

CLOVERDALE TIMBER SALE
RECONSTRUCTION OF SPECIFIED ROADS

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SCHEDULE OF ITEMS	2 Page
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CLOVERDALE TIMBER SALE
ROAD RECONSTRUCTION COSTS

Road Reconstruction Total Estimated Costs

<u>FSR Number</u>	<u>Estimated Costs</u>
1533	\$64,225.80
C5.213# Reconstruction Engineering Deposits	<u>\$9,629.00</u>
TOTAL RECON \$	\$73,854.80

Public Works Costs - \$73,298.75

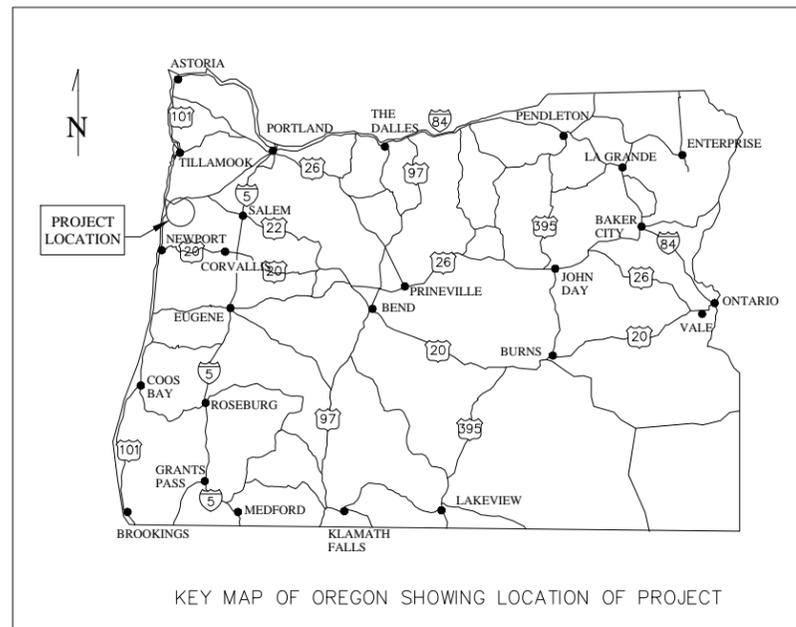
UNITED STATES DEPARTMENT OF AGRICULTURE
 FOREST SERVICE – REGION SIX
SIUSLAW NATIONAL FOREST
HEBO RANGER DISTRICT
TILLAMOOK COUNTY



PLANS FOR ROAD RECONSTRUCTION

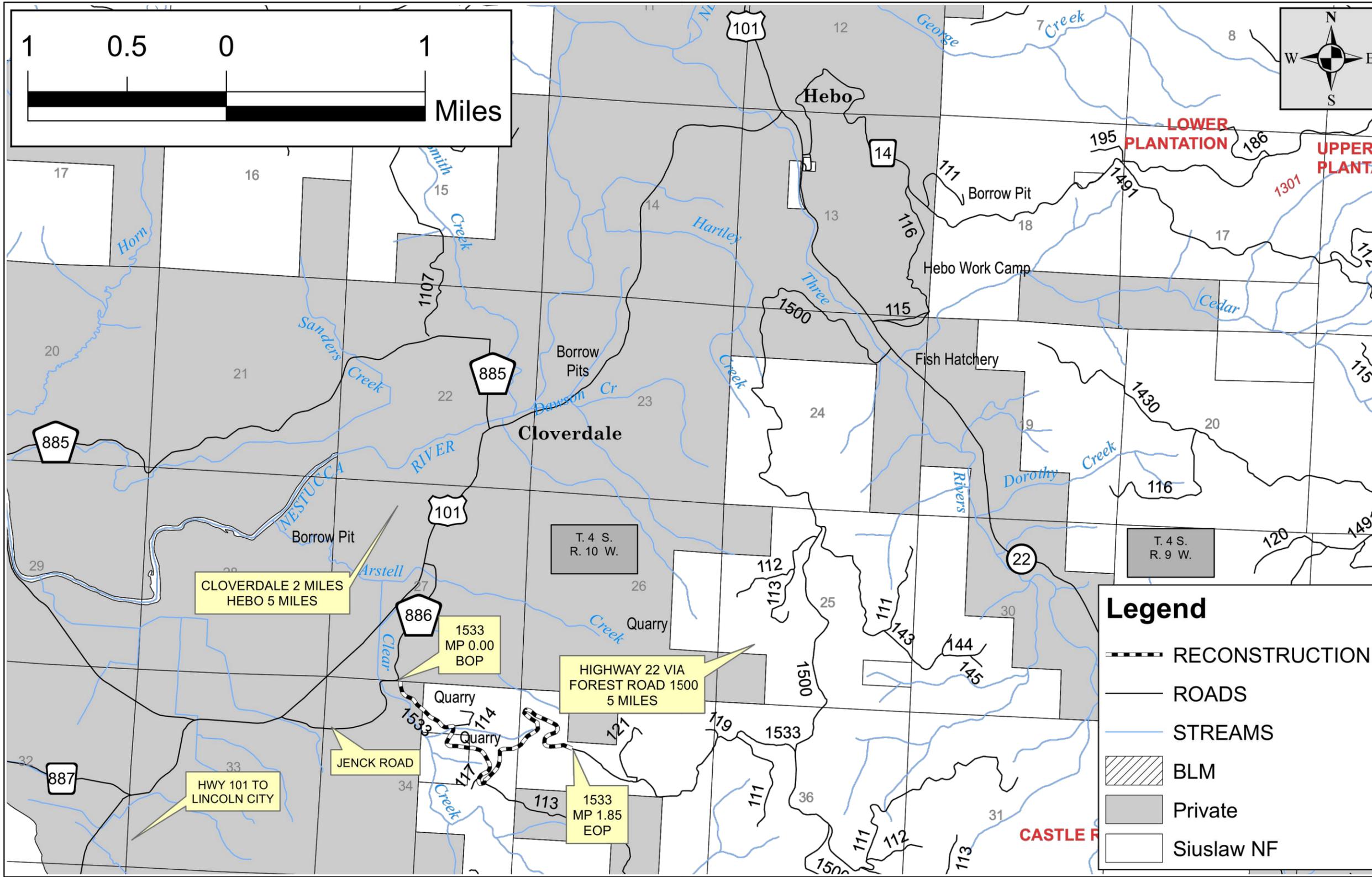
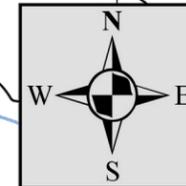
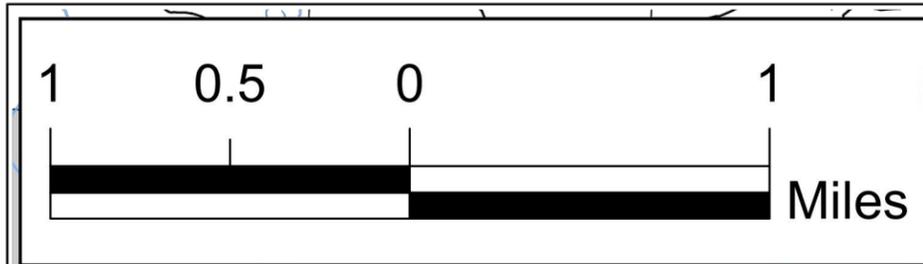
CLOVERDALE THIN TIMBER SALE

ROAD NO.	FROM/TO	LENGTH (MILES)	TYPE OF WORK
1533	COUNTY ROAD 886/M.P. 1.85	1.85	Reconstruction



INDEX TO SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	VICINITY MAP
3	ESTIMATE OF QUANTITIES
4	ROAD STRUCTURE DETAILS
5	DRAINAGE CONSTRUCTION DETAILS
6	DRAINAGE LISTING
7	ROADSIDE BRUSHING DETAILS
8	WORK DESCRIPTION

Designed by: Roanna Tomlinson	
Designer	Date
Reviewed by: Josh Latham	
Reviewer: Jeff Caswell	Date
Dev. Engineer	Date
Recommended by:	
Zone Engineer	Date
Approved by:	
Line Officer	Date
Forest Engineer	Date



CLOVERDALE THIN TIMBER SALE

VICINITY MAP



ESTIMATE OF QUANTITIES

ROAD NUMBER		1533		GENERAL NOTES	
PROJECT LENGTH (MILES)		1.85			
ITEM NO.	DESCRIPTION	UNIT	QUANTITIES	* Denotes Contract Quantities	
15101	Mobilization	Lump Sum	ALL	Includes fire protection, equipment cleaning and traffic control.	
20358	Removal of culverts, disposal method A	Each	2	Dispose of legally off of government lands.	
20479	Drainage Excavation, type ditch	Mile	0.10		
23051	Roadside brushing, disposal method 1	Mile	1.85	Disposal method - scattering.	
25101	Placed Riprap, class 3	Cubic Yard*	6	Commercial source/In-Place Compacted Quantities.	
30322	Road reconditioning, compaction E	Mile	1.85	Scarify all potholes and irregular surfaces to 6" maximum depth except where indicated on description of work. Includes all existing turnouts and curve widening, cleaning of asphalt surfaces, bridge deck and structure. See sheet 4 of 8 for ditch and roadway dimensions. Grubbing and disposal of all vegetation and root masses within the road bed is required. Haul all material from ditch reestablishment and slough and slide removal to designated disposal area.	
32207	Subbase, grading B, compaction method B	Cubic Yard*	1440	Commercial Source/In-Place Compacted Quantities. Includes 12" compacted depth over culvert site installations and 4" depth bedding material.	
60278	24-inch corrugated polyethylene pipe, type S, compaction method B	Foot	72	All excavation is included. Excavation below existing grade line may be required for culvert replacements.	
REMARKS:					
1) Disposal Areas : 6' Maximum height of material, 1V:2H slopes, Compaction method C, shape to drain & reconstruct ditchline between road and disposal site. Disposal area locations will be flagged by the Contracting Officer prior to any material placement and are identified in Description of Work.			3) See Timber Sale provisions and specifications for daily and seasonal requirements and restrictions.		
2) Payment will be made on actual work performed as described in FP-03 109.01 unless otherwise noted.			4) All utility locates, permits and water rights are the responsibility of the contractor.		

