

**SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION/RECONSTRUCTION OF
SPECIFIED ROADS**

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OLY MOLY STEWARDSHIP

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SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY

Road No. 14315

Road Name NORTH SLOPE YAAK

Length (Miles) 0.8

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 188.68	\$ 188.68
20480	INSTALL OPEN TOP BOX CULVERT	AQ	LF	22.00	\$ 31.67	\$ 696.74
20483	J-HOLE CONSTRUCTION ON EXISTING ROAD	AQ	EA	1.00	\$ 183.49	\$ 183.49
25101	HAUL & PLACE RIPRAP, CLASS 1 , SOURCED ON SITE	CQ	CY	0.50	\$ 114.04	\$ 57.02
32222	GENERATE, HAUL & PLACE 4" MINUS ANGULAR PIT RUN, GRID ROLL COMPACTION 204.11.E.4	CQ	CY	9.00	\$ 24.77	\$ 222.93
71801	FURNISH & INSTALL TRAFFIC SIGNS, HARDWARE & POSTS	LSQ	LS	1.00	\$ 315.32	\$ 315.32

SUB-TOTAL: \$ 1,664.18

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY
 Road Name KILBRENNAN RIDGE A

Road No. 14321A
 Length (Miles) 0.89

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit	
					Price	Total
15101	Mobilization	LS	LS	1.00	\$ 1,929.82	\$ 1,929.82
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, LIGHT	CQ	STA	37.75	\$ 24.77	\$ 935.07
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, HEAVY	CQ	STA	9.25	\$ 75.23	\$ 695.88
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, MEDIUM	CQ	STA	47.00	\$ 37.61	\$ 1,767.67
20419	DRAINAGE EXCAVATION, OUTLET DITCH	AQ	LF	25.00	\$ 3.21	\$ 80.25
20453	EXCAVATION, COMPACTION E, FINISHING A, TOLERANCE L	CQ	CY	55.00	\$ 18.35	\$ 1,009.25
20480	INSTALL OPEN TOP BOX CULVERT	AQ	LF	18.00	\$ 30.00	\$ 540.00
20483	J-HOLE CONSTRUCTION ON EXISTING ROAD	AQ	EA	1.00	\$ 642.20	\$ 642.20
20701	EARTHWORK GEOTEXTILE, TYPE 2C (15'WIDE ROLL)	CQ	LF	410.00	\$ 3.00	\$ 1,230.00
25101	HAUL & PLACE RIPRAP, CLASS 1, SOURCED ON SITE	CQ	CY	0.50	\$ 77.19	\$ 38.60
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	STA	9.25	\$ 42.34	\$ 391.65
32222	GENERATE, HAUL & PLACE 4" MINUS ANGULAR PIT RUN, GRID ROLL COMPACTION 204.11.E.4	CQ	CY	387.00	\$ 28.07	\$ 10,863.09
62201	EQUIPMENT RENTAL, MEDIUM EXCAVATOR (315 CLASS)	AQ	HR	2.00	\$ 160.55	\$ 321.10
62201	EQUIPMENT RENTAL, LARGE END DUMP TRUCK (10 CY)	AQ	HR	5.00	\$ 137.61	\$ 688.05
62556	SEEDING, DRY, APPLICATION ONLY (GFM)	CQ	AC	1.40	\$ 198.28	\$ 277.59

SUB-TOTAL: \$ 21,410.22

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS
(Timber Sale)

Timber Sale OLY MOLY

Road No. 14393

Road Name SEARS & ROEBUCK

Length (Miles) 0.41

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 570.18	\$ 570.18
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, MEDIUM	CQ	STA	21.60	\$ 37.61	\$ 812.38
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, MEDIUM	CQ	STA	21.60	\$ 37.61	\$ 812.38
20453	EXCAVATION, COMPACTION E, SIDE CAST	CQ	CY	750.00	\$ 3.44	\$ 2,580.00
20481	CONSTRUCT 4% OUTSLOPE, COMPACTION E	AQ	EA	2.00	\$ 211.01	\$ 422.02
32222	GENERATE, HAUL & PLACE 4" MINUS ANGULAR PIT RUN, GRID ROLL COMPACTION 204.11.E.4	CQ	CY	48.00	\$ 28.07	\$ 1,347.36
62556	SEEDING, DRY, APPLICATION ONLY (GFM)	CQ	AC	0.60	\$ 198.28	\$ 118.97

SUB-TOTAL: \$ 6,663.29

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY

Road No. 2393

Road Name BIG EDDIE

Length (Miles) 0.81

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 3,114.04	\$ 3,114.04
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, LIGHT	CQ	STA	10.00	\$ 24.77	\$ 247.70
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, LIGHT	CQ	STA	43.00	\$ 26.61	\$ 1,144.23
20453	EXCAVATION, COMPACTION E, FINISHING A, TOLERANCE L	CQ	CY	150.00	\$ 18.35	\$ 2,752.50
20453	EXCAVATION, COMPACTION E, SIDE CAST	CQ	CY	1,430.00	\$ 16.51	\$ 23,609.30
20480	INSTALL OPEN TOP BOX CULVERT	AQ	LF	80.00	\$ 30.00	\$ 2,400.00
20483	J-HOLE CONSTRUCTION ON EXISTING ROAD	AQ	EA	1.00	\$ 642.20	\$ 642.20
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	MI	0.81	\$ 2,112.61	\$ 1,711.21
62201	EQUIPMENT RENTAL, MEDIUM EXCAVATOR (315 CLASS)	AQ	HR	3.00	\$ 160.55	\$ 481.65
62201	EQUIPMENT RENTAL, LARGE END DUMP TRUCK (10 CY)	AQ	HR	5.00	\$ 137.61	\$ 688.05
62556	SEEDING, DRY, APPLICATION ONLY (GFM)	CQ	AC	1.00	\$ 198.28	\$ 198.28

SUB-TOTAL: \$ 36,989.16

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY
Road Name KILBRENNAN LAKE C

Road No. 2394C
Length (Miles) 0.06

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 131.58	\$ 131.58
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, HEAVY	CQ	STA	5.00	\$ 76.15	\$ 380.75
20482	REMOVE/INSTALL EARTH BERM, COMPACTION E	AQ	EA	2.00	\$ 100.92	\$ 201.84
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	STA	3.00	\$ 42.34	\$ 127.02
32222	GENERATE, HAUL & PLACE 4" MINUS ANGULAR PIT RUN, GRID ROLL COMPACTION 204.11.E.4	CQ	CY	9.00	\$ 28.95	\$ 260.55
70601	4" DIAMETER HDPE PIPE	AQ	LF	60.00	\$ 5.50	\$ 330.00

SUB-TOTAL: \$ 1,431.74

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY

Road No. 4408

Road Name YACKETY-YAAK

Length (Miles) 1.29

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 1,464.91	\$ 1,464.91
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, LIGHT	CQ	STA	60.00	\$ 24.77	\$ 1,486.20
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, MEDIUM	CQ	STA	8.15	\$ 37.61	\$ 306.52
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, MEDIUM	CQ	STA	68.15	\$ 37.61	\$ 2,563.12
20453	EXCAVATION, COMPACTION E, FINISH A, TOLERANCE L	CQ	CY	270.00	\$ 14.68	\$ 3,963.60
20453	EXCAVATION, COMPACTION E, SIDE CAST	CQ	CY	630.00	\$ 8.26	\$ 5,203.80
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	STA	34.00	\$ 42.34	\$ 1,439.56
62556	SEEDING, DRY, APPLICATION ONLY (GFM)	CQ	AC	1.50	\$ 198.28	\$ 297.42

SUB-TOTAL: \$ 16,725.13

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY
 Road Name UPPER SEARS A

Road No. 4446A
 Length (Miles) 0.6

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit	
					Price	Total
15101	Mobilization	LS	LS	1.00	\$ 570.18	\$ 570.18
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, LIGHT	CQ	STA	15.80	\$ 24.77	\$ 391.37
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, LIGHT	CQ	STA	15.80	\$ 26.61	\$ 420.44
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, MEDIUM	CQ	STA	15.70	\$ 37.61	\$ 590.48
20482	REMOVE/INSTALL EARTH BERM, COMPACTION E	AQ	EA	2.00	\$ 100.92	\$ 201.84
62201	EQUIPMENT RENTAL, MEDIUM EXCAVATOR (315 CLASS)	AQ	HR	10.00	\$ 160.55	\$ 1,605.50
62201	EQUIPMENT RENTAL, LARGE END DUMP TRUCK (10 CY)	AQ	HR	20.00	\$ 137.61	\$ 2,752.20
62556	SEEDING, DRY, APPLICATION ONLY (GFM)	CQ	AC	0.30	\$ 198.28	\$ 59.48

SUB-TOTAL: \$ 6,591.49

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS
(Timber Sale)

Timber Sale OLY MOLY

Road No. 4446C

Road Name UPPER SEARS C

Length (Miles) 0.34

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 324.56	\$ 324.56
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, HEAVY	CQ	STA	18.00	\$ 76.15	\$ 1,370.70
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, MEDIUM	CQ	STA	18.00	\$ 37.61	\$ 676.98
20483	J-HOLE CONSTRUCTION ON EXISTING ROAD	AQ	EA	1.00	\$ 642.20	\$ 642.20
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	STA	15.00	\$ 42.34	\$ 635.10
62556	SEEDING, DRY, APPLICATION ONLY (GFM)	CQ	AC	0.10	\$ 198.28	\$ 19.83

SUB-TOTAL: \$ 3,669.37

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY

Road No. 4458

Road Name K SQUARED

Length (Miles) 0.64

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 517.54	\$ 517.54
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, LIGHT	CQ	STA	12.00	\$ 24.77	\$ 297.24
32222	GENERATE, HAUL & PLACE 4' MINUS ANGULAR PIT RUN, GRID ROLL PER 204.11 (e)(4)	CQ	CY	210.00	\$ 19.30	\$ 4,053.00
62201	EQUIPMENT RENTAL, MEDIUM EXCAVATOR (315 CLASS)	AQ	HR	2.00	\$ 160.55	\$ 321.10
62201	EQUIPMENT RENTAL, LARGE END DUMP TRUCK (10 CY)	AQ	HR	4.00	\$ 137.61	\$ 550.44

SUB-TOTAL: \$ 5,739.32

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS

(Timber Sale)

Timber Sale OLY MOLY
Road Name K SQUARED F

Road No. 4458F
Length (Miles) 0.05

Item Number	Description	Method of Meas.	Unit	S.R.C Unit		Total
				Quantity	Price	
15101	Mobilization	LS	LS	1.00	\$ 8.77	\$ 8.77
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, LIGHT	CQ	STA	2.80	\$ 26.61	\$ 74.51

SUB-TOTAL: \$ 83.28

TOTAL ALL ROADS: \$ 311,490.99

SCHEDULE OF ITEMS
(Timber Sale)

Timber Sale OLY MOLY

Road No. 2394

Road Name KILBRENNAN LAKE

Length (Miles) 0

Item Number	Description	Method of Meas.	Unit	Quantity	S.R.C Unit Price	Total
15101	Mobilization	LS	LS	1.00	\$ 219.30	\$ 219.30
32222	STOCKPILE ANGULAR PIT RUN, 4" MINUS	CQ	CY	500.00	\$ 4.39	\$ 2,195.00

SUB-TOTAL: \$ 2,414.30

TOTAL ALL ROADS: \$ 311,490.99

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Preface

Preface_wo_03_15_2004_m

Delete all but the first paragraph and add the following:

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

101 - Terms, Format, and Definitions

101.00_nat_us_07_25_2005

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

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

101.03_nat_us_06_16_2006

101.03 Abbreviations.

Add the following to (a) Acronyms:

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

Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04_nat_us_03_29_2007

101.04 Definitions.

Delete the following definitions and substitute the following:

Bid Schedule--The Schedule of Items.

Bridge--No definition.

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

Culvert--No definition.

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

Add the following:

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

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

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

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

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

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

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

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

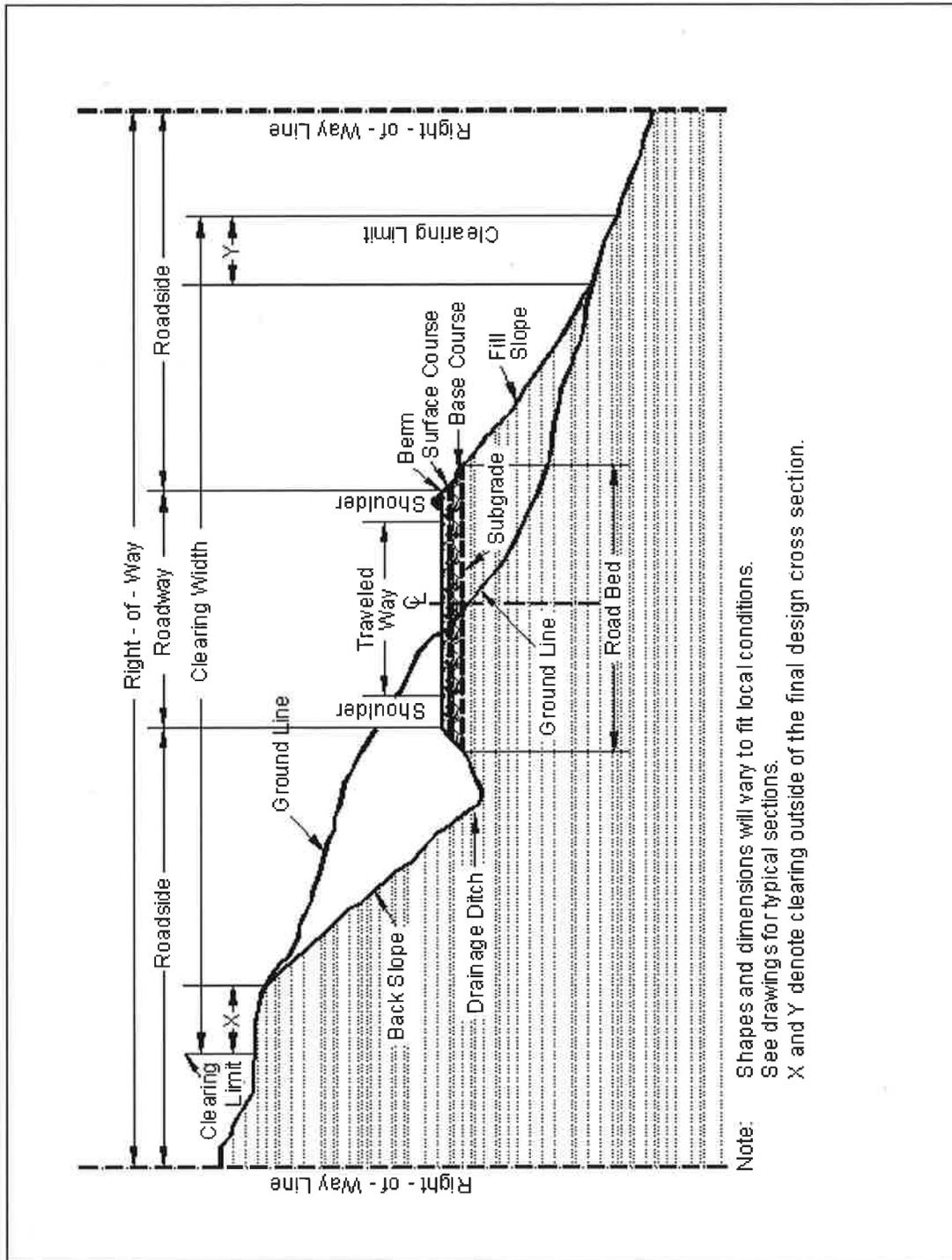
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

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

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

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

Figure 101-1—Illustration of road structure terms.



102 - Bid, Award, and Execution of Contract

102.00_nat_us_02_16_2005

102 Bid, Award, and Execution of Contract

Delete Section 102 in its entirety.

103 - Scope of Work

103.00_nat_us_02_16_2005

Deletions

Delete all but subsection 103.01 Intent of Contract.

104 - Control of Work

104.00_nat_us_06_16_2006

Deletions

Delete Sections 104.01, 104.02, and 104.04.

104.06_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.

105 - Control of Material

105.02_nat_us_01_18_2007

105.02 Material Sources.

105.02(a) Government-provided sources.

Add the following:

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

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.

106 - Acceptance of Work

106.07_nat_us_05_11_2004

106.07 Delete

Delete subsection 106.07.

107 - Legal Relations and Responsibility to the Public

107.05_nat_us_05_11_2004

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.06_nat_us_06_16_2006

107.06 Contractor's Responsibility for Work.

Delete the following from the first paragraph.

“except as provided in Subsection 106.07”.

107.09_nat_us_06_16_2006

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

107.10_nat_us_06_16_2006

107.10 Environmental Protection.

Add the following:

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

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

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

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

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

108 - Prosecution and Progress

108.00_nat_us_02_16_2005

108 Delete.

Delete Section 108 in its entirety.

109 - Measurement and Payment

109.00_nat_us_02_17_2005

109 Deletions

Delete the following entire subsections:

109.06 Pricing of Adjustments.

109.07 Eliminated Work.

109.08 Progress Payments.

109.09 Final Payment.

109.02_nat_us_06_16_2006

109.02 Measurement Terms and Definitions.

(b) Contract quantity.

Add the following:

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

Change the following:

“(b) Cubic yard” to “(c) Cubic yard”.

Add the following definition:

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

109.02_0114_us_06_09_2008

109.02 Measurement Terms and Definitions.

Add the following definition:

(q) Actual quantity. (AQ) These quantities are determined from measurements of completed work.

151 - Mobilization

151.00_01_us_10_11_2006

Delete Section 151 in its entirety and replace with the following.

Description

151.01 This work consists of moving personnel, equipment, material, and incidentals to the project and performing all work necessary before beginning work at the project site; obtaining of permits, insurance, and bonds. This work also includes washing and treating construction equipment and vehicles necessary for equipment transport to remove seeds, plants, and plant

fragments before the equipment is used on Forest Service lands, according to the requirements within.

Construction Requirements

Wash the sides, tops, and undercarriages of all construction equipment. Remove all seeds, plants, plant fragments, dirt, and debris from the construction equipment. Only equipment inspected by the Forest Service will be allowed to operate within the project area. All subsequent move-ins of equipment to the project area will be treated in the same manner as the initial move-in. This requirement does not apply to cars, pickup trucks, and other vehicles that regularly travel between the construction site and areas off the National Forest.

Equipment will be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment, components or the need for specialized inspection tools is not required.

Notify the CO in writing at least 72 hours before moving any construction equipment onto the national forest. Notification will include an agreed upon location where the equipment will be available for inspection by the Forest Service. Inspection will be required after every cleaning.

Use methods of cleaning and locations for cleaning approved by the CO.

For work at a commercial washing facility, use an approved facility.

New infestations of noxious weeds of concern to Forest Service and identified by either Contractor or Forest Service, in the Project Area or on the haul route, will be promptly reported to the other party. Contractor and Forest Service will agree on treatment methods to reduce or stop the spread of noxious weeds when new infestations are found. A current list of noxious weeds of concern to Forest Service is available at each Forest Service office.

Measurement

151.02 Clean equipment prior to moving onto this project. The initial cleaning will not be included in the measurement for payment. Payment for cleaning will only be made if subsequent cleanings are ordered by the CO. Measurement shall be on an "each" basis, meaning one complete cleaning of all equipment required for this contract. Subsequent cleanings necessitated by the Contractor's actions but not directed by the CO will not be included in the measurement for payment.

Measure mobilization according to Subsection 109.02.

Payment

151.03 The accepted quantity, measured as provided in Subsection 109.02, will be paid at the contract price per unit of measurement for the Section 151 pay item shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for mobilization lump sum will be paid as follows:

(a) If applicable, bond premiums will be reimbursed according to FAR Clause 52.232-5 Payments Under Fixed-Price Construction Contracts, after receipt of the evidence of payment.

(b) When 5 percent of the original contract amount is earned from other bid items, 50 percent of the mobilization item, or 5 percent of the original contract amount, whichever is less, will be paid.

(c) When 10 percent of the original contract amount is earned from other bid items, 100 percent of the mobilization item, or 10 percent of the original contract amount, whichever is less, will be paid.

(d) Any portion of the mobilization item in excess of 10 percent of the original contract amount will be paid after final acceptance.

Include all costs associated with the initial cleaning of equipment in the unit bid price for Mobilization. Cleaning for subsequent move-ins will not be paid for unless after a suspension ordered by the CO.

152 - Construction Survey and Staking

152.00_01_us_10_11_2006

Delete Section 152 in its entirety and replace with the following.

Description

152.01 This work consists of furnishing qualified personnel and necessary equipment and material to survey, stake, calculate, and record data for the control of work. See provision F2.1.2 Construction Staking.

Personnel, equipment, and material shall conform to the following:

(a) **Personnel.** Furnish technically qualified survey crews experienced in highway construction survey and staking. Provide personnel capable of performing in a timely and accurate manner. An acceptable crew supervisor shall be on the project whenever surveying/staking is in progress.

Conduct construction staking under the direct supervision of a professional engineer registered for the state in which work is completed.

(b) **Equipment.** Furnish survey instruments and supporting equipment capable of achieving the specified tolerances.

(c) **Material.** Furnish acceptable tools, supplies, and stakes of the type and quality normally used in highway survey work and suitable for the intended use. Furnish stakes and hubs of sufficient length to provide a solid set in the ground with sufficient surface area above ground for necessary legible markings.

Use required stake dimensions and materials. Pre-paint the top 2 inches of all stakes and lath, or mark them with plastic flagging. Use designated colors for paint or flagging. Mark all stakes with a stake pencil that leaves a legible imprint, or with waterproof ink.

Do not use aerosol spray paints in the field. Provide for the safe storage use and clean-up of paint when on National Forest System Lands. Immediately report all spills to the CO, clean-up and disposal of spills and painting waste shall be in accordance with Federal state and local requirements.

Use moisture-resistant paper for survey notes. Keep notes in books with covers that will protect the contents and retain the pages in numerical sequence. At the conclusion of each road segment, the registered engineer shall affix the state authorized seal and sign all field books and drawings and attest in writing to the satisfactory completion of the project.

152.02 General. When indicated on the plans, a preliminary survey line has been established on the ground. The project location line is established by offsets from this preliminary line. Data relating to horizontal and vertical alignment, theoretical slope stake catch points, and other design data will be furnished.

Before beginning construction, notify the CO of any missing initial reference lines, control points, or stakes. Reestablish missing reference, control lines, or stakes as necessary to control subsequent construction staking operations

Perform additional calculations for convenient use of Government-furnished data. Provide immediate notification of apparent errors in the initial staking or in the furnished data.

Preserve all initial reference and control points. After beginning construction, replace all destroyed or disturbed initial reference or control points necessary to the work.

Before surveying or staking, discuss and coordinate the following with the CO:

- (a) Surveying and staking methods;
- (b) Stake marking;
- (c) Grade control for courses of material;
- (d) Referencing;
- (e) Structure control; and
- (f) Any other procedures and controls necessary for the work.

Survey and establish controls within the tolerances shown in Table 152-1.

Prepare field notes in an approved format. Furnish all survey notes at least weekly. All field notes and supporting documentation become the property of the Government upon completion of the work.

Start work only after staking for the affected work is accepted.

The construction survey and staking work may be spot-checked for accuracy, and unacceptable portions of work may be rejected. Resurvey rejected work, and correct work that is not within the tolerances specified in Table 152-1. Acceptance of the construction staking does not relieve the Contractor of responsibility for correcting errors discovered during the work and for bearing all additional costs associated with the error.

Remove and dispose of all flagging, lath, stakes, and other staking material after the project is complete.

152.03 Survey and Staking Requirements. Perform all survey, staking, recording of data, and calculations as necessary to construct the project from the initial layout to final completion. Reset stakes as many times as necessary to construct the work.

(a) Control points. Relocate initial horizontal and vertical control points in conflict with construction to areas that will not be disturbed by construction operations. Furnish the coordinates and elevations for the relocated points before the initial points are disturbed.

(b) Roadway cross-sections. Take roadway cross-sections normal to centerline. When the centerline curve radius is less than or equal to 200 feet, take cross-sections at a maximum centerline spacing of 25 feet. When the centerline curve radius is greater than 200 feet, take cross-sections at a maximum centerline spacing of 80 feet. When the centerline curve radius is greater than 500 feet, take cross-sections at a maximum centerline spacing of 50 feet. Take additional cross-sections at significant breaks in topography and at changes in the typical section. Along each cross-section, measure and record points at breaks in topography, but no further apart than 20 feet. Measure and record points to at least the anticipated slope stake and reference locations. Reduce all cross-section distances to horizontal distances from centerline.

(c) Slope Stakes and References. Locate slope stakes on designated portions of the road. Locate the slope stake catch points and use them to establish clearing limits and slope stake references.

Mark slope stakes with the station, the amount of cut or fill, the horizontal distance to centerline, and the slope ratios.

Place slope reference stakes at least 10 feet outside the clearing limit and mark with the offset distance to the slope stake.

Prior to clearing and grubbing operations, move the slope stake outside the clearing limit to the slope reference stake. After clearing and grubbing and before excavation, reset the slope stakes in their original position.

Use the designated method to establish the slope stake catchpoint.

- **Method I—Computed Method.** Use the template information shown in the plans or other Government-provided data to calculate the actual location of the catchpoint. The slope stake “catchpoint distance” provided may be used as a trial location to initiate slope staking. Recatch slope stakes on any section that does not match the staking report within the tolerances established in Table 152-2.
- **Method II—Catchpoint Measurement Method.** Determine the location of slope stake catchpoints by measuring the catchpoint distances shown in the plans or other Government-provided data.

(d) Clearing and grubbing limits. Set clearing and grubbing limits on both sides of centerline at roadway cross-section locations.

Establish clearing limits on each side of the location line by measuring the required horizontal or slope distances shown in the stake notes. Mark the clearing limits with flagging or tags on trees to be left standing, or on lath. Make markings intervisible, and no more than 90 feet apart.

After establishing clearing limits, move the location line stake outside the clearing limits for station identification purposes, and mark it with horizontal distance to location line

(e) Centerline reestablishment. Reestablish centerline from instrument control points. The maximum spacing between centerline points is 25 feet when the centerline curve radius is less than or equal to 200 feet. When the centerline curve radius is greater than 200 feet, the maximum distance between centerline points is 80 feet.

(f) Grade finishing stakes. Set grade finishing stakes, for grade elevations and horizontal alignment, on centerline and on each shoulder at roadway cross-section locations. Set stakes at the top of subgrade and the top of each aggregate course.

Where turnouts are constructed, set stakes on centerline, on each normal shoulder, and on the shoulder of the turnout. In parking areas, set hubs at the center and along the edges of the parking area. Set stakes in all ditches to be paved.

When the centerline curve radius is less than or equal to 200 feet, the maximum centerline spacing for stakes is 25 feet. When the centerline curve radius is greater than 200 feet the maximum centerline spacing for stakes is 80 feet. The maximum transverse spacing between stakes is 20 feet. Use brushes or guard stakes at each stake.

(g) Culverts. Stake culverts to fit field conditions, the final locations may differ from the plans. Set a culvert reference stake on the centerline of the culvert 10 feet from each end or beyond the clearing limit, whichever is greater. Record the following on culvert reference stakes:

- (1) Diameter, actual field measured length, and type of culvert.
- (2) The vertical and horizontal distance from the reference stake to the invert at the ends of the culvert.
- (3) Station of actual point where culvert intersects centerline.

Stake headwall for culverts by setting a hub with a guard stake on each side of the culvert on line with the face of the headwall. Perform this work after clearing is completed.

(h) Bridges. Set adequate horizontal and vertical control and reference points for all bridge substructure and superstructure components. Establish and reference the bridge chord or the bridge tangent. Also establish and reference the centerline of each pier, bent, and abutment.

(i) Retaining walls. Survey and record profile measurements along the face of the proposed wall and 5 feet in front of the wall face. Every 25 feet along the length of the wall and at all major breaks in terrain take cross-sections within the limits designated by the CO. For each cross-section, measure and record points every 25 feet and at all major breaks in terrain. Set adequate references and horizontal and vertical control points.

(j) Borrow and waste sites. Perform the work essential for initial layout and measurement of the borrow or waste site. Establish a referenced baseline, site limits, and clearing limits. Survey and record initial and final cross-sections.

(k) Permanent monuments and markers. Perform all survey and staking necessary to establish permanent monuments and markers. Set permanent monuments according to Section 621.

(l) Miscellaneous survey and staking. Perform all surveying, staking, and recording of data essential for establishing the layout and control of the following, as applicable:

- (1) Approach roads and trails;
- (2) Curb and gutter;
- (3) Guardrail;
- (4) Parking areas;
- (5) Paved waterways;
- (6) Special ditches;
- (7) Turf establishment;
- (8) Utilities;
- (9) Signs, delineators, and object markers; and
- (10) Pavement markings.
- (11) Cattleguards
- (12) Drain Dips
- (13) Erosion Control Measures

(m) Field Discrepancies. Immediately notify the CO if a discrepancy is encountered between the plans and field conditions which affect the final road location. Prepare recommendations, in writing, to the CO for adjustments to the design to better fit field conditions. Affix the state authorized seal and sign the recommendation attesting to the adequacy of the adjustment. Ensure that adjustments to the design follow all applicable regulations and are consistent with design standards and criteria. Adjustments shall minimize construction effort, such as clearing and embankment volumes. Gain written approval of the adjusted design from the CO before incorporating such adjustment in the field. Return to the original design as soon as practical.

Table 152-1 Tolerances for reestablishing centerline, traverse, and elevations.

Precision Class	Minimum Position Closure	Angular Accuracy (\pm)	L-Line Tangent Control Points ^a (\pm)	Vertical Closure ^b (\pm)
A (Bridges)	1/10,000	2 sets, direct/reverse 10 second rejection limit	N/A	0.02 ft or 0.02ft/1000ft ^c
B	1/5,000	2 sets, direct/reverse 20 second rejection limit	0.1 ft	0.02 ft or 0.02ft/1000ft ^c
C	1/1,000	1 set, direct/reverse 1 minute rejection limit	0.2 ft	0.5ft/1000ft
D	1/300	Foresight and backsight; 15 minute rejection limit	0.4 ft	1.0ft/1000ft
E	1/100	Foresight and backsight; 30 minute rejection limit	0.8 ft	1.0ft/1000ft

a. Accuracy of offset measurement.

b. Determine vertical closures at intervals not to exceed 2000 ft as measured along centerline.

c. Use greater value.

Table 152-2 Cross section and slope stake tolerances.

Item	Tolerances				
	A	B	C	D	E
Allowable deviation of cross-section line projection from a true perpendicular to tangents, a true bisector of angle points, or a true radius of curves	(±)2°	(±)3°	(±)3°	(±)5°	(±)5°
Take cross-sections topography measurements so that variations in ground from a straight line connecting the cross-section points will not exceed	0.5 ft	1.0 ft	2.0 ft	2.0 ft	3.0 ft
Horizontal and vertical accuracy for cross-sections, in feet or percentage of horizontal distance measured from traverse line.	0.1 ft or 0.4% ^a	0.15 ft or 0.6% ^a	0.2 ft or 1.0% ^a	0.2 ft or 1.0% ^a	0.3 ft or 1.0% ^a
Horizontal and vertical accuracy for slope stake and slope stake references, in feet or percentage of horizontal distance measured from centerline or reference stake.	0.1 ft or 0.4% ^a	0.15 ft or 0.6% ^a	0.2 ft or 1.0% ^a	0.2 ft or 1.0% ^a	0.3 ft or 1.0% ^a
Horizontal and vertical accuracy for clearing limits.	1.0 ft	1.0 ft	1.0 ft	1.5 ft	2.5 ft
a. Use greater value.					

152.04 Acceptance. Construction survey and staking will be evaluated under Subsections 106.02 and 106.04.

Measurement

152.05 Measure the Section 152 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

155 - Schedules for Construction Contracts

155.00_nat_us_05_11_2004

155 Delete.

Delete Section 155 in its entirety.

