

**RIDGE SPY / PIONEER TRAIL STEWARDSHIP
SPECIFIED ROAD WORK SCHEDULE OF ITEMS**

Date: (Rev.) 02/27/2012

Page 1 of 1

Item No.	Road Number & Item Description	C or R ¹	Unit of Measure & M of M ²	Quantity	Road Standard (W, D, S) ³	Unit Allowance	Estimated Allowance
	FR 502 M.P. 0.35	C			D		
650 01	Furnish and install road closure device (steel gate), size 3'X20' (per the typical details).		Each/AQ	1		\$1400.00	\$1400.00
							FR 502 Segment = \$1,400.00
Total Specified Roadwork Appraisal = \$1,400.00							

Prepared by: Eric Cromell, Civil Engineering Technician

¹C = Construction

¹R = Reconstruction

²Method of Measure

³W = Winter

³D = Dry Summer

³S = Summer

RIDGE SPY / PIONEER TRAIL STEWARDSHIP

NOTES FOR SPECIFIED ROAD WORK

NOTE: There is a steel gate to be furnished and installed on Forest Road 502. Plans for fabrication of this gate shall be provided by the Forest Service. All signs for the steel gate will be provided by the Forest Service. All of the sign-mounting hardware, concrete (or comparable mixture) and the 4"x 4" post shall be provided by the purchaser.

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

Specification List

Project Name: Ridge Spy / Pioneer Trail Stewardship

Date Prepared: 02/27/2012

Road Numbers: FR 502		FR 502		
Road Name:	Termini...	Miles		
	Construction Reconstruction	0.35		
Spec. No.	Title			Latest Revised Edition
101 thru 109	General Requirements	X		2003

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

Specification List

Project Name: Ridge Spy / Pioneer Trail Stewardship

Date Prepared: 6/22/2012

Road Numbers: (FR 502-F) Segment TC-1 Segment TC-2 Segment TC-3 Segment TC-4		Service Work Segment TC-1	Service Work Segment TC-2	Service Work Segment TC-3	Service Work Segment TC-4	
Road Name:	Termini...	Miles	Miles	Miles	Miles	
	Construction Reconstruction	0.30	0.36	0.31	0.28	
Spec. No.	Title					Latest Revised Edition
101 thru 109	General Requirements	X	X	X	X	2003
157	Soil Erosion Control	X	X	X	X	2003
201	Clearing and Grubbing		X	X	X	2003
204	Excavation and Embankment	X	X	X	X	2003
209	Structure Excavation and Backfill		X		X	2003
249	Composite Road Construction	X	X	X	X	2003
251	Rip Rap		X	X		2003
251	Geotextiles Type II		X	X	X	2003
301	Untreated Aggregate Courses		X	X		2003
602	Culverts and Drains	X	X	X	X	2003
625	Turf Establishment		X	X	X	2003

RIDGE SPY / PIONEER TRAIL STEWARDSHIP

SUPPLEMENTAL SPECIFICATIONS

Section 101-109	General Requirements
Section 157	Soil Erosion Work
Section 201	Clearing and Grubbing
Section 204	Excavation and Embankment
Section 209	Structure Excavation and Backfill
Section 249	Composite Road Construction
Section 251	Rip-Rap
Section 251	Geotextiles Type II
Section 301	Untreated Aggregate Courses
Section 602	Culverts and Drains
Section 625	Turf Establishment
Section 650	Road Closure Devices

SUPPLEMENTAL SPECIFICATION

PREFACE

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.

SUPPLEMENTAL SPECIFICATION

Section 101 – TERMS, FORMAT, AND DEFINITIONS

101.01 Meaning of Terms.

Add the following:

Delete all references in FP-03 to Transportation Acquisition Regulations (TAR). For Timber Sales, delete all references in FP-03 to Federal Acquisition Regulations (FAR).

101.03 Abbreviations.

Add the following to (a) Acronyms:

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

Add the following to (b) SI Symbols:

mp	Milepost
ppm	Part Per Million

101.04 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.