CLOVERDALE THIN TIMBER SALE

ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

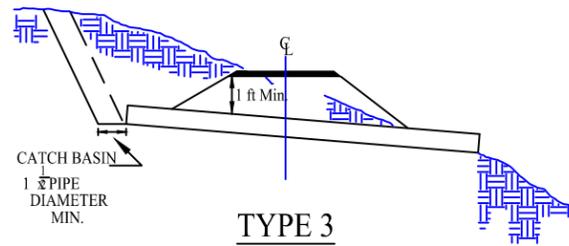
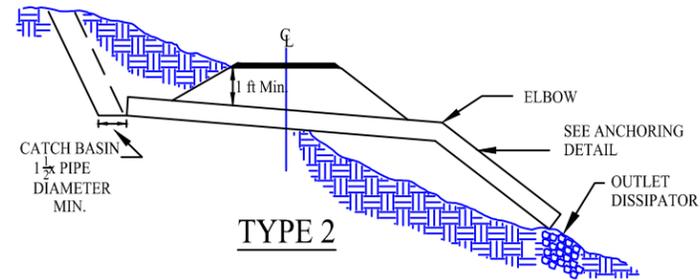
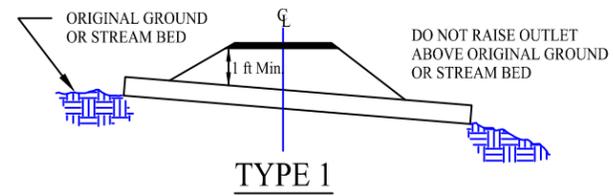


SHEET NUMBER TOTAL SHEETS

3

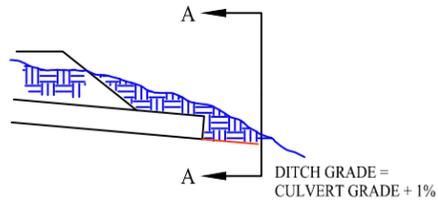
8

CULVERT INSTALLATION TYPES

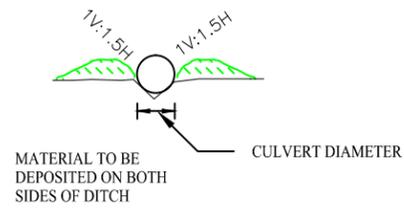


ALL FILLS SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1V:1.5H.

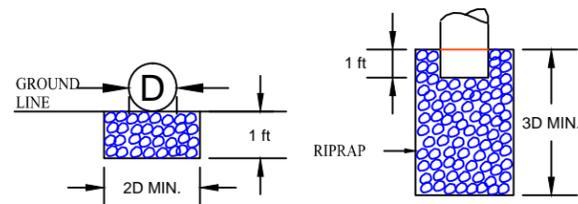
OUTLET DITCH



SECTION A-A

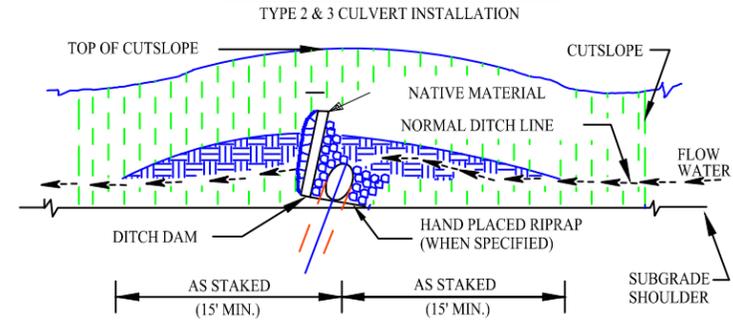


OUTLET DISSIPATOR DETAIL

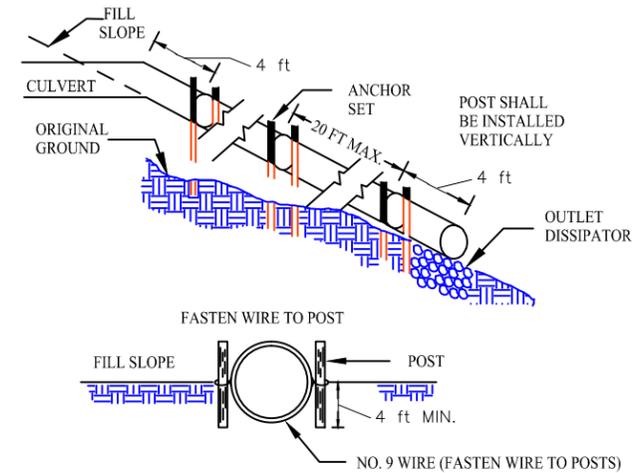


APRON SURFACE MUST CONFORM TO SHAPE OF EXISTING GROUND AND BE LEFT ROUGH TO REDUCE WATER VELOCITY. SEE DRAINAGE LISTING FOR ACTUAL QUANTITIES.

DITCH DAM PLAN VIEW

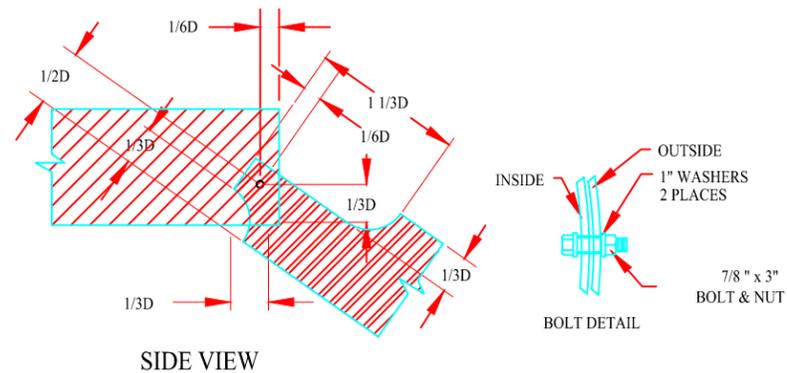


ANCHOR DETAILS

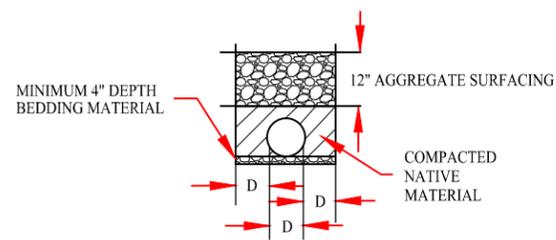


NOTE:
3 FT DIAMETER AND LARGER DOWNPIPE SHALL BE HALF BURIED.
ANCHOR SETS SHALL CONSIST OF TWO 6 FT STEEL FENCE POSTS (AASHTO M 281) AND NO. 9 GALVANIZED WIRE. 3 STRANDS OF WIRE SHALL BE TWISTED TOGETHER AND ENCOMPASS THE ENTIRE CIRCUMFERENCE OF THE PIPE.