157 - Soil Erosion Control

157.02_01_us_08_23_2004

157.02 Materials

Add the following:

Provide bales, wattles, logs and rolls from a certified noxious weed free source.

157.03 General

Add the following:

Prior to the start of construction, submit a written plan for review that provides permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction. Include methods to minimize disturbance to the stream and prevent runoff from the construction site entering directly into the stream. The "Soil Erosion Control Plan" must address construction activities that have the potential for stream sedimentation.

201 - Clearing and Grubbing

201.00_nat_us_08_05_2009

201.02 Material:

Delete Tree wound dressing material reference.

201.03 General.

Delete the last sentence.

201.04 Clearing.

Delete the last sentence of (d).

201.01_nat_us_02_18_2005

201.01 Description

Replace with the following

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

201.04_nat_us_02_22_2005

201.04 Clearing. (c)

Delete paragraph (c) and replace with the following:

(c) In areas outside the excavation, embankment, and slope rounding limits, cut stumps to within 12 inches or one-third of the stump diameter of the ground, whichever is higher, measured on the side adjacent to the highest ground. For timber sales, stump heights will meet the requirements of the Timber Sale contract.

201.04 Clearing.

Delete subsection (d) and replace with the following:

(d) Do not cut vegetation less than 3 feet tall and less than 3 inches in diameter, that is within the clearing limits but beyond the roadway and not in a decking area, and that does not interfere with sight distance along the road.

Add the following:

(e) Trim branches of remaining trees or shrubs to give a clear height of 14 feet above the roadbed unless otherwise indicated. Trim tree limbs as near flush with the trunk as practicable.

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

201.06_nat_us_02_18_2005

201.06 Disposal.

Delete the first sentence of this subsection and substitute the following:

Dispose of merchantable timber designated for removal according to the provisions of the timber sale contract.

203 - Removal of Structures and Obstructions

203.00_01_us_10_11_2006

203.03 Salvaging Material.

Delete this subsection and add the following:

Unless shown on the plans, remove all designated material from the project area and National Forest land.

203.05 Disposing of Material.

(a) Remove from project.

Delete this paragraph and add the following:

All removed material may be salvaged by the Contractor unless otherwise shown on the plans. Dispose of all items not designated to be salvaged for the Government in any legal manner.

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.

203.05_nat_us_02_18_2005

203.05 Disposing of Material.

Add the following:

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

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

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

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

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

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

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

(l) Placing Slash on Embankment Slopes. Place construction slash on completed embankment slopes to reduce soil erosion. Place construction slash as flat as practicable on the completed

slope. Do not place slash closer than 2 feet below subgrade. Priority for use of available slash is for: (1) through fills; (2) insides of curves; and (3) ditch relief outlets.

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

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

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

203.08_nat_us_02_24_2005

203.08 Payment

Add the following:

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

204 - Excavation and Embankment

204.06_0114_us_07_06_2005

204.06 Roadway Excavation

Add the following:

- (d) **Drainage Excavation.** Drainage excavation includes construction of side ditches, minor channel changes, inlet and outlet ditches, furrow ditches, rolling drainage dips, surface water deflectors and other minor earth drainage structures as shown on the plans. Compaction for drainage excavation is as shown on the plans.

204.11 Compaction

Delete the first paragraph and replace it with the following:

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

Add the following compaction methods:

(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) 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) 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, approved by the CO.

204.14 Disposal of Unsuitable or Excess Material.

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

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

204.15 Acceptance

Delete the first paragraph.

204.13_0114_us_03_21_2008

204.13 Sloping, Shaping, and Finishing.

Delete section (d) and add the following:

(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 with suitable material. Finish roadbeds to the designated tolerance class as shown in table 204-2.

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

Use the designated 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. Grid roller or approved equal according to Subsection 204.11 (e).
- (3) Method C. For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.
- (4) Method D. Reduce in place or remove and dispose of rocks larger than 4 inches extending above the finished road surface.

Add Table 204-2—Construction Tolerances:

Table 204-2 Construction tolerances.

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

a. Maximum allowable deviation from construction stakes and drawings.

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

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

204.16_0114_us_02_25_2005

204.16 Measurement.

b) Unclassified borrow, select borrow, and select topping

Delete first paragraph and add the following:

Measure by the cubic yard in place.

209 - Structure Excavation and Backfill

209.00_01_us_10_11_2006

209.07 Dewatering

Delete the subsection and add the following:

Submit a Dewatering Plan 5 days prior to beginning excavation.

Construct diversion prior to performing any excavation. Construct diversions using water tight, non-eroding methods. Employ settling basins or other methods so that muddy water is not returned to stream. Install, operate, and remove diversions in a manner that minimizes erosion and sedimentation.

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.

209.11 Compacting.

Delete the subsection and add the following:

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

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 6 inch layer with a minimum of three complete passes or until visual displacement ceases using a mechanical tamper, (wacker-packer type or approved equal). 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. Compact each layer of backfill with a minimum of two passes with mechanical tamper, (wacker-packer type, or approved equal).

Method D. 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.

209.12 Acceptance.

Sampling and Testing Requirements

Add the following:

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

209.13 See Subsection 109.05

Delete the first sentence and replace with the following:

Do not measure structure excavation, bedding, and backfill for payment.

211 - Roadway Obliteration

211.00_01_us_10_11_2006

211.01 Description

Delete this subsection and replace with the following:

This work consists of the reclamation of roadways by the removal of culverts; construction of waterbars and leadoff ditches; restoration of stream channels; and seeding, fertilizing, and mulching of all disturbed areas. This work may include necessary diverting of live streams, pumping, bailing, draining, sheeting, bracing, and miscellaneous items required for execution of the work. Additionally, survey stakes depicting work locations may need to be re-established using original survey notes and/or plans.

Roadway reclamation methods are designated as follows:

(a) Method 1. Fill ditches and restore the roadway to approximate original ground contour or shape to blend with the terrain. Before placing embankment, loosen the roadbed by ripping or scarifying to the depth of 12-16 inches. Pull all embankments and apply the material to contour or fill ditches; or haul it to designated areas. Construct waterbars as shown on the plans. Scatter any available slash on obliterated roadway. Keep excavated material within the original roadway limits unless otherwise shown on the plans.

(b) Method 2. Shape the roadway to drain water. Fill ditches, outslope the roadbed and loosen the roadbed by ripping or scarifying to the depth of 12-16 inches to provide a seedbed and promote establishment of vegetation. Scatter any available slash on obliterated roadway. Construct waterbars as shown on the plans. Effectively close the road as shown in the plans and work logs.

(c) Method 3. Loosen the roadbed by scarifying to the depth of 12-16 inches. Construct waterbars as shown on the plans. Scatter any available slash on obliterated roadway. Eliminate all ruts and low spots that could hold water. Effectively close the road as shown in the plans and work logs.

(d) Method 4. Grade the roadbed to eliminate all ruts and low spots that could hold water.

(e) Method 5. Treat the roadway as shown on the plans.

211.02 Construction Requirements

Delete this subsection and replace with the following:

Remove all culverts designated to be removed from National Forest lands and dispose of them in any legal manner. All removed culverts may be salvaged by the Contractor for personal use. Excavate and finish to the lines shown on the plans. Seed, fertilize, and mulch all disturbed ground. Place Erosion Control Blankets and Straw Wattles as shown on the plans.

Dispose of bridges N/A or as shown on the plans.

230 - Roadside Brushing

230.00_0114_us_08_04_2005

Description

230.01 Work. This work consists of removing all vegetative material including limbs, residual slash, live roadside brush, and small trees within the brushing limits designated on the plans.

Construction

230.02 Brushing. Cut all brush and small trees (6 inches diameter, or less, at the point of cut) inside the brushing limits and outside the roadbed no higher than 4 inches above ground level (6 inches for machine brushing). If rocks or other obstructions are encountered, cut no higher than 6 inches above the obstruction. Limb live trees with a diameter larger than 6 inches to provide a clear height of 14 feet above the road surface.

Cut all brush and trees located on the roadbed as nearly flush to the road surface as possible so stumps will not become a hazard to vehicle tires.

230.03 Windfalls. Limb windfalls lying within or across the brushing limits, cut off at the top of the existing cut slope or 5 feet from the shoulder on the fill slope. Dispose of windfall material as slash.

230.04 Road Junctions. Do not deposit brushing debris on the roadway of adjoining roads.

230.05 Slash Treatment. Scatter slash outside the brushing limits without damaging residual trees. Slash is defined as any material that has a length greater than 36 inches or a diameter greater than 2 inches at any point. Do not deposit material in streams, streambeds, culvert inlets or outlets, drainage ways, or cattle guards.

230.06 Acceptance. Roadside brushing will be evaluated under Subsection 106.02.

Measurement

230.07 Method. Measure the Section 230 items listed in the bid schedule according to Subsection 109.02 and the following.

Linear measurements will be horizontal along the road centerline.

Quantities will be the number of miles (or stations) and fractions thereof along the road centerline.

Payment

230.08. 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.

249 - Composite Road Construction

249.00_0114_us_08_08_2006

Description

249.01 Work. Perform clearing and grubbing, excavation and embankment, and erosion control.

During clearing and grubbing, treat merchantable timber and construction slash, including all trees designated for removal.

Excavation and embankment includes borrow excavation; drainage excavation; placing all excavated material; and shaping the roadway, including approaches, turnarounds, ditches and drainages dips.

Perform erosion control by furnishing and placing seed, fertilizer, mulch and tackifier. Construct the roadway in conformance with the dimensions “shown on the plans” or as staked on the ground.

Construction

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

(a) Merchantable Timber. Deck or remove timber meeting Utilization Standards as “shown on the plans”.

(b) Unmerchantable Timber. Treat unmerchantable timber as “shown on the plans”.

(c) Large Construction Slash. Treat construction slash larger than 3 inches in diameter or longer than 3 feet by one or more of the following methods, as “shown on the plans”.

Method A. Incorporate construction slash into the embankment.

Method B. Windrow construction slash inside the clearing limits. When slash is windrowed, place it approximately parallel to the roadway outside the toe of the fill slope.

Method C. Scatter construction slash outside the roadway without damaging trees. Limb all logs. Place logs and stumps away from trees, positioned so they will remain in place and are not on top of one another.

Method D. Construct piles that are free of soil, with smaller slash well mixed with larger slash. Buck unmerchantable logs into lengths less than 30 feet prior to placement in piles.

Method E. Transport construction slash to a location “shown on the plans” or designated by the C.O.

Method F. Bury construction slash within the roadway limits. Construct mats in layers and cover the mats with at least 18 inches of rock and soil.

Method G. Construct piles of construction slash in the areas “shown on the plans” or staked on the ground. Construct piles so burning does not damage standing trees. Burn the piles until all the material remaining in the pile is charred or ash.

Method H. Bury the construction slash outside the roadway at the locations “shown on the plans” or staked on the ground. Construct mats in layers, and cover the mats with at least 18 inches of rock and soil. Slope the final surface to drain.

Method J. Construct a debris mat of construction slash under the road subgrade. Use tree limbs, tops, cull logs, split stumps, wood chunks, and other debris to form a mat. Place stumps upside down and blended into the mat as “shown on the plans”.

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

Immediately remove slash deposited in stream courses.

Fell all dead trees outside the clearing limits that lean toward the road and are sufficiently tall to reach the roadbed. Fell hazard or unstable live trees designated on the ground outside the clearing limits before felling timber in the immediate clearing vicinity.

Leave stump heights less than 12 inches or one-third of the stump diameter, whichever is greater, measured on the side adjacent to the highest ground. Leave felled trees outside the clearing limits in place, and treat them no further unless otherwise “shown on the plans”.

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

249.04 Grubbing. Grub within the limits as “shown on the plans”. Stumps outside the grubbing limits may remain if cut no higher than 12 inches or one-third the stump diameter, whichever is greater, above the original ground, measured on the uphill side, unless otherwise “shown on the plans”. Grub stumps that will protrude through the subgrade or have less than 6 inches of cover.

249.05 Excavation and Embankment. Construct the roadway to conform to the typical sections “shown on the plans”. Protect backslopes from being undercut. Embankment may be placed by side casting and end dumping.

Locate and use borrow material, remove and treat unsuitable or excess material, as “shown on the plans”.

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

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

Shape and finish the roadbed to the condition ordinarily accomplished by a crawler tractor with dozer blade to provide drainage of surface water, unless otherwise "shown on the plans". Do not permit individual rocks to protrude more than 4 inches above the subgrade of the roadbed.

Width tolerance for the roadbed is (+) 30 inches unless otherwise "shown on the plans".

249.06 Erosion Control. Perform erosion control measures, including seeding, as "shown on the plans". Use methods and rates of application, and types of seed, fertilizer, mulch, and tackifier, as specified in Section 625 and as "shown on the plans". Apply materials uniformly to the areas to be treated.

Measurement

249.07 Method. Measure the Section 249 items listed in the Bid Schedule according to Subsection 109.02.

Payment

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

251 - Riprap

251.01_0114_us_06_27_2011

251.01 Description

Delete the first sentence and add the following:

This work consists of hauling, and placing of Government Furnished riprap for bank protection, slope protection, drainage structures, erosion control, and other features shown on the plans.

251.02 Material.

Add the following:

When shown on the plans stone from the project site may be utilized.

251.07 Acceptance

Delete sampling and testing requirements of Table 251-1 and certification requirements of Subsection 106.03.

301 - Untreated Aggregate Courses

301.00_nat_us_03_03_2005

301 Title Change.

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

301.01_nat_us_03_03_2005

301.01 Work.

Add the following:

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

301.02_nat_us_05_16_2005

301.02 Material.

Add the following:

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

301.03_nat_us_02_28_2013

301.03 General.

Add the following:

Written approval of the roadbed is required before placing aggregate.

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

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

Develop and use Government furnished sources according to Section 105.

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

301.04_nat_us_03_03_2005

301.04 Mixing and Spreading.

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

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

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

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

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

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

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

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

301.05_0114_us_03_07_2005

301.05 Compacting

Delete the first and third paragraphs and add the following:

Compact the aggregate using the following method as specified:

(c.) Determine the maximum density of the mixture according to AASHTO 180, method D.

Compact each layer to at least 95 percent of maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedure.

(d.) Hauling and Spreading Equipment. Adjust the moisture content to a level suitable for compaction. Operate spreading and hauling equipment over the full width of each layer of the aggregate.

(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.

301.10_nat_us_03_03_2005

301.10 Payment

Delete the following:

adjusted according to Subsection 106.05

303 - Road Reconditioning

303.00_01_us_10_11_2006

Delete Section 303 in its entirety and replace with the following.

Description

303.01 This work consists of reconditioning ditches, shoulders, roadbeds, parking areas, turnouts, approach road intersections, cattleguards, asphalt surfaces and aggregate surfaces. Construct out slopes, clean and maintain all roadbed drainage structures when shown on the plans.

Material

303.02 Conform to the following Subsection:

Water 725.01

Construction Requirements

303.03 Ditch Reconditioning. Remove all slide material, sediment, vegetation, and other debris from the existing ditches and culvert inlets and outlets. Reshape ditches and culvert inlets and outlets to achieve positive drainage and a uniform ditch width, depth, and grade. Dispose of waste as shown on the plans.

303.04 Shoulder Reconditioning. Repair soft and unstable areas according to Subsection 204.07. Remove all slide material, vegetation, and other debris from existing shoulders

including shoulders of parking areas, turnouts, and other widened areas. Dispose of waste as shown on the plans.

303.05 Roadbed Reconditioning Repair soft and unstable areas according to Subsection 204.07. Remove all organic, deleterious material larger than 6 inches from the top 6 inches of subgrade. Dispose of waste as shown on the plans. Scarify, rip and shape the traveled way and shoulders at locations and to the depth and width designated on the plans. Remove surface irregularities and shape to provide a uniform surface.

Dispose of rock larger than 4 inches brought to the surface during scarification in areas designated on the plans.

For portions of roads not requiring scarification, the roadbed may contain rocks larger than 4 inches provided they do not extend above the finished roadbed surface. Reduce in place or remove rock extending above the finished roadbed surface. Dispose of removed rock in areas designated on the plans.

Compact using the following method as specified:

- (a) Compaction A. Operate equipment over the full width.
- (b) Compaction B. 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.

303.06 Aggregate Surface Reconditioning. Repair soft and unstable areas to the full depth of the aggregate surface and according to Subsection 303.05. Scarify to the depth of the aggregate surface or to a depth of 8 inches, whichever is less, and remove surface irregularities. Reshape, finish, and compact the entire aggregate surface according to Section 308.

303.07 Roadway Reconditioning. Perform all the applicable work described in Subsections 303.03 through 303.06.

Maintain the existing cross slope or crown unless otherwise shown on the plans. Establish a blading pattern that will retain the surfacing on the roadbed and provide a through mixing of the materials within the completed surface width.

Blade and shape the subgrade for both surfaced and unsurfaced roads when moisture content is suitable for compaction.

303.08 Pulverizing. Scarify the surface to the designated depth and width. Pulverize all material to a size one and one half times the maximum sized aggregate or to 1½ inches, whichever is greater. Mix, spread, compact, and finish the material according to Section 301.

303.09 Acceptance. See Table 303-1 for sampling and testing requirements. Road reconditioning work will be evaluated under Subsections 106.02 and 106.04.

Measurement

303.10 Measure the Section 303 items listed in the Schedule of Items according to Subsection 109.02 and the following as applicable.

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

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

Payment

303.11 The accepted quantities will be paid at the contract price per unit of measurement for the Section 303 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

306 - Dust Palliative

306.03_nat_us_03_02_2005

306.03 General.

Add the words “or rainy” after the word “foggy” in the third sentence.

306.04_nat_us_03_02_2005

306.04 Preparation and Application.

Add the following to the last paragraph:

When designated, begin compaction as soon as palliative has penetrated enough to prevent pickup of material. Operate rollers over the full width of each layer until visual displacement ceases.

306.06_nat_us_03_02_2005

306.06 Acceptance.

Add the following:

Submit certification and samples as specified in Table 306-1.

Add Table 306-1:

Table 306-1—Sampling and Testing.

Material or Product	Type of Acceptance (Subsection)	Characteristic	Test Method Specification	Sampling Frequency	Point of Sampling	Spilt	Reporting Time
	Production Certification (Subsection 106.03)	Chemical Composition	Subsection 725	1 per type of material	Source of materials	No	Prior to construction
		Toxicity Tests(1)	EPA Standard Operating Procedure 2022	“	“	“	“
		Specific Gravity Chart (2) (liquid non-petroleum products only)	-	“	“	“	“
		Material Safety Data Sheet	-	“	“	“	“
		Quality	-	First load and determined by the CO thereafter	Hauling vehicle (3)	Samples submitted to the Government	During construction

Note: 1) 96-Hour static toxicity test using Daphnia and juvenile rainbow trout (*Oncorhynchus mykiss*).

2) Specific Gravity Chart: Correlation of Specific Gravity with percent solids of constituent presented in 1 percent increments beginning with a 5 percent solution up to, including, and exceeding 5 percent (or the solubility limit of the product) the proposed concentration of the undiluted product.

3) If the product is liquid, obtain a two-liter sample from the transfer load. If the product is solid obtain a 1-pound sample from the load.

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.

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.

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.

Measurement

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

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

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

Measure thickness perpendicular to the grade of the travelway.

Measure width perpendicular to the centerline.

Payment

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

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

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

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

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

(1) Minimum of 5 points per proctor.

**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

602.00_01_us_10_12_2006

602.03 General

Add the following:

Clean and paint damaged coating caused by welding, field cutting, or handling in accordance with AASHTO M 36M and ASTM A 849.

602.05 Laying Metal Pipe

Add the following:

Install helically corrugated lock-seam pipe with the seam at the inlet end placed below the horizontal centerline. This, requirement also applies to the outlet end, when less than 5 feet below subgrade.

602.03_0114_us_08_04_2005

602.03 General.

Delete second paragraph and add the following:

The lengths and locations of individual pipe “as shown on the plans” are approximate. Do not order pipe until culvert locations are designated on the ground and a written list of the correct lengths is approved by the C.O.

607 - Cleaning, Reconditioning, and Repairing Existing Drainage Structures

607.01_06_us_09_15_2009

607.01 Description.

Add the following to the first sentence:

.....and bridges.

Add the following paragraph:

Remove all dirt and deleterious debris from bridge decks, expansion joints, curbs, rails and deck drains.

607.02 General.

Add the following:

Clean bridge decks and appurtenances by an approved pressurized water method and/or other approved mechanical and manual methods. Contain and remove loose material from the bridge off the work site to an approved location. Do not allow material to enter the waterways.

Remove cleaned material from bridge to designated site as specified in the plans.

607.04 Cleaning Culverts in Place.

Add the following:

If approved by the CO, all or part of the pipe designated to be cleaned in-place may be removed, cleaned, and re-laid in accordance with Section 602. In these cases, furnish all material required to replace damaged pipe and joints and relay the pipe.

607.06_01_us_10_12_2006

607.06 Reconditioning Drainage Structures.

Add the following:

Repair all culverts designated to be cut by removal of the damaged sections and furnish all material required to replace damaged pipe and joints.

622 - Rental Equipment

622.02_01_us_10_12_2006

622.02 Rental Equipment.

Delete the first two sentences of the first paragraph and add the following:

Provide equipment of the type listed in the Schedule of Items. Provide equipment of at least the minimum size needed to efficiently perform the work. Submit the model number of the equipment to the CO for approval before delivery to the project site. Equipment shall be no more than 15 years old and shall be reasonably free of leaks and other mechanical deficiencies.

Delete “along with certified copies of the payrolls” in the last sentence of the third paragraph.

625 - Turf Establishment

625.00_01_us_10_12_2006

625.03 General.

Delete this subsection and replace with the following:

Apply turf establishment to the areas shown on the drawings or in the worklists within 14 days after completion of ground disturbing activities. Seeded areas damaged by construction activities shall be reseeded within 10 days of the damage.

Seed as soon as possible after constructed to template lines unless otherwise specified in writing by the CO. Do not seed during windy weather or when the ground is excessively wet, frozen, snow covered.

Assure that all seed and mulch used in the work conforms to the weed free requirements of Section 713.

625.04 Preparing Seedbed.

Delete entire subsection.

625.05 Watering

Delete entire subsection.

625.06 Fertilizing.

Delete entire subsection.

625.07 Seeding.

Delete the first sentence and add the following.

Apply seed mix by the following methods.

(a) Dry method. Delete the third sentence.

Add the following after subsection (b).

Seed Mix. Furnish and apply the following kinds and amounts pure live seed:

<u>Kind of Seed</u>	<u>Quantity of Pure Live Seed (Lbs/Acre)</u>
Slender Wheatgrass (Elymus Trachycaulus)	8
Mountain Brome (Bromus Marginatus)	11
Bluebunch Wheatgrass (Pseudoroegneria Spicata)	5

Determine the pounds of seed to be furnished per acre by dividing the pounds of pure live seed required per acre by the product of the percent purity and percent germination.

Example $\frac{5 \text{ lbs. pure live seed/acre}}{0.90 \times 0.85} = \text{ . commercial}$

seed per acre; purity = 90% and germination = 85%

625.08 Mulching.

Delete the entire subsection.

625.09 Protecting and Caring for Seeded Areas

Delete the first sentence and add the following:

Protect and care for seeded areas until final acceptance.

625.11 Measurement.

Delete the entire Subsection and replace with the following:

Measure the Section 625 items listed in the bid schedule according to Subsection 109.02.

648 - Stream Simulation

648.00_nat_us_04_17_2008

Description

648.01 This work consists of placing rock and fill to simulate a natural streambed, profile and cross section through road stream crossings. The placement of Channel Rock for: fish rest stop, rock bands, rock weirs, stream bank rocks, and other in stream rock structures, is included within this specification.

Material

648.02 Conform to the following Subsections.

Foundation Fill	704.01
Stream Bed Simulation Material	705.07
Channel Rock	705.08

Construction Requirements

648.03 General. Place streambed simulation material on a prepared surface to form a well-graded, low permeability mass, similar in appearance and texture to the natural streambed. Do not drive metal track or rubber tired equipment directly on metal or concrete structure surfaces.

648.04 Placed Streambed Simulation Material and Channel Rock.

(a) Method A, Machine Placed. Place stream simulation rock in one or more layers with a layer depth less than 1 ½ times the maximum dimension of the stream simulation rock. Place

stream simulation by methods that do not cause segregation or damage to the prepared surface. Place or rearrange individual rocks by mechanical methods to obtain a compact low permeability mass matching streambed simulation details. Fill voids before placing the next lift. Place fish rest stop, rock bands, rock weirs, stream bank rocks, and other in stream rock structures as designated.

(b) Method B, End Dumped. Dump stream simulation rock in one or more layers with a layer depth less than 1 ½ times the maximum dimension of the stream simulation rock. Distribute larger rocks throughout the mass of stone. Obtain a uniformly dense, compact, low permeability bed with a surface matching stream simulation bed details. Fill voids before placing the next lift. Place fish rest stop, rock bands, rock weirs, stream bank rocks, and other in stream rock structures as designated.

(c) Method C, Hand Placed. Place stream simulation rock using hand labor. Material may be hand carried, or carried in wheelbarrows and end dumped to obtain its full thickness. Compact each load using hand operated or hand operated mechanical equipment to obtain a uniformly dense, compact, low permeability bed with a surface matching stream simulation bed details. Fill voids before placing the next lift. Place fish rest stop, rock bands, rock weirs, stream bank rocks, and other in stream rock structures as designated.

648.04 Foundation fill. Fill all voids left during placement of Channel Rocks and Streambed Simulation adjacent to footings, concrete structures or corrugated pipes with foundation fill. Use water pressure, metal tamping rods, and similar hand operated equipment to force material into all surface and subsurface voids between the structure and rocks and between individual rocks.

648.05 Acceptance. Placing streambed simulation material will be evaluated under Subsections 106.02 and 106.04.

Measurement

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

Payment

648.07 The accepted quantities, measured as provided in Subsection 109.02, will be paid at the contract unit price per unit of measurement for Section 648 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05

651 - Development of Pits & Quarries

651.00_01_us_10_12_2006

Description

651.01 This work consists of clearing, grubbing, stripping topsoil, removing overburden, constructing access roads, conducting restoration activities, and performing other incidental work required for pit or quarry development.

Construction Requirements

651.02 General. Submit a plan of operations according to Section 105. Perform all work in accordance with Sections 105, 201, 203, 204, 625, and 635, landscape preservation requirements, and the approved pit and quarry development plan of operations. Perform the work in accordance with MSHA 30 CFR, part 56.

651.03 Acceptance. Developing pits and quarries will be evaluated under Subsections 106.02 and 106.04.

651.04 Restoration. After excavation has been completed in part or all of the area, slope and grade the sides, and smooth the general pit area as shown on the plans.

Rip and drain access roads that are marked on the drawings for obliteration; block them to traffic; and seed them in Accordance with Section 625.

Payment

651.05 Pit Development is considered a subsidiary item to Sections 204, 251, 252, 253, 301, 302, 321, or 322. No separate payment will be made under this Section or Sections 204, 251, 252, 253, 301, 321, ,322, or 409.

703 - Aggregate

703.05_0114_us_08_04_2005

703.05 Subbase, Base, and Surface Course Aggregate

Delete Section 703.05(c) and add:

(c) Surface course aggregate. In addition to (a) above, conform to the following:

- | | |
|---|-------------|
| (1) Gradation and plasticity index, AASHTO T 90 | Table 703-3 |
| (2) Liquid Limit, AASHTO T 89 | 35 max. |

Do not furnish material that contains asbestos fibers.

Table 703-3.

Crushed Aggregate Grading Requirement for Surface Courses

Percent Passing (AASHTO T-11 and T-27)

Sieve Size	Grading	Grading	Grading	Grading
	D-SR	D-SR with PI	E-SR	E-SR with PI
1 - inch	100(a)	100(a)		
¾ - inch	70 - 98	70 - 98	100(a)	100(a)
½ - inch	58 - 88	58 - 88	70 - 98	70 - 98
No. 4	36 - 60	36 - 60	44 - 70	44 - 70
No. 8	25 - 47	25 - 47	30 - 54	30 - 54
No. 30	12 - 31	12 - 31	15 - 34	15 - 34
No. 200	8 - 20(b)	6 - 15	8 - 20(b)	6 - 15

(a) An average percent passing of greater than 98 percent is acceptable.

(b) If minus No. 40 material in finished product has a PI greater than 0, the percent pass No. 200 range is 6 to 15 percent.

The gradation will closely parallel the specification gradation curves. Percent passing ½ inch, No. 4 and No. 30 sieves will be in either the upper, middle or lower portion of the specification band. Size ratios, as defined below, will be determined for each sieve analysis test. The maximum difference between the ½ inch and No. 4 size ratio, the No. 4 and No. 30 size ratio, and the ½ inch and No. 30 size ratio, will not exceed 0.50.

$$\frac{1}{2} \text{ inch size ratio} = \frac{(\text{Test \% Pass } \frac{1}{2}'') - (\text{Min \% Pass } \frac{1}{2}'')}{(\text{Max \% Pass } \frac{1}{2}'') - (\text{Min \% Pass } \frac{1}{2}'')}$$

$$(\text{Max \% Pass } \frac{1}{2}'') - (\text{Min \% Pass } \frac{1}{2}'')$$

$$\text{No. 4 size ratio} = \frac{(\text{Test \% Pass No. 4}) - (\text{Min \% Pass No. 4})}{(\text{Max \% Pass No. 4}) - (\text{Min \% Pass No. 4})}$$

$$(\text{Max \% Pass No. 4}) - (\text{Min \% Pass No. 4})$$

$$\text{No. 30 size ratio} = \frac{(\text{Test \% Pass No. 30}) - (\text{Min \% Pass No. 30})}{(\text{Max \% Pass No. 30}) - (\text{Min \% Pass No. 30})}$$

$$(\text{Max \% Pass No. 30}) - (\text{Min \% Pass No. 30})$$

Table 703-2 CorrectionInclude the following substitution

In Table 703-2, delete the “436 – 74 (6)” percent by mass passing for grading E (base) No. 4 sieve size and substitute “36 – 74 (6).”

703.10_nat_us_03_02_2005

Delete Table 703-7 and substitute the following:**Table 703-7 Target Value Ranges**

**Table 703-7
Target Value Ranges for
Single and Multiple Course Surface Treatment Aggregate Gradation**

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 & T 11)					
	Grading Designation					
	A	B	C	D	E	F
1½ inch	100 ⁽¹⁾					
1 inch	90-100(3)	100 ⁽¹⁾				
¾ inch	0-35(5)	90-100(3)	100 ⁽¹⁾			
½ inch	0-8(3)	0-35(5)	90-100(3)	100 ⁽¹⁾		
⅜ inch	—	0-12(3)	0-35(5)	85-100(3)	100 ⁽¹⁾	100 ⁽¹⁾
No. 4	—	—	0-12(3)	0-35(5)	85-100(3)	85-100 ⁽¹⁾
No. 8	—	—	—	0-8(3)	0-23(4)	—
No. 200	0-1(1)	0-1(1)	0-1(1)	0-1(1)	0-1(1)	0-10 ⁽¹⁾

(1) Statistical procedures do not apply.

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

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.

Replace Table 703-3 with the following:

Table 703-3. Gradation TV ranges for surface courses.

% by Mass Passing Designated Sieve (AASHTO T 27 and T 11)						
Grading Designation						
Sieve Size	F	G	H	S	T	U
1 ½ in.	100			100		
1 in.	97-100	100		72-92 (6)	100	
¾ in.	76-89 (6)	97-100	97-100	-	-	100
½ in.	-	-	-	-	71-91 (6)	-
3/8 in.	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. 30	15-23 (5)	19-27 (5)	16-26 (5)	-	-	-
No. 40	-	-	-	14-25 (5)	16-28 (5)	19-30 (5)
No. 200	10-16 (4)	10-16 (4)	9 14 (4)	8-15 (4)	8-15 (4)	8-15 (4)

Note: Allowable deviations (\pm) from TV are shown in parentheses. If the plasticity index (PI) is greater than 0, the TV range for the No. 200 sieve size is 6-12 (4).