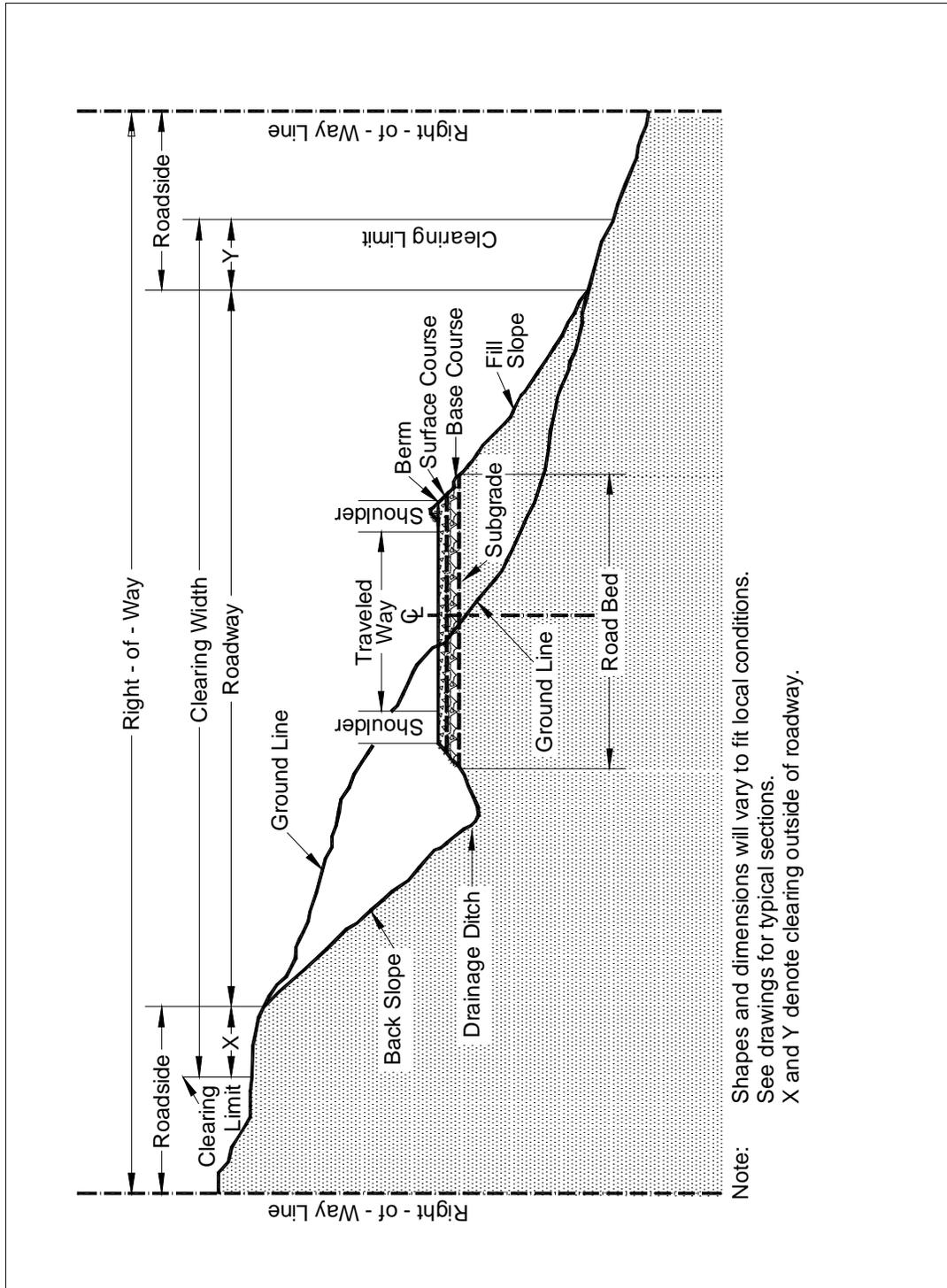
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

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.