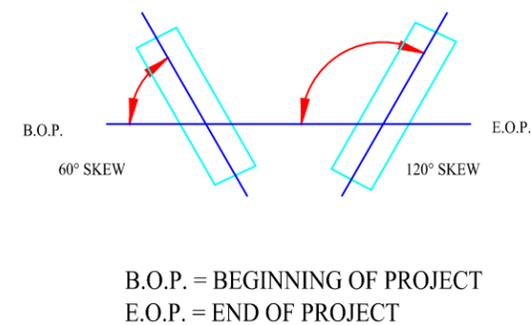
FLEX ELBOW



CULVERT INSTALLATION DETAIL



SKEW DIAGRAM



CLOVERDALE TIMBER SALE

DRAINAGE CONSTRUCTION DETAILS



SHEET NUMBER TOTAL SHEETS

5

8

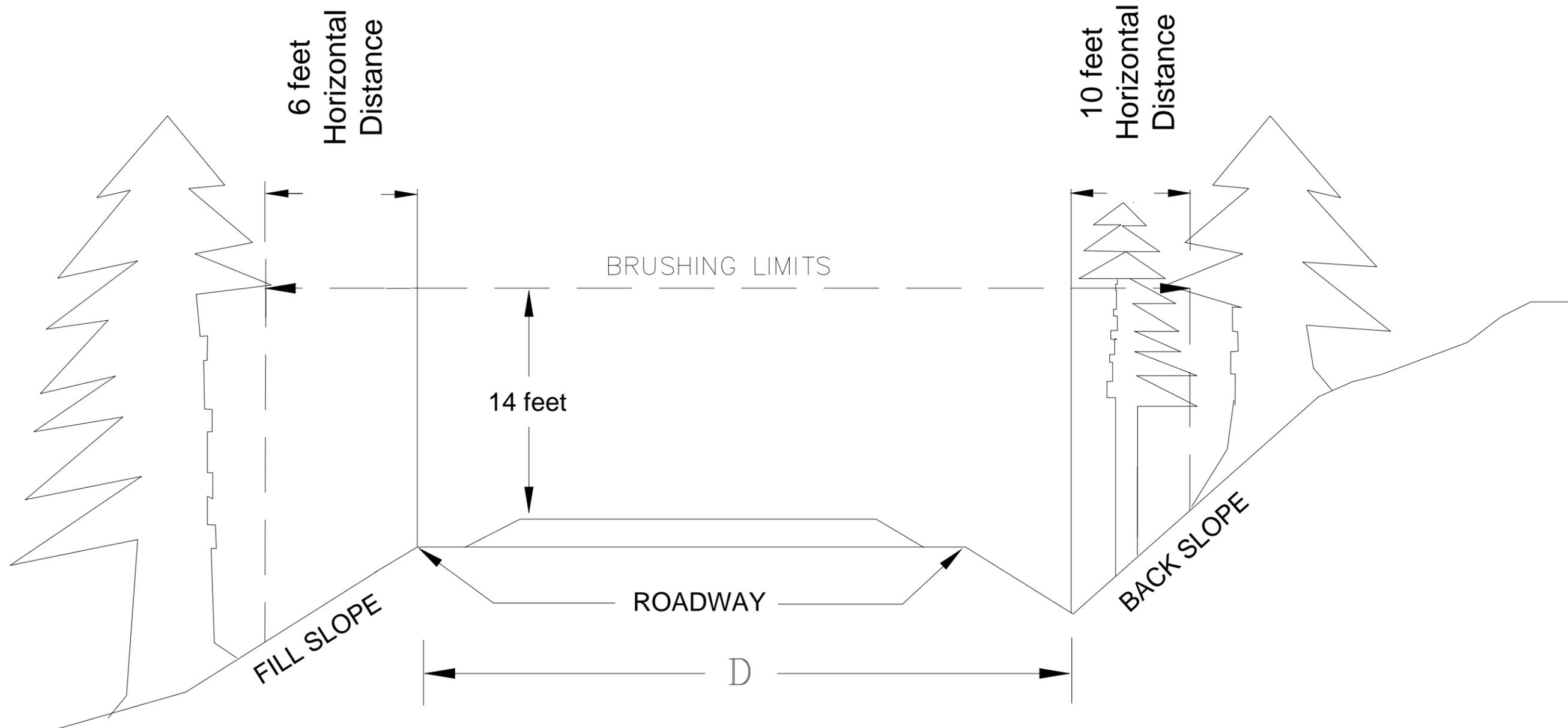
DRAINAGE LISTING								
Designed			Installation Details					
STA or MP	Plastic Pipe		Grade (%)	Skew (deg)	Type	Machine Placed		Remarks
	Diameter (in)	Length (ft)				Inlet CY	Outlet CY	
FS Road 1533								
0.04	24	36	*	*	3		3	
1.36	24	36	*	*	3		3	
Total	24	72					6	

CMP = Corrugated Metal Pipe
 CPP = Corrugated Plastic Pipe
 * 7% minimum grade required for ditch relief pipes.
 Some culvert installations may require excavation below existing grade line.

CLOVERDALE THIN TIMBER SALE

DRAINAGE LISTING





Grub stumps within "D" above and haul to designated disposal areas.

Mechanical brushing may require manual limbing and manual scattering of machine cut material beyond the brushing limits.

CLOVERDALE TIMBER SALE

ROADSIDE BRUSHING DETAILS



SHEET NUMBER	TOTAL SHEETS
7	8

WORK DESCRIPTION
ROAD 1533

<u>MILEPOST</u>	<u>PAY ITEM</u>	<u>QUANTITY</u>	<u>UNITS</u>	<u>DESCRIPTION</u>
0.00	23051	1.85	MILE	BOP /RP: Tillamook County Road 886. Begin Roadside brushing.
	30322	1.85	MILE	Begin Road Reconditioning.
0.04	20358	1	Each	Remove existing culvert.
	60278	36	Foot	Install 24" ditch relief culvert.
	32207	10	CY*	Place 4" depth bedding material and 12" depth compacted surfacing.
	25101	3	CY*	Construct outlet dissipator.
0.09	30322			Scarify and remove 15' asphalt treatment section or reduce to 4" maximum size and incorporate into roadbed.
0.36				RP: Road 1533114/quarry left.
0.37	20479	0.10	Miles	Begin ditch construction.
0.45				RP: Center of upper quarry.
0.47	32207	1420	CY*	End ditch construction. Begin placement of 4" depth compacted aggregate.
0.82				RP: Junction 1533117 right.
1.36	20358	1	Each	Remove existing culvert.
	60278	36	Foot	Install 24" ditch relief culvert.
	32207	10	CY*	Place 4" depth bedding material and 12" depth compacted surfacing.
	25101	3	CY*	Construct outlet dissipator.
1.38				Disposal area right.
1.45				Disposal area right.
1.61				End placement of 4" depth compacted aggregate.
1.85	23051			End Roadside brushing.
	30322			End Road Reconditioning. EOP



FP- 03 SPECIFICATION LIST FOR CLOVERDALE THIN

All specifications not included in the specification listing, but referenced by listed specifications, are applicable.

The supplements shown on the specification list are physically attached.

	<u>Title</u>	<u>Revised</u>	<u>5854</u>
<u>Preface</u>	Preface	<u>FP03 & 3/15/2004</u>	X
<u>101</u>	Terms, Format, and Definitions	FP03	X
101 .01	Meaning of Terms	1/22/2009	X
101 .01	Meaning of Terms	1/22/2009	X
101 .03	Abbreviations	6/16/2006	X
101 .04	Definitions	3/29/2007	X
101 .04	Definitions	11/6/2007	X
<u>102</u>	Bid, Award, and Execution of Contract	FP03	X
102	Delete entire section	2/16/2005	X
<u>103</u>	Scope of Work	FP03	X
103	Delete 103.02 through 103.05	2/16/2005	X
<u>104</u>	Control of Work	FP03	X
104 .00	Delete 104.01, 104.02, 104.04	6/16/2006	X
104 .03	Specifications and Drawings	1/22/2009	X
104 .06	Use of Road by Contractor	2/17/2005	X
104 .07	Other Contracts	2/17/2005	X
<u>105</u>	Control of Material	FP03	X
105 .02	Material Sources	3/8/2007	X
105 .05	Use of Materials Found in the Work.	5/12/2004	X
<u>106</u>	Acceptance of Work	FP03	X
106 .01	Conformity with Contract Requirements	7/31/2007	X
106 .07	Delete	5/11/2004	X
<u>107</u>	Legal Relations and Responsibility to the Public	FP03	X
107 .05	Responsibility for Damage Claims	5/11/2004	X
107 .06	Contractor's Responsibility for Work	6/16/2006	X
107 .08	Sanitation, Health and Safety	3/29/2005	X
107 .09	Legal Relationship of the Parties	6/16/2006	X
<u>108</u>	Prosecution and Progress	FP03	X
108	Delete entire section	2/16/2005	X
<u>109</u>	Measurement and Payment	FP03	X
109	Deletions 109.06 through 109.09	2/17/2005	X
109 .02	Measurement Terms and Definitions	6/16/2006	X
<u>151</u>	Mobilization	FP03	X
<u>155</u>	Schedules for Construction Contracts	FP03	X
155 .00	Delete	5/11/2004	X
<u>156</u>	Public Traffic	FP03	X
156 .00	Complete Specification	4/17/2007	X
<u>157</u> .00	Complete Specification - Soil Erosion Control	2/3/2009	X

FP- 03 SPECIFICATION LIST FOR CLOVERDALE THIN

All specifications not included in the specification listing, but referenced by listed specifications, are applicable.

The supplements shown on the specification list are physically attached.

<u>Title</u>	<u>Revised</u>	<u>5854</u>
<u>170</u> .00 Complete Specification - Develop Water Supply and Watering	3/26/2007	X
<u>203</u> Removal of Structures and Obstructions	FP03	X
203 .01 Description	2/25/2005	X
203 .04 Removing Material	2/18/2005	X
203 .05 Disposing of Material	5/30/2007	X
203 .05 Disposing of Material	3/26/2007	X
203 .08 Payment	2/24/2005	X
<u>204</u> .00 Complete Specification - Excavation and Embankment	2/11/2008	X
<u>209</u> Structure Excavation and Backfill	FP03	X
209 .10 Backfill	10/23/2007	X
209 .11 Compacting.	2/24/2005	X
<u>230</u> .00 Complete Specification - Roadside Brushing	3/31/2010	X
<u>303</u> Road Reconditioning	FP03	X
303 .01 Work	9/10/2008	X
303 .04 Shoulder Reconditioning	11/26/2008	X
303 .05 Roadbed Reconditioning	3/26/2007	X
303 .10 Measurement	3/26/2007	X
303 .10 Measurement	3/29/2005	X
<u>322</u> .00 Complete Specification - Minor Aggregate Courses	10/14/2011	X
<u>602</u> Culverts and Drains	FP03	X
602 .03 General.	9/6/2005	X
602 .06 Laying Plastic Pipe.	8/5/2009	X
<u>635</u> Temporary Traffic Control	FP03	X
635 .03 General.	5/13/2004	X
<u>703</u> Aggregate	FP03	X
703 .05 Subbase, Base, & Surface Course and screened Aggregate	8/14/2009	X
703 .10 Flakiness Index	4/11/2011	X
<u>718</u> Traffic Signing and Marking Material	FP03	X
718 .05 Aluminum Panels	8/5/2009	X

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

101 - Terms, Format, and Definitions

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

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

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

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

101.03_nat_us_06_16_2006

101.03 Abbreviations.

Add the following to (a) Acronyms:

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

.

Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04_nat_us_03_29_2007

101.04 Definitions.

Delete the following definitions and substitute the following:

Bid Schedule--The Schedule of Items.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

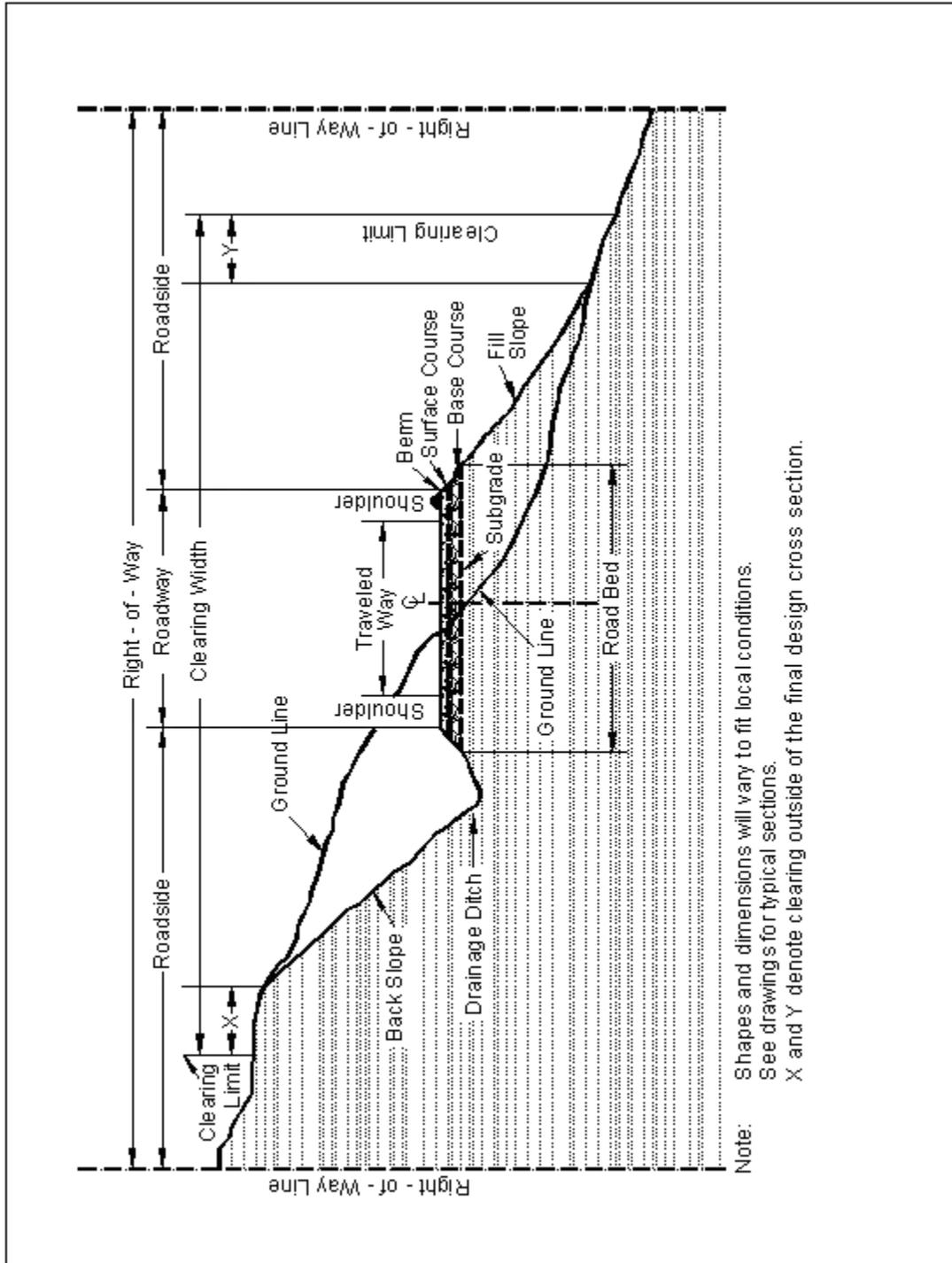
Schedule of Items--A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, unit price, and amount.

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:

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Figure 101-1—Illustration of road structure terms.



CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

101.04_nat_us_11_06_2007

101.04 Definitions.

Delete the following definitions:

Contract Modification

Day

Notice to Proceed

Solicitation

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

103 - Scope of Work

103.00_nat_us_02_16_2005

Deletions

Delete all but subsection 103.01 Intent of Contract.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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_01_22_2009

104.03 Specifications and Drawings.

Delete 104.03.

104.06_nat_us_02_17_2005

Add the following subsection:

104.06 Use of Roads by Contractor

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

104.07_nat_us_02_17_2005

Add Subsection.

104.07 Other Contracts.

The Forest Service has awarded additional contracts scheduled to haul on North Fork Siuslaw county Roads 5084 and 5070. Construction activities may be concurrent with this project and may affect the county roads. Schedule activities to assure no delays or interference to the operations of the other contract.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

105 - Control of Material

105.02_nat_us_03_08_2007

105.02 Material Sources.

105.02(a) Contractor-provided sources.

Add the following:

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

Weeds specific to this project:

<u>Common Name</u>	<u>Scientific Name</u>
African rue	<i>Peganum harmala</i>
Bamboo	<i>Sasa palmata</i>
Beachgrass, European	<i>Ammophila arenaria</i>
Bean-caper, Syrian	<i>Zygophyllum fabago</i>
Biddy-biddy	<i>Acaena novae-zelandiae</i>
Bindweed, field	<i>Convolvulus arvensis</i>
Blackberry, evergreen	<i>Rubus laciniatus</i>
Blackberry, Himalaya	<i>Rubus discolor</i>
Blueweed, Texas	<i>Helianthus ciliaris</i>
Broom, French	<i>Genista monspessulana</i>
Broom, Portuguese	<i>Cytisus striatus</i>
Broom, Scot's	<i>Cytisus scoparius</i>

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Broom, Spanish	<i>Spartium junceum</i>
Broomrape, small	<i>Orobanche minor</i>
Buffalobur	<i>Solanum rostratum</i>
Bugloss, common	<i>Anchusa officinalis</i>
Buttercup, creeping	<i>Ranunculus repens</i>
Butterflybush	<i>Buddleja globosa</i>
Camelthorn	<i>Alhagi pseudalhagi</i>
Canary grass, reed	<i>Phalaris arundinacea</i>
Cherry, laurel	<i>Prunus laurocerasus</i>
Cinquefoil, sulfur	<i>Potentilla recta</i>
Clematis	<i>Clematis vitalba</i>
Cocklebur, spiny	<i>Xanthium spinosum</i>
Coltsfoot	<i>Tussilago farfara</i>
Cordgrass, Common	<i>Spartina anglica</i>
Cordgrass, Dense-flowered	<i>Spartina densiflora</i>
Cordgrass, Saltmeadow	<i>Spartina patens</i>
Cordgrass, smooth	<i>Spartina alterniflora</i>
Cress, creeping yellow	<i>Rorippa sylvestris</i>
Crupina, common	<i>Crupina vulgaris</i>
Daisy, ox-eye	<i>Chrysanthemum leucanthemum</i>
Dyers woad	<i>Isatis tinctoria</i>
False brome	<i>Brachypodium sylvaticum</i>
Floating heart, yellow	<i>Nymphoides peltata</i>
Garlic Mustard	<i>Alliaria petiolata</i>

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Geranium, Robert	<i>Geranium robertianum</i>
Geranium, shining	<i>Geranium lucidum</i>
Goatgrass, barbed	<i>Aegilops triuncialis</i>
Goatgrass, jointed	<i>Aegilops cylindrical</i>
Goatgrass, ovate	<i>Aegilops ovata</i>
Gorse	<i>Ulex europaeus</i>
Halogeton	<i>Halogeton glomeratus</i>
Hawkweed, king devil	<i>Hieracium piloselloides</i>
Hawkweed, meadow	<i>Hieracium pratense</i>
Hawkweed, mouse-ear	<i>Hieracium pilosella</i>
Hawkweed, orange	<i>Hieracium aurantiacum</i>
Hawkweed, yellow	<i>Hieracium floribundum</i>
Holly, English	<i>Ilex aquafolium</i>
Hogweed, giant	<i>Heracleum mantegazzianum</i>
Horsetail, giant	<i>Equisetum telmateia</i>
Houndstongue	<i>Cynoglossum officinale</i>
Hydrilla	<i>Hydrilla verticillata</i>
Iris, flag	<i>Iris pseudocorus</i>
Ivy, English	<i>Hedera helix</i>
Johnsongrass	<i>Sorghum halepense</i>
Knapweed, diffuse	<i>Centaurea diffusa</i>
Knapweed, meadow	<i>Centaurea pratensis (jacea x nigra)</i>
Knapweed, Russian	<i>Acroptilon repens</i>
Knapweed, short-fringed	<i>Centaurea nigrescens</i>

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Knapweed, spotted	<i>Centaurea maculosa</i>
Knapweed, squarrose	<i>Centaurea virgata</i>
Knotweed, giant	<i>Polygonum sachalinense</i>
Knotweed, Himalayan	<i>Polygonum polystachyum</i>
Knotweed, Japanese	<i>Polygonum cuspidatum</i>
Kudzu	<i>Pueraria lobata</i>
Loosestrife, purple	<i>Lythrum salicaria</i>
Matgrass	<i>Nardus stricta</i>
Millet, wild proso	<i>Panicum miliaceum</i>
Nightshade, silverleaf	<i>Solanum elaeagnifolium</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Nutsedge, purple	<i>Cyperus rotundus</i>
Pampas grass	<i>Cortaderia selloana</i>
Parrot feather	<i>Myriophyllum aquaticum</i>
Paterson's curse	<i>Echium plantagineum</i>
Peavine, everlasting	<i>Lathyrus latifolius</i>
Peaweed, Austrian	<i>Sphaerophysa salsula</i>
Policeman's helmet	<i>Impatiens glandulifera</i>
Puncturevine	<i>Tribulus terrestris</i>
Quackgrass	<i>Agropyron repens</i>
Ragweed	<i>Ambrosia artemisiifolia</i>
Rush skeletonweed	<i>Chondrilla juncea</i>
Saltcedar	<i>Tamarix ramosissima</i>
Skeletonleaf bursage	<i>Ambrosia tomentosa</i>