Table 703-3. Gradation ranges for Size Ratio surface courses.

**% by Mass Passing Designated Sieve (AASHTO T 27 and T 11)
Grading Designation**

Sieve Size	Grading F-SR	Grading F-SR with Bentonite	Grading G-SR	Grading G-SR with Bentonite
1 ½ in.	100	100		
1 in.	97-100	97-100	100	100
¾ in.	70 - 98	70 - 98	97-100	97-100
½ in.	58 - 88	58 - 88	70 - 98	70 - 98
No. 4	36 - 60	36 - 60	44 - 70	44 - 70
No. 16	25 - 47	25 - 47	30-54	30-54
No. 30	12 - 31	12 - 31	15 - 34	15 - 34
No. 200	8 - 20 (a)	6 - 15	8 - 20 (a)	6 - 15

Note: SR and PI are abbreviations for Size Ratio and Plasticity Index.

- (a) If the minus No. 40 material in finished product has a PI greater than 0, the percent pass No. 200 range is 6 to 15%.

The gradation shall closely parallel the specification gradation curves. Percent passing ½ inch, No. 4, and No. 30 sieves shall all be in either the upper, middle, or lower portion of the specification band. Size ratios, as defined below, shall be determined for each sieve analysis test. The maximum difference between the ½ inch and No. 4 size ratio, the No 4 and No. 30 size ratio, and the ½ inch and No. 30 size ratio, shall not exceed 0.50.

$$\frac{1}{2} \text{ inch size ratio} = \frac{(\text{Test \% Pass } \frac{1}{2} \text{ inch}) - (\text{Min \% Pass } \frac{1}{2} \text{ inch})}{(\text{Max \% Pass } \frac{1}{2} \text{ inch}) - (\text{Min \% Pass } \frac{1}{2} \text{ inch})}$$

$$\text{No.4 size ratio} = \frac{(\text{Test \% Pass No.4}) - (\text{Min \% Pass No.4})}{(\text{Max \% Pass No.4}) - (\text{Min \% Pass No.4})}$$

$$\text{No.30 size ratio} = \frac{(\text{Test \% Pass No.30}) - (\text{Min \% Pass No.30})}{(\text{Max \% Pass No.30}) - (\text{Min \% Pass No.30})}$$

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	

704 - Soil

704.02_nat_us_03_02_2005

704.02 Bedding Material.

Delete Subsection 704.02 and substitute the following:

Furnish a well graded, free draining material free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material conforming to the following:

- (a) Maximum particle size 3 inch or half the corrugation depth, whichever is smaller
- (b) Material passing No. 200 sieve, 10% max.
AASHTO T 27 and T 11

704.02_nat_us_05_01_2013

704.02 Bedding Material.

Delete Subsection 704.02 and substitute the following:

Furnish a well graded, free draining material free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material conforming to the following:

- (a) Maximum particle size 1/2 inch or half the corrugation depth, whichever is smaller
- (b) Material passing No. 200 sieve, 10% max.
AASHTO T 27 and T 11

705 – Rock

705.02_nat_us_08_05_2009

705.02 Riprap Rock.

Delete Table 705-1 and replace it with the following

Gradation Requirements for Riprap

Class	Percent of Rock by Mass	Mass (pounds)	Approximate Cubic Dimension^{b,c} (inches)
1	20	22 to 33	6 to 8
	30	11 to 22	5 to 6
	40	1 to 11	2 to 5
	10 ^a	0 to 1	0 to 2
2	20	55 to 110	8 to 10
	30	22 to 55	6 to 8
	40	2 to 22	3 to 6
	10 ^a	0 to 2	0 to 3
3	20	220 to 330	14 to 16
	30	110 to 220	10 to 14
	40	11 to 110	5 to 10
	10 ^a	0 to 11	0 to 5
4	20	550 to 770	18 to 20
	30	220 to 570	14 to 18
	40	22 to 220	6 to 14
	10 ^a	0 to 22	0 to 6
4a	20	770 to 1353	20 to 24
	30	330 to 770	16 to 20
	40	33 to 330	7 to 16
	10 ^a	0 to 33	0 to 7
5	20	1540 to 2200	26 to 28
	30	1100 to 1540	20 to 26
	40	55 to 1100	8 to 20
	10 ^a	0 to 55	0 to 8
6	20	1870 to 3520	28 to 34
	30	1100 to 1870	22 to 28
	40	110 to 1100	10 to 22
	10 ^a	0 to 110	0 to 10
7	20	4400 to 5940	35 to 39
	30	2200 to 4400	28 to 35
	40	220 to 2200	14 to 28
	10 ^a	0 to 220	0 to 14
8	20	7000 to 10000	42 to 47
	30	4000 to 7000	35 to 42
	40	400 to 4000	16 to 35
	10 ^a	0 to 400	0 to 16

- (a) Furnish spall and rock fragments graded to provide a stable dense mass.
- (b) The volume of a rock with these cubic dimensions has a mass approximately equal to the specified rock mass.
- (c) Furnish rock with breadth and thickness at least one-third its length.

705.02_01_us_10_12_2006

705.02 Riprap Rock

Delete the second sentence of this subsection. Additionally delete the requirements specified for (a), (b), and (c).

705.07_nat_us_04_17_2008

Add the following:

705.07 Streambed Simulation Rock.

(a) General. Furnish a mixture of soil, gravel, cobble, and boulders to simulate a natural streambed. The cobbles and boulders should be hard, durable rock that conforms to test values in 705.02.

Table 705-5 – Gradation requirements for Streambed Simulation Material, inches or sieve size

Bed Class	100% passing	84% passing	50% passing	16% passing	10% passing
2	5	2	3/4	1/4	No. 10
4	10	4	1 3/4	1/2	No. 10
6	14	6	2 1/2	3/4	No. 10
8	22	8	3	1	No. 10
10	24	10	4	1	No. 10
12	30	12	5	1 1/2	No. 10
14	36	14	6	1 3/4	No. 10
16	42	16	7	2	No. 10
20	48	20	8	3	No. 10
24	60	24	10	3	No. 10
36	72	36	14	4	No. 10
48	96	48	18	6	No. 10

705.08_nat_us_04_17_2008

705.08 Channel Rock.

(a) General. Furnish hard, durable rock that consists of intact blocks without open fractures, foliation, or other planes of weakness. Conform to test values in 705.02.

(b) Sized and shapes. Furnish rocks that are generally cubical, tabular, or rectangular in shape, with dimensions as designated, or as specified in the following table:

Table 705-6 gradation requirement for Channel Rock

Rock Size (Man Rock)	Mass (Pounds)	Approximate Cubic Dimension (inches)
1	50-200	12-18
2	200-700	18-28
3	700-2000	28-36
4	2000-4000	36-48
5	4000-6000	48-54
6	6000-8000	54-60

(c) Color. Furnish rocks with a color indigenous to the area. Rocks should be free of machine-made scratches, mars, or other damage to the visible surface. If requested, submit a 12 in sample of rock that is representative of the rock color for approval by the CO.

714 - Geotextile and Geocomposite Drain Material

714.03_nat_us_02_25_2005

Tables 714-1 and 714-4.

Add the following note to both tables:

(4) Woven slit film will not be allowed.

Add the following:

714.03 Geogrids.

Furnish geogrids consisting of polymeric materials such as polypropylene, polyethylene, or polyester formed into a stable network of bars or straps fixed at their junctions such that the bars retain their relative position to each other.

Elevate and protect rolls with a waterproof cover if stored outdoors.

(a) Physical requirements. Furnish geogrid treated to resist ultraviolet degradation, and conforming to the physical strength requirements shown in table 714-7 according to ASTM D 4595 for the specified geogrid category. Strength values shown in table 714-7 represent minimum average roll values and are for the direction of primary reinforcement. Ensure that the aperture size for all geogrids is between ¾ to 3 inches.

(b) Evaluation procedures. Geogrids will be evaluated under Subsection 106.03. Furnish a certification and a sample of the geogrid.

Table 714-7—Physical strength requirements for geogrids.

Category	Minimum Ultimate Strength at Breakage (<i>lbs/ft</i>)
1	890
2	1985
3	2875
4	4110
5	5475
6	8215

717 - Structural Metal

717.01_nat_us_08_05_2009

717.01 Structural Steel

(e) High-Strength Bolts, Nuts, & Washers.

Delete the first paragraph and replace with the following:

Conform to either AASHTO M164 or AASHTO M253, as specified. Use Type 3 bolts in combination with unpainted weathering structure steel. Conform to AASHTO M293 (ASTM F 436) for hardened steel washers.

Add the following subsections:

(f) Load-Indicating Washers.

Furnish load-indicating washers (Compressible-washer-type DTI's) conforming to ASTM F 959, Type 8.8 or 10.9. Use Type 8.8 with AASHTO M 164 bolts and with ASTM F 568, Class 8.8 tie rods; use Type 10.9 with AASHTO M 253 bolts. When galvanizing is shown on the plans, furnish DTI's mechanically galvanized to conform to AASHTO M 298, Class 50, Type I. When used with other components that are weathering steel or are to be coated the color of weathering steel, furnish DTI's protectively coated with baked epoxy in a black color.

(g) Steel Anchor Bolts.

Furnish steel anchor bolts of the dimensions shown on the plans. Furnish steel anchor bolts that conform to AASHTO M314, Grade 40 unless otherwise shown on the plans. Ensure that the exposed portion of the bolt is zinc coated by hot dip or mechanical deposition.

(h) Structural Steel Tubing.

Furnish structural steel tubing that conforms to ASTM A500, grade B or ASTM A501 unless otherwise shown on the plans.

717.07 Galvanized Coatings

Add the following:

Furnish hot-dipped galvanized hardware and fasteners conforming to AASHTO M 232 and mechanically galvanized hardware and fasteners conforming to AASHTO M 298.

Repair damaged galvanized surfaces by power or hand tool cleaning, followed by 2 brush applications of zinc rich 2 component paint meeting FS TT-P-641, FS TT-P-1046A or MIL-P-21035. Single component brush or spray-on zinc or galvanizing compounds are not permitted. A source for TT-P-641 paint is Far West Paint Company, Tukwila, WA 206-244-8844.

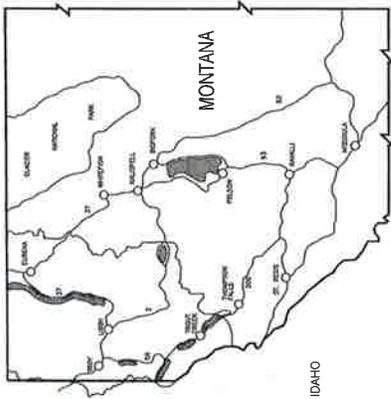
718 - Traffic Signing and Marking Material

718.05_nat_us_08_05_2009

718.05 Aluminum Panels

Delete the third paragraph and replace with the following:

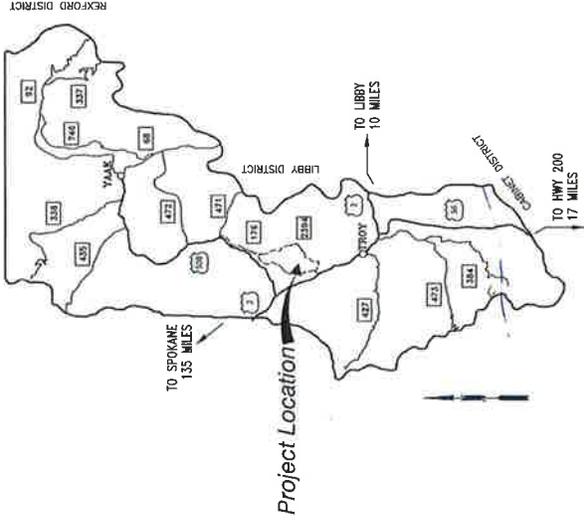
Clean, degrease and properly prepare the panels according to methods recommended by the sheeting manufacturer. Conversion coatings will conform to ASTM B-921 or ASTM B-449.



IDAHO

UNITED STATES DEPARTMENT OF AGRICULTURE
 FOREST SERVICE - REGION ONE
 PLANS FOR PROPOSED
 NATIONAL FOREST SYSTEM ROADS
 LINCOLN COUNTY, MONTANA

OLY MOLY
 KOOTENAI NATIONAL FOREST
 THREE RIVERS RANGER DISTRICT



ROAD NO.	ROAD NAME	*LENGTH	**CR
14315	NORTH SLOPE YAAK	0.80 ✓	R
14321	KILBRENNAN RIDGE	229+30	R/C
14321A	KILBRENNAN RIDGE A	47+00	R/C
14321B	KILBRENNAN RIDGE B	11+00	R
14393	SEARS & ROEBUCK	21+60	R
176F	EASTSIDE F	18+00	R
2393	BIG EDDIE	0.81	R
2394A	KILBRENNEN LAKE A	18+00	R
2394C	KILBRENNEN LAKE C	3+00	R
2394I	KILBRENNEN LAKE I	13+50	R
4612	OKILBRIEN	1.74	R
4407	YAAK MTN LOOKOUT	4.68	R
4408	YACKETY-YAAK	68+15	R
4446	UPPER SEARS	0.83 & 27+00	R
4446A	UPPER SEARS A	31+50	R
4446C	UPPER SEARS B	18+00	R
11446	CONSTITUTION AVE.	13+00	R
4447	SEARS FLATS/OLD EASTSIDE	0.48 & 21+00	R
4458	K SQUARED	0.64	R
4458A	K SQUARED A	2+87	R
4458F	K SQUARED F	2+87	R
4458G	K SQUARED G	20+60	R
752	OBRIEN CREEK	1.55	R

* LENGTH IN MILE = DRIVABLE
 * LENGTH IN STATIONS = UNDRIVABLE
 ** C = CONSTRUCTION
 ** R = RECONSTRUCTION

PREPARED BY: Justin Pelt PROJECT ENGINEER DATE: 1-29-16

REVIEWED BY: [Signature] PROJECT TEAM LEADER DATE: 8/1/16

MULTIPLE RESOURCE REVIEW BY: Ruston Keeser DISTRICT RANGER DATE: 8-7-16

I certify that this project has been designed in accordance with sound engineering practice.
[Signature] FOREST ENGINEER DATE: 8/1/16

INDEX/DETAIL OF WORK

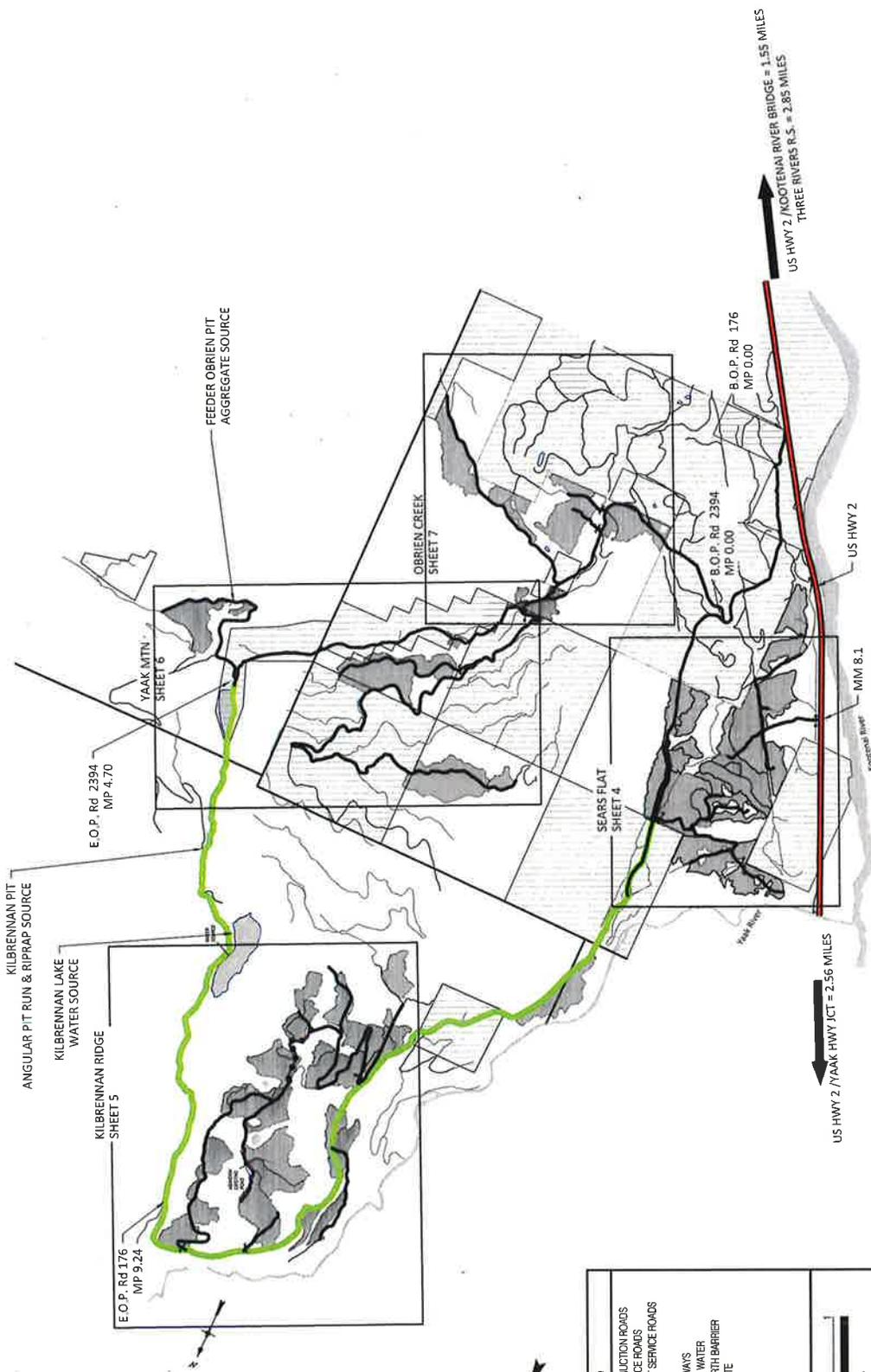
SHEET DESCRIPTION	PAGE NO.	DETAILS OF WORK
TITLE SHEET	1	<p>1. Pay Item 20102 Clearing & Grubbing - This Pay Item applies to the Travel Way & Turnouts only. No grubbing is required in the Ditch, Cut Slope or Fill Slope. Reference Figure 101-1 in Forest Service Supplemental Specs.</p> <p>2. Pay Item 20103 Mechanical Roadway Clearing - This Pay Item applies to the Clearing Limits minus the Travel Way. All Sawlog Timber (7" diameter breast height) will be mechanically cut (chain saw or feller buncher, ect), skidded to an agreed location. Stumps will be left in place unless removal is necessary for excavation (Pay Item 20453).</p> <p>3. Pay Item 20453 Excavation - This Pay Item is for Bank Cubic Yard excavation. If End Haul is required a higher unit price will be reflected in the Specified Road Cost, otherwise side cast soil.</p> <p>4. Pay Item 20483 J-Hole Construction - J-Holes with less than 10 CY excavation. Clearing & Grubbing of J-Hole included in Unit Price. All J-Holes with greater than 10 CY excavation are paid for in Pay Item 20453 Excavation.</p> <p>5. Pay Item 32222 Generate, Haul & Place 4" Minus - It is assumed that a 1 loader, 1 excavator and a jaw will be used to manufacture material. The Kilbrennan Lake Pit has sufficient quantity of 18" rock available for crushing. There currently is naturally occurring 4" minus onsite which may be incorporated. Pay Item 30357 Roadway Reconditioning is only required prior to pitrun placement if it is specified in the reconstruction log, otherwise pitrun placement is on existing road surface. A dozer/grid roller maybe substituted for a motor grader & steel drum roller for pit run placement. Volumes are paid in compacted cubic yards.</p> <p>6. 62201 Equipment Rental (Excavator & End Dump) - Unknown work items are expected on certain roads. These will be identified by the Forest Service during reconstruction. Hourly work will be coordinated with contractor & mobilization will be paid for at same rate if necessary.</p> <p>7. There is no separate Pay Item for haul or watering, they are incidental to Pay Items 204, 209, 251, 306 and 322.</p> <p>8. Excess material obtained from excavation shall be placed in areas agreed upon in the field.</p> <p>9. Temporary Traffic Control is incidental to Pay Item 15101. All signs must be manufactured and installed as specified in the FHWA "Manual on Uniform Traffic Control Devices" (MUTCD) and FS publication "Standards for Forest Service Signs and Posters" (EM 7100-15).</p> <p>10. All excavation associated with site preparation for and placement of riprap shall be incidental to Pay Item 251.</p> <p>11. Final location of work items will be marked by the Government with wooden stakes prior to the start of work.</p> <p>12. Catch basin excavation is included under Pay Item 60270.</p> <p>13. Class 1, 3 and 6 riprap will be inspected visually for suitability. If appearance is suitable, AASHTO T85 and T210 will be waived. If rock appearance is questionable then required testing set forth in FP03 705 will be enforced.</p> <p>14. For Item 20701, Type 2C Separation Geotextile, Requirements are listed in Table 714-2 of FP03. Burst Strength D 3786 has been replaced with CBR Puncture ASTM D 6241</p>
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OLY MOLY	SHEET NUMBER	2
	TOTAL SHEETS	56

PROJECT AREA MAP

ROAD SYSTEM INSETS

- SEARS FLAT
 - 4447
 - 4458
 - 4458A
 - 4458B
 - 4458C
 - 4458D
 - 4458E
 - 4458F
 - 4458G
 - 4458H
 - 4458I
 - 4458J
 - 4458K
 - 4458L
 - 4458M
 - 4458N
 - 4458O
 - 4458P
 - 4458Q
 - 4458R
 - 4458S
 - 4458T
 - 4458U
 - 4458V
 - 4458W
 - 4458X
 - 4458Y
 - 4458Z
- KILBRENNAN RIDGE
 - 14315
 - 14321
 - 14321A
 - 14321B
 - 14321C
 - 14321D
 - 14321E
 - 14321F
 - 14321G
 - 14321H
 - 14321I
 - 14321J
 - 14321K
 - 14321L
 - 14321M
 - 14321N
 - 14321O
 - 14321P
 - 14321Q
 - 14321R
 - 14321S
 - 14321T
 - 14321U
 - 14321V
 - 14321W
 - 14321X
 - 14321Y
 - 14321Z
- YAAK MTN
 - 4407
 - 4408
 - 752
- OBRIEN
 - 2394A
 - 2394B
 - 2394C
 - 2394D
 - 2394E
 - 2394F
 - 2394G
 - 2394H
 - 2394I
 - 2394J
 - 2394K
 - 2394L
 - 2394M
 - 2394N
 - 2394O
 - 2394P
 - 2394Q
 - 2394R
 - 2394S
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 - 2394U
 - 2394V
 - 2394W
 - 2394X
 - 2394Y
 - 2394Z
- COUNTY
 - 176
 - 234



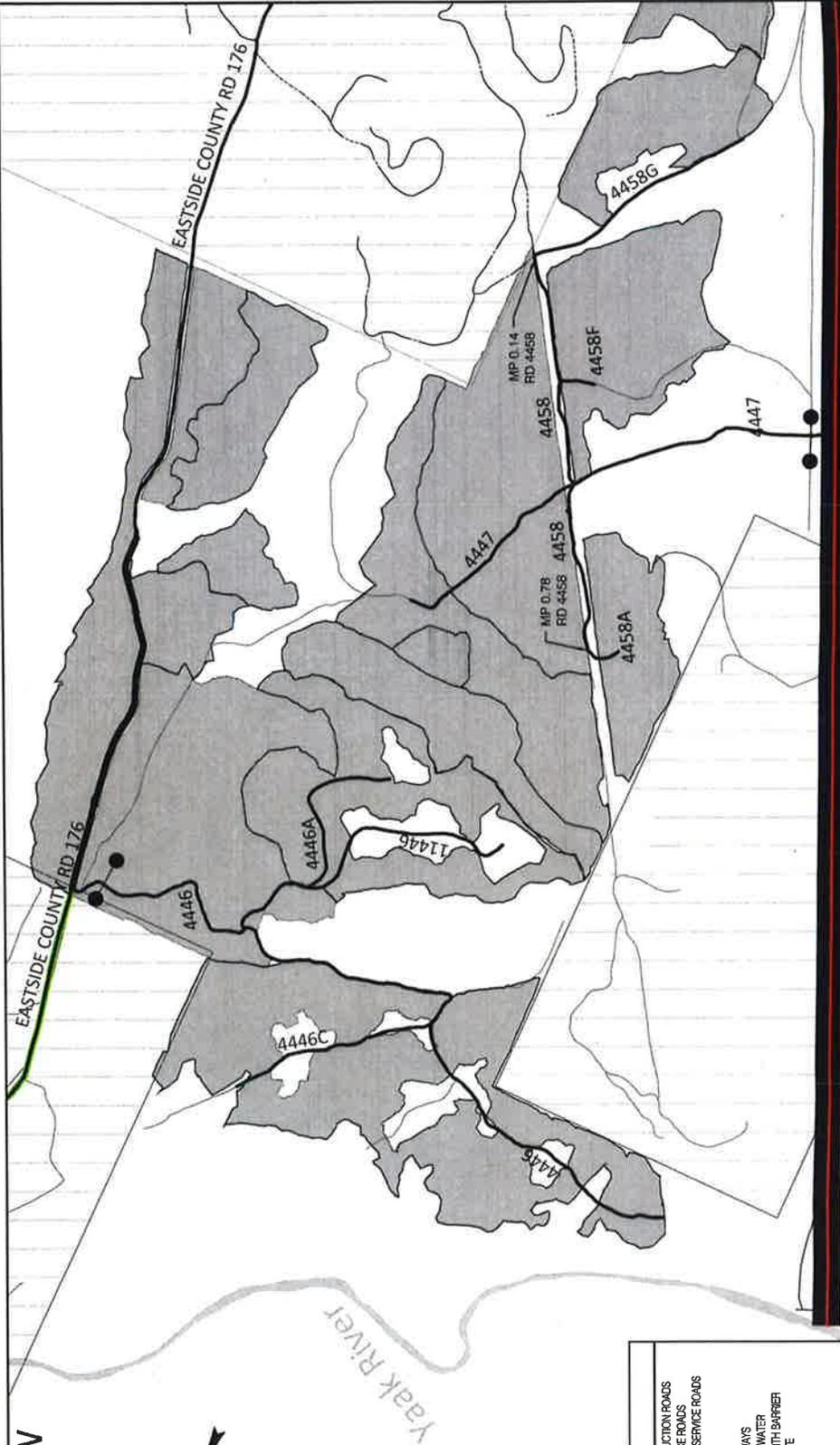
LEGEND	
	PROJECT RECONSTRUCTION ROADS
	OPEN FOREST SERVICE ROADS
	RESTRICTED FOREST SERVICE ROADS
	ROAD NUMBER 383
	STATE AND US HIGHWAYS
	STREAMBEDS OF WATER
	ROAD CLOSURE - EARTH BARRIER
	ROAD CLOSURE - GATE
	LOGGING UNITS
	NON-FS LANDS
<p>SCALE IN MILES 1/2 1</p>	
<p>LINCOLN COUNTY MONTANA</p>	

SHEET NUMBER	3	TOTAL SHEETS	56
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OLY MOLY

SEARS FLAT INSET

T32N R34W



LEGEND

- PROJECT RECONSTRUCTION ROADS
- OPEN FOREST SERVICE ROADS
- RESTRICTED FOREST SERVICE ROADS
- ROAD NUMBER
- STATE AND US HIGHWAYS
- STREAMBODIES OF WATER
- ROAD CLOSURE - EARTH BARRIER
- ROAD CLOSURE - GATE
- LOGGING UNITS
- NON-FS LANDS

0 1/8 1/4

SCALE IN MILES
PMM
LINCOLN COUNTY
MONTANA

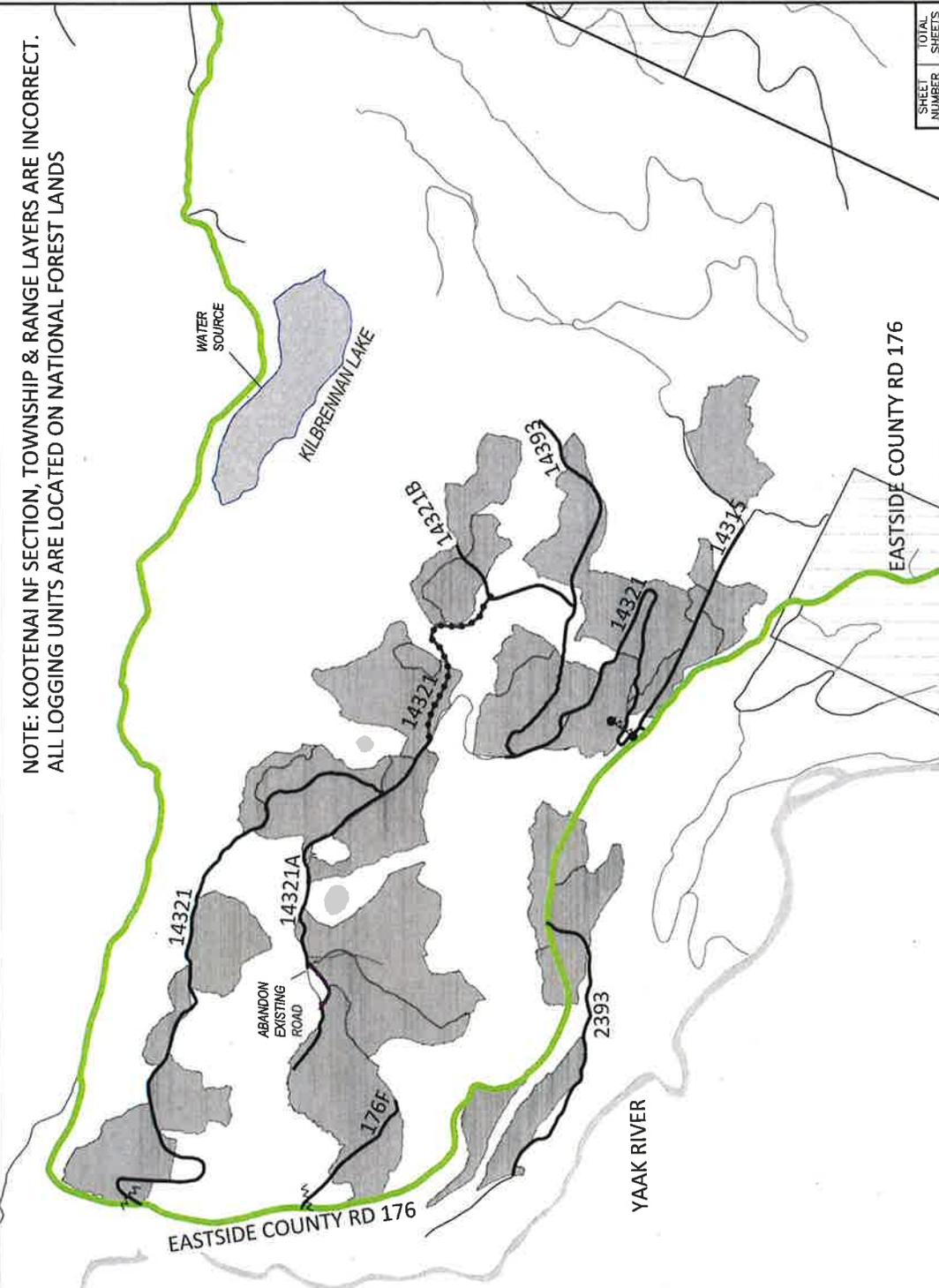
NOTE: KOOTENAI NF SECTION, TOWNSHIP & RANGE LAYERS ARE INCORRECT.
ALL LOGGING UNITS ARE LOCATED ON NATIONAL FOREST LANDS

