: Berm is to be constructed as directed by the Engineering Representative,

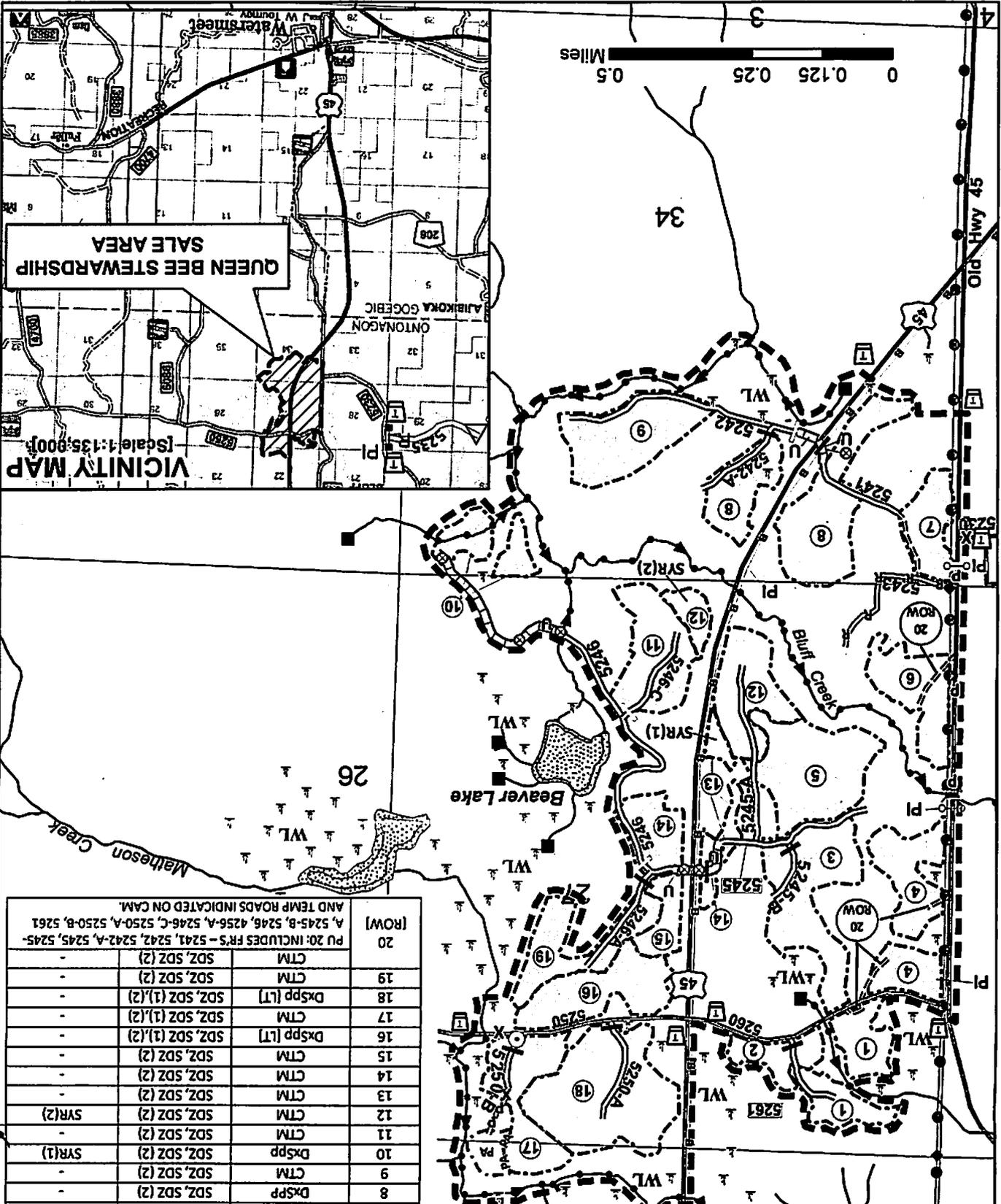
TYPICAL BERM DETAIL

CONTRACT AREA MAP	
QUEEN BEE STEWARDSHIP TIMBER SALE	WATERSMEET RD, OTTAWA NF
GOGEBIC COUNTY, MI	T46N R39W, SECS 22, 27 & 34
COMPARTMENTS 48, 56 & 77	NET ACRES: 274
GROSS ACRES: 647	



PAYMENT	T UNIT	DESIGNATION	TREATMENT	SKID & YARD
1	CTM	SDZ, SDZ (1),(2)	-	-
2	CTM	SDZ, SDZ (1),(2)	-	-
3	CTM	SDZ, SDZ (1),(2)	-	-
4	CTM	SDZ, SDZ (1),(2)	-	-
5	CTM	SDZ, SDZ (2)	-	-
6	Dx5pp (CT & LT)	SDZ, SDZ (1),(2)	-	-
7	Dx5pp (LT)	SDZ, SDZ (1),(2)	-	-
8	Dx5pp	SDZ, SDZ (2)	-	-
9	CTM	SDZ, SDZ (2)	-	-
10	Dx5pp	SDZ, SDZ (2)	SYR(1)	-
11	CTM	SDZ, SDZ (2)	-	-
12	CTM	SDZ, SDZ (2)	SYR(2)	-
13	CTM	SDZ, SDZ (2)	-	-
14	CTM	SDZ, SDZ (2)	-	-
15	CTM	SDZ, SDZ (2)	-	-
16	Dx5pp (LT)	SDZ, SDZ (1),(2)	-	-
17	CTM	SDZ, SDZ (1),(2)	-	-
18	Dx5pp (LT)	SDZ, SDZ (1),(2)	-	-
19	CTM	SDZ, SDZ (2)	-	-
20	CTM	SDZ, SDZ (2)	-	-