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Spikeweed	<i>Hemizonia pungens</i>
Spurge, leafy	<i>Euphorbia esula</i>
Spurge, myrtle	<i>Euphorbia myrsinites</i>
St. John's-wort	<i>Hypericum perforatum</i>
Starthistle, yellow	<i>Centaurea solstitialis</i>
Starthistle, Iberian	<i>Centaurea iberica</i>
Starthistle, purple	<i>Centaurea calcitrapa</i>
Tansy ragwort	<i>Senecio jacobaea</i>
Teasel	<i>Dipsacus sylvestris</i>
Teasel, cutleaf	<i>Dipsacus laciniatus</i>
Thistle, bull	<i>Cirsium vulgare</i>
Thistle, Canada	<i>Cirsium arvense</i>
Thistle, Italian	<i>Carduus pycnocephalus</i>
Thistle, musk	<i>Carduus nutans</i>
Thistle, plumeless	<i>Carduus acanthoides</i>
Thistle, Scotch	<i>Onopordum acanthium</i>
Thistle, slender-flowered	<i>Carduus tenuiflorus</i>
Thistle, smooth distaff	<i>Carthamus baeticus</i>
Thistle, woolly distaff	<i>Carthamus lanatus</i>
Toadflax, yellow	<i>Linaria vulgaris</i>
Toadflax, Dalmatian	<i>Linaria dalmatica</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Water chestnut, European	<i>Trapa natans</i>
Waterlily, fragrant	<i>Nymphaea odorata</i>

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Watermilfoil, Eurasian	Myriophyllum spicatum
Waterweed, South. American.	Elodea densa
Whitetop	Lepidium draba
Whitetop, hairy	Lepidium pubescens
Whitetop, lens-podded	Lepidium chalepensis

105.05_nat_us_05_12_2004

105.05 Use of Material Found in the Work.

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

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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

106 - Acceptance of Work

106.01_nat_us_07_31_2007

106.01 Conformity with Contract Requirements.

Delete Subsection 106.01 and substitute the following:

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

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

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

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

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

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

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

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

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(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.

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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.

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107 - Legal Relations and Responsibility to the Public

107.05_nat_us_05_11_2004

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.06_nat_us_06_16_2006

107.06 Contractor's Responsibility for Work.

Delete the following from the first paragraph.

“except as provided in Subsection 106.07”.

107.08_nat_us_03_29_2005

107.08 Sanitation, Health, and Safety

Delete the entire subsection.

107.09_nat_us_06_16_2006

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

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108 - Prosecution and Progress

108.00_nat_us_02_16_2005

108 Delete.

Delete Section 108 in its entirety.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

155 - Schedules for Construction Contracts

155.00_nat_us_05_11_2004

155 Delete.

Delete Section 155 in its entirety.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

156 - Public Traffic

156.00_nat_us_04_17_2007

Delete Section 156 in its entirety and replace with the following:

Description

156.01 This work consists of controlling and protecting public traffic adjacent to and within the project.

Material

156.02 Conform to the MUTCD and the following Sections and Subsections:

Construction sign panels	633
Retro-reflective sheeting	718.01
Temporary concrete barrier	618
Temporary plastic fence	710.11
Temporary traffic control devices	718.22

156.03 General. Unless otherwise provided for in Table 156-1, keep existing roads open to all traffic during road improvement work, and maintain them in a condition that will adequately accommodate traffic. Delays may not exceed 120 minutes at any one time followed by an open period of no less than 10 minutes.

Perform no work that interferes or conflicts with traffic or existing access to the roadway surface until a traffic control plan has been approved. Post construction signs and traffic control devices in conformance with MUTCD. All required signs will be in place and approved prior to beginning work on project.

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If the Contractor agrees in writing to allow public traffic to use a new road being constructed prior to completion, it will be considered an existing road for traffic control purposes.

156.04 Temporary Traffic Control. Install and maintain temporary traffic control devices adjacent to and within the project as required by the approved traffic control plan and the MUTCD. Install and maintain traffic control devices as follows:

- (a) Furnish and install traffic control devices before the start of construction operations.
- (b) All detours outside of clearing limits will be approved in writing by the Contracting Officer as part of the traffic control plan.
- (c) Install only those traffic control devices needed for each stage or phase.
- (d) Relocate temporary traffic control devices as necessary.
- (e) Remove devices that no longer apply to the existing conditions.
- (f) Immediately replace any device that is lost, stolen, destroyed, or inoperative.
- (g) Keep temporary traffic control devices clean.
- (h) Remove all temporary traffic control devices upon contract completion or when approved.
- (i) When required, use flaggers certified by the American Traffic Safety Services Association, the National Safety Council, the International Municipal Signal Association, a state agency, or other acceptable organization. Perform the work described under MUTCD Part 6. Use type III, VII, VIII, or IX retroreflective sheeting on flagger paddles. Do not use flags. Flaggers must wear high visibility safety apparel as required by MUTCD 6E.02.

156.05 Temporary Closures. Road segments may be closed as shown in Table 156-1. The maximum consecutive days of closure shall be followed by a minimum number of consecutive days open to traffic as shown. Maintain traffic control devices during closure period(s). Appropriate barricades and signs will be erected and maintained as shown in the traffic control plan or as otherwise designated.

Prior to closing roads during construction, give written notice to the Contracting Officer at least 10 days in advance.

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Table 156-1

Temporary Road Closures

Road Number	From Terminus	To Terminus	Maximum Consecutive Days of Closure	Minimum Consecutive Days Open
1533	0.47	1.61	5	2

156.06 Acceptance. Public traffic work will be evaluated under Subsection 106.02.

Measurement and Payment

156.07 Do not measure Public Traffic for payment. Compensation is made as an indirect payment.

157 - Soil Erosion Control

157.01_0618_us_02_03_2009

Description

157.01 Add the following:

This includes protection of all phases of work during the life of the contract including storm events.

Materials

157.02 Add the following:

Coarse Aggregate for Concrete.....	703.02
Watertight Gaskets.....	712.03

Construction Requirements

157.03 General. Add the following:

21 days prior to the start of construction, submit a written plan that provides specific sediment control measures to minimize delivery of soil and turbidity into the stream during the construction period including a channel diversion and dewatering plan if dewatering is required. Include the sequence of operations and information on equipment, materials and suppliers. Measures given in the Plans and Supplemental Specifications are minimum requirements, and may be revised only with written approval by the CO.

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The turbidity of the water 100-200 feet downstream shall not be visually greater than the turbidity of the water upstream of the project site.

When this turbidity requirement or other erosion control measures are not met, immediately take corrective action. Cease operations that are causing turbidity and pump or otherwise improve the diversion of the stream around the construction site according to this specification and the Plans until the turbidity requirement can be met. When the interpretation of this requirement is in question, measure turbidity using a turbidity meter as approved by the CO, and provide documentation that operations are in compliance with FAR 52.236-7 Permits and Responsibilities, subsection 107.01 Laws to be Observed and subsection 107.10 Environmental Protection, and subsection 107.11, including but not limited to, the requirements of the National Marine Fisheries Service.

Do not begin work until the necessary controls for that particular phase of work have been implemented. Incorporate all erosion control features into the project at the earliest practicable time, as agreed by the CO.

Operate in a manner that will avoid harm to aquatic organisms whenever possible.

Notify the CO of the intention to dewater the stream, at least 10 days in advance. Do not re-route the stream until approved by the CO. The CO will not approve dewatering until a fisheries biologist and other Government personnel are present and prepared to rescue aquatic organisms. Dewater the stream slowly and incrementally in order to facilitate the fish rescue. The rescue operation will generally take several hours.

Do not release water through the newly constructed simulated streambed until approved by the CO. After approval, release water slowly and incrementally over a period of at least one hour, or as approved by the CO. During this time, treat any water that does not meet the requirements of the turbidity standard stated in this specification.

157.04 Controls and Limitations on Work. Add the following:

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Prior to construction, Contracting Officer will delineate critical riparian vegetation areas, wetlands, and other sensitive sites to prevent ground disturbance. Minimize disturbance to existing vegetation along stream.

Where necessary, danger tree removal may be required. Fell danger trees within riparian areas. Where possible, fell trees towards the stream. Dispose of trees as directed by the Contracting Officer.

Confine work within the construction limits marked by the Contracting Officer. Use existing roadways or travel paths whenever reasonable. Minimize the number of new access paths.

Dispose of waste material at approved sites.

When erosion control materials are to be left on site after the project has been completed, construct erosion controls of organic and bio-degradable materials whenever possible.

157.04(b) Add the following:

For the work immediately adjacent to the stream, use sediment control barriers between the work and the stream. Place sediment barriers prior to construction around sites where significant levels of erosion may enter the stream directly or through road ditches.

Provide straw bales and silt fence for sediment control measures for each channel crossing being constructed concurrently. Use only as needed for sediment control or when specified by the Contracting Officer.

Provide waterproof membrane products to cover all stockpiled material adjacent to a live stream that is subject to erosion or water saturation. Cover stockpiles at the end of each work day and all day during the threat of precipitation or when specified by the Contracting Officer.

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157.04(d) Delete the subsection and replace with the following:

Apply temporary turf establishment, mulch and stabilization measures on disturbed areas within three days of the last disturbance. Short-term stabilization measures may include the use of non-native sterile seed mix when native seeds are not available; weed-free certified straw, jute matting, and other similar techniques. Maintain short-term stabilization measures until permanent erosion control measures are effective.