OLY MOLY

SHEET NUMBER	4	TOTAL SHEETS	56
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KILBRENNAN RIDGE INSET

NOTE: KOOTENAI NF SECTION, TOWNSHIP & RANGE LAYERS ARE INCORRECT.
ALL LOGGING UNITS ARE LOCATED ON NATIONAL FOREST LANDS

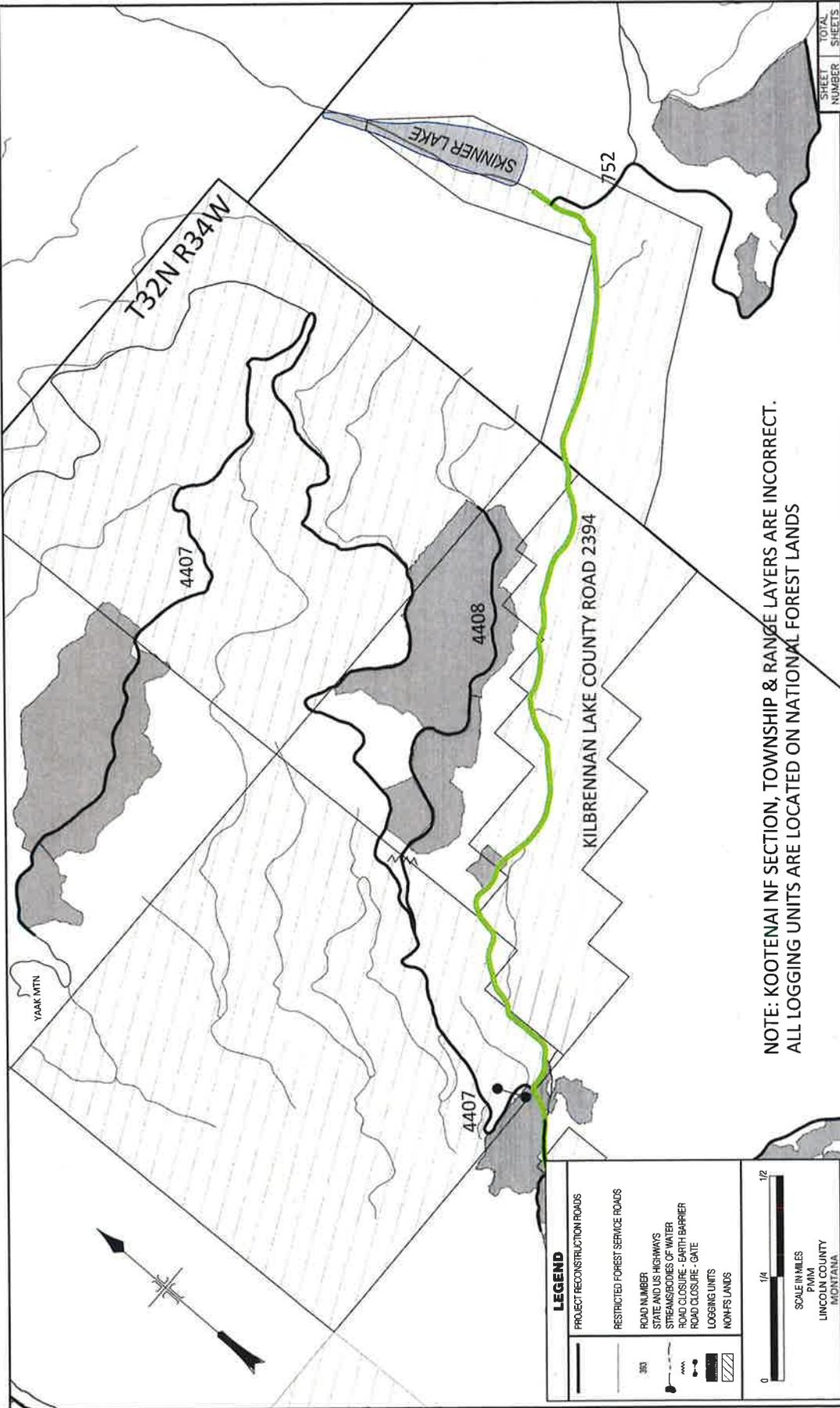


LEGEND	
	PROJECT RECONSTRUCTION ROADS
	NEW CONSTRUCTION
	OPEN FOREST SERVICE ROADS
	RESTRICTED FOREST SERVICE ROADS
	ROAD NUMBER
	STREAMS/BODIES OF WATER
	ROAD CLOSURE - EARTH BARRIER
	ROAD CLOSURE - GATE
	LOGGING UNITS
	NON-FS LANDS
SCALE IN MILES P/M LINCOLN COUNTY MONTANA	

SHEET NUMBER	5	TOTAL SHEETS	56
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OLY MOLY

YAAK MOUNTAIN INSET



NOTE: KOOTENAI NF SECTION, TOWNSHIP & RANGE LAYERS ARE INCORRECT.
 ALL LOGGING UNITS ARE LOCATED ON NATIONAL FOREST LANDS

LEGEND

- PROJECT RECONSTRUCTION ROADS
- RESTRICTED FOREST SERVICE ROADS
- ROAD NUMBER
- STATE AND US HIGHWAYS
- STREAMBODIES OF WATER
- ROAD CLOSURE - EARTH BARRIER
- ROAD CLOSURE - GATE
- LOGGING UNITS
- NON-FS LANDS

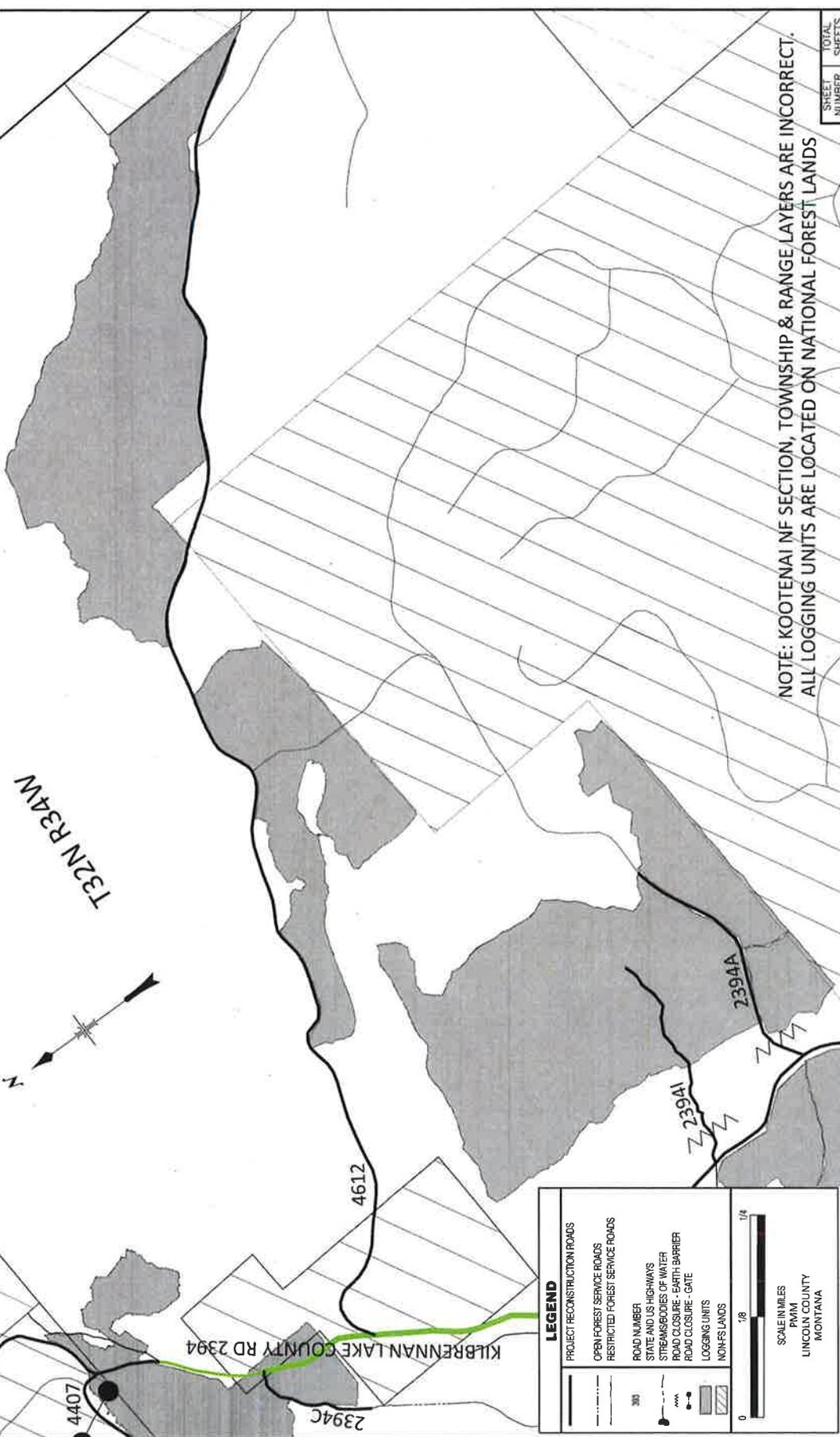
0 1/4 1/2

SCALE IN MILES
 P/M/M
 LINCOLN COUNTY
 MONTANA

SHEET NUMBER	6	TOTAL SHEETS	56
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OLY MOLY

O'BRIEN CREEK INSET



NOTE: KOOTENAI NF SECTION, TOWNSHIP & RANGE LAYERS ARE INCORRECT.
ALL LOGGING UNITS ARE LOCATED ON NATIONAL FOREST LANDS

LEGEND

- PROJECT RECONSTRUCTION ROADS
- OPEN FOREST SERVICE ROADS
- RESTRICTED FOREST SERVICE ROADS
- ROAD NUMBER
- STATE AND US HIGHWAYS
- STREAMS/CREEKS OR WATER
- ROAD CLOSURE - EARTH BARRIER
- ROAD CLOSURE - GATE
- LOGGING UNITS
- NON-FS LANDS

SCALE IN MILES
0 1/8 1/4

PMMI
LINCOLN COUNTY
MONTANA

SHEET NUMBER	7	TOTAL SHEETS	56
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OLY MOLY

SUMMARY OF QUANTITIES

ITEM NO	ITEM DESCRIPTION	METHOD OF MEASURE	UNIT OF MEASURE	14315	14321	14321A	14321B	14393	178F	2393	2394A	2394C	2394I	4612	4407	4408
15101	MOBILIZATION	LSQ	LS	All									All	All	All	All
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, LIGHT	CQ	STA	103.3		37.75				10	8					
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, MEDIUM	CQ	STA				11	21.6								60.0
20102	CLEARING & GRUBBING, SLASH DISPOSAL F, HEAVY	CQ	STA	126		9.25			18		10	5	13.5			8.15
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, LIGHT	CQ	STA						18	43	18		13.5			
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, MED.	CQ	STA			47	11	21.6								68.15
20103	MECHANICAL ROADWAY CLEARING, DISPOSAL F, HEAVY	CQ	STA	229.3												
20419	MECHANICAL ROADWAY CLEARING, DISPOSAL F, HEAVY	AQ	LF	80		25			150		30			20		
20419	DRAINAGE EXCAVATION, OUTLET DITCH	AQ	LF	10												
20453	EXCAVATE (BCY), COMPACT. E, FINISH A, TOLERANCE L	CQ	CY	550		55		750		150					200	270
20453	EXCAVATE (BCY), COMPACT. E (TRAVEL WAY) SIDE CAST	CQ	CY							1430			300			630
20480	INSTALL OPEN TOP BOX CULVERT, COMPACTION F	AQ	LF	22	170	18	18			80	44		80	30		
20481	CONSTRUCT DRAIN DIP, COMPACTION E	AQ	EA	5										4	6	
20481	CONSTRUCT 4% OUTSLOPE, COMPACTION E	AQ	EA	4				2								
20481	CONSTRUCT 2% OUTSLOPE ABOVE SWD, COMPACTION D	AQ	EA												19	
20482	REMOVE/INSTALL EARTH BERM, COMPACTION E	AQ	EA	4					2		1	2	1			
20483	J-HOLE CONSTRUCTION(EXISTING ROAD), COMPACTION E	AQ	EA	1		1			1	1	1		1		3	
20701	EARTHWORK GEOTEXTILE, TYPE 2C (15' WIDE ROLL)	CQ	LF			410								1.74	4.78	
23050	ROADWAY BRUSHING	CQ	MI													
25101	PLACED RIP RAP, CLASS 1, SOURCED ON SITE	CQ	CY	0.5	9.5	0.5	0.5				1.5		3			
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	MI							0.81				1.74		
30357	ROADWAY RECONDITIONING, COMPACTION B	CQ	STA	126		9.25	11		10		10	3	13.5			34
32222	STOCKPILE ANGULAR PIT RUN, 4" MINUS, GRADING N	CQ	CY													
32222	HAUL & PLACE AGGREGATE, COMPACTION B	CQ	CY													
32222	GENERATE, HAUL & PLACE 4" MINUS ANGULAR PIT RUN, GRID ROLL 204.11(e)(4), GRADING N	CQ	CY	9		387	27	48			18	9				
32222	HAUL & PLACE 2" MINUS ANGULAR PIT RUN FROM COMMERCIAL SOURCE, GRADING R, COMPACTION B	CQ	CY		180									129		
32222	HAUL & PLACE EXCAVATED PIT RUN FROM CUT SLOPE FILL RUTS & PLACE LIFT, COMPACTION B	CQ	CY										9		27	
60270	18" CSP, 16 GAUGE, INCLUDES EXCAVATION, COMPACTION B	AQ	LF		82								38			
60712	CLEAN EXISTING SURFACE WATER DEFLECTOR	AQ	EA												20	
60712	CLEAN EXISTING CULVERT INLET/OUTLET	AQ	EA								1			3		
62201	EQUIPMENT RENTAL, MEDIUM EXCAVATOR (315 CLASS)	AQ	HR	10		2			3	3			2			
62201	EQUIPMENT RENTAL, LARGE END DUMP TRUCK (10 CY)	AQ	HR	20		5			5	5						
62556	SEEDING & FERTILIZER; DRY, MATERIAL & APPLICATION	CQ	AC	0.7		1.40	0.3	0.6	0	1	0.2	0	0.2	0.6	3.5	1.5
65001	FURNISH & INSTALL POWDER RIVER STYLE GATE; 16 FT	AQ	EA	2							1					
65002	FURNISH & INSTALL TEMPORARY WOOD GATE; 16 FT	AQ	EA						1				1			
70601	4" DIAMETER HDPE PIPE	AQ	LF	80					80			60				
71801	FURNISH & INSTALL TRAFFIC SIGNS, HARDWARE & POSTS	LSQ	LS	All												

OLY MOLY

TOTAL SHEETS
8 56

Drainage Listing

AS DESIGNED				AS BUILT				INSTALLATION DETAILS				RIPRAP		BMP ITEMS						REMARKS						
STATION OR MILE POST	CULVERT DIAMETER (INCHES)	CULVERT LENGTH (FEET)	ROLLING DRAINAGE	BLIND DRAIN (LN. FT.)	OPEN TOP BOX (LN. FT.)	STATION OR MILE POST	CULVERT DIAMETER (INCHES)	CULVERT LENGTH (FEET)	ROLLING DRAINAGE	BLIND DRAIN (LN. FT.)	SURFACE DEFLECTOR (LN. FT.)	TYPE *	SKEW (DEGREES)	OUTLET (LN. FT.)	GASKETS REQUIRED	CLASS	INLET (C.Y.)	OUTLET (C.Y.)	STRAW BALES	SLASH FILTER DRAIN	FILTER FABRIC	INLET	STRAW WATTLE (LN. FT.)	SILT FENCE (LN. FT.)	REMARKS	
MP 0.72	ROAD 14315				22'							2	**			1	0.5								Conductions Shall Be 2-2 3/4" x 1/2" Unless Otherwise Stated Below Pipe Thickness Shall Be As Shown on The Summary Of Quantities Sheet * See "CULVERT CONSTRUCTION DETAILS" Sheet ** As Staked; if outlet stake is lost/damaged, maximize skew and grade of CSP for the given length of pipe. Embankment slope shall intersect pipe invert. Culvert alignment and bedding require inspection and acceptance in writing, prior to backfilling on all live streams with culverts of 48" diameter or larger.	
STA 15+75	ROAD 14321		XXX		22'											1	0.5								Place 30 C.Y. of 2' Minus Pit Run on Surface	
STA 25+25			XXX		22'											1	0.5								Haul & Place 30 CY 2' Minus Pit Run	
STA 30+00			XXX									2	**			1	0.5	0.5							Place 30 CY 2' Minus Pit Run on Surface	
STA 39+20	18" 38'		XXX													1	0.5								Place 30 CY 2' Minus Pit Run on Surface	
STA 41+00			XXX		22'											1	0.5								Place 30 CY 2' Minus Pit Run	
STA 59+00			XXX									2	**			1	0.5	0.5							Install 5 CY Class 1 riprap on catch basin	
STA 71+70	18" 44'		XXX		18'											1	0.5								Place 30 C.Y. of 2' minus pit run on surface	
STA 86+20			XXX													1	0.5									
STA 92+80			XXX		18'											1	0.5									
STA 115+00			XXX		18'											1	0.5									
STA 210+00			XXX		18'											1	0.5									
STA 213+50			XXX		18'											1	0.5									
STA 217+00			XXX		18'											1	0.5									
STA 217+50			XXX		18'											1	0.5									
STA 220+50			XXX		18'											1	0.5									
STA 224+00			XXX		18'											1	0.5									
STA 40+00	ROAD 14321A															1	0.5									
STA 2+45	ROAD 14321B															1	0.5									
STA 7+75	ROAD 2394A				22'											1	0.5									
STA 13+00					22'											1	0.5									
STA 0+10	ROAD 2394I															1	0.5									
STA 4+25	18" 38'				20'											1	0.5									
STA 6+50					20'											1	0.5									
STA 8+75					20'											1	0.5									
STA 11+00					20'											1	0.5									
MP 0.21	ROAD 4612				30'											1	0.5									
MP 0.59			XXX																							
MP 0.85			XXX																							
MP 0.96			XXX																							
MP 1.12			XXX																							
MP 0.31 & MP 0.4	ROAD 752																									
MP 0.55 & MP 0.62			XXX																							
MP 0.20	ROAD 2393				20'																					
MP 0.24					20'																					
MP 0.28					20'																					
MP 0.32					20'																					
MP 2.61	ROAD 4407																									
MP 2.99			XXX																							
MP 3.33			XXX																							
MP 3.61			XXX																							
MP 4.16			XXX																							
MP 4.60			XXX																							
TOTAL SHEETS																							10	56		

OLY MOLY

RECONSTRUCTION LOG

NORTH SLOPE YAAK ROAD #14315

Station or Mile Post	Pay Item Number	Description of Work
MP 0.00		BEGIN PROJECT; JUNCTION WITH EASTSIDE COUNTY ROAD 176, MP 6.48
MP 0.57	71801	INSTALL 'SINGLE LAND BRIDGE' SIGN ON 4"x4" POST. SEE DETAIL A, SHEET 27
MP 0.58	71801	INSTALL ONE TYPE 3 'OBJECT MARKER' AND CARSONITE POST. ATTACH TO BRIDGE GUARDRAIL POST; SEE DETAIL A, SHEET 27
MP 0.59	71801	INSTALL 'SINGLE LAND BRIDGE' SIGN ON 4"x4" POST; SEE DETAIL A, SHEET 27
MP 0.66	20483	CONSTRUCT J-HOLE TURN AROUND, FILL ONLY, COMPACTION METHOD E
		CLEAR & GRUB, SLASH DISPOSAL METHOD F
	32222	HAUL & PLACE 9 CY ANGULAR PITRUM, COMPACTION METHOD B
MP 0.72	20480	INSTALL 22 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
MP 0.80		END SPECIFIED ROAD

KILBRENNAN RIDGE #14321

Station or Mile Post	Pay Item Number	Description of Work
0+00		BEGIN PROJECT; JUNCTION WITH NORTH SLOPE YAAK ROAD 14315
	20453	SEE PLAN & PROFILE 'RD 14321 SWITCHBACK'. COMPACTION E; SHEET 37&38
	20103	BEGIN MECHANICAL ROADWAY CLEARING; SEE TYPICAL B, SHEET 25
	20453	EXCAVATE 260 CY, COMPACTION METHOD E
		CLEAR AND GRUB FROM ROADWAY. SLASH DISPOSAL METHOD F
	62556	BEGIN SEEDING ALL DISTURBED AREAS WITH EXCEPTION OF TRAVEL WAY
4+25	20482	REMOVE EARTH BERM, COMPACTION METHOD E
4+40	20482	REMOVE EARTH BERM, COMPACTION METHOD E
5+70		END SWITCHBACK RECONSTRUCTION
6+00	65001	INSTALL 16 FT POWDER RIVER STYLE GATE. SEE SHEET 31
12+15	30357	MAINTAIN ARMORED OVERFLOW ACROSS ROADWAY
15+75	20481	CONSTRUCT DRAIN DIP; COMPACTION METHOD E; SEE SHEET 30
	32222	HAUL & PLACE 30 CY 2 INCH MINUS ANGULAR PITRUM ON SURFACE OF DRAIN DIP COMPACTION METHOD B
16+00	20102	CLEAR & GRUB TREES ON TURNOUT, APPROX 60 TREES. SLASH DISPOSAL F
	30357	RECONDITION TURNOUT; COMPACTION METHOD B
17+00		END CLEARING & GRUBBING ON TURNOUT

Station or Mile Post	Pay Item Number	Description of Work
18+80	20102	END TURNOUT RECONDITIONING, COMPACTION METHOD B
		CLEAR AND GRUB EXISTING J-HOLE, SLASH DISPOSAL F
	30357	RECONDITION J-HOLE, COMPACTION METHOD B, SEE DETAIL C, SHEET 27
25+25	20480	INSTALL 22 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
26+35	20419	CONSTRUCT 6" DEEP BY 10' WIDE V-CHANNEL ACROSS SPUR ROAD TO DRAIN DITCHLINE BEGINS ON RD 14321
30+00	20481	CONSTRUCT DRAIN DIP; COMPACTION METHOD E; SEE SHEET 30
	32222	HAUL & PLACE 30 CY 2 INCH MINUS ANGULAR PITRUM ON SURFACE OF DRAIN DIP COMPACTION METHOD B
33+40	30357	SHAPE EXISTING GRADE SAG TO DRAIN
39+20	60270	INSTALL 18"X38LF CSP, COMPACTION METHOD B
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT INLET AND OUTLET; 1 CY TOTAL
41+00	20481	CONSTRUCT DRAIN DIP; COMPACTION METHOD E; SEE SHEET 30
	32222	HAUL & PLACE 30 CY 2 INCH MINUS ANGULAR PITRUM ON SURFACE OF DRAIN DIP COMPACTION METHOD B
45+60	62201	BEGIN TEMPLATE WIDENING, TYPICAL F, SHEET 25
46+70	62201	END TEMPLATE WIDENING
50+00	20102	CLEAR AND GRUB EXISTING TURNOUT, COMPACTION METHOD E LEAVE GRASS IN PLACE
53+00	20480	INSTALL 22 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
58+20		JUNCTION OF RD 14321/OLD ROAD, STAY RIGHT
60+20	20481	CONSTRUCT 4% OUTSLOPE, 20 LF. SEE TYPICAL J, SHEET 26
67+00	20481	CONSTRUCT 4% OUTSLOPE, 20 LF. SEE TYPICAL J, SHEET 26
	30357	REMOVE ORGANICS FROM BERM ON ROADWAY EDGE AND INCORPORATE SOIL INTO RUTS AND DRIVING SURFACE
71+70	20481	CONSTRUCT DRAIN DIP, COMPACTION METHOD E; SEE SHEET 30
	32222	HAUL & PLACE 30 CY 2 INCH MINUS ANGULAR PITRUM ON SURFACE OF DRAIN DIP COMPACTION METHOD B
74+30		END BERM REMOVAL FROM EDGE OF ROADWAY
76+90	60270	INSTALL 18"X44 LF CSP, COMPACTION METHOD B EXCAVATE CATCH BASIN, WASTE ON SITE.
	25101	INSTALL 5 CY CLASS 1 RIPRAP AT INLET, OUTLET AND ON CATCH BASIN
80+15		JUNCTION OF ROADS 14321/14393, STAY LEFT

Note: Distances are measured electronically and do not match Mile Posts marked on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
11	56

RECONSTRUCTION LOG

KILBRENNAN RIDGE ROAD #14321 (continued)

KILBRENNAN RIDGE ROAD #14321 (continued)

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
82+15	20419	CONSTRUCT LEAD OUT DITCH, RIGHT. 25 LF. AS STAKED. SEE TYPICAL K, SHEET 26	213+60	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
83+45	20102	CLEAR AND GRUB 7 TREES FROM MIDDLE OF ROADWAY, ESTABLISH MAIN DRIVING SURFACE TO LEFT OF TREE ISLAND. AS STAKED.	217+00	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
	32222	HAUL & PLACE 30 CY 3" MINUS ANGULAR PIT RUN	220+60	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
86+20	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29	25101	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
90+75	20419	CONSTRUCT LEAD OUT DITCH, RIGHT. 25 LF. AS STAKED. SEE TYPICAL K, SHEET 26	20480	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
92+80		T=0+00 FOR KILBRENNAN RIDGE NEW CONSTRUCTION	25101	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
	20481	CONSTRUCT DRAIN DIP, COMPACTION METHOD E, SEE SHEET 30	20480	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
	32222	HAUL & PLACE 30 CY 2 INCH MINUS ANGULAR PITRUN ON SURFACE OF DRAIN DIP COMPACTION METHOD B	227+00		SWITCHBACK
95+30		JUNCTION WITH NEW CONSTRUCTION & RD 14321B. T = 1+50 = P = 0+00	228+30	20482	REMOVE EARTH BERM, COMPACTION METHOD E
	20453	SEE PLAN & PROFILE FOR RD 14321 RIDGE TOP REROUTE, 282 CY SEE SHEETS 33-36. COMPACTION METHOD E	228+60	20482	REMOVE EARTH BERM, COMPACTION METHOD E
	20102	CLEAR & GRUB TREES TO EXCAVATION LIMIT. SLASH DISPOSAL. F. HEAVY	228+80	65001	INSTALL 16 FT POWDER RIVER STYLE GATE, SEE SHEET 31
	20103	MECHANICAL ROADWAY CLEARING FOR TREES > 7" DBH WITHIN CLEARING LIMITS	229+20	32222	FILL DITCHLINE OF ROAD 176 WITH ANGULAR PITRUN (MINIMAL FINES FOR FLOW)
	20453	EXCAVATE 290 CY, COMPACTION METHOD E			COMPACTION METHOD A, 80 LF = 4.5 CY, SEE TYPICAL G, SHEET 26
113+30		END RIDGE TOP REROUTE			PLACE 80 LF OF 4" HDPE IN DITCH BOTTOM PRIOR TO PITRUN PLACEMENT
115+00	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29	229+30		END OF PROJECT
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE	KILBRENNAN RIDGE A ROAD #14321A		
126+00	20419	CONSTRUCT 30 LF LEAD OUT DITCH DOWN OLD SKID TRAIL. SEE TYPICAL K, SHEET 26			
128+20		JUNCTION ROAD 14321 TO RIGHT / 14321A TO LEFT			
	20102	BEGIN HEAVY ROADWAY CLEARING & GRUBBING. MAJORITY OF TREES ARE < 4" DBH SLASH DISPOSAL METHOD F	Station or Mile Post	Pay Item Number	Description of Work
	30357	BEGIN ROADWAY RECONDITIONING, COMPACTION B	0+00		BEGIN PROJECT; JUNCTION WITH SEARS LOOP ROAD 14321 AT STA 128+20
138+00	20481	CONSTRUCT 4% OUTSLOPE FOR 20 FT, COMPACTION E. SEE TYPICAL J, SHEET 26		20103	BEGIN MECHANICAL ROADWAY CLEARING; SLASH DISPOSAL F SEE TYPICAL B, SHEET 25
143+00	20481	CONSTRUCT 4% OUTSLOPE FOR 20 FT, COMPACTION E. SEE TYPICAL J, SHEET 26		20102	BEGIN LIGHT ROADWAY CLEARING & GRUBBING, SLASH DISPOSAL F; TYPICAL B, SHEET 25
165+30		SOUTHERN BOUNDARY OF UNIT 53			FILL TO BACKFILL STUMP HOLES IS AVAILABLE ON CUTSLOPE
175+20		UNIT 53 BOTH SIDES OF ROAD		62556	BEGIN SEEDING ALL DISTURBED AREAS WITH EXCEPTION OF TRAVEL WAY
204+10		SOUTHWEST CORNER UNIT 56	1+00	20102	CLEAR & GRUB EXISTING TURNOUT (+35 TREES >7" DBH)
209+15		SWITCHBACK		30357	BEGIN ROADWAY RECONDITIONING, COMPACTION METHOD B
210+00	20480	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29	7+20		CONTINUE STRAIGHT AHEAD. SKID TRAIL TO LEFT
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE			

Note: All measurements are measured electronically and do not match Mile Posts marked on the ground.

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SHEET NUMBER	12	TOTAL SHEETS	56
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RECONSTRUCTION LOG

KILBRENNAN RIDGE A ROAD #14321A (continued)

KILBRENNAN RIDGE A ROAD #14321A (continued)

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
9+45	32222	HAUL & PLACE 18 CY ANGULAR PIT RUN IN LOW SPOT, COMPACTON METHOD B	25+20	32222	HAUL & PLACE 9 CY ANGULAR PIT RUN IN LOW SPOT, COMPACTON METHOD B
10+75		ENTER UNIT 52 C EXCLUSION	25+90	32222	HAUL & PLACE 9 CY ANGULAR PIT RUN IN LOW SPOT.
10+75	20701	PLACE WOVEN TYPE 2C GEOTEXTILE (15' WIDE x 200' LONG)			KILBRENNAN RIDGE A ROAD #14321A
	32222	HAUL & PLACE 150 CY ANGULAR PIT RUN IN LOW SPOT, SEE DETAIL E, SHEET 25			RECONSTRUCTION METHOD B
12+75		END GEOTEXTILE PLACEMENT AND PIER FOUNDATION END, COMPACTON METHOD B			RECONSTRUCTION METHOD B
14+85	20102	CLEAR & GRUB EXISTING TURNOUT (3 TREES >7" DBH)		20102	BEGIN ROADWAY CLEARING & GRUBbing REROUTE
15+45	32222	HAUL & PLACE 18 CY ANGULAR PIT RUN IN LOW SPOT, DETAIL E, SHEET 25 COMPACTON METHOD B		20103	BEGIN MECHANICAL ROADWAY CLEARING, SEET TYPICAL B, SHEET 25
16+50	20701	PLACE WOVEN TYPE 2C GEOTEXTILE (15' WIDE x 210' LONG)	2+45	20480	BEGIN SEEDING ALL DISTURBED AREAS WITH EXCEPTION OF TRAVEL WAY
			5+00	20102	INSTALL 18 LF OPEN TOP BOX CULVERT, COMPACTON METHOD F, SHEET 29
			8+00	32222	FLAT PROFILE GRADE, CLEAR AND GRUB TO MEET TYPICAL B, SHEET 25
			11+00		HAUL & PLACE 27 CY ANGULAR PIT RUN, 6" LIFT, COMPACTON METHOD B
					END PROJECT
17+05	32222	HAUL & PLACE 120 CY ANGULAR PIT RUN , SEE DETAIL E, SHEET 25 SHAPE/TAPER LIFT TO MATCH EXISTING GRADE EITHER END COMPACTON METHOD B			
17+05	32222	HAUL AND PLACE 9 CY ANGULAR PIT RUN IN HOLE BEFORE PLACING LIFT METHOD B			
18+15	32222	HAUL AND PLACE 18 CY ANGULAR PIT RUN IN HOLE BEFORE PLACING LIFT COMPACTON METHOD B			
	20419	DIG OUTLET DITCH FOR 25 LF WITH SUMP HOLE; SEE TYPICAL K, SHEET 26			
18+60		END GEOTEXTILE PLACEMENT; END PIT RUN PLACEMENT			
22+50		STAY RIGHT, SKID ROAD TO LEFT			
24+90		STAY LEFT, SKID ROAD TO RIGHT			

Notes: 1. All measurements are measured electronically and do not include minor fill. Posts marked on the ground.