SUPPLEMENTAL SPECIFICATION

Section 102 – BID, AWARD, AND EXECUTION OF CONTRACT

102 Delete

Delete Section 102 in its entirety.

SUPPLEMENTAL SPECIFICATION

Section 103 – SCOPE OF WORK

103 Delete

Delete all but subsection 103.01 Intent of Contract.

SUPPLEMENTAL SPECIFICATION

Section 105- CONTROL OF MATERIAL

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.

The government-provided source for this project is identified as follows:

Material is available for use as pit run for the project from **Cascade Pit, T49N-R41W, Section 5.**

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.

SUPPLEMENTAL SPECIFICATION

Section 106- ACCEPTANCE OF WORK

106.07 Partial and Final Acceptance.

Delete subsection 106.07

SUPPLEMENTAL SPECIFICATION

Section 107- LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

SUPPLEMENTAL SPECIFICATION

Section 108- PROSECUTION AND PROGRESS

Delete Section 108 in its entirety.

SUPPLEMENTAL SPECIFICATION

Section 109- MEASUREMENT AND PAYMENT

109.02 Measurement Terms and Definitions

Add: One of the following methods of measurement for determining final payment is DESIGNATED on the SCHEDULE OF ITEMS for each pay item:

- (a) Designated Quantities (DQ). These quantities denote the final number or units to be paid for under the terms of the contract. They are based upon the original design data available prior to advertising the project. Original design data include the preliminary survey information, design assumptions, calculations, drawings, and the presentation in the contract. Changes in the number of units SHOWN in the SCHEDULE OF ITEMS may be authorized under any of the following conditions:
- (1) As a result of changes in the work authorized by the Contracting Officer.
 - (2) As a result of the Contracting Officer determining that errors exist in the original design that cause a pay item quantity to change by 15 percent or more.
 - (3) As a result of the contractor submitting to the Contracting Officer a written request showing evidence of errors in the original design that cause a pay item quantity to change by 15 percent or more. The evidence must be verifiable and consist of calculations, drawings, or other data that show how the designated quantity is believed to be in error.
- (b) Staked Quantities (SQ). These quantities are determined from staked measurements prior to construction.
- (c) Actual Quantities (AQ). These quantities are determined from measurements of completed work.
- (d) Vehicle Quantities (VQ). These quantities are measured or weighed in hauling vehicles.
- (e) Lump Sum Quantities (LSQ). These quantities denote one complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job. They will not be measured.

Quantity Measurements. The Forest Service shall make all measurements for computation of quantities for all work items except those specified for payment by Design Quantity (DQ). The Engineer shall compute the quantities for periodic payments and for final payment.

The Contractor shall certify in writing at the completion of contract work, that the quality of construction conforms to the drawings, specifications, and requirements of the Contract.

109 Deletions

Delete the following entire subsections:

109.06 Pricing of Adjustments.

109.07 Eliminated Work.

109.08 Progress Payments.

109.09 Final Payment.

SUPPLEMENTAL SPECIFICATION

Section 157. - SOIL EROSION CONTROL

157.03 General

(a) Add the following:

Prior to the start of construction, submit a written plan that provides permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction. Do not begin work until the necessary controls for that particular phase of work have been implemented.

157.16

Delete **(a), (b), & (c)**.

Replace with:

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

SUPPLEMENTAL SPECIFICATION

Section 201-CLEARING AND GRUBBING

201.01 Delete entire subsection and replace with the following:

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

201.02 Delete Tree wound dressing material reference.

201.03 Delete the last sentence.

201.04 Clearing.

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

Replace with the following:

- (a) Trees may be felled perpendicular and away from the road centerline to facilitate slash treatment operations whenever ground conditions, tree lean and shape of clearing permit. Controlled felling shall be used to prevent damage to trees outside of the clearing limits. Controlled felling shall be used that will ensure the direction of fall when necessary to prevent damage to property, structures, trees DESIGNATED to remain, or traffic.
- (b) Fire-dangerous dead trees or unstable live trees, DESIGNATED by the Engineer within 100 feet slope distance of the centerline of roads shall be cut of not more than 12 inches above the uphill ground line and treated in accordance with Subsections 201.04 (a).
- (c) When Branch Trimming is used as a pay item, the removal of limbs which hang over the roadway shall be limited to those within 20 feet vertical clearance above and to the edge of the existing clearing on each side of the road shoulder. Branches removed shall be scattered outside of the existing clearing unless otherwise directed. Branches shall not be bunched during scattering operations. Limbing shall be done by means of pruning saws, power saws, nippers, bow saws, or cross-cuts. Limbs shall be pruned as close as possible to the tree trunks. Disposal shall include removal of debris from the roadway ditches, to provide a roadside strip that will be aesthetically pleasing.
- (d) Felling and Bucking. Felling shall be done to minimize damage to merchantable timber and damage to remaining trees outside of clearing limits. Felling shall be done with saws or shears unless shown otherwise in the SUPPLEMENTAL SPECIFICATIONS. Felling may be accomplished by pushing over with Construction or Logging equipment.

201.05 Grubbing.

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

Replace with the following:

- (a) Undisturbed stumps outside the roadway or in embankment areas, provided they do not extend more than 12 inches above the original ground (measured from the uphill side) nor closer than 2 feet to the finished subgrade or 1 foot to any slope surface or as otherwise SHOW ON THE DRAWINGS and they do not interfere with the placement or compaction of embankments.
- (b) Grubbing of pits, channel changes, rock sections, and ditches, below the depth of the proposed excavation.
- (c) All roots over 3 inches in diameter within the roadbed area shall be grubbed to a minimum depth of 6 inches below subgrade. Roots over 3 inches in diameter protruding from the excavated slope shall be cut flush with the excavated slope surface.

201.06 Disposal.

Delete the first sentence and substitute the following:

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

Add the following:

Utilization and Removal of Timber

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

- (a) Logs meeting utilization standards shall be limbed and decked at locations SHOWN ON THE DRAWINGS or at locations approved by the Engineer. Decking shall be done in such a manner that logs are piled parallel one to the other, can reasonably be removed by standard log loading equipment, will not damage standing trees, and will not roll. Decks shall be free of brush and soil.
- (b) Disposal as Unmerchantable Timber. Timber on this project that is not considered merchantable shall be disposed of in accordance with Subsection 201.06 for the treatment methods SHOWN ON THE DRAWINGS and in the SCHEDULE OF ITEMS.
- (c) Slash Treatment. Treatment of construction slash larger than 3 inches in diameter and 3 feet in length shall be accomplished by one or more of the following methods as shown in the SCHEDULE OF ITEMS:

(1) Scattering

(2) Stump Dumps

(a) All Methods. No construction slash shall be deposited in lakes, meadows, streams, or streambeds. Construction slash that interferes with drainage structures shall be removed immediately. Trees adjacent to the clearing limits damaged beyond recovery shall be felled and disposed of in accordance with Subsection 201.06 or treated as construction slash.

(b) Specific Methods.

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

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

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

SUPPLEMENTAL SPECIFICATION

Section 204-EXCAVATION AND EMBANKMENT

204.05 Conserved Topsoil.

Delete the subsection.

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 Embankment Construction.

Add the following:

When an embankment is to be placed across swampy ground and removal of unsuitable material or subgrade treatment is not required, the lower part of the embankment shall be constructed in a single layer to the minimum depth necessary to support construction equipment.

(c) Individual rock fragments and boulders.

Add the following:

(5) Such rocks and boulders shall be at least 6 inches below subgrade.

204.11 Compaction.

Add the following:

All embankments shall be placed and compacted by one or more of the following methods as SHOWN ON THE DRAWINGS and listed in the SCHEDULE OF ITEMS.

Add the following compaction method:

(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 Method (Roller Compaction). 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.