157.04(f) Add the following:

When required by the Contracting Officer, loosen compacted areas, such as access roads, stream crossings, staging, and stockpile areas.

157.09 Diversions. Add the Following:

Construct stream diversion, related appurtenances and measures as follows:

(a) In Stream Work.

- (1) Isolate construction area and coordinate with Contracting Officer for aquatic species removal by the Government. Coordinate aquatic species removal a minimum of 10 working days prior to beginning isolation of construction areas.
- (2) Cease project operations under high flow conditions that inundate the project area, except for efforts to avoid or minimize resource damage.
- (3) When approved, minimize time in which heavy equipment is in stream channels, riparian areas, and wetlands. Operate heavy equipment in streams only when Contracting Officer determines that such actions are the only reasonable alternative for implementation, or would result in less sediment in the stream channel or damage (short- or long-term) to the overall aquatic and riparian ecosystem relative to other alternatives.

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- (4) Clean and repair all equipment used in the in-stream work prior to entering the project area. Remove external oil and grease, along with dirt and mud, prior to construction. Inspect equipment daily for leaks or accumulations of grease, and repair any identified problems prior to entering streams or areas that drain directly to streams or wetlands.
 - (5) Fuel and service equipment used for in stream or riparian work in an approved staging area outside of riparian zone. When not in use, store vehicles in the staging area.
- (b) Stream Bypass Dam and Pipe. Construct a dam of material handling bags, and bypass pipe as shown on the Plans or as approved by the CO. The mining of material from the streambed or floodplain to construct diversions is not permitted. If diversion allows for downstream aquatic species passage, (i.e., is not screened), place diversion outlet in a location to promote safe reentry of aquatic species into the stream channel, preferably into pool habitat with cover.
- (1) Primary Bypass Dam. Construct the material handling bag dam in a dry condition by first pumping the stream around the dam. Place temporary cofferdams as needed. Remove rock and other irregularities from the streambed to form smooth bedding for the bypass dam. Place the dam so that water does not seep from the downstream side of the dam; if seepage occurs, improve the dam by adding bags, improving or adding seals, or other means to minimize seepage from the dam. When it is impossible to eliminate seepage, construct a sump and pump clear water to the upstream side of the dam.
 - (2) Bypass Dam Impermeable Membrane. Place an impermeable membrane within or on the upstream side of the dam and entrenched in the streambed as shown on the Plans or approved by the CO. When approved by the CO, a small amount of granular bentonite may be used along the edges of the membrane to minimize seepage between the membrane and the streambed. Cut a hole in the membrane to fit the bypass pipe and seal the membrane to the bypass pipe or the bypass pipe collar using gaskets, adhesive strips or other approved methods.
 - (3) Bypass pipe. Place bypass pipe as shown on the Plans or approved by the CO. Place the upstream invert of the pipe at the lowest point in the stream channel as practical. Install joints and elbows as shown on the Plans and as needed to accommodate the site layout. Use watertight seals meeting the requirements of Subsection 712.03. Do not place backfill until the pipe joints have been approved by the CO. Allow water to pass through pipe only after a downstream splash apron has been prepared in a manner that will protect the stream from scour and turbidity, and protect fish from harm. Construct the bypass in a manner that avoids injury to aquatic organisms.

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- (4) Material handling bags. Use only clean sand or coarse concrete aggregate in the bags. Loosely fill and tamp the bags in place to minimize seepage between, under, and around the bags.
 - (5) Bypass Pipe Collar. Install and maintain a leak-proof pipe collar as shown on the Plans or approved by the CO.
 - (6) Sediment Retention Pond. Provide a pond immediately downstream of the construction area capable of collecting and holding all seepage, drainage, and sediment not captured in stream diversion. Provide sufficient storing capacity to enable a sump pump to transfer the water, sediment and turbidity to a suitable treatment facility or area. Construct a downstream cofferdam to create a sediment retention pond when none is available immediately downstream of the project, when it is too small to use or to prevent water from entering the work area.
- (c) Pumps. Install pumps as required to re-route stream around construction site and dewater foundations. When failure of a pump would result in movement of sediment or turbidity beyond the work area, provide a back-up pump that is readily available. When adjacent stream crossing projects are constructed concurrently, provide a minimum of one extra pump on site for the largest discharge site. Use the pumps for installing and removing the gravity bypass pipes and dams, at other times to facilitate construction operations, and during storms to supplement the gravity bypass. Pumps must have fish screens if used in streams where aquatic species are present and be operated in accordance with National Marine Fisheries Service (NMFS) aquatic species screen criteria. Equip the pump with approved screens, appropriate suction and discharge hoses, fittings and flow regulation equipment as needed. Insure that the pumps are clean, free of leaks and that the oil used as lubricant in the pump seal systems is food grade mineral oil. Install and operate pumps in a manner that will avoid impingement of small fish against the intake screens.
- (1) Pump intakes. Use one of the following methods of screening on all draft hoses:
 - i. Perforated Plate; screen openings shall not exceed 3/32 or 0.0938-inches
 - ii. Profile Bar Screen; the narrowest dimension in the screen openings shall not exceed 0.0689-inches in the narrowest direction.
 - iii. Woven Wire Screen; screen openings shall not exceed 3/32 or 0.0938-inches the narrow direction.Check intakes frequently and clean as needed with wire brushing, flushing, or any other acceptable method.
 - (2) Sump Pumps. Supply pumps capable of dewatering the structure foundation and sediment retention pond. Insure that pumps are clean and free of leaks. Remove sediment and turbidity in the Sump Pump discharge water prior to re-entering the stream.
- (d) Sump Water Discharge. Discharge sump water as shown on the Plan or as approved by the CO. Apply one or more methods to remove sediment from sediment-laden water. Apply additional methods as needed to eliminate increase in downstream turbidity. Use the following methods as needed:
- (1) Natural Vegetation/Soil Dispersal and Filtration. Discharge sump water onto areas of ground most advantageous for dispersal and filtration of sediment, e.g. flat

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- heavily vegetated soil. When single point discharge does not function adequately, discharge water into a perforated pipe or series of pipes laid approximately level so that the brown water disperses over a wide area.
- (2) Silt Bag Filtration. Discharge sump water into one or more silt bags. Silt bags are constructed of Mirafi 180N (or approved equal) with sewn seam strengths of 90% efficiency according to ASTM D4632. Construct bag to hold and filter sump water. Place silt bag(s) on level ground having layer of straw one foot thick minimum.
 - (3) Settling Basin. Discharge sump water into one or more basins. The basins may be pre-manufactured tanks, folding tanks, geotextile or membranes placed over a sandbag or weed-free straw berm, or other similar basins designed to separate sediment from the water.
 - (4) Suspended Sediment Coagulation Agent. When other methods do not function adequately, add an approved coagulation agent to water prior to discharging the water onto natural vegetation, silt bag, or settling basin. Use a flocculation agent such as Chitisan-based Storm-Klear Gel-Floc, or approved equal. Use suspended sediment coagulation agent according to manufacturer's recommendations.
- (e) Stream Re-Watering. Monitor downstream during rewatering to prevent stranding of aquatic organisms below the construction site. Ensure that concrete is sufficiently cured or dried before coming into contact with stream flow.

157.13 Maintenance & Cleanup. Add the following:

When removing sandbags, spread sand away from the waterway; if coarse concrete aggregate meeting the requirements of Subsection 703.02 is used in the sandbags, the gravel may be distributed evenly across the waterway.

Remove geotextile and other non-biodegradable materials used in dewatering and sediment control operations from Government property, unless otherwise approved by the CO.

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170 - Develop Water Supply and Watering

170.00_0618_us_03_26_2007

Description

170.01 This work consists of developing an acceptable water supply, furnishing, hauling, and applying water.

Materials

170.02 Conform to the following subsection.

Water	725.01.
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Construction Requirements

170.03 Development of Supply & Access. Develop water supplies and access to the water supplies as required. Use designated water sources or other approved water sources. Before using non-designated water sources, obtain all necessary permissions, water rights, and permits.

170.04 Equipment.

(a) Water tanks. Provide mobile watering equipment with watertight tanks of known capacity. Provide for positive control of water application from the driver's position.

(b) Juvenile fish protection. All draft hoses being used to withdraw water from any live flowing stream or pond will utilize one of the following methods of screening.

(1) Perforated plate: Screen opening shall not exceed 3/32 or 0.0938-inches.

(2) Profile bar screen: The narrowest dimension in the screen openings shall not exceed 0.0689-inches in the narrowest direction.

(3) Woven wire screen: Screen openings shall not exceed 3/32 or 0.0938-inches in the narrow direction.

All methods shall be cleaned frequently with either wire brushing, flushing or other acceptable method.

170.05 Application. Apply water uniformly without ponding or washing.

170.06 Acceptance. Developing water supplies and watering will be evaluated under Subsections 106.02 and 106.04.

Measurement and Payment

170.07 See Subsection 109.05.

Do not measure develop water supply and watering for payment.

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203 - Removal of Structures and Obstructions

203.01_nat_us_02_25_2005

203.01 Description.

Delete and replace with the following:

This work consists of disposing of construction slash and debris, salvaging, removing, and disposing of buildings, fences, structures, pavements, culverts, utilities, curbs, sidewalks, and other obstructions.

203.04_nat_us_02_18_2005

203.04 Removing Material.

Replace the fourth and fifth paragraphs with the following:

Where part of an existing culvert is removed, remove the entire culvert upstream from the removal. The remaining downstream culvert may be left in place if no portion of the culvert is within 12 inches of the subgrade, embankment slope, or new culvert or structure; and the culvert ends are sealed with concrete.