OLY MOLY

SHEET NUMBER	13
TOTAL SHEETS	56

RECONSTRUCTION LOG

SEARS AND ROEBUCK ROAD # 14393

EASTSIDE F ROAD # 176F

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0+00		BEGIN PROJECT; JUNCTION WITH SEARS LOOP ROAD 14321 AT STA 80+15	0+00		JUNCTION WITH COUNTY ROAD 176 AT MP 8.28. ROAD IS NOT DRIVABLE
	20103	BEGIN MECHANICAL ROADWAY CLEARING; SLASH DISPOSAL F. TYP B, SHEET 25		20103	BEGIN MECHANICAL ROADWAY CLEARING, LIGHT
	20102	BEGIN ROADWAY CLEARING & GRUBBING; SLASH DISPOSAL F. TYP B, SHEET 25 FILL TO BACKFILL. STUMP HOLES IS AVAILABLE ON ADJACENT CUTSLOPE		20102	BEGIN CLEARING & GRUBBING, DISPOSAL F. HEAVY. TYP B, SHEET 25
	62556	BEGIN SEEDING ALL DISTURBED AREAS WITH EXCEPTION OF TRAVEL WAY	0+05	30357	BEGIN ROADWAY RECONDITIONING, COMPACTION B
	20102	CLEAR & GRUB EXISTING TURN AROUND		32222	HAUL & FILL DITCHLINE WITH ANGULAR PIT RUN FOR 80 LF (4.5 CY)
3+85	32222	BEGIN ANGULAR PIT RUN PLACEMENT, 4" MINUS. COMPACTION METHOD B 6"X 14"X 145 LF = 48 CY		70601	80 LF 4" HDPE IN DITCH BOTTOM. SEE TYPICAL G, SHEET 26
5+30		END ANGULAR PIT RUN PLACEMENT	0+50	20102	CLEAR & GRUB 100' LONG X 25' WIDE FLAT AT BASE OF SLOPE. DISPOSAL F. COMPACTION METHOD E
5+80	20102	CLEAR & GRUB EXISTING J-HOLE TURN AROUND, COMPACTION B	1+00	20482	REMOVE EXISTING EARTH BERM, COMPACTION METHOD E
6+40	20102	CLEAR EXISTING 50 LF TURNOUT, RIGHT	1+50	20419	CONNECT EXISTING DITCH TO DITCH LINE OF RD 176, 150 LF AS STAKED
8+45	20102	CLEAR & GRUB EXISTING J-HOLE TURN AROUND; COMPACTION METHOD B	1+75	65001	INSTALL TEMPORARY WOOD GATE, SEE SHEET 32
12+95	20481	SHAPE 4% OUTSLOPE TO DRAIN, 50 LF CENTERED. SEE TYPICAL J, SHEET 26	2+25	20482	REMOVE EXISTING EARTH BERM, COMPACTION METHOD E
16+25	20481	SHAPE 4% OUTSLOPE TO DRAIN, 40 LF CENTERED. SEE TYPICAL J, SHEET 26	18+00	20483	CONSTRUCT J-HOLE TURN AROUND (NO EXCAVATION). FIT TO MINIMIZE GRUBBING COMPACTION METHOD E. DETAIL C, SHEET 27
16+95		EXISTING 100 LF TURNOUT, RIGHT. CLEAR BRUSH AND TREES. LEAVE GRASS			CLEAR & GRUB (TWO LARGE DOUGLAS FIR STUMPS)
17+80		JUNCTION WITH SKID ROAD LEFT. STAY RIGHT.			END PROJECT
20+85	20102	BEGIN CLEARING AND GRUBBING FROM ROADWAY, MEDIUM. SLASH DISPOSAL F			
21+60	20481	SHAPE GRADE SAG TO DRAIN			
		JUNCTION WITH SKID ROAD TO RIGHT. RECONSTRUCT EXISTING SKID ROAD RIGHT			
	20453	SEE PLAN & PROFILE FOR 'ROAD 14393 WIDENING'; COMPACTION METHOD E SHEET 42 - 44. 750 CY			

NOTE: All areas of reconstruction shall be marked with yellow flag or orange flag as shown on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
14	56

RECONSTRUCTION LOG

BIG EDDIE ROAD # 2393

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0.00	20103	JUNCTION WITH EASTSIDE COUNTY ROAD 176 AT MP 7.07 BEGIN MECHANICAL ROADWAY CLEARING, SLASH DISPOSAL F. TYP B, SHEET 25 ROAD IS DRIVABLE			
0.14	32222	HAUL & PLACE 61 CY ONTO ROAD SURFACE FROM WIDENING SEGMENT. FILL RUTS: COMPACTION METHOD B			3" MINUS
0.20	20480	START TEMPLATE WIDENING. SEE PLAN & PROFILE ROAD 2393 WIDENING COMPACTION METHOD E. SHEETS 44 - 46 EXCAVATION AND HAUL REQUIRED VOLUME TO SPECIFIED			SIDECAST
0.24	20480	INSTALL 20 LF OPEN TOP BOX CULVERT			
0.28	20480	INSTALL 20 LF OPEN TOP BOX CULVERT			
0.32	20480	INSTALL 20 LF OPEN TOP BOX CULVERT			
0.38		LOCATIONS FOR FILL. END TEMPLATE WIDENING.			
0.65	20481	SOUTH BOUNDARY UNIT 55B			
0.79		SHAPE TO DRAIN CLEAR & GRUB			
	20483	CONSTRUCT J-HOLE ON WEST SIDE OF ROAD. MINIMAL EXCAVATION. DETAIL B, SHEET 27			
	32222	HAUL & PLACE 45 CY OF FILL FROM WIDENING SEGMENT TO ENTRENCHED ROAD SEGMENT. COMPACTION METHOD B			
0.81		END PROJECT			

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Note: Distances are measured electronically and do not include mile posts marked on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
15	56

RECONSTRUCTION LOG

KILBRENNEN LAKE A ROAD #2394A

KILBRENNEN LAKE C ROAD #2394C

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0+00		JUNCTION WITH RD 2394 AT MP 1.32	0+00		JUNCTION WITH RD 2394 AT MP 2.17
0+26	20102	BEGIN ROADWAY CLEARING & GRUBBING, LIGHT. SLASH DISPOSAL F. TYPICAL B, SHEET 26	0+05	32222	HAUL & FILL DITCHLINE WITH ANGULAR PITRUN FOR 60 LF, 9 CY
	20482	REMOVE EARTH BERM, COMPACTION METHOD E		70601	INSTALL 60 LF 4" HDPE IN DITCH BOTTOM; TYPICAL G, SHEET 25
	30357	REMOVE LOG FROM FILL		20102	BEGIN CLEARING & GRUBBING, SLASH DISPOSAL F. SEE TYP B, SHEET 25
0+57	65001	INSTALL 16 FT POWDER RIVER STYLE GATE, SEE SHEET 32	1+15	20482	REMOVE EARTH BERM, COMPACTION METHOD E
	60712	CLEAN INLET/OUTLET OF EXISTING 18" CSP	2+00	20102	BEGIN CLEAR & GRUB LANDING, 100ft x 45ft DISPOSAL F. SEE TYP B, SHEET 26.
2+00	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET		20482	INSTALL EARTH BERM, COMPACTION METHOD E
2+25	32222	BEGIN PLACING PIT RUN TO RAISE GRADE 6". 12x0.5x72 LF = 16 CY	3+00		END PROJECT
2+50	20419	CONSTRUCT 30 LF OUTLET DITCH WITH 3FT SUMP HOLE, SEE TYPICAL K, SHEET 26	KILBRENNEN LAKE I ROAD #2394I		
2+72	20102	CLEAR & GRUB EXISTING J-HOLE TURN AROUND, VERY LIGHT	Station or Mile Post	Pay Item Number	Description of Work
		END PITRUN PLACEMENT	0+00		JUNCTION WITH RD 2394 AT MP 1.49
3+50		ROAD JUNCTION, STAY LEFT		20102	BEGIN ROADWAY CLEARING & GRUBBING, HEAVY, ALL TREES < 6" DBH
7+75	20480	INSTALL 22 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29			SLASH DISPOSAL F. TYP B, SHEET 25
8+00	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE	0+10	60270	INSTALL 18" X38 LF CSP, COMPACTION METHOD B
9+75	20102	ROADWAY CLEARING & GRUBBING, MEDIUM, ALL TREES LESS THAN 2" DIA		25101	PLACE 1.0 CY CLASS 3 RIPRAP AT OUTLET
13+00	20480	CLEAR & GRUB EXISTING TURNOUT, RIGHT.	0+50	65002	INSTALL 16 FT TEMPORARY GATE, SEE SHEET 32
		INSTALL 22 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29	1+00	20102	BEGIN CLEARING & GRUBBING TURNOUT, LEFT (25' TOTAL WIDTH)
17+50	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE	4+00		END CLEARING & GRUBBING OF WIDE TURNOUT
18+00	20483	CONSTRUCT J-HOLE. <10 CY EXCAVATION. COMPACTION E. DETAIL B, SHEET 27		20453	BEGIN ROADWAY EXCAVATION, WIDEN TRAVELWAY TO 14 FT. SIDECAST. SEE TYP F, SHEET 28. 300 CY BETWEEN 4+00 & 11+00. COMPACTION E
		END ROADWAY CLEARING & GRUBBING	4+25	20480	INSTALL 20 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
				25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
			6+50	20480	INSTALL 20 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
				25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
			8+75	20480	INSTALL 20 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
				25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
			11+00	20480	INSTALL 20 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29
				25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE
			13+50	20483	CONSTRUCT J-HOLE TURN AROUND, COMPACTION METHOD E. DETAIL B, SHEET 27
					GROUND IS FLAT. FIT J-HOLE TO MINIMIZE EXCAVATION.
			SHOLEY MOLY		
					TOTAL SHEETS
					16
					56

Notes:
 1. Measurements are measured electronically and do not match field notes marked on the ground.

RECONSTRUCTION LOG

OKILBRIEN ROAD #4612

OKILBRIEN ROAD #4612 CONTINUED

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0.00		JUNCTION WITH ROAD 2394 @ MP 2.00	1.57	32222	HAUL & PLACE 9 CY 2" MINUS PIT RUN IN LOW SPOT, COMPACTION METHOD B 50' LONG x 14' WIDE x 0.5' THICK, TAPERED LIFT, SEE TYPE E, SHEET 25
	23050	BEGIN ROADWAY BRUSHING			
	30357	BEGIN ROADWAY RECONDITIONING, COMPACTION METHOD B			
	30357	GRADE SAG, SHAPE TO DRAIN			
0.08	30357	GRADE SAG, SHAPE TO DRAIN	1.67	32222	HAUL AND PLACE 18 CY 2" MINUS PIT RUN IN LOW SPOT, COMPACTION METHOD B 50' LONG x 14' WIDE x 1' THICK; TAPERED LIFT, SEE TYPE E, SHEET 25
	20419	CONSTRUCT 20 LF OUTLET DITCH. SEE TYPICAL K, SHEET 26			
0.12		GRADE SAG, SHAPE TO DRAIN			
0.21	20480	INSTALL 30 LF OPEN TOP BOX CULVERT, COMPACTION METHOD F; SEE SHEET 29	1.74		END PROJECT
	25101	PLACE 0.5 CY CLASS 1 RIPRAP AT OUTLET ON FILL SLOPE			
0.30	30357	GRADE SAG, SHAPE TO DRAIN			
0.40		UNIT 11 BOUNDARY, RIGHT			
0.43	32222	HAUL AND PLACE 18 CY OF 2" MINUS PIT RUN IN SAG. COMPACTION METHOD B			
0.53	30357	GRADE SAG, SHAPE TO DRAIN			
0.59	20481	CONSTRUCT DRAIN DIP, COMPACTION METHOD B. SEE SHEET 30			
0.75		JUNCTION WITH ROAD 9933			
0.77	30357	GRADE SAG, SHAPE TO DRAIN			
	60712	CLEAN INLET & OUTLET OF EXISTING 18" CSP			
0.85	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FROM SAG TO CREST & 0' DEEP			40 FT
0.88	60712	CLEAN INLET OF EXISTING 18" CSP			
		EAST BOUNDARY OF UNIT 12, RIGHT			
0.95		NORTHWEST BOUNDARY OF UNIT 14			
0.96	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FROM SAG TO CREST & 1' DEEP			35 FT
1.04	60712	CLEAN OUTLET OF EXISTING CSP			
1.12	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FROM SAG TO CREST & 6' DEEP			40 LF
1.19	32222	HAUL & PLACE 27 CY OF 2" MINUS PIT RUN, COMPACTION METHOD B LONG x 14' WIDE x 0.5' THICK, UNIFORM LIFT			80'
1.52	32222	HAUL & PLACE 9 CY 2" MINUS PIT RUN IN LOW SPOT, COMPACTION METHOD B LONG x 14' WIDE x 0.5' THICK, TAPERED LIFT, SEE TYPE E, SHEET 25			50'
	32222	HAUL & PLACE 48 CY 2" MINUS PIT RUN LIFT ON TOP OF PREVIOUS FILL METHOD B. 185' LONG x 14' WIDE x 0.5' THICK, UNIFORM LIFT			COMPACTION

Notes: Measurements are measured electronically, and do not include match line posts marked on the ground.

OLY MOLY

SHEET NUMBER	17
TOTAL SHEETS	56

RECONSTRUCTION LOG

YAAK MTN LOOKOUT ROAD #4407

ROAD #4407 CONTINUED

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0.00		BEGIN PROJECT; JUNCTION WITH KILBRENNAN LAKE	1.38	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
		COUNTY ROAD 2394; MP 2.36		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
0.04		EXISTING POWDER RIVER GATE	1.44	30357	SHAPE GRADE SAG TO DRAIN
0.29	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	1.48	30357	CLEAN INLET OF EXISTING 18" CSP
0.53	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	1.49	20483	EXISTING J-HOLE, COMPACTION METHOD E. SEE SHEET 49
0.42	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET		20102	CLEAR & GRUB, SLASH DISPOSAL METHOD F
	30357	CLEAN ROCK FROM TOE OF CUT SLOPE	1.51	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
0.49	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
0.56	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	1.71	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
0.71	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	1.82	20483	EXISTING J-HOLE, COMPACTION METHOD E. SEE SHEET 49
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE		20102	CLEAR & GRUB, SLASH DISPOSAL METHOD F
0.77	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	1.83	20103	CLEAR & GRUB BORROW SITE, SLASH DISPOSAL METHOD F 6 TREES > 4" DBH, APPROX 40 TREES < 2" DBH
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE	1.89	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
0.78		JUNCTION WITH ROAD 4408, TO RIGHT		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
0.84	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	1.97		BOUNDARY OF SECTION 12 & 1
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE	2.13	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
1.02	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE	2.16	30357	CLEAN INLET OF EXISTING 18" CSP
1.06		BOUNDARY OF SECTION 11&12	2.19	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
1.07		CLEAR & GRUB, SLASH DISPOSAL METHOD F	2.27	30357	CLEAN INLET & CATCH BASIN OF EXISTING 18" CSP
	20102	CLEAN SURFACE WATER DEFLECTOR OUTLET	2.30	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET
1.09	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET		20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE	2.36	30357	CLEAN INLET OF EXISTING 18" CSP
1.29	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET			
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE			

Note: All measurements are measured electronically and do not match file Posts marked on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
18	56

RECONSTRUCTION LOG

YAAK MTN LOOKOUT ROAD # 4407 (continued)

YAAK MTN LOOKOUT ROAD # 4407 (continued)

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
2.38	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	4.46	32222	RAISE GRADE, HAUL & PLACE 15 CY OF PIT RUN FROM ANY LOCATION AGREED TO IN FIELD (MP 1.83), COMPACTION METHOD B
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE	4.49	20453	EXISTING J-HOLE, COMPACTION METHOD E. SEE TYP I, SHEET 49
2.45	30357	LIGHT WASH BOARDING, SPOT BLADE 100 LF.		20102	CLEAR & GRUB, SLASH DISPOSAL METHOD F
2.61	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FT FROM SAG TO CREST & 1' DEEP	4.50	20102	CLEAR EXISTING TURNOUT
2.79	60712	CLEAN SURFACE WATER DEFLECTOR OUTLET	4.60	20481	EXISTING DRAIN DIP, CUT RUTS AND RECOMPACT, METHOD E
	20481	CONSTRUCT 2% OUTSLOPE JUST ABOVE SWD FOR 10 FT SEE TYP I, SHEET 26. SEE SWD AT MP 1.17 FOR EXAMPLE	4.68	20102	CLEAR AND GRUB EXISTING TURN AROUND, SLASH DISPOSAL METHOD F
2.99	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FT FROM SAG TO CREST & 3" DEEP		30357	SHAPE AS NEEDED TO DRAIN WATER, COMPACTION METHOD B
3.09	30357	CLEAN INLET OF EXISTING 18" CSP			
	30357	JACK INLET			
3.33	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FT FROM SAG TO CREST & 3" DEEP			
3.49		JUNCTION WITH ROAD 4407D, TO RIGHT			
	32222	HAUL & PLACE 9 CY 2' MINUS PIT RUN, COMPACTION METHOD B LONG X 14' WIDE X 0.5' DEEP, TAPER TO MATCH EXISTING ROAD			
3.55	32222	HAUL & PLACE 9 CY 2' MINUS PIT RUN, COMPACTION METHOD B LONG X 14' WIDE X 0.5' DEEP, TAPER TO MATCH EXISTING ROAD			
3.56		EXISTING POWDER RIVER GATE			
3.61	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FT FROM SAG TO CREST & 12" DEEP			
3.92		BOUNDARY OF SECTION 1 & 2			
	23050	BEGIN ROADWAY BRUSHING			
4.03		EXISTING J-HOLE, COMPACTION METHOD E. SEE SHEET 49			
	20102	CLEAR & GRUB, SLASH DISPOSAL METHOD F			
4.13	20102	CLEAR & GRUB EXISTING TURNOUT, COMPACTION METHOD E			
4.16	20481	RECONSTRUCT EXISTING DRAIN DIP, COMPACTION METHOD E FT FROM SAG TO CREST & 7" DEEP			
4.45	20453	DECOMPACT EXISTING HOLE IN ROADWAY			
	32222	HAUL & PLACE 5 CY PIT RUN FROM ANY LOCATION AGREED TO IN FIELD (MP 1.83), COMPACTION METHOD B			

Notes:
1. All measurements are measured electronically and do not include manual measurements marked on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
19	56

DESCRIPTION OF WORK

YACKETY YACK ROAD #4408

UPPER SEARS ROAD #4446

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
STA 0+00			0.00		JUNCTION WITH EASTSIDE COUNTY ROAD 176 AT MP 3.40
	20102	JUNCTION WITH YAAK MTN ROAD 4407 AT MP 0.78			ROAD IS DRIVABLE TO MP 0.82
		BEGIN CLEAR & GRUB, SLASH DISPOSAL F. TYP B, SHEET 26		20103	BEGIN MECHANICAL ROADWAY CLEARING, TYP D, SHEET 26
		HEAVY CLEARING ENTIRE TEMPLATE, ALL TREES < 2" DBH		32222	HAUL & FILL APPROACH, 3' MINUS ANGULAR PIT RUN, COMPACTION METHOD B
	30357	ROADWAY RECONDITIONING COMPACTION METHOD B			LIFT 1 = 12x0.5x12 = 3.0 CY.
3+00		END HEAVY CLEARING & GRUBBING			LIFT 2 = 12x0.5x25 = 6.0 CY.
	20102	BEGIN MEDIUM LIGHT CLEARING (MOSTLY CUT AND FILLSLOPE)	0.01		EXISTING GATE
5+40		CLEAR & GRUB PICKUP SIZED TURNOUT, RIGHT	0.02	20482	REMOVE EXISTING EARTH BERM, COMPACTION METHOD E
9+60	30357	EXISTING 18" CSP, CLEAN BOTH INLET & OUTLET	0.05	32222	HAUL & FILL LOW SPOT, COMPACTION METHOD B. 55x8x1' = 18 CY
10+60		CLEAR & GRUB PICKUP SIZED TURNOUT, RIGHT	0.06	32222	HAUL & PLACE AN ADDITIONAL 81 CY ANGULAR PIT RUN, AS STAKED AFTER FILLING ALL LOW SPOTS, COMPACTION B
11+20		PROPERTY BOUNDARY, STIMPSON -->FS			
11+70	20483	CONSTRUCT J-HOLE TURN AROUND, SEE SHEET 50, COMPACTION METHOD E	0.12	20419	CONSTRUCT 20' OUTLET DITCH AT GRADE SAG. SEE TYPICAL K, SHEET 26
14+10	20102	CLEAR & GRUB 50 FT TURNOUT, RIGHT	0.17	20419	CONSTRUCT 20' OUTLET DITCH AT GRADE SAG. SEE TYPICAL K, SHEET 26
19+75	20102	CLEAR & GRUB PICKUP SIZED TURNOUT, RIGHT	0.19	32222	HAUL & FILL LOW SPOT, COMPACTION METHOD B. 55x8x1' = 18 CY
23+90	30357	SHAPE EXISTING GRADE SAG TO DRAIN	0.20		CORNER TO RIGHT
24+10	20483	CONSTRUCT J-HOLE TURN AROUND, COMPACTION E SEE SHEET 50		20102	GRUBB STUMPS 50 LF EACH DIRECTION FROM CENTER OF CORNER, AS FLAGGED, SCATTER STUMPS
25+30	20102	CLEAR & GRUB 50 FT TURNOUT, RIGHT	0.23	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
28+60	30357	EXISTING 18" CSP, CLEAN BOTH INLET & OUTLET	0.25	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
	20419	CONSTRUCT 20 LF OUTLET DITCH	0.26	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
39+10	20102	CLEAR & GRUB 75 FT TURNOUT, RIGHT	0.27	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
41+40	30357	SHAPE EXISTING GRADE SAG TO DRAIN	0.30	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
44+00	20102	CLEAR & GRUB PICKUP SIZED TURNOUT, RIGHT	0.33	32222	HAUL & PLACE 18 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
48+25		SHAPE EXISTING GRADE SAG TO DRAIN	0.35		JUNCTION WITH ROAD 4446A, LEFT
51+00		CLEAR & GRUB LARGE TURNOUT, RIGHT	0.37		BOUNDARY, UNIT 40, LEFT
53+00	20453	BEGIN ROADWAY WIDENING, SEE SHEETS 53 - 55	0.40	20419	CONSTRUCT 20' OUTLET DITCH AT GRADE SAG. SEE TYPICAL K, SHEET 26
53+10	20483	CONSTRUCT J-HOLE TURN AROUND, SEE SHEET 51		32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B
62+00		END LIGHT CLEARING & GRUBBING	0.48	20419	CONSTRUCT 20' OUTLET DITCH AT GRADE SAG. SEE TYPICAL K, SHEET 26
	20102	BEGIN HEAVY CLEARING AND GRUBBING, SNOW BRUSH	0.51	20483	CONSTRUCT J-HOLE TURN AROUND, LEFT, DETAIL C, SHEET 27
66+00		END ROADWAY WIDENING		20102	CLEAR & GRUB SLASH DISPOSAL METHOD F, COMPACTION METHOD E, AS STAKED, FLAT GRADE, MINIMAL EXCAVATION
67+50	20483	CONSTRUCT J-HOLE TURN AROUND, SEE SHEET 52			
68+15		END ROADWAY CLEARING & GRUBBING			

OLY MOLY

SHEET NUMBER	20
TOTAL SHEETS	56

Mileposts are measured electronically and do not match Mile Posts marked on the ground.

RECONSTRUCTION LOG

UPPER SEARS ROAD #4446 (continued)

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0.56	32222	HAUL & PLACE 54 CY PIT RUN IN LOW SPOT, TAPER THICKNESS, COMPACTION METHOD B. SEE TYPICAL E, SHEET 25, 12' WIDE			
0.60		END PIT RUN PLACEMENT			
0.67	32222	HAUL & PLACE 18 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B			
0.71	20483	CONSTRUCT J-HOLE TURN AROUND, LEFT. DETAIL C, SHEET 27			
	20102	CLEAR & GRUB, SLASH DISPOSAL METHOD F. COMPACTION METHOD E. AS STAKED, FLAT GRADE. MINIMAL EXCAVATION			
0.72		JUNCTION WITH ROAD 4446B, LEFT			
	20453	RECONSTRUCT CORNER, SEE SHEET 55			
	20102	CLEAR & GRUB, SLASH DISPOSAL METHOD F. COMPACTION METHOD E			
	32222	HAUL & PLACE 54 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B			
0.75	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B			
0.83		END DRIVABLE ROAD			
	20103	BEGIN MECHANICAL ROADWAY CLEARING			
	20102	BEGIN CLEARING & GRUBBING, SLASH DISPOSAL METHOD F			
1+12	32222	HAUL & PLACE 9 CY PIT RUN IN LOW SPOT, COMPACTION METHOD B			
2+72		LEAVE ISLAND #2 BOUNDARY			
3+00		JUNCTION WITH RD 4446C, RIGHT			
6+54	20102	FULL WIDTH CLEAR & GRUBB THROUGH REGEN UNIT			
9+26		END REGEN UNIT			
12+70		ENTER REGEN LEAVE ISLAND			
13+50		JUNCTION WITH RD 4446D, RIGHT			
16+30		LEAVE REGEN LEAVE ISLAND			
18+37		ENTER REGEN LEAVE ISLAND			
20+45		LEAVE REGEN LEAVE ISLAND			
	32222	-11% AHEAD. HAUL & PLACE 27 CY PIT RUN, AS STAKED. 12'x0.5'x120 LF. COMPACTION METHOD B			
22+20	32222	HAUL & PLACE 27 CY PIT RUN, AS STAKED. 12'x0.5'x120 LF. COMPACTION METHOD B			
27+00		POWERLINES			
		END CLEARING & GRUBBING			

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SHEET NUMBER	TOTAL SHEETS
21	56

OLY MOLY

Note: Mileages are measured electronically and do not match Mile Posts marked on the ground.

RECONSTRUCTION LOG

CONSTITUTION AVE #11446

UPPER SEARS A ROAD # 4446A

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0+00		JUNCTION WITH ROAD 4446A AT STA. 15+70.	0+00		JUNCTION WITH ROAD 4446 AT MP 0.35
		ROAD NOT DRIVABLE			ROAD IS DRIVABLE TO STA. 10+40
	20103	BEGIN MECHANICAL ROADWAY CLEARING		20103	BEGIN MECHANICAL ROADWAY CLEARING. LIGHT
	20102	BEGIN CLEARING & GRUBBING, DISPOSAL E, MEDIUM			30 - 40 LF SPACING BETWEEN SAW LOG TREE EACH SIDE
		COMPACTION METHOD, TYPICAL B, SHEET 25	10+40		BEGIN ROADWAY CLEARING & GRUBBING, LIGHT. TYP B. SHEET 26
16+50	32222	HAUL & PLACE 4CY PIT RUN IN LOW SPOT. SPREAD REMAINING 5 CY IN STUMP HOLE ON ROAD. COMPACTION METHOD B			SLASH DISPOSAL METHOD F. TREES < 7" DBH
12+00	20483	CONSTRUCT J-HOLE TURN AROUND. < 5 CY EXCAVATION	15+70		JUNCTION WITH ROAD 11446 (AHEAD), 4446A (TO RIGHT)
	20102	CLEAR & GRUB, SLASH DISPOSAL E, HEAVY			BEGIN ROADWAY CLEARING & GRUBBING, MEDIUM
		COMPACTION METHOD E, DETAIL B, SHEET 27	20+00	20102	CLEAR & GRUB OLD STUMPS AND 12 TREES FROM OPENING
13+00		END CLEARING & GRUBBING		20483	AND CONSTRUCT J-HOLE. NO EXCAVATION. BLEND MATERIAL FOR UNIFORM SURFACE
		END OF PROJECT	31+50		COMPACTION METHOD E, DETAIL B, SHEET 27
					END MECHANICAL ROADWAY CLEARING (ENTERING REGEN)
					END CLEARING & GRUBBING
					END COMPACTION

UPPER SEARS A ROAD # 4446C

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0+00		JUNCTION WITH ROAD 4446 AT STA. 3+00.			
		ROAD NOT DRIVABLE			
	20102	BEGIN CLEARING & GRUBBING, DISPOSAL METHOD E			
		EXISTING PRECOMMERCIAL SLASH TO BE WINDROWED			
		BEGIN ROADWAY RECONDITIONING, COMPACTION B			
17+00	20483	CONSTRUCT J-HOLE TURN AROUND. < 5 CY EXCAVATION			
	20102	CLEAR & GRUB, SLASH DISPOSAL METHOD E			
		COMPACTION METHOD, E, DETAIL B, SHEET 28			
18+00		END CLEARING & GRUBBING			
		END OF PROJECT			

Notes:
Measurements are measured electronically and do not match file Posts marked on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
22	56

RECONSTRUCTION LOG

OLD EASTSIDE ROAD #4447

K SQUARED ROAD #4458

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
0.00		JUNCTION WITH US HIGHWAY 2 AT MP 8.1	0.14		JUNCTION WITH ROAD 4458G
		ROAD IS DRIVABLE TO MP 0.48		20102	CLEAR BRANCHES FROM TREES WITHIN CLEARING LIMITS. 1200 LF.
0.14	20701	BEGIN PLACEMENT OF TYPE 2C NONWOVEN GEOTEXTILE. 220 LF X 15' WIDE.	0.21		OLD ROAD TO LEFT
	32222	HAUL & PLACE 396CY 4" MINUS ANGULAR PITRUN. TAPER APPROACH. SEE TYPICAL C, SHEET 25 (14.5X1' w/1:1 FOR 792). COMPACTION B	0.27		OLD ROAD TO LEFT
0.18		END NONWOVEN	0.34		JUNCTION WITH ROAD 4458F, LEFT
0.21	30357	FLATTEN SAND BERMS TO FILL LOW AREA, 15 CY	0.42	32222	HAUL & PLACE 18 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION METHOD B
0.24		BEGIN THROUGH CUT.	0.46	32222	HAUL & PLACE 18 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION METHOD B
0.29		END FILL PLACEMENT AT TOP OF GRADE	0.51		JUNCTION WITH ROAD 4447
0.34	32222	HAUL & PLACE 45 CY 4" MINUS ANGULAR PITRUN IN LOWSPOT. COMPACTION METHOD B	0.55	32222	HAUL & PLACE 18 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION METHOD B
	20102	BEGIN CLEARING & GRUBBING, DISPOSAL E, LIGHT	0.57	32222	HAUL & PLACE 18 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION METHOD B
0.41	32222	HAUL & PLACE 18 CY 4" MINUS ANGULAR PITRUN IN LOWSPOT. COMPACTION METHOD B	0.58	32222	HAUL & PLACE 9 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION METHOD B
0.44		CROSS POWERLINE CORRIDOR	0.61	32222	HAUL & PLACE 9 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION METHOD B
		END HAUL AND FILL PLACEMENT	0.63	32222	HAUL & PLACE 45 CY 2" MINUS. COMMERCIAL SOURCE. RAISE GRADE 1.5' @ MIDPOINT.
		JUNCTION WITH ROAD 4458 @ MP 0.51			WIDEN ROAD. TAPER FROM 1.5' TO 0 OVER 30 FT. COMPACTION METHOD B
0.46	20102	BEGIN CLEARING & GRUBBING, DISPOSAL E, LIGHT	0.67	32222	HAUL & PLACE 18 CY 2" MINUS. COMMERCIAL SOURCE. COMPACTION B
	20103	BEGIN MECHANICAL ROADWAY CLEARING, DISPOSAL E, LIGHT	0.69		REMOVE EXISTING DOWN DOWN DOUGLAS FIR. 24" DBH. PLACE AT LEAST 8' FROM EDGE OF ROAD OR REMOVE FROM SITE
0.48	20481	REMOVE EXISTING EARTH BERM. COMPACTION METHOD E	0.71	32222	HAUL & PLACE 18 CY 2" MINUS. COMMERCIAL SOURCE. 12x0.5x55'. COMPACTION B
7+00	32222	HAUL & PLACE 18 CY 4" MINUS ANGULAR PITRUN IN GRADE SAG	0.76	32222	HAUL & PLACE 45 CY 2" MINUS. COMMERCIAL SOURCE. RAISE GRADE 1'. WIDEN ROAD. TAPER FROM 1.5' TO 0 OVER 30 FT. COMPACTION METHOD B
12+00	20102	JUNCTION WITH ROAD TO LEFT, CLEAR FOR J-HOLE	0.78		JUNCTION WITH ROAD 4458A
12+75		UNIT 38/38A UNIT BOUNDARY			
21+00	20102	CLEAR AND GRUB TURN AROUND, AS FLAGGED. COMPACTION METHOD E			
		END PROJECT			

Notes:
Mileages are measured electronically and do not match Mile Posts marked on the ground.