(a) Sloping.

Add the following:

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

(c) Shaping.

Add the following:

When excavation is measured on a station basis, excavating, placing of embankment, and shaping and compacting the roadway template shall include only those areas where cuts and fills are generally less than five feet in depth as measured from the finished shoulder grade to the top of the adjacent cut or toe of fill. These areas of station grading shall consist of light dozing or grading of such character that the excavation from backslopes, ditches, and roadbed shall be used in shaping the subgrade, shoulders, and adjacent fills.

When excavation is measured by the station (station grading) as designated in the SCHEDULE OF ITEMS, turnouts, side entrances, approaches, radii and T-turnarounds shall not be measured separately, but will be included as part of the station measurement along the construction centerline.

This work shall include all necessary scarifying, dozing, diking, moving, shaping, and compacting to develop the cross-sections SHOWN ON THE DRAWINGS. Loading and hauling will not be included or required in the work.

Compaction of the subgrade shall be accomplished with the construction and hauling equipment.

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. Bring low sections, holes, cracks, or depressions 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.

204.16

(b) Unclassified borrow, select borrow, and select topping.

Add the following:

When borrow is designated as a pay item by the cubic yard in the SCHEDULE OF ITEMS, measurement will be in the final position.

SUPPLEMENTAL SPECIFICATION

Section 209. STRUCTURE EXCAVATION AND BACKFILL

209.10 Backfill.

(a) General.

Add the following:

Do not place or backfill pipe that meets any of the following conditions until the excavation and foundation have been approved in writing by the CO:

- Embankment height greater than 6 feet at subgrade centerline.
- Installation in a protected stream course.
- Round pipe with a diameter of 48 inches or greater.
- Pipe arches with a span of 50 inches or greater.
- Any box culvert of structure other than pipe culverts.

209.10 Backfill.

(a) General.

Add the following:

Replace any pipe that is distorted by more than 5 percent of nominal dimensions, or that is ruptured or broken.

(b) Pipe culverts.

(1) Pipe culverts with compacted backfill.

Add the following:

On each side of the pipe there shall be an area of compacted material at least as wide as one diameter or span of the structure, with a minimum of two feet or a maximum of twelve feet. Compact the backfill without damaging or displacing the pipe. Complete the backfilling of the trench with suitable material.

109.11 Compacting.

Delete the subsection and add the following:

Compact backfill using designated compaction method A, B, or C:

Method A. Ensure that backfill density exceeds the density of the surrounding embankment.

Method B. Adjust the moisture content of the backfill material to a moisture content suitable for compaction. Compact each layer using appropriate compaction equipment until visual displacement ceases. For compaction under sections 252, 254, 255, 257, and 258 compact with a vibratory steel wheeled roller with a mass of at least 8 tons.

Method C. Determine optimum moisture content and maximum density according to AASHTO T 99 method C. Adjust the moisture content of the backfill material to a moisture content suitable for compaction. Compact material placed in all layers to at least 95 percent of the maximum density. Determine the in place density and moisture content according to AASHTO T 310 or other approved test procedures.

Table 209-1 Sampling and Testing Requirements

Add the following:

(2) Compaction methods (A) and (B) do not require AASHTO T-99 or T-310 test methods for foundation fill.

SUPPLEMENTAL SPECIFICATION

Section 249. – COMPOSITE ROAD CONSTRUCTION

Description

249.01 This work consists of clearing and grubbing, excavation and embankment, and removal of all construction slash including all trees designated for removal. Excavation and embankment includes on site borrow excavation; drainage

excavation; placing all excavated material; and shaping the roadway; including approaches, turnarounds, ditches and drainage dips. Construct the roadway in conformance with the dimensions “shown on the plans” or as staked on the ground.

Construction Requirements

249.02 Clearing & Disposal

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

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

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

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

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

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

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

Immediately remove slash deposited in stream courses.

249.03 Pioneering.

Do not undercut the final back slope during pioneer operations. 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.