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

203.05_0618_us_05_30_2007

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(1)) Scattering method outside clearing limits. 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.

(f(2)): Scattering method inside clearing limits. 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.

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(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.

(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.

203.05_0618_us_03_26_2007

203.05 Disposing of Material

(a) Remove from project.

Delete the last two sentences

203.08_nat_us_02_24_2005

203.08 Payment

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Add the following:

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

204 - Excavation and Embankment

204.00_0618_us_02_11_2008

Delete Section 204 in its entirety and replace with the following.

Description

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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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

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.

(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 When blasting rock, use blasting methods according to Subsection 205.08.

(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.

(e) **Drainage Excavation.** Drainage excavation includes construction of all ditches, minor channel changes, drainage dips, catchbasins, surface water deflectors, and other minor drainage structures. Compact by Method (f) unless otherwise shown on the plans. Excavate on a uniform grade between control points.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

204.07 Subexcavation. Excavate material to the limits as designated. 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.** Unless otherwise designated by the CO, remove topsoil. 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.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

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(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 sheepfoot 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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

(d) Compaction D. Hauling and Spreading Equipment. Adjust the moisture content to a level suitable for compaction. Compact the material by operating equipment over the full width of the roadway.

(e) Compaction E. Roller Compaction. Adjust the moisture content to a level suitable for compaction. Operate Rollers over the full width of each layer until visual displacement ceases, but not fewer than three complete passes. Use rollers that meet the following requirements:

(1) Steel wheeled rollers, other than vibratory, capable of exerting a force of not less than 250 pounds per inch of width of the compression roll or rolls.

(2) Vibratory steel wheeled rollers equipped with amplitude and frequency controls with a minimum weight of 6 tons, specifically designed to compact the material on which it is used.

(3) Pneumatic-tired rollers with smooth tread tires of equal size that will provide a uniform compacting pressure for the full width of the roller and capable of exerting a ground pressure of at least 80 psi.

(4) Sheepsfoot, tamping, or grid rollers capable of exerting a force of 250 lbs/inch of width of roller drum.

(f) Compaction F. Mechanical Tamper. Adjust the moisture content of the backfill material to a moisture content suitable for compaction. Compact each 6 inch layer with a minimum of three complete passes with a mechanical tamper.

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 through M roads.

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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 $1\frac{1}{3}V:1H$ 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 according to Subsection 204.11 (c) Compaction C. Do not mix clearing or other material not subject to payment with the waste material. When there is not a pay item for waste, shape and compact the waste material in its final location according to Subsection 204.11 (c) Compaction C.

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.

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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.

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(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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

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.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

**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 layer	“	“	“
		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 layer	“	“	“
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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

**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.

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**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

209 - Structure Excavation and Backfill

209.10_nat_us_10_23_2007

209.10 Backfill.

(a) General.

Add the following:

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

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

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

(b) Pipe culverts.

(1) Pipe culverts with compacted backfill.

Add the following:

Excavate an area on each side of the pipe as needed to effectively achieve compaction requirements. Backfill without damaging or displacing the pipe. Complete backfilling of the trench with suitable material.

209 - Structure Excavation and Backfill

209.11_nat_us_02_24_2005

209.11 Compacting.

Delete the subsection and add the following:

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

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

Method B. Adjust the moisture content of the backfill material to a moisture content suitable for compaction. Compact each layer using appropriate compaction equipment until visual displacement ceases. For compaction under sections 252, 254, 255, 257, 258 and 262 compact with a vibratory steel wheeled roller with a mass of at least 8 tons.

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

Table 209-1 Sampling and Testing Requirements

Add the following:

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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

230 - Roadside Brushing

230.00_0618_us_03_31_2010

230.01 Description. This work consists of removing limbs, residual slash, roadside brush and small trees within the brushing limits designated in the plans, including turnouts.

Construction Requirements

230.02 General. Cut all brush and small trees, (7 inch diameter or less at the point of cut) within the brushing limits and outside the roadbed no higher than 6 inches above the ground surface or obstructions such as rocks or stumps. Trees beyond the bottom of ditch and beyond the hinge point on the fill slope side, with a diameter larger than 6 inches at a point 1 feet above the ground shall be limbed to a height of 14 feet above the road surface.

Cut all brush and trees located in the roadbed. Grub and haul stumps to designated waste areas or as directed by the Contracting Officer. Smooth and shape the disturbed areas where stumps are removed to prevent water ponding.

230.03 Windfalls. Cut windfalls lying within or across the brushing limits to a horizontal distance of 4 feet from each shoulder or at the brushing limit, whichever is least. Dispose of windfall material as slash.

230.04 Slash Treatments. Remove limbs, chunks, and debris within the roadway in excess of 3 feet in length or 3 inches in diameter, or concentrations which may plug ditches or culverts, from the traveled way, shoulders, ditches and water courses.

Dispose of slash in accordance with one or more of the following methods, as shown in the bid schedule:

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

- (1) **Scattering.** Scatter slash outside the roadway limits without damaging trees. Do not scatter any material in streambeds, culvert inlets or outlets, drainage ways or cattleguards.
- (2) **Chipping.** Process slash through a chipping machine. Deposit chips on embankment slopes or outside the roadway to a loose depth less than 6 inches.
- (3) **Piling.** Pile slash in designated locations. Place and construct piles so that if the piles are burned, the burning will not damage surrounding trees. Keep piles free of dirt. Cut unmerchantable logs into lengths less than 20 feet.
- (4) **Decking.** Deck logs in excess of 10 feet long and 8 inches in diameter in designated locations. Logs shall be limbed and decks are to be stable and free of brush and soil. Treat other material according to designated slash treatment methods.
- (5) **Placing slash on embankment slopes.** Place slash on embankments slopes as designated in the plans to reduce soil erosion. Place slash as flat as practicable on slope. Do not place closer than 2 feet below shoulder. Priority for use of available slash in for: (1) through fills; (2) insides of curves.
- (6) **Burying.** Bury slash at designated locations. Mat slash down in layers and cover with rock and soil.
- (7) **Piling & burning.** Pile and burn slash in designated locations. Construct piles so that burning does not damage remaining trees.

Measurement

230.05 Measure the Section 230 items listed in the bid schedule according to Subsection 109.02. Quantities will be the number of miles and fractions thereof along the road centerline, regardless of the amount of work required.

Payment

230.06 The accepted quantities will be paid at the contract price per unit of measurement for the Section 230 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

303 - Road Reconditioning

303.01_0618_us_09_10_2008

303.01 Work.

Delete and add the following:

This work consists of reconditioning ditches, shoulders, roadbeds, cattleguards, asphalt surfaces, bridge decks, and aggregate surfaces.

303.07 Roadway Reconditioning.

Add the following:

Asphalt Surfaces

Clean the existing surface of all loose material, dirt, or other deleterious substances by approved methods.

Bridge Decks

Clean bridge deck and deck drains of all loose soil material, move all material longitudinally off the deck while cleaning. Use equipment that has the capability of removing all loose material without causing damage to the deck surface. Use of hydraulic flushing or pneumatic equipment will not be permitted unless approved by the Contracting Officer.

303.04_0618_us_11_26_2008

303.04 Shoulder Reconditioning.

Delete and add the following:

Remove all slide material, vegetation and other debris from existing shoulders including shoulders of turnouts and other widened areas. Reshape shoulders and dispose of waste as designated.

303.05_0618_us_03_26_2007

303.05 Roadbed Reconditioning.

Delete fourth sentence and replace with the following:

Scarify to the depth and width shown on the drawings, remove surface irregularities, and shape to provide a uniform surface.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

303.10_0618_us_03_26_2007

303.10

Measurement

Remove and replace the first sentence in the third paragraph with the following:

Measure roadbed reconditioning, aggregate surface reconditioning, roadway reconditioning, and pulverizing by the mile, by the foot, by the station or by the square yard.

303.11_nat_us_03_29_2005

303.10 Measurement

Modify the second paragraph as follows:

Measure ditch reconditioning and shoulder reconditioning by the mile, station, or foot horizontally along the centerline of the roadway for each side of the roadway.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

322 - Minor Aggregate Courses

322.00_nat_us_10_14_2011

Description

322.01 This work consists of constructing one or more courses of aggregate on a prepared surface. Work includes producing aggregate by grid rolling, screening, or crushing methods, or placing pit-run or Government-furnished aggregate.

Surface aggregate grading is designated as shown in Table 703-3.

Subbase and base aggregate grading is designated as shown in Table 703-2.

Screened aggregate grading is designated as shown in Table 703-16.

Material

322.02 Conform to the following Subsections:

Aggregate	703.05
Water	725.01

Construction Requirements

322.03 General. Prepare the surface on which the aggregate course is placed according to Section 204 or 303 as applicable.

Request approval of the roadbed in writing before placing aggregate.

Develop, haul, and apply water in accordance to Section 170.

Submit target values within the gradation ranges shown in Table 703-2 or 703-3 for the required grading. After reviewing the proposed target values the CO will determine the final values for the gradation and notify the Contractor in writing.

No quality requirements or gradation other than maximum size will be required for pit run and grid-rolled material. For grid rolling, use all suitable material that can be reduced to maximum size.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

After processing on the road, remove all oversize material from the road and dispose of it as directed by the CO.

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

322.04 Mixing and Spreading. Mix the aggregate and adjust the moisture content to obtain a uniform mixture with a moisture content suitable for the specified compaction method. Spread and shape the mixture on the prepared surface in a uniform layer with no segregation of size, and to a loose depth that will provide the required compacted thickness.

Do not place in layers exceeding 6 inches in compacted thickness for aggregate base and surface courses or twice the maximum particle size for screened aggregate. When more than one layer is necessary, compact each layer according to Subsection 322.05 before placing the next layer. Route hauling and leveling equipment uniformly over the full width.