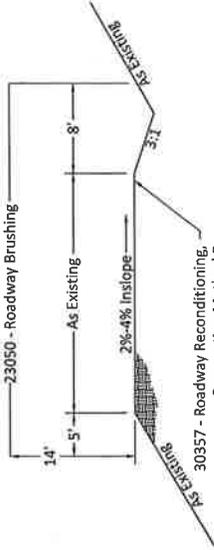
OLY MOLY

SHEET NUMBER	TOTAL SHEETS
23	56

TYPICAL SECTIONS

Typical A

Roads: 14315
4612
4407
752

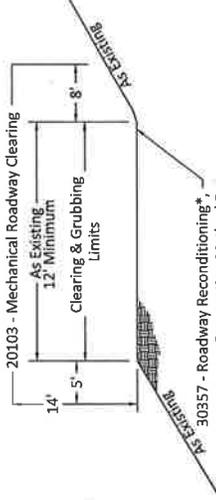


30357 - Roadway Reconditioning, Compaction Method B

Note: If surface is crowned or outsloped, maintain existing profile at 2%-4%.
Typical ditch depth is 1'.

Typical B

Roads: 14321 2394C
14321A 2394I
14321B 4408
14383 4446A
176F 4446C
2883 11446
2384A 4468

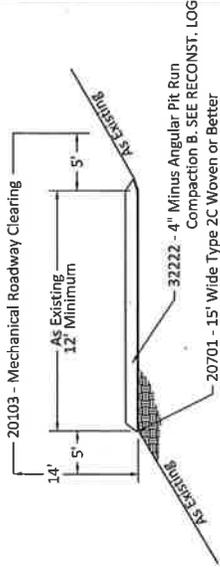


30357 - Roadway Reconditioning*, Compaction Method B

Note: If surface is crowned or outsloped, maintain existing profile at 2%-4%.
*30357 - Not all roads require roadway reconditioning. See Summary of Quantities

Typical C

Roads: 4447 MP 0.00 - 0.44
4458G
4458A - NO PITRUN/GEOTEX
4458F - NO PITRUN/GEOTEX



Note: Surface cross-slope is flat.

Typical D

Roads: 4446



32222 - Haul & Place Angular Pitrun, Compaction Method B
SEE RECONST. LOG

Note: Shape cross-slope template as flat or crowned.

Typical E

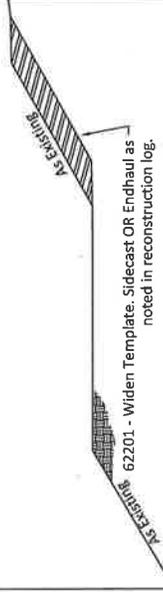
Item 32222: Haul & Place __ CY Pitrun in Low Spot



Note: Road Profile Along Centerline

Typical F

Item 62201: Template Widening



SHEET NUMBER	25
TOTAL SHEETS	56

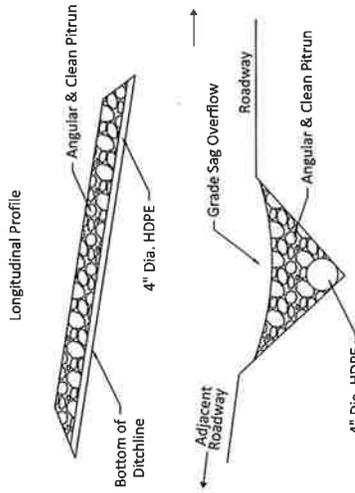
OLY MOLY

TYPICAL SECTIONS

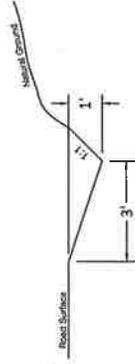
Typical G

Roads: 14321
176F
2394C

Item 60271 & 32222 - 4" HDPE Ditch Drain & Fill

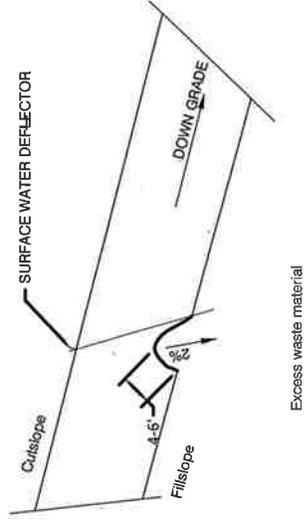


Typical H



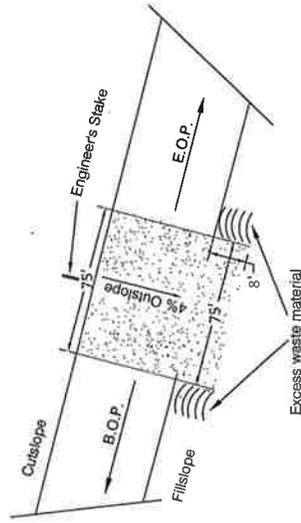
Item 20419 - Construct Ditch
Item 30357 - Reconstruct Ditch

Typical I



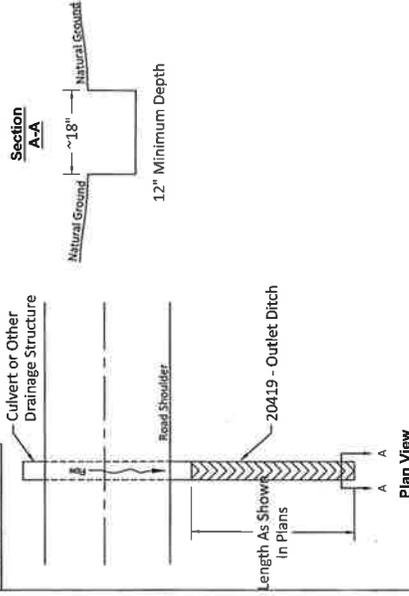
Item 20481 - Construct Outslope

Typical J



Item 20481B - Construct Outslope

Typical



Item 20419 - Outlet Ditch

SHEET NUMBER

26

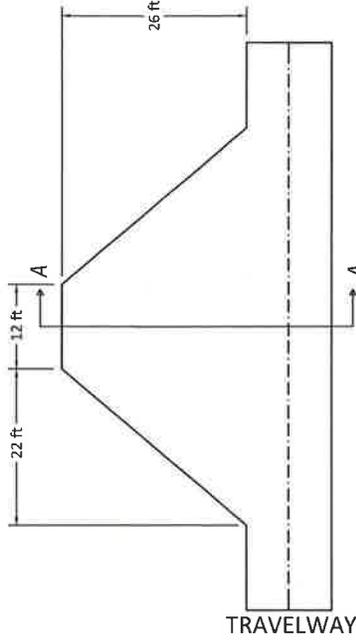
TOTAL SHEETS

56

OLY MOLY

DETAIL B

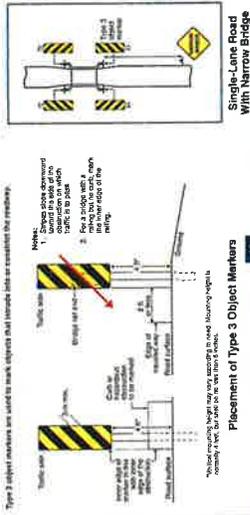
J-HOLE TYPICAL; PLAN & SECTION VIEW



SHEET NUMBER	27
TOTAL SHEETS	56

DETAIL A

Object and Barricade Marker Installations



Placement of Type 3 Object Markers

Warning Sign Installations (cont.)

Minimum Advance Placement Distances

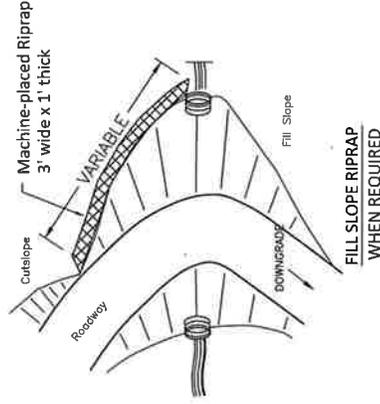
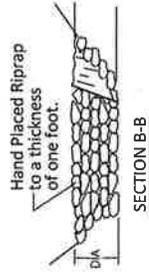
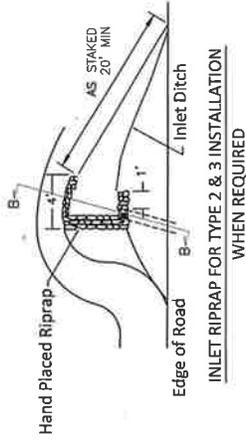
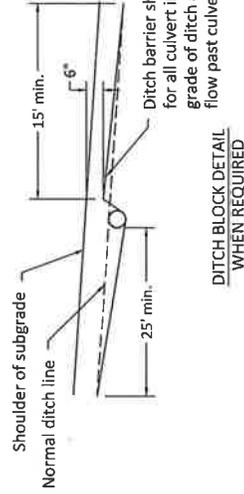
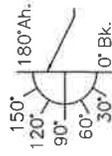
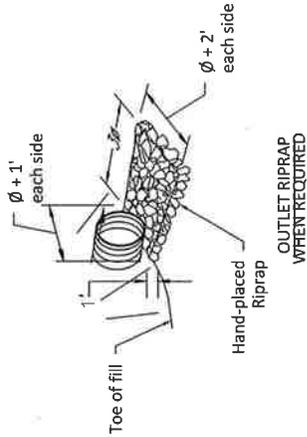
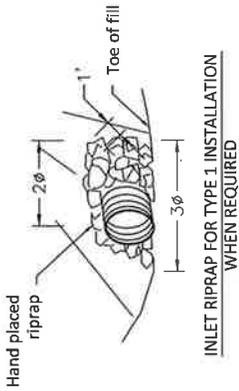
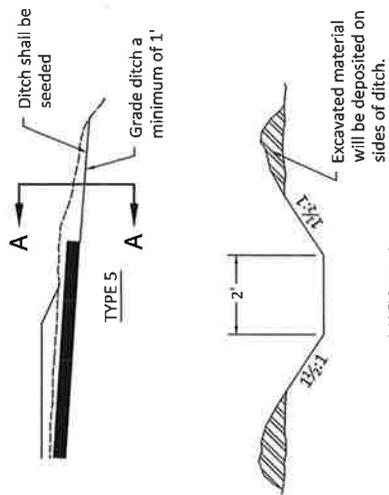
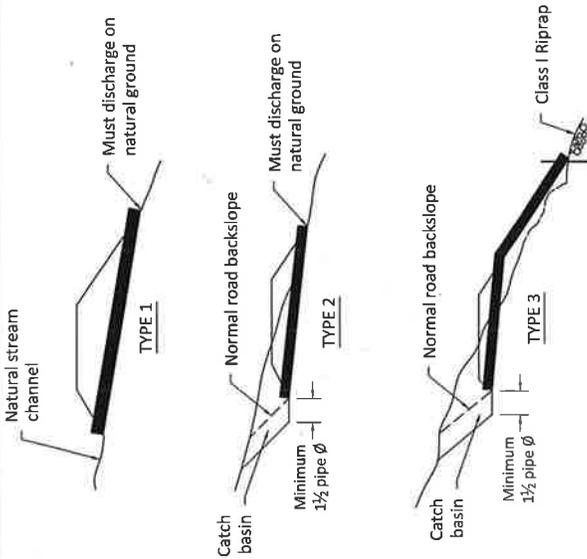
Posted speed or advisory speed (mph)	Stopping sight distance (ft)				Minimum advance placement distance (ft)				Minimum advance placement distance (ft)			
	10	20	30	40	10	20	30	40	10	20	30	40
25	118	155	200	250	5	10	20	30	5	10	20	30
30	155	200	250	300	5	15	30	45	5	15	30	45
35	200	250	300	350	5	20	35	50	5	20	35	50
40	250	300	350	400	5	25	40	55	5	25	40	55
45	300	350	400	450	5	30	45	60	5	30	45	60
50	350	400	450	500	5	35	50	65	5	35	50	65
55	400	450	500	550	5	40	55	70	5	40	55	70
60	450	500	550	600	5	45	60	75	5	45	60	75

ROAD 14315
 FURNISH & INSTALL FOUR TYPE 3 OBJECT MARKERS (RETROREFLECTIVE ENGINEER GRADE, BLACK & YELLOW, 10"x30") ON FOUR 4"x4" TREATED POSTS (INSTALLED A MINIMUM 30" INTO GROUND),
 FURNISH & INSTALL TWO - 24" "NARROW BRIDGE" SIGNS (RETROREFLECTIVE ENGINEER GRADE) ON TWO 4"x4" POSTS. USE COATED HARDWARE. UPSET/FRACTURE THREADS TO PREVENT REMOVAL OF NUTS.

<http://www.fs.fed.us/t-d/pubs/pdfpubs/pdf10712812/pdf10712812dpi72.pdf>

OLY MOLY

CULVERT CONSTRUCTION DETAIL



SECTION A-A

SHEET NUMBER

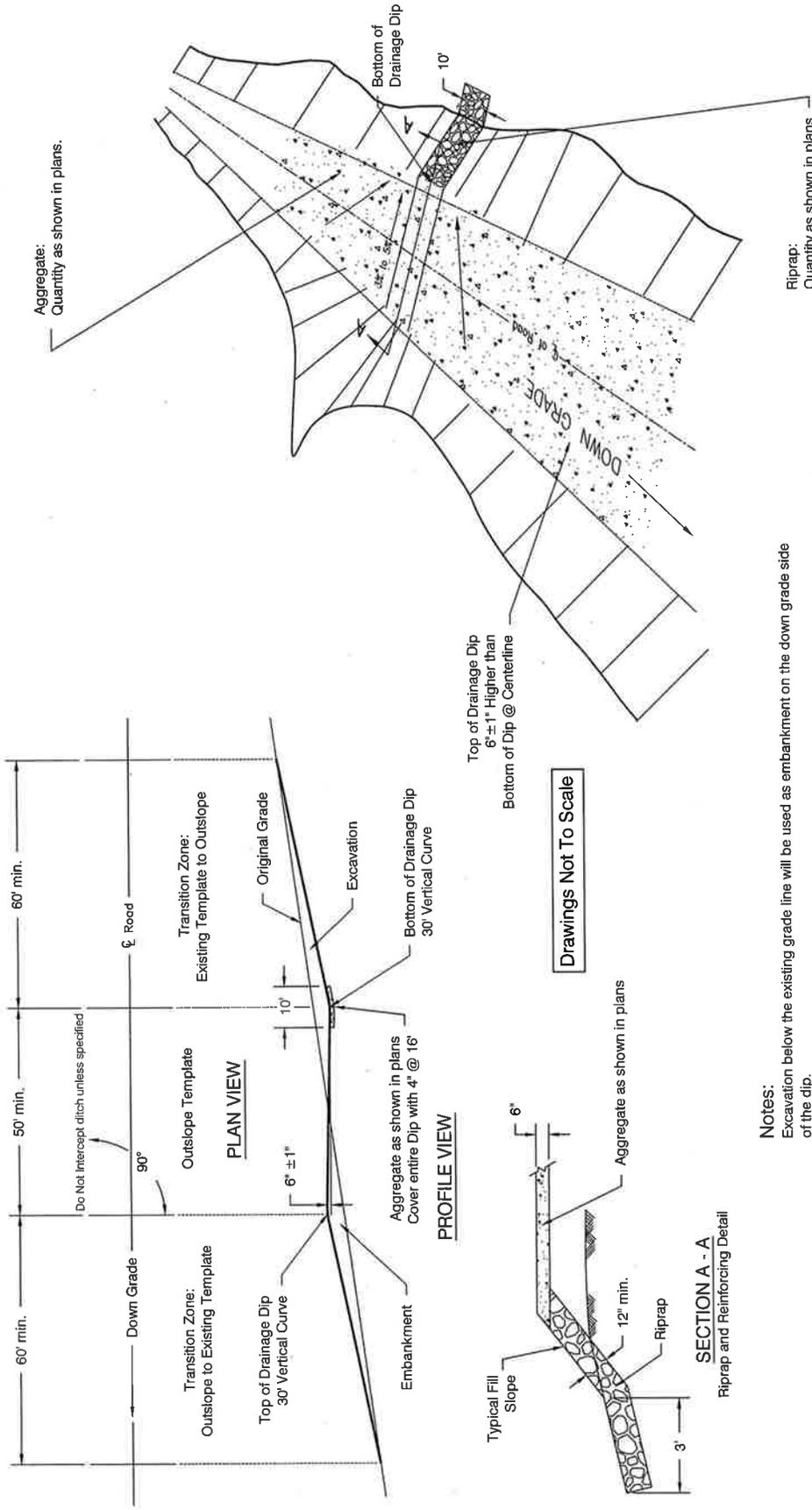
28

TOTAL SHEETS

56

OLY MOLY

DRAIN DIP DETAIL



Notes:
 Excavation below the existing grade line will be used as embankment on the down grade side of the dip.
 All disturbances shall be kept within the limits of the Drainage Dip.
 Aggregate, Dip Reinforcement, or Riprap will only be required when specified in the Drainage Listing or Reconstruction Log.

Aggregate:
Quantity as shown in plans.

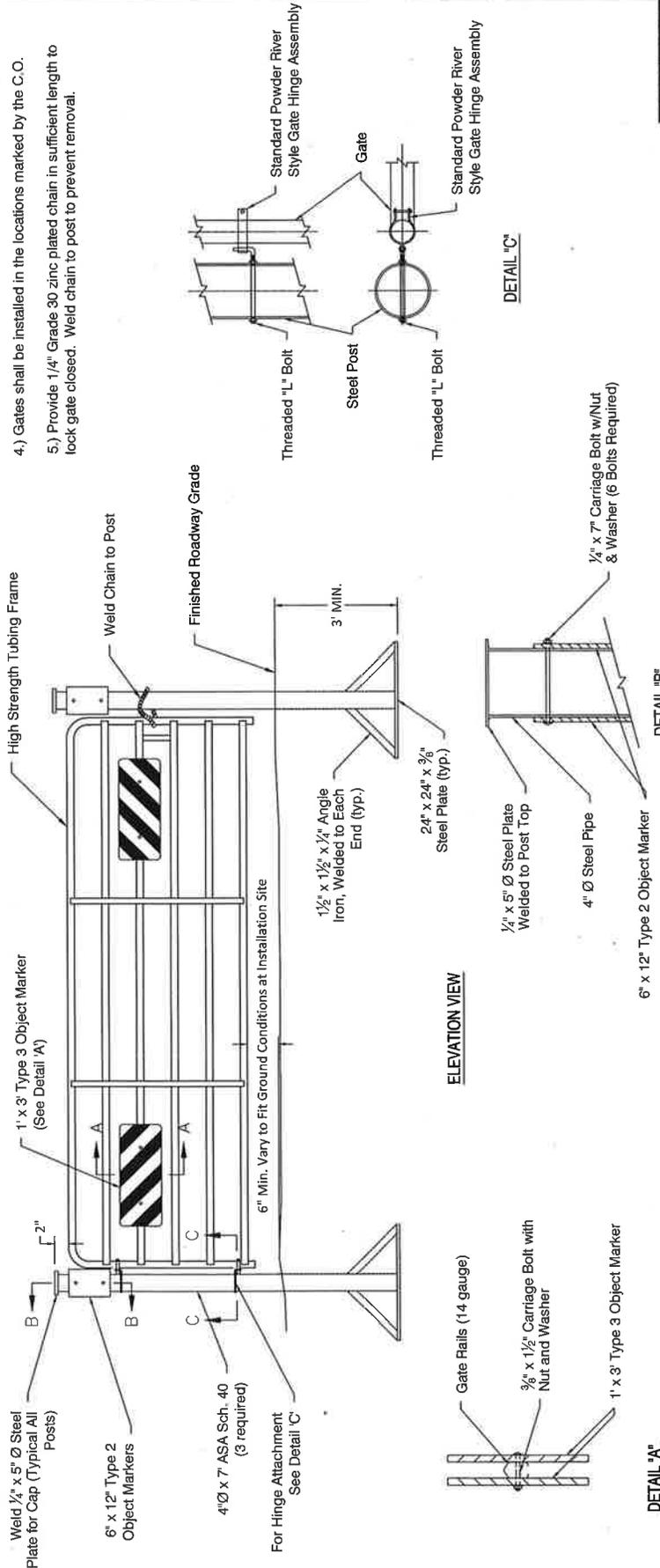
Riprap:
Quantity as shown in plans

SHEET NUMBER	TOTAL SHEETS
30	56

OLY MOLY

POWDER RIVER SYLE GATE

- NOTES:**
- 1.) Gate, all hardware, signs and sign placement, etc. typical with elevation shown this sheet. Heavy duty gate manufactured by Powder River Co. or equal is acceptable.
 - 2.) All signs and markers for the gate shall conform to the "Manual of Uniform Traffic Control Devices", 2009 Edition. Sheeting type shall be 3M High Intensity Prismatic Sheeting, or equivalent that meets reflectivity standards set forth in the "MUTCD". Type 3 Object Markers shall consist of red and white alternating stripes.
 - 3.) After the gate is installed and adjusted, all bolt threads shall be peened or spot welded to prevent their removal.
 - 4.) Gates shall be installed in the locations marked by the C.O.
 - 5.) Provide 1/4" Grade 30 zinc plated chain in sufficient length to lock gate closed. Weld chain to post to prevent removal.

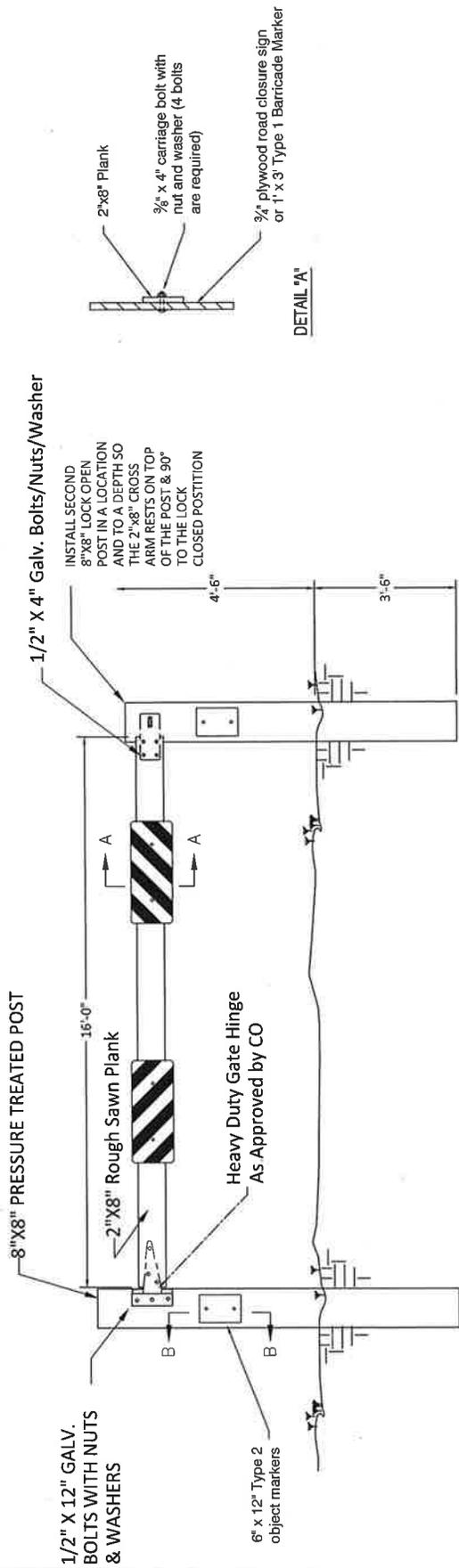


SHEET NUMBER		TOTAL SHEETS	
31		56	

OLY MOLY

Note: Dimensions are measured, dimensionally and do not match Mile Posts marked on the ground.

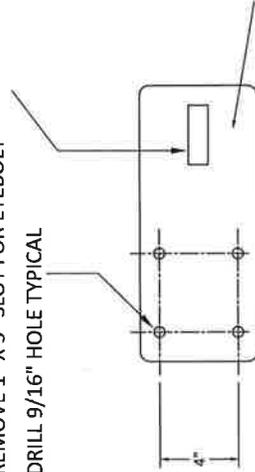
TEMPORARY GATE DETAIL



6" x 12" Type 2 Object Markers, both sides (See Detail 'B')

1/2" X 12" Galv. Eye Bolt With Nut & Washer

REMOVE 1" X 3" SLOT FOR EYEBOLT
DRILL 9/16" HOLE TYPICAL

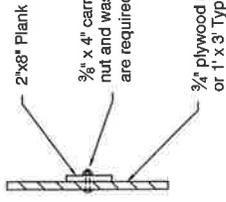


LATCH PLATE DETAIL

3/8" THICK X 6" X 1'-2" STEEL LATCH PLATE. PRIME & PAINT PRIOR TO INSTALLATION

8"x8" Treated Post
6" x 12" Aluminum Object Marker

DETAIL 'B'



DETAIL 'A'

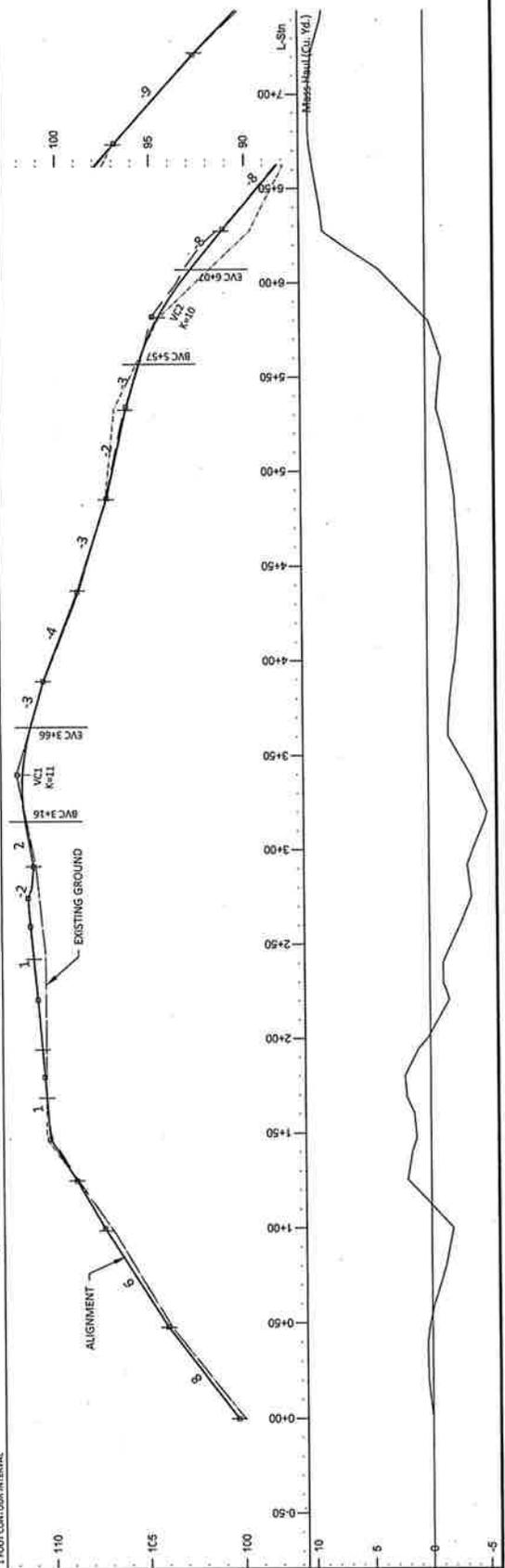
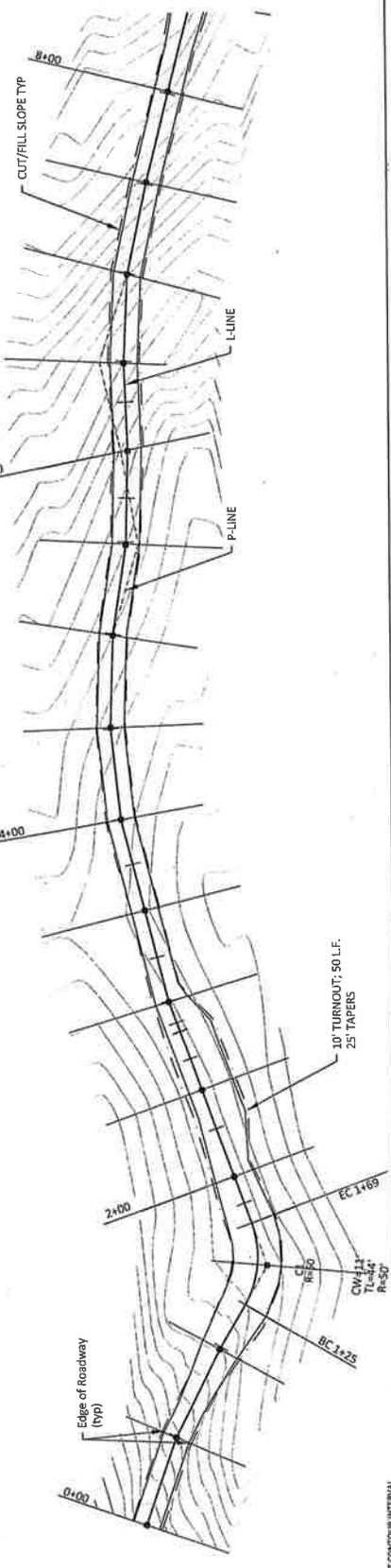
Note: All electrical components and do not install life posts marked on the ground.