Measurement

249.07 Method.

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

Payment

249.08 Basis.

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

SUPPLEMENTAL SPECIFICATION

Section 251 - RIPRAP

251.04 Add: Place geotextile under all placed riprap.

SUPPLEMENTAL SPECIFICATION

Section 301- UNTREATED AGGREGATE COURSES

301 Title Change.

Change the title to:

Section 301- AGGREGATE COURSES

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.

301.03 General.

Add the following:

Request approval in writing of the roadbed 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 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 during crushing. Control additive proportions to 0.5 percent dry weight.

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

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.

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.

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 Compacting.

Delete the first and third paragraphs and add the following:

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

(a) Compaction A. Compact the aggregate by operating spreading and hauling equipment over the full width of each layer of the aggregate.

(b) Compaction B. 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).

(c) Compaction C. Compact each layer of aggregate to a density of at least 95 per-cent of the maximum density, as determined by AASHTO T 99, method C or D.

(d) Compaction D. Compact each layer of aggregate to a density of at least 95 percent of the maximum density, as determined by AASHTO T 180, method C or D.

(e) Compaction E. Operate rollers and compact as specified in Subsection 204.11(a).

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 Surface Tolerance.

Add the following:

Thickness and Width requirements:

The thickness of the compacted nominal aggregate shall not vary more than ½ inch for aggregates with a maximum particle size of 1 inch or less, nor more than 1 inch for aggregates with a nominal maximum particle size greater than 1 inch from the thickness SHOWN ON THE DRAWINGS. The compacted thickness shall not be consistently above or below the specified thickness.

301.09 Measurement.

Delete:

Measure aggregate by the cubic yard in the hauling vehicle and substitute with the following:

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

Payment

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.

SUPPLEMENTAL SPECIFICATION

Section 602- CULVERTS AND DRAINS

Description

- 602.01** Delete 602.01 in its entirety and substitute with the following:
- 602.01** This work shall consist of furnishing and installing, or installing only, metal pipe and Corrugated High Density Polyethylene (HDPE) with smooth interior and pipe appurtenances, including all bedding and backfilling required to complete the work. The term metal refers to aluminum and steel.

Material

- 602.02** Add: Corrugated High Density Polyethylene Drainage Pipe shall meet the requirements of AASHTO M252, ASTM F405, and ASTM 667 and be non – perforated. Advance Drainage systems N – 12 pipe meets these requirements.

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 foot, whichever is less.

Backfill material shall be readily compactible material free of frozen lumps, chunks of highly plastic clay (Plasticity Index greater than 10), or other objectional material. Rocks larger than 3 inches in greatest dimension shall not be used within 1 foot of the pipe.

Payment

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.

Section 625- TURF ESTABLISHMENT

Description

625.01 Delete: watering

625.03 General.

Delete the first subsection and add the following:

Apply turf establishment to finished slopes and ditches between June 1 and October 1 unless approved by the CO. Do not seed during windy weather or when the ground is excessively wet, frozen, snow covered, extremely dry, cloddy, hard pan, or is otherwise untillable.

625.05 Watering. Delete 625.05 Watering and its description in its entirety.

625.06 Fertilizing. (a) Dry method.

Add the following:

The fertilizer shall be 10-10-10, and shall be applied at the rate of 200 pounds per Acre.

625.07 Seeding. (a) Dry method.

Delete the subsection and add the following:

<u>Species</u>	<u>Seed Mixture</u>	
	<u>Pounds per Acre</u>	<u>Percent</u>
Perennial Rye	7.5	25
Ladino Clover	10.5	35
Creeping Red Fescue	12.0	40

The seed mixture shall be applied at the rate of 30 Pounds per Acre.

625.08 Mulch. (a) Dry Method

Delete the subsection and add the following:

Mulch shall be applied at the rate of 50 Bales per Acre. Bales shall be a standard size with an average length of 36-inches and an average weight of 40-50 pounds as determined by the engineer.

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.

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.

Measurement

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

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.