PU 20: INCLUDES FR'S - 5241, 5242, 5242-A, 5245, 5245-A, 5245-B, 5246, 4256-A, 5246-C, 5250-A, 5250-B, 5261 AND TEMP ROADS INDICATED ON CAM.



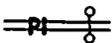
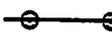
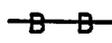
VICINITY MAP
 [Scale: 1:135,000]

QUEEN BEE STEWARDSHIP SALE AREA

ONTONAGON
 ARIKOKA GOGEBIC

CONTRACT AREA MAP - LEGEND

Queen Bee Stewardship Sale

	Sale Area Boundary, BT.1
	Payment Unit Boundary, BT.1
	Payment Unit 20 – Road Clearing, Temporary Roads, No Payment Unit Boundary, BT.1
	Payment Unit Number, BT.1
DxSPP	Designation by Species and Diameter, LT [Leave Trees] and CT [any additional trees marked with blue paint] (KT-CT.3.5.2#
CTM	Cut Tree Marked Prior to Advertisement, CT.3.5, KT-CT.3.5.5#, GT.4.1.2
	Existing Transportation System Road, FT.1
	Existing Road, Use Prohibited, FT.1.2, KT-FT.1.2#
	Existing Road, Hauling Prohibited, FT.1.2, KT-FT.1.2#
	Existing Road, Use Restricted, FT.1.2, KT-FT.1.2#
	Existing Road, Unsuitable for hauling prior to agreed reconstruction, FT.1.2, KT-FT.1.2#
	Specified Road Reconstruction, AT.7, AT.B, FT.2, GT.2.2, GT.2.2.2, GT.3.6.1, Schedule of Items
	Specified Drainage Structure, Purchaser Remove (2)/Furnish(6)/Install Culverts, AT.7, AT.8, FT.2, GT.2.2, GT.2.2.2, GT.3.6.1, Schedule of Items
	Maintenance Drainage Structure, Purchaser Furnish/Install Culvert, KT-FT.3.1#, T-8340
	Contractor Install Berm, FT.3, KT-FT.3.1#, T-8620
	Contractor Remove/Install Berms, FT.3, KT-FT.3.1#, T-8620
	Protect Improvement (Gate – Jay Bird Pit Road), GT.2.2, KT-FT.1.2#
	Protect Improvement (Guard Rails – Old Highway 45), GT.2.2, KT-FT.1.2#
	Protect Improvement (Above-Ground Utility Poles/Lines), GT.2.2, KT-FT.1.2#
	Protect Improvement (Below-Ground Utility Fiber Optic), GT.2.2, KT-FT.1.2#
	Streamcourse Protection, Block Marks Upper Limit, Arrow Indicates Flow Direction, GT.5
SYR(1)(2)	Skidding and Yarding Requirements, Payment Unit 12 & 13, KT-GT.4.2#
WL 	Wetland Protection, GT.6.2, KT-GT.6.2#
	Lakes and Ponds
SDZ	Slash Disposal, GT.7, KT-GT.7#
SDZ(1)	Slash Disposal, GT.7, KT-GT.7#
SDZ(2)	Slash Disposal Area, GT.7, KT-GT.7#
	Safety– Purchaser to Provide and Maintain Traffic Control Signs, GT.3.3
	Protect Known Survey Monuments, GT.2.3
	Material Source, Pit-Run Gravel, KT-FT.2.2.1#, (Jay Bird Pit, T45N-R44W, Section 2)
PA	Protected Area, KT-CT.3.0.1#

T.J. FRANK 11/24/2015

CONTRACT AREA MAP
QUEEN BEE STEWARDSHIP TIMBER SALE
STEWARDSHIP PROJECTS
GROSS ACRES: 647 NET ACRES: 274



MANDATORY STEWARDSHIP PROJECTS		
Aspen Site Preparation	Payment Unit	Acres
 SP-010	10	8
SP-016	16	14
SP-018	18	28
OPTIONAL STEWARDSHIP PROJECTS		
Site Preparation Anchor Chaining	Payment Unit	Acres
 AC-006	6	13
AC-007	7	9
AC-008	8	28
AC-009	9	17
Road Decommissioning – Slash Closure		
Unauthorized Road Number	Length	
 SC-01	06056001	0.0-0.03
SC-02	06056001	0.0-0.03
SC-03	06056004	0.02-0.05
SC-04	06056004	0.0-0.03
SC-05	06056012	0.02-0.05
SC-06	06056012	0.0-0.03