OLY MOLY

SHEET NUMBER	TOTAL SHEETS
32	56

PLAN & PROFILE - RD 14321 RIDGE TOP REROUTE, 1 OF 4

- CONTRACTOR MAY SHIFT BOTH HORIZONTAL AND VERTICAL ALIGNMENT BY SMALL AMOUNTS TO BALANCE CUTS & FILLS.
- HORIZONTAL CURVES MUST MEET STATE REQUIREMENTS.
- ANY CHANGES TO THIS DRAWING MUST BE MADE BY THE OPERATOR. CREATED VERTICAL CURVE UNLESS SPECIFIED OTHERWISE.
- CURVE WIDENING MAY BE WASTED ADJACENT TO ROADWAY EXCEPT 25 FEET EITHER SIDE OF STATION 3+50 WHERE A SMALL DRAWN IS LOCATED.
- CURVE WIDENING WIDTH IS SPILT BETWEEN INSIDE AND OUTSIDE OF CURVE

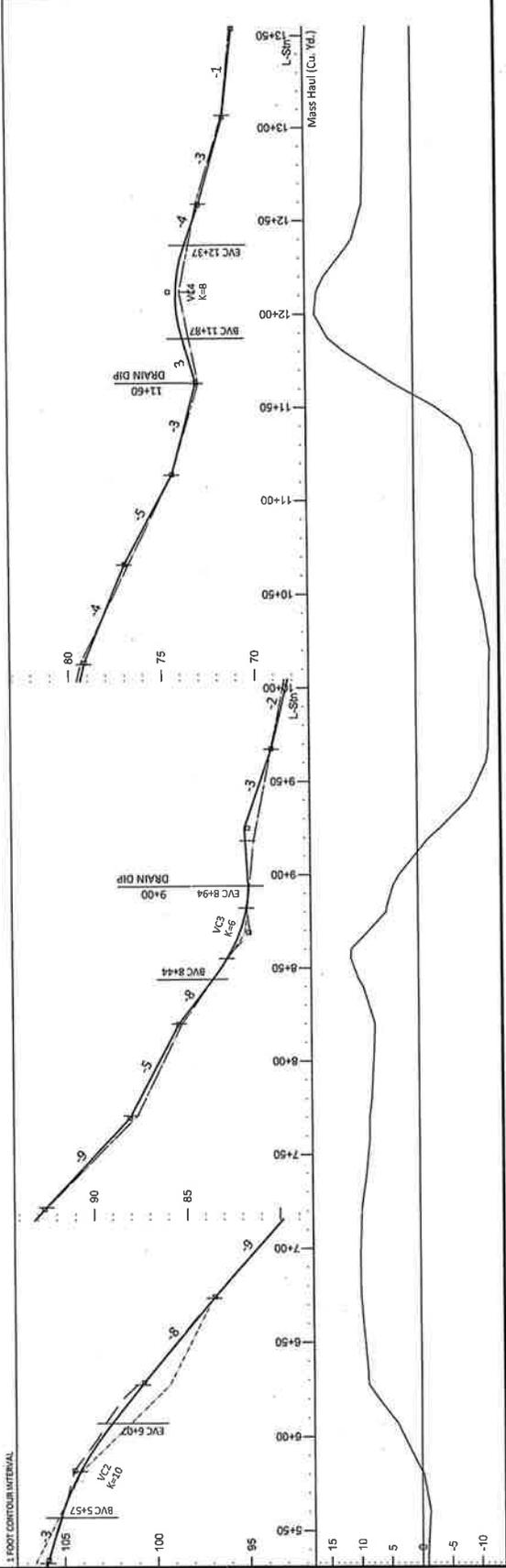
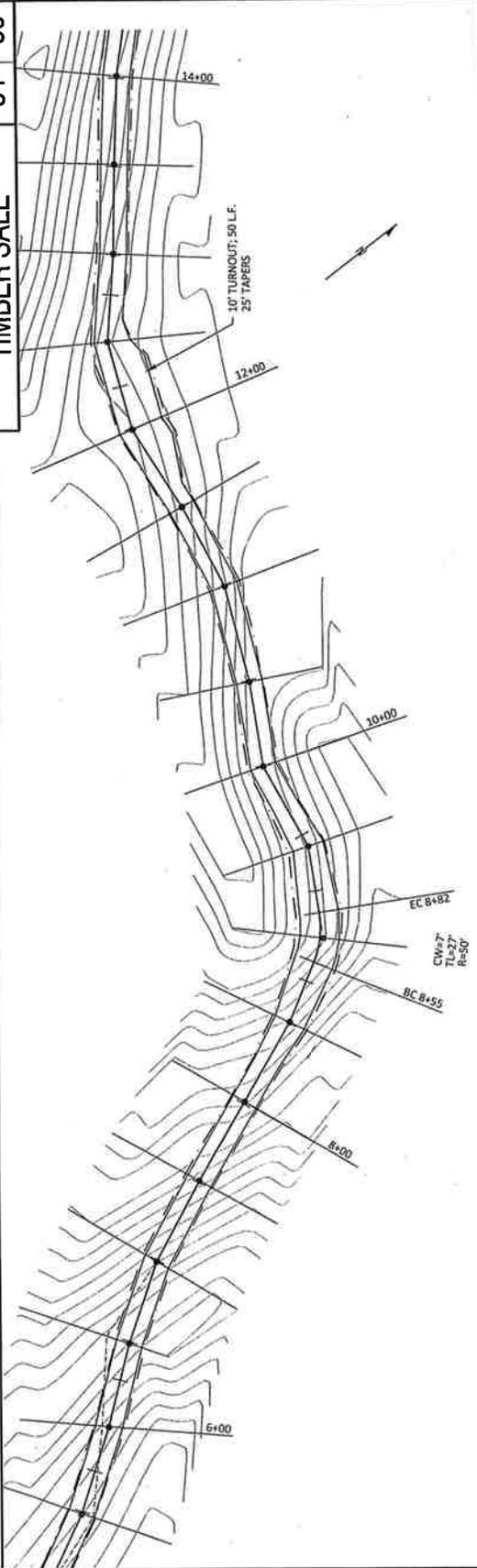


PLAN & PROFILE - RD 14321 RIDGE TOP REROUTE, 2 OF 4

OLY MOLY
TIMBER SALE

SHEET
NUMBER
34

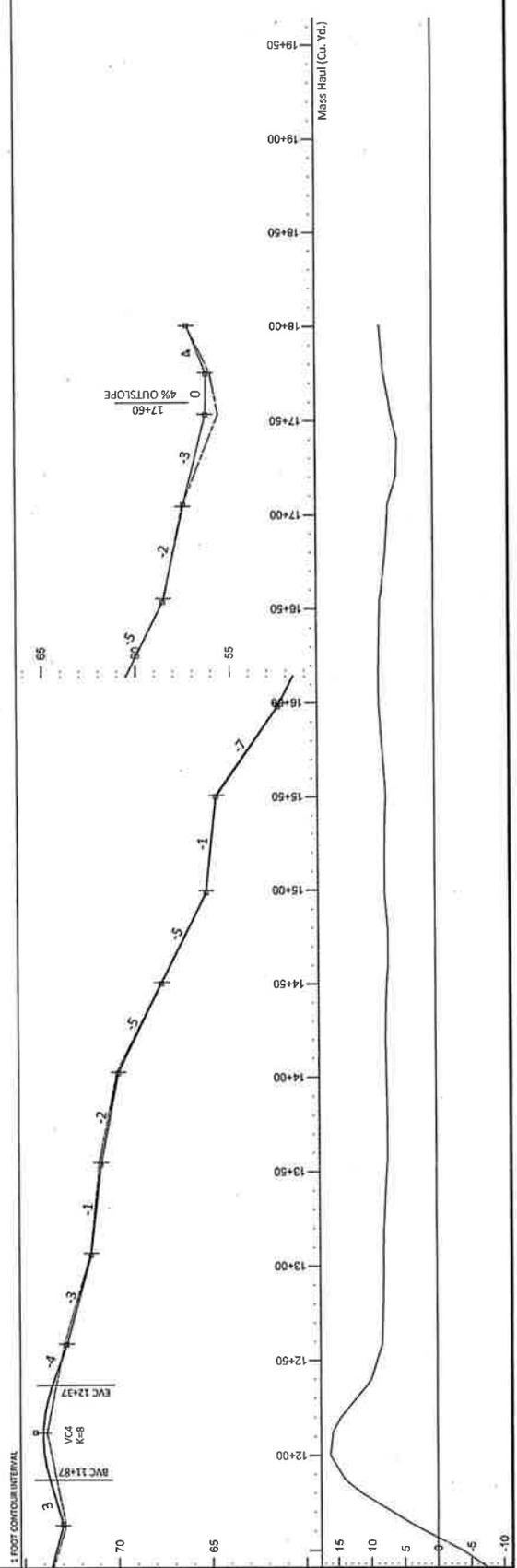
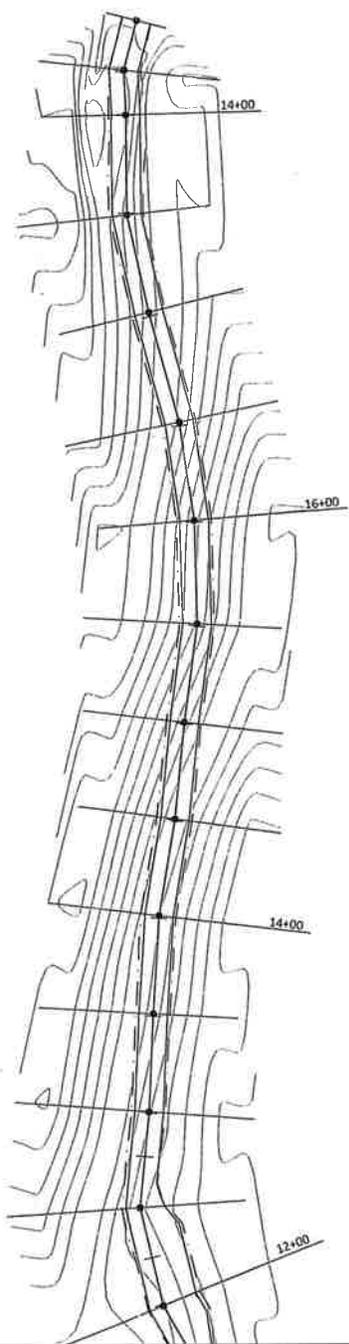
TOTAL
SHEETS
56



PLAN & PROFILE - RD 14321 RIDGE TOP REROUTE, 3 OF 4

OLY MOLY
TIMBER SALE

SHEET NUMBER 35
TOTAL SHEETS 56



RD 14321 RIDGE TOP REROUTE - STAKING NOTES, 4 OF 4

OLY MOLY
TIMBER SALE

SHEET NUMBER 36

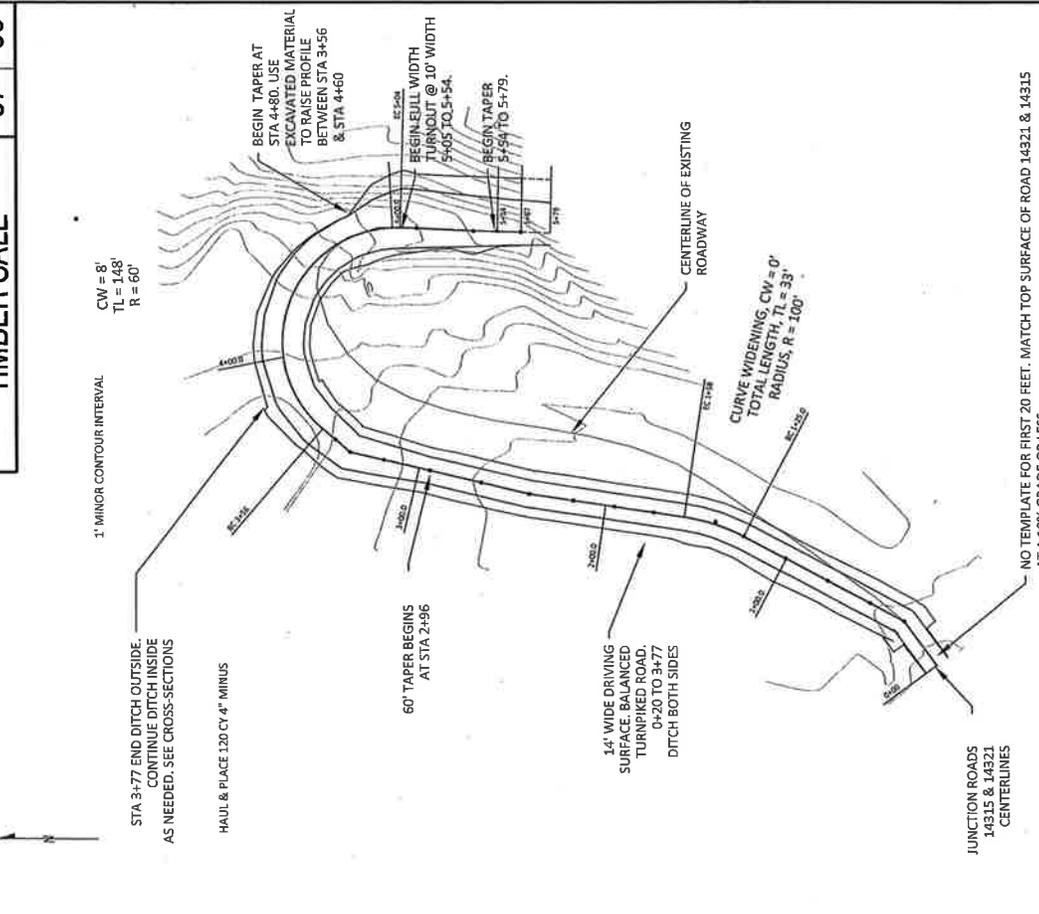
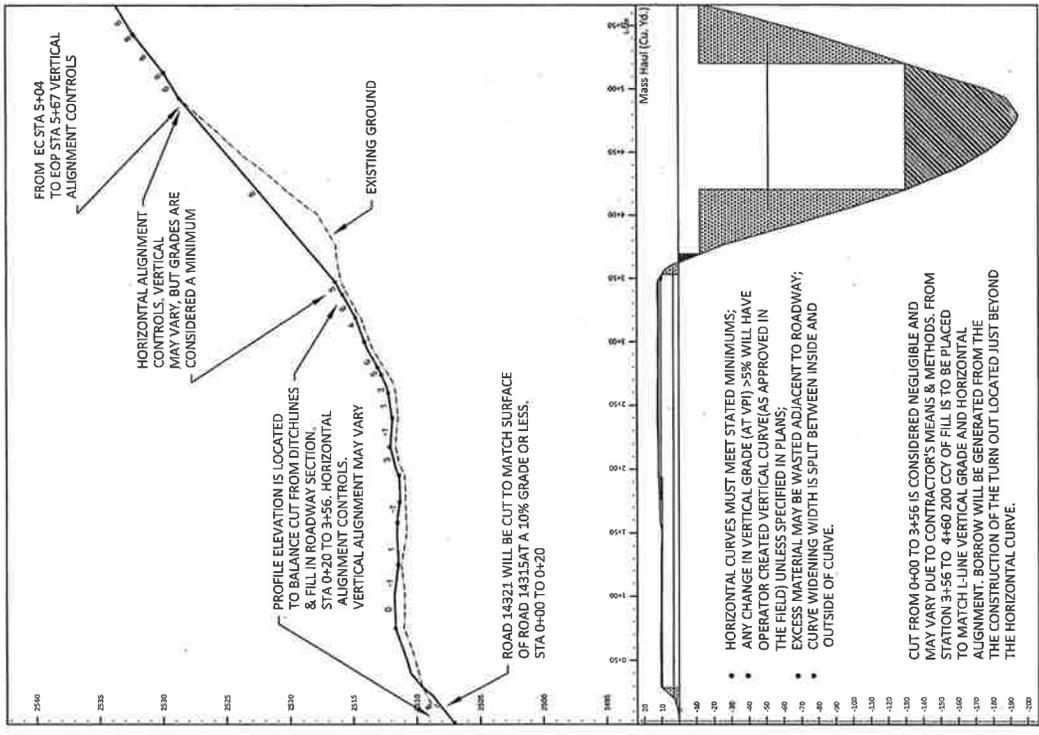
TOTAL SHEETS 56

P-Sin	L-Sin	Cut Dp.	Rd. Wd.	H. Offset	Sk L	Sk R	Ch L	Ch R	Cu. Yd.
0+00	0+00	0	14	0	8	8	8	8	15
0+48	0+48	0	14	0	8	8	8	8	15
0+99	0+99	0	20	0	10	10	11	17	19
1+25	1+25	0	25	0	13	13	13	20	20
1+72	1+69	0	25	0	13	13	20	20	5
1+98	1+95	0	20	0	12	11	19	18	14
2+46	2+43	-1	24	0	9	19	17	26	15
2+95	2+92	0	17	0	8	11	15	18	4
3+44	3+41	0	14	0	7	8	14	15	4
3+93	3+90	0	14	0	8	8	15	15	3
4+41	4+38	0	14	0	8	8	15	15	3
4+89	4+86	0	14	0	8	8	15	15	4
5+36	5+33	0	14	-6	8	8	15	15	5
5+86	5+82	0	14	4	8	8	15	15	10
6+38	6+27	0	14	12	8	8	15	15	6
6+82	6+74	0	14	0	8	8	16	15	6
7+31	7+22	0	14	0	8	8	15	15	5
7+80	7+71	0	14	0	8	8	15	15	6
8+29	8+20	0	17	0	10	10	17	17	11
8+64	8+55	0	21	0	13	13	20	20	6
8+91	8+82	0	21	0	13	12	20	19	6
9+28	9+18	0	17	0	11	9	18	16	4
9+77	9+67	0	14	0	9	8	16	15	6
10+23	10+13	0	14	0	8	8	15	15	8
10+75	10+66	0	14	0	8	9	15	16	6
11+23	11+14	0	14	0	8	8	15	15	17
11+72	11+63	0	24	0	8	19	15	26	22
12+21	12+12	0	19	0	9	13	16	20	3
12+68	12+59	0	14	0	9	8	16	15	7
13+16	13+07	0	14	0	9	8	16	15	8
13+64	13+55	0	14	0	9	8	16	16	9
14+12	14+03	0	14	0	9	9	16	16	8
14+60	14+51	0	14	0	9	8	16	15	8
15+09	15+00	0	14	0	9	8	16	16	9
15+60	15+51	0	14	0	9	8	16	16	8
16+09	16+00	0	14	0	9	8	16	15	8
16+56	16+56	0	14	0	9	8	16	15	6
17+14	17+05	0	14	0	9	8	16	15	10
17+63	17+54	-1	14	0	8	10	16	17	5
17+85	17+76	0	14	0	7	8	14	15	1
18+10	18+01	0	14	0	0	7	14	14	282

PLAN & PROFILE - RD 14321 SWITCHBACK RECONSTRUCTION

OLY MOLY
TIMBER SALE

SHEET NUMBER 37
TOTAL SHEETS 56



PLAN & PROFILE - RD 14321 SWITCHBACK RECONSTRUCTION

OLY MOLY
TIMBER SALE

SHEET NUMBER 38
TOTAL SHEETS 56

P-Stn ft.	L-Stn ft.	Cut Dp. ft.	Rd. Wd. ft.	H. Offset ft.	Sk L ft.	Sk R ft.	Clr L ft.	Clr R ft.	Mass H. Cu. Yd.	SG Cut V. Cu. Yd.
0+01	0+01	0+00	0+14	0	7	7	14	14	0	11
0+30	0+30	0+00	0+14	0	12	12	19	19	11	4
0+50	0+50	-0+01	0+14	-4	13	13	20	20	11	5
0+75	0+75	-0+01	0+14	-7	13	12	20	19	11	6
1+00	1+00	-0+01	0+14	-10	14	12	21	19	10	6
1+25	1+25	0+00	0+14	-13	12	12	19	19	10	0
1+25	1+25	0+00	0+14	-13	13	12	20	19	10	7
1+57	1+58	-0+01	0+14	-22	13	12	20	19	11	3
1+77	1+74	0+00	0+14	-28	12	12	19	19	11	3
2+02	1+95	0+00	0+14	-33	12	12	19	19	12	3
2+24	2+17	0+00	0+14	-35	12	12	19	19	12	4
2+49	2+41	0+00	0+14	-35	12	12	19	19	12	4
2+75	2+67	-0+01	0+14	-33	12	12	19	19	12	4
3+00	2+94	0+00	0+14	-33	12	12	19	19	12	3
3+20	3+19	0+00	0+17	-35	14	14	21	21	12	3
3+34	3+37	0+00	0+19	-40	15	15	22	22	12	2
3+40	3+47	0+00	0+21	-38	16	15	23	22	12	1
3+44	3+56	-0+01	0+22	-38	15	15	22	22	8	30
4+60	5+04	0+00	0+32	0	32	14	39	21	-168	21
4+69	5+13	0+00	0+31	0	30	13	37	20	-147	70
4+99	5+43	0+00	0+27	0	31	13	38	21	-79	68
5+24	5+67	0+00	0+24	0	24	7	12533	15	-12	

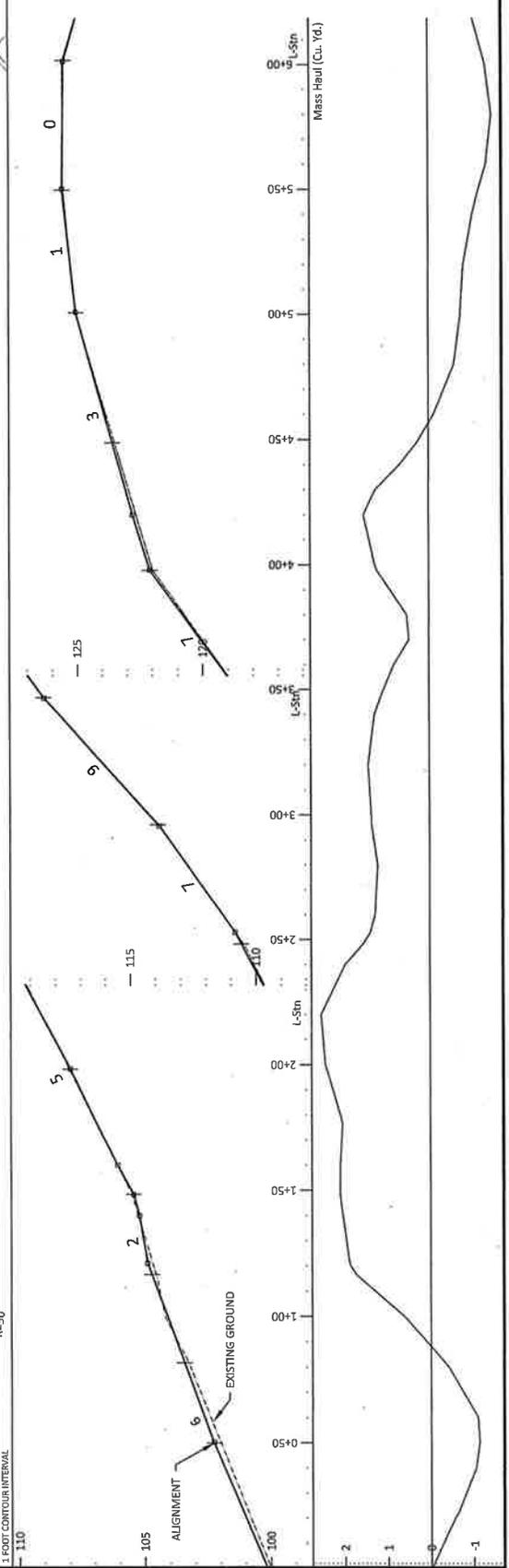
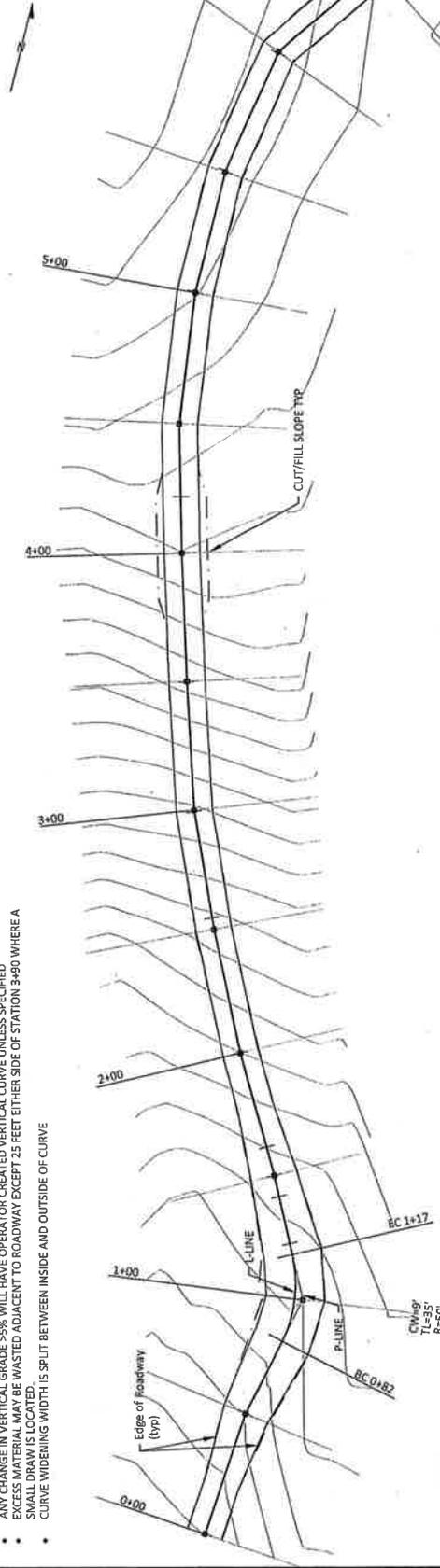
PLAN & PROFILE - RD 14321A REROUTE, 1 OF 3

OLY MOLY
TIMBER SALE

SHEET
NUMBER
39

TOTAL
SHEETS
56

- CONTRACTOR MAY SUEVE BOTH HORIZONTAL AND VERTICAL ALIGNMENT BY SMALL AMOUNTS TO BALANCE CUTS & FILLS.
- HORIZONTAL CURVES MUST MEET STATED MINIMUMS.
- ANY CHANGE IN VERTICAL GRADE $\pm 5\%$ WILL HAVE OPERATOR CREATED VERTICAL CURVE UNLESS SPECIFIED
- EXCESS MATERIAL MAY BE WASTED ADJACENT TO ROADWAY EXCEPT 25 FEET EITHER SIDE OF STATION 3+00 WHERE A SMALL DRAW IS LOCATED.
- CURVE WIDENING WIDTH IS SPLIT BETWEEN INSIDE AND OUTSIDE OF CURVE



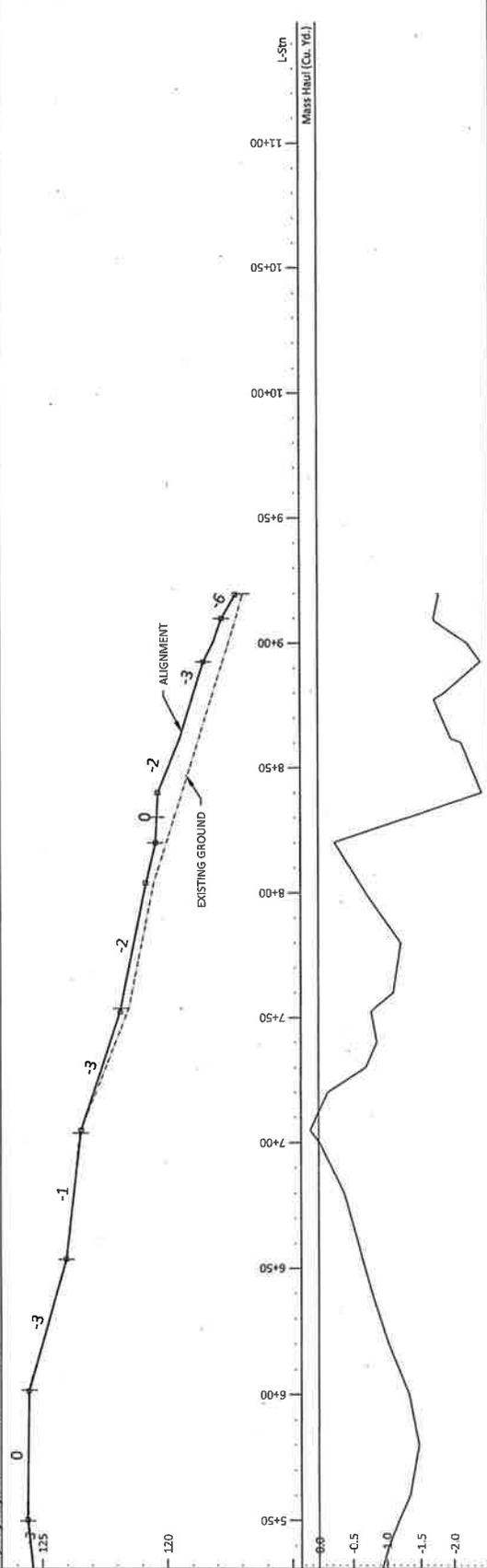
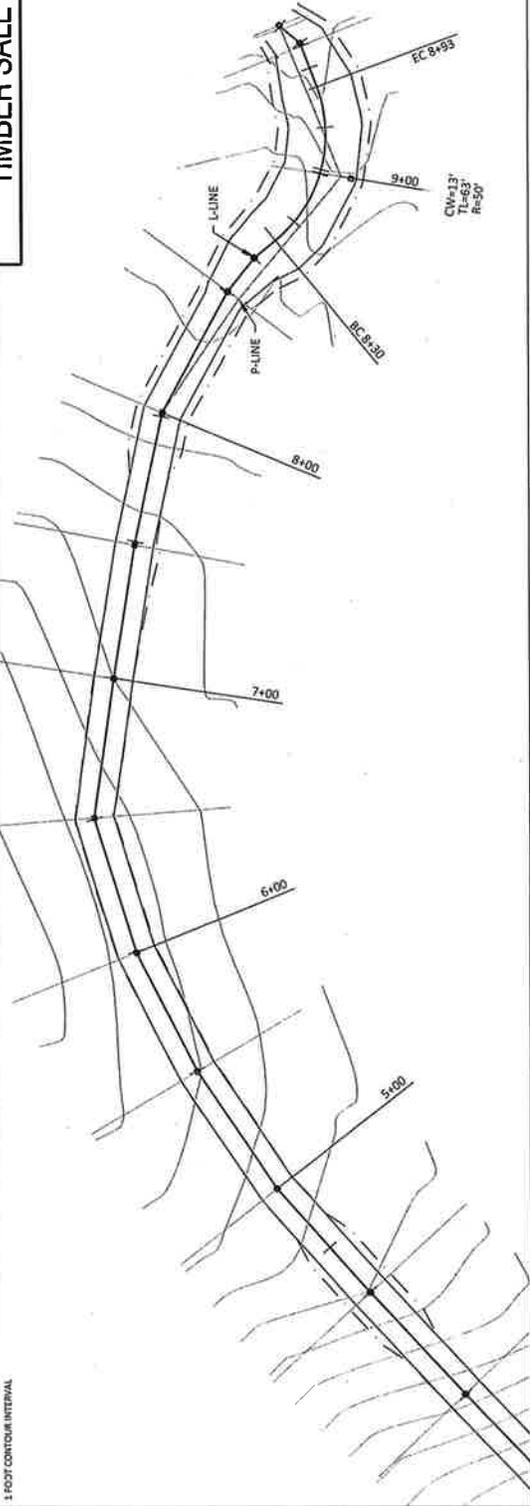
PLAN & PROFILE - RD 14321A REROUTE, 2 OF 3