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

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

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

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

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

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

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

Compaction E. Removed.

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

Compaction G. Removed.

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

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

322.06 Construction Tolerance. If grade finishing stakes are required, finish the surface to within ± 0.10 feet from staked line and grade elevation.

If grade finishing stakes are not required, shape the surface to the required template and check the surface with a 10-foot straightedge. Defective areas are surface deviations in excess of 1/2 inch in 10 feet between any two contacts of the straightedge with the surface.

Correct all defective areas by loosening the material, adding or removing material, reshaping, and compacting.

Ensure that the compacted thickness is not consistently above or below the specified thickness. The maximum variation from the compacted specified thickness is 1/2 inch.

Ensure that the compacted width is not consistently above the specified width. The maximum variation from the specified width will not exceed +12 inches at any point.

322.07 Maintenance. Maintain the aggregate course to the correct line, grade, and cross-section by blading, watering, rolling, or any combination thereof until placement of the next course. Correct all defects according to Subsection 322.06.

322.08 Acceptance. See Table 322-1 or Table 322-2 as applicable, for sampling and testing requirements.

Aggregate gradation and surface course plasticity index will be evaluated under Subsection 106.04. If the aggregate is obtained from a Government stockpile then the above characteristics will be evaluated under Subsection 106.02. Other aggregate quality properties will be evaluated under Subsections 106.02 and 106.04. Placement of aggregate courses will be evaluated under Subsections 106.02 and 106.04.

The allowable upper and lower aggregate gradation limits are the Target Value plus or minus the allowable deviations shown in Tables 703-2 and 703-3.

The allowable upper and lower Plasticity index limits for surface courses are stated in 703.05(b).

Preparation of the surface on which the aggregate course is placed will be evaluated under Section 204 or 303 as applicable.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Measurement

322.09 Measure the Section 322 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

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

If the measurement for aggregate is by cubic yard using contract quantities then measure aggregate by the cubic yard in-place once compacted, otherwise measurement for aggregate by the cubic yard is measured by the cubic yard in the hauling vehicle.

Measure thickness perpendicular to the grade of the travelway.

Measure width perpendicular to the centerline.

Payment

322.10 The accepted quantities will be paid at the contract price per unit of measurement for the Section 322 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

**Table 322-1
Sampling and Testing Requirements**

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time	
Aggregate source quality 703.05	Measured and tested for conformance (106.04 & 105)	L.A. abrasion (coarse)	—	AASHTO T 96	1 per type & source of material	Source of material	Yes, when requested	Before using in work	
		Sodium sulfate soundness loss (coarse & fine)	—	AASHTO T 104	“	“	“	“	
		Durability index (coarse & fine)	—	AASHTO T 210	“	“	“	“	“
		Fractured faces	—	ASTM D 5821	“	“	“	“	“
Subbase, Base, and Surface courses	Measured and tested for conformance (106.04)	Sample	—	AASHTO T 2	2 per day	From windrow or roadbed after processing or from approved crusher sampling device	Yes	48 hours	

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

**Table 322-1 (continued)
Sampling and Testing Requirements**

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time	
Subbase, Base, and Surface	Measured and tested for conformance (106.04)	Moisture-density Method D	—	AASHTO T 99 (1)	1 per type and source of material	Source of material	Yes, when requested	Before using in work	
		Moisture-density Method F	—	AASHTO T 180(1)	“	“	“	“	
		In-place density & moisture content	—	—	AASHTO T 310 or other approved procedures	3 per day	In-place	—	Before placing next layer
			—	—	—	—	—	—	—

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

**Table 322-2
Sampling and Testing Requirements**

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Screened Aggregate	Measured and tested for conformance (106.04)	Sample	—	AASHTO T 2	2 per day	From windrow or roadbed after processing or from approved crusher sampling device	Yes	48 hours

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.

635 - Temporary Traffic Control

635.03_nat_us_05_13_2004

635.03 General.

Add the following:

Install temporary traffic control signs to temporary posts or approved temporary sign mounts.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

703 – Aggregate

703.05_nat_us_08_14_2009

Delete 703.05 and replace with the following:

703.05 Subbase, Base, Surface Course, and Screened Aggregate.

(a) Subbase or base aggregate. Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming the following:

(1) Gradation	Table 703-2
(2) Liquid limit, AASHTO T 89	25 max.
(3) Plastic limit, AASHTO T 90	Nonplastic
(4) Los Angeles abrasion, AASHTO T 96	40% max.
(5) Sodium sulfate soundness loss (5 cycles), AASHTO T 104	12% max.
(6) Durability index (coarse), AASHTO T 210	35 min.
(7) Durability index (fine), AASHTO T 210	35 min.
(8) Fractured faces, ASTM D 5821	50% min.
(9) Free from organic matter and lumps or balls of clay	

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary. Fine aggregate, material passing the No. 4 sieve, shall consist of natural or crushed sand and fine mineral particles.

(b) Surface course aggregate. Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming the following:

(1) Gradation	Table 703-3
(2) Liquid limit, AASHTO T 89	35 max.
(3) Plastic Index, AASHTO T 90	
a) If the percent passing the No. 200 sieve is less than 12%	2 to 9
b) If the percent passing the No. 200 sieve is greater than 12%	Less than 2
(4) Los Angeles abrasion, AASHTO T 96	40% max.
(5) Sodium sulfate soundness loss (5 cycles), AASHTO T 104	12% max.
(6) Durability index (coarse), AASHTO T 210	35 min.
(7) Durability index (fine), AASHTO T 210	35 min.
(8) Fractured faces, ASTM D 5821	75% min.
(9) Free from organic matter and lumps or balls of clay	

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Do not furnish material that contains asbestos fibers.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary. Fine aggregate, material passing the No. 4 sieve, shall consist of natural or crushed sand and fine mineral particles.

(c) Screened aggregate – Furnish hard, durable particles or fragments of stone, slag, or gravel conforming the following:

- | | |
|--|--------------|
| (1) Gradation | Table 703-16 |
| (2) Plastic Index, AASHTO T 90 | Less than 9 |
| (3) Los Angeles abrasion, AASHTO T 96 | 55% max. |
| (4) Free from organic matter and lumps or balls of clay. | |

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Delete Table 703-2 and replace with the following:

**Table 703-2
Target Value Ranges for Subbase and Base Gradation
Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)**

Sieve Size	Grading Designation				
	A (Subbase)	B (Subbase)	C (Base)	D (Base)	E (Base)
2½ inch	100				
2 inch	97 – 100	100			
1½ inch		97 – 100			
1 inch	65 – 79 (6)		80 – 100 (6)	100	
¾ inch			64 – 94 (6)	86 – 100 (6)	100
½ inch	45 – 59 (7)				
⅜ inch			40 – 69 (6)	51 – 82 (6)	62 – 90 (6)
No. 4	28 – 42 (6)	40 – 60 (8)	31 – 54 (6)	36 – 64 (6)	36 – 74 (6)
No. 40	9 – 17 (4)			12 – 26 (4)	12 – 26 (4)
No. 200	4.0 – 8.0 (3)	4.0 – 12.0 (4)	4.0 – 7.0 (3)	4.0 – 7.0 (3)	4.0 – 7.0 (3)

() The value in the parentheses is the allowable deviation (±) from the target values..

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Delete Table 703-3 and replace with the following:

**Table 703-3
Target Value Ranges for Surface Gradation
Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)**

Sieve Size	Grading Designation							
	F	G	H	S	T	U		
1 1/2 inch	100			100				
1 inch	97-100	100		72 - 92 (6)	100			
3/4 inch	76-89 (6)	97 - 100	97 - 100			100		
1/2 inch					71 - 91 (6)			
3/8 inch	56-68 (6)	70 - 80 (6)	80 - 92 (6)	51 - 71 (6)		71 - 90 (6)		
No. 4	43-53 (7)	51 - 63 (7)	58 - 70 (7)	36 - 53 (7)	43 - 60 (7)	50 - 68 (7)		
No. 8				26 - 40 (6)	30 - 46 (6)	34 - 51 (6)		
No. 16	23-32 (6)	28 - 39 (6)	28 - 40 (6)					
No. 40	15-23 (5)	19 - 27 (5)	16 - 26 (5)	14 - 25 (5)	16 - 28 (5)	19 - 30 (5)		
No. 200	10.0-16.0 (4)	10.0 - 16.0 (4)	9.0 - 14.0 (4)	8.0 - 15.0 (4)	8.0 - 15.0 (4)	8.0 - 15.0 (4)		

() The value in the parentheses is the allowable deviation (\pm) from the target values.
If the plasticity index (PI) is greater than 0, the TV range for the No. 200 sieve size is 8-12 (4).

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

Add Table 703-16:

Table 703-16

Gradation Requirements for Screened Aggregate

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)						
	Grading Designation						
	L	M	N	O	P	Q	R
6 inch	100	100					
4 inch			100	100			
3 inch					100	100	
2 inch							100
No. 4		15-45		15-45		15-45	

703.10_nat_us_04_11_2011

703.10(e) Flakiness Index.

Delete and replace with the following:

Flakiness Index, FLH T 508 30% max.

703.10(i) Adherent Coating.

Add the following:

Adherent coating on the aggregate, FLH T 512 0.5% max.

CLOVERDALE THIN T.S. SUPPLEMENTAL SPECIFICATIONS

718 - Traffic Signing and Marking Material

718.05_nat_us_08_05_2009

718.05 Aluminum Panels

Delete the third paragraph and replace with the following:

Clean, degrease and properly prepare the panels according to methods recommended by the sheeting manufacturer. Conversion coatings will conform to ASTM B-921 or ASTM B-449.