OLY MOLY
TIMBER SALE

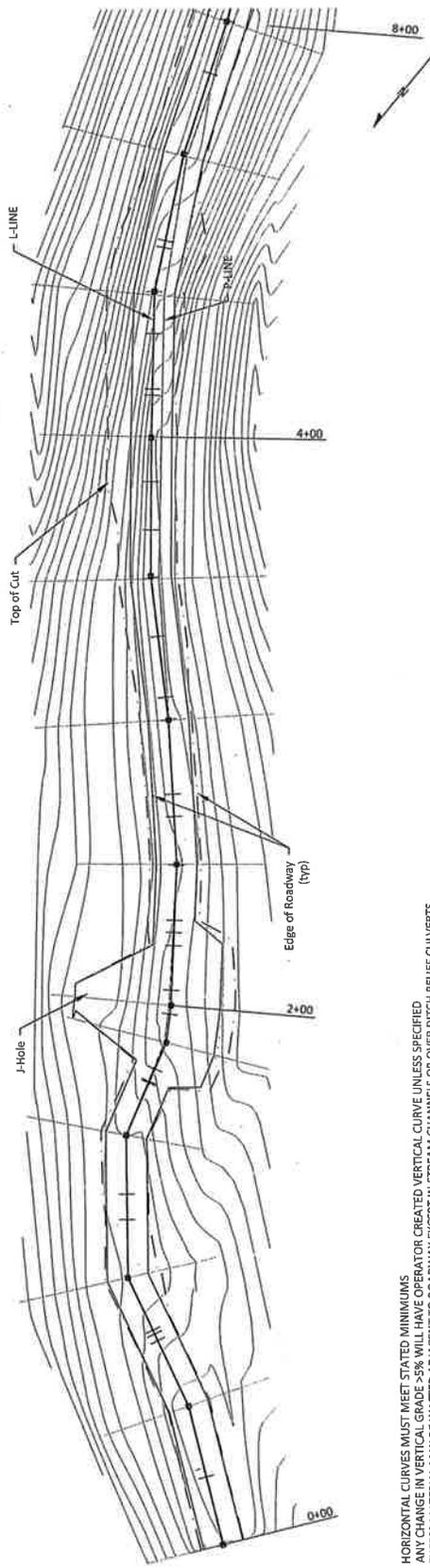
SHEET
NUMBER
40

TOTAL
SHEETS
56

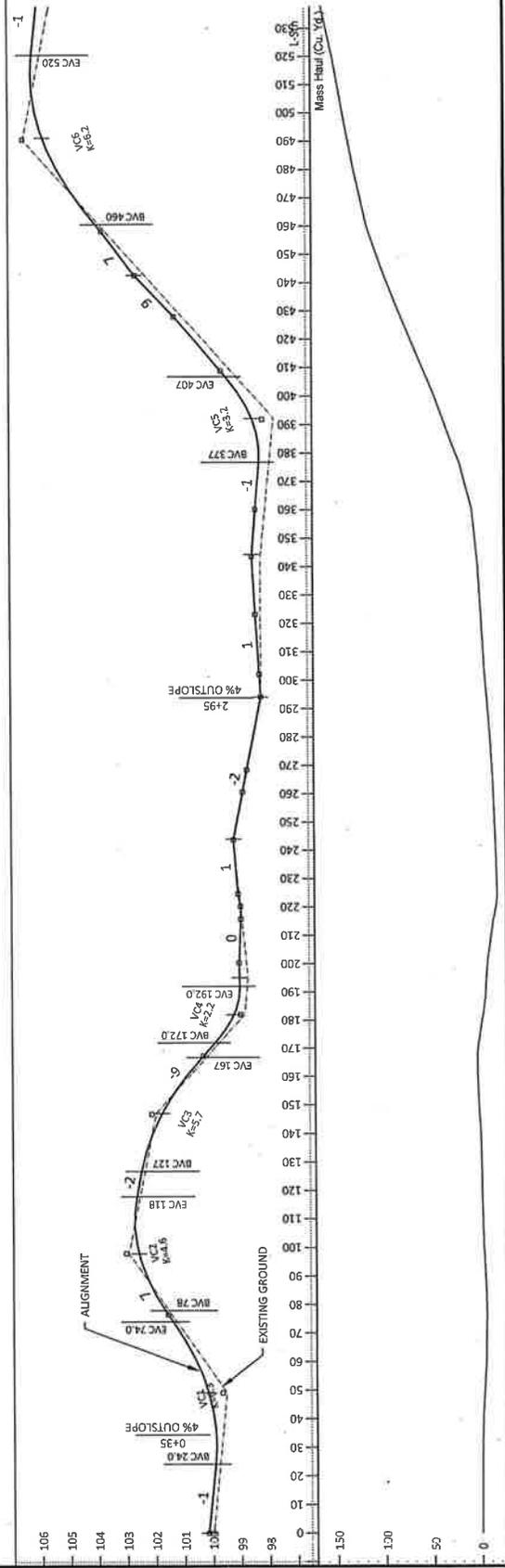
1 FOOT CONTOUR INTERVAL



1 FOOT CONTOUR INTERVAL



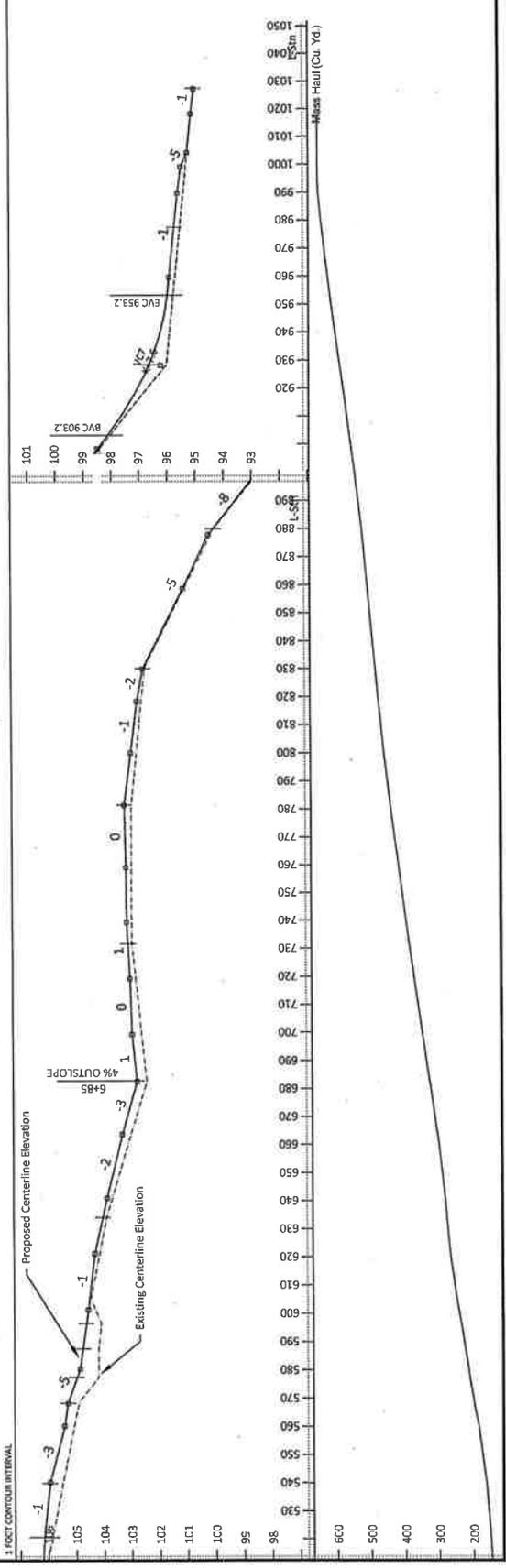
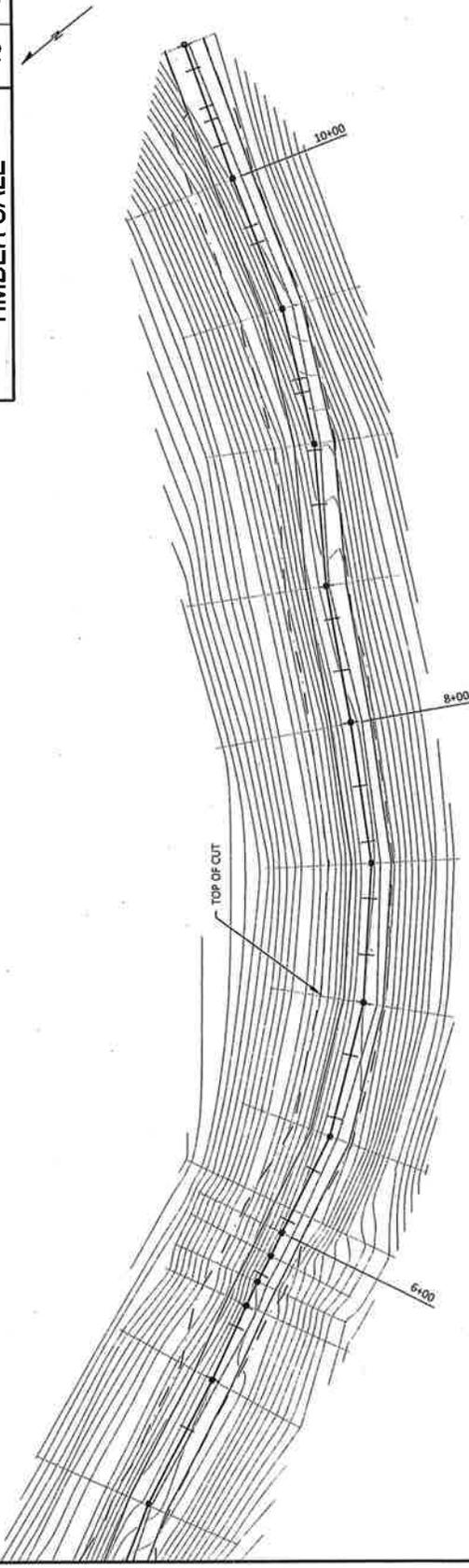
- HORIZONTAL CURVES MUST MEET STATED MINIMUMS
- ANY CHANGE IN VERTICAL GRADE >5% WILL HAVE OPERATOR CREATED VERTICAL CURVE UNLESS SPECIFIED
- EXCESS MATERIAL MAY BE WASTED ADJACENT TO ROADWAY EXCEPT IN STREAM CHANNELS OR OVER DITCH RELIEF CULVERTS
- EXCAVATION WILL BE SIDE CAST. NO COMPACTION REQUIRED



PLAN & PROFILE - ROAD 14393, 2 OF 3

OLY MOLY TIMBER SALE

SHEET NUMBER 43
TOTAL SHEETS 56



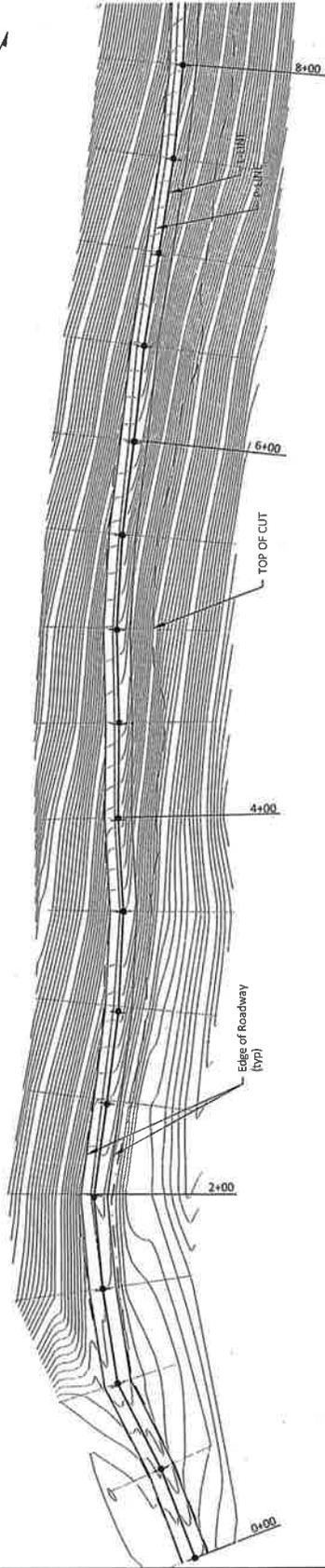
PLAN AND PROFILE - ROAD 2393, 1 OF 3

OLY MOLY
TIMBER SALE

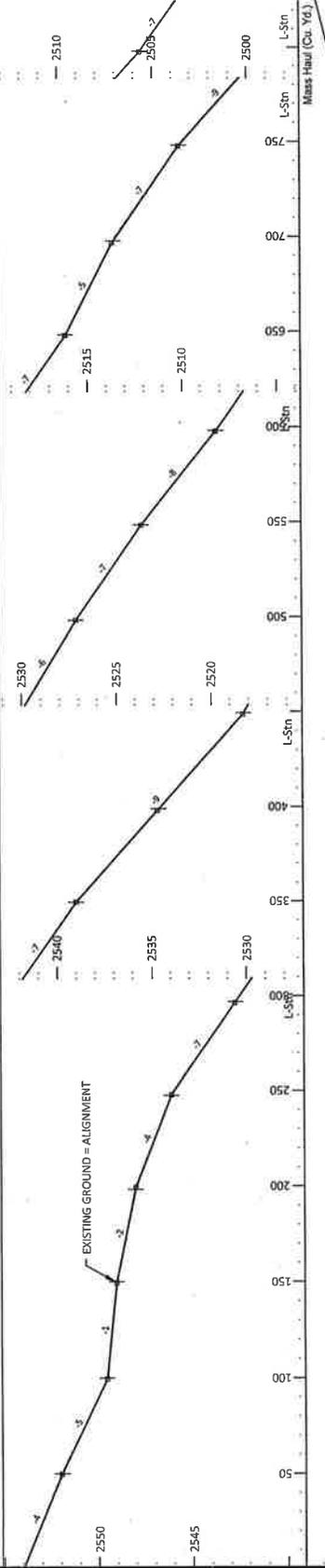
SHEET
NUMBER
45

TOTAL
SHEETS
56

1 FOOT CONTOUR INTERVAL



- HORIZONTAL CURVES MUST MEET STATED MINIMUMS
- ANY CHANGE IN VERTICAL GRADE >5% WILL HAVE OPERATOR CREATED VERTICAL CURVE UNLESS SPECIFIED
- EXCESS MATERIAL MAY BE WASTED ADJACENT TO ROADWAY EXCEPT IN STREAM/ CHANNELS OR OVER DITCH RELIEF CULVERTS
- EXCAVATION WILL BE SIDE CAST. NO COMPACTION REQUIRED, EXCEPT FOR 150 CY USED TO CREATE VERTICAL CURVE AT BOTTOM OF GRADE



500

800

350

400

500

750

800

850

900

950

1000

1050

1100

1150

1200

1250

1300

1350

1400

1450

1500

1550

1600

1650

1700

1750

1800

1850

1900

1950

2000

2050

2100

2150

2200

2250

2300

2350

2400

2450

2500

2550

2600

2650

2700

2750

2800

2850

2900

2950

3000

3050

3100

3150

3200

3250

3300

3350

3400

3450

3500

3550

3600

3650

3700

3750

3800

3850

3900

3950

4000

4050

4100

4150

4200

4250

4300

4350

4400

4450

4500

4550

4600

4650

4700

4750

4800

4850

4900

4950

5000

5050

5100

5150

5200

5250

5300

5350

5400

5450

5500

5550

5600

5650

5700

5750

5800

5850

5900

5950

6000

6050

6100

6150

6200

6250

6300

6350

6400

6450

6500

6550

6600

6650

6700

6750

6800

6850

6900

6950

7000

7050

7100

7150

7200

7250

7300

7350

7400

7450

7500

7550

7600

7650

7700

7750

7800

7850

7900

7950

8000

8050

8100

8150

8200

8250

8300

8350

8400

8450

8500

8550

8600

8650

8700

8750

8800

8850

8900

8950

9000

9050

9100

9150

9200

9250

9300

9350

9400

9450

9500

9550

9600

9650

9700

9750

9800

9850

9900

9950

10000

10050

10100

10150

10200

10250

10300

10350

10400

10450

10500

10550

10600

10650

10700

10750

10800

10850

10900

10950

11000

11050

11100

11150

11200

11250

11300

11350

11400

11450

11500

11550

11600

11650

11700

11750

11800

11850

11900

11950

12000

12050

12100

12150

12200

12250

12300

12350

12400

12450

12500

12550

12600

12650

12700

12750

12800

12850

12900

12950

13000

13050

13100

13150

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13500

13550

13600

13650

13700

13750

13800

13850

13900

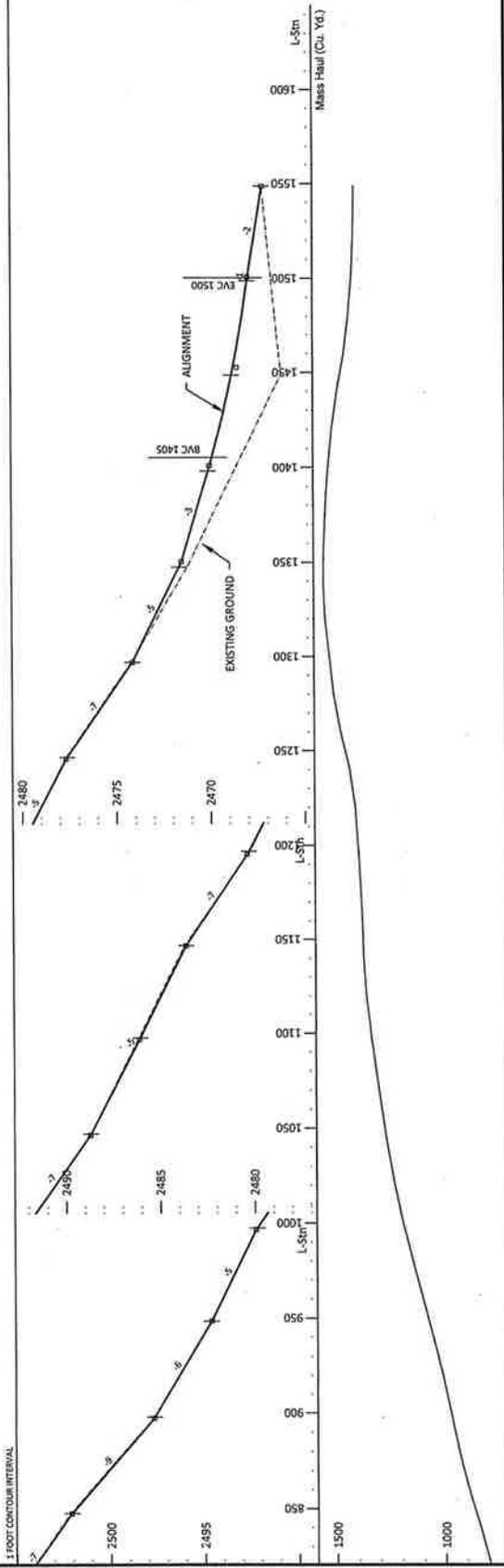
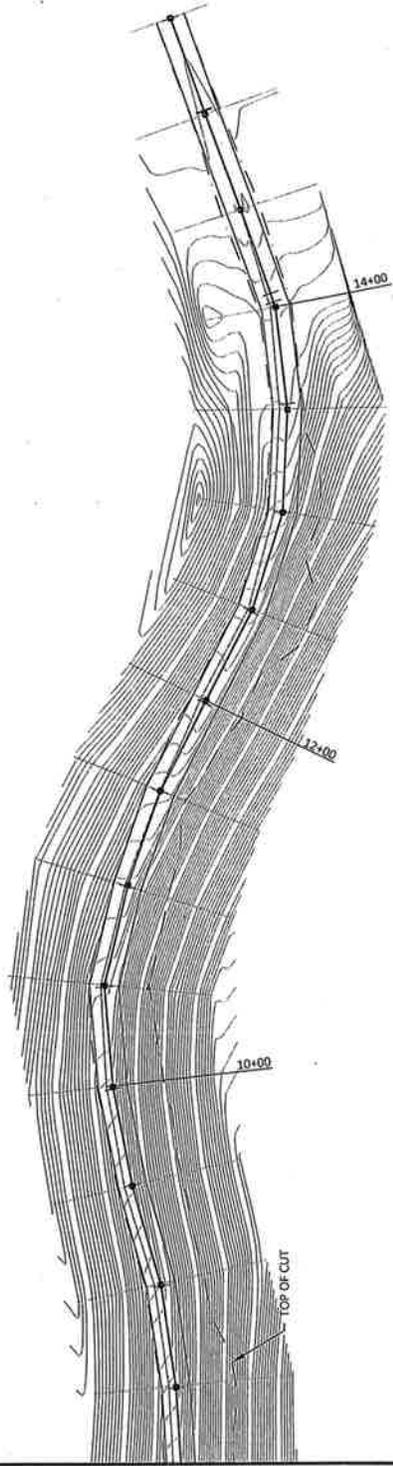
</

PLAN AND PROFILE - ROAD 2393, 2 OF 3

OLY MOLY
TIMBER SALE

SHEET
NUMBER
46

TOTAL
SHEETS
56



RD 2393 STAKING NOTES, 3 OF 3

OLY MOLY
TIMBER SALE

SHEET NUMBER 47

TOTAL SHEETS 56

P-Sh	L-Sh	Rd. Wd.	H. Offset	SK L	SK R	CL L	CL R	Mass H.	SG Cut V.
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	Cu. Yd.	Cu. Yd.
0	0+00	0+14	0	7	8	7	7	0	2
50	0+50	0+14	0	8	7	7	8	-2	3
100	1+00	0+14	0	7	8	7	8	-3	2
150	1+50	0+14	0	8	9	8	9	-4	3
198	1+98	0+14	2	8	9	8	9	-3	10
248	2+47	0+14	3	8	14	8	14	5	26
297	2+97	0+14	3	8	17	8	17	31	31
350	3+49	0+14	2	7	17	7	17	61	47
399	3+99	0+14	2	8	24	8	24	107	65
449	4+49	0+14	2	7	29	7	29	171	51
498	4+98	0+14	2	7	22	7	22	222	46
549	5+48	0+14	2	8	22	8	22	267	64
598	5+98	0+14	3	8	27	8	27	331	92
649	6+48	0+14	4	8	37	8	37	422	107
698	6+98	0+14	4	7	31	7	31	528	107
749	7+48	0+14	4	7	28	7	28	635	109
798	7+98	0+14	4	8	33	8	33	744	118
848	8+48	0+14	3	7	36	7	37	861	112
898	8+98	0+14	3	8	26	8	26	973	107
948	9+48	0+14	4	7	30	7	30	1079	112
997	9+97	0+14	3	8	31	8	31	1190	86
1047	10+47	0+14	2	8	26	8	26	1275	63
1098	10+98	0+14	1	7	24	7	24	1337	36
1148	11+47	0+14	0	7	14	7	14	1373	22
1198	11+97	0+14	3	7	23	7	23	1392	53
1247	12+47	0+14	2	7	35	7	35	1443	76
1297	12+97	0+14	4	7	22	7	22	1518	33
1347	13+48	0+14	4	8	8	8	8	1547	1
1397	13+98	0+14	3	8	8	8	8	1526	0
1447	14+49	0+14	0	10	9	10	10	1472	0
1497	14+99	0+14	0	7	8	7	8	1423	0
1547	15+49	0+14	0	7	7	7	7	1411	1584

PLAN & PROFILE - RD 4407, MP 1.07 J-HOLE

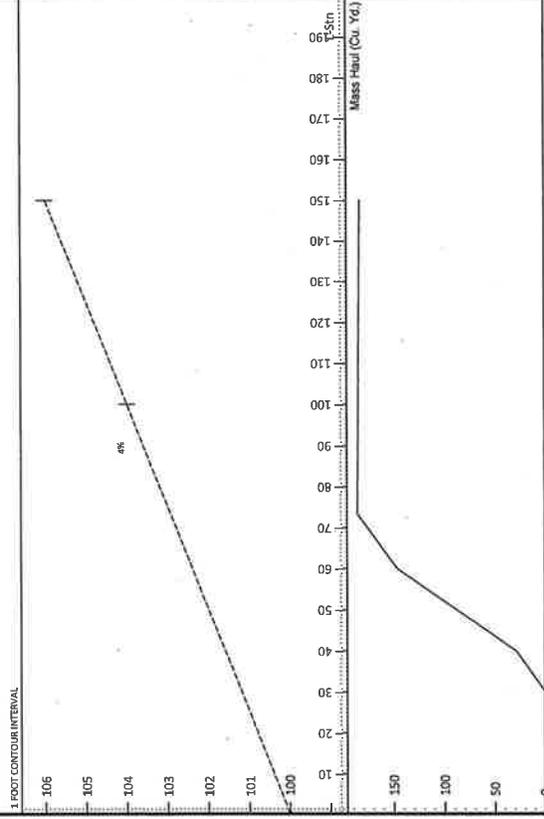
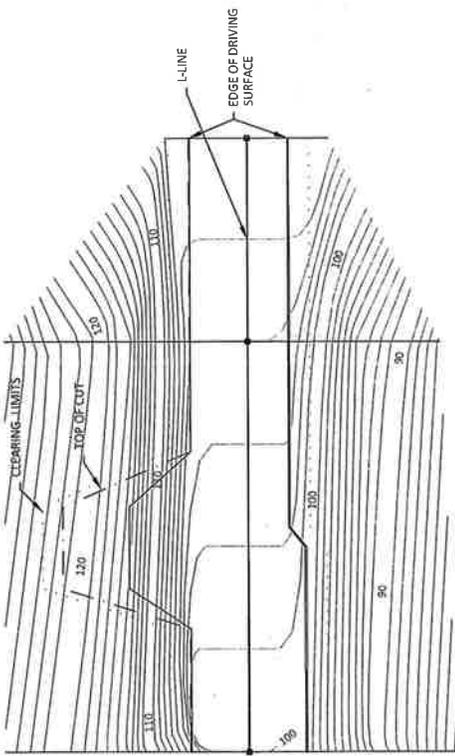
OLY MOLY
TIMBER SALE

SHEET NUMBER
48

TOTAL SHEETS
56

STAKING NOTES

P-Str	L-Str	H. Offset	Rd. Wd. L	Rd. Wd. R	Slk L	Slk R	Clr L	Clr R
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
0	0	0	14	14	14	14	20	20
0	0	0	14	14	14	14	20	20
20	20	0	14	14	14	14	20	20
40	40	0	29	14	49	14	54	20
60	60	0	29	10	49	10	54	16
80	80	0	14	10	14	10	20	16
100	100	0	14	10	14	10	20	16
120	120	0	14	10	14	10	20	16
140	140	0	14	10	14	10	19	15
150	150	0	14	10	14	10	19	15



PLAN & PROFILE - RD 4407, J-HOLES, MP1.49, 1.82, 4.03, 4.49

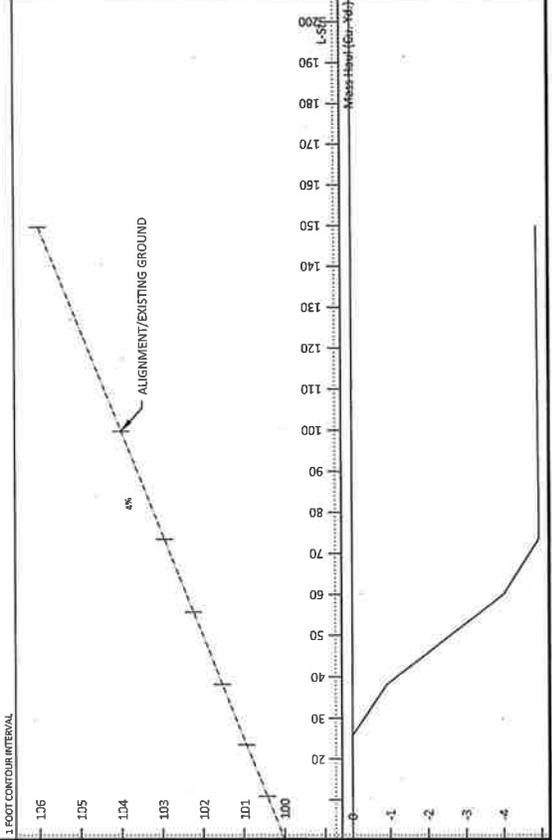
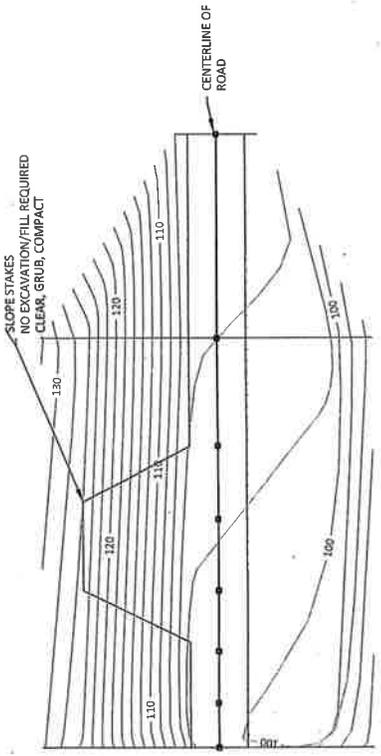
OLY MOLY
TIMBER SALE

SHEET NUMBER
49

TOTAL SHEETS
56

STAKING NOTES

P-Stn	L-Stn	H. Offset	Rd. Wd. L	Rd. Wd. R	Sk. L	Sk. R	Cir. L	Cir. R
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
0+00	0+00	0	7	7	7	7	7	7
0+20	0+20	0	7	7	7	7	7	7
0+40	0+40	0	33	19	36	42	36	42
0+60	0+60	0	33	19	36	42	36	42
0+80	0+80	0	7	11	7	25	7	25
1+00	1+00	0	7	7	7	7	7	7
1+20	1+20	0	7	7	7	7	7	7
1+40	1+40	0	7	7	7	7	7	7
1+60	1+60	0	7	7	7	7	7	7



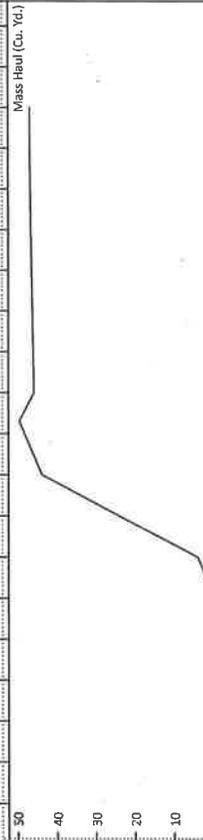
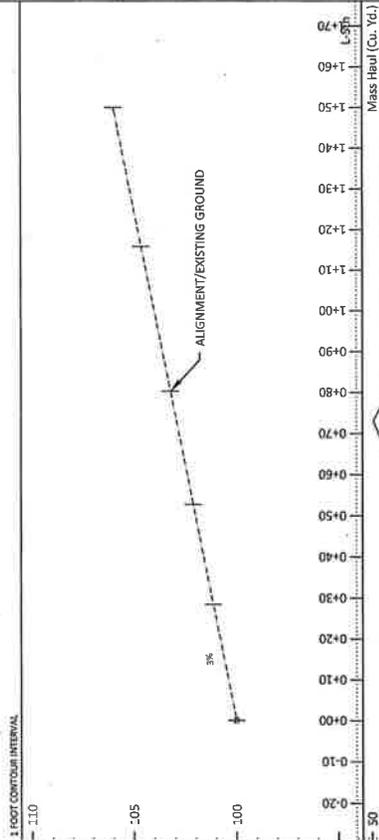
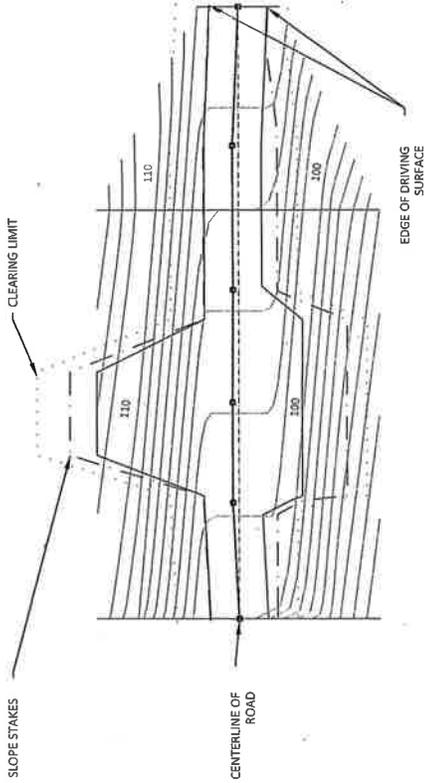
PLAN & PROFILE - RD 4408, STA 11+70 & 24+10, 1 OF 6

OLY MOLY
TIMBER SALE

SHEET NUMBER 50 TOTAL SHEETS 56

STAKING NOTES

P-Strn	L-Strn	H. Offset	Rd. Wd. L	Rd. Wd. R	Sk R	Sk L	Cir L	Cir R
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
0+00	0+00	0	7	7	9	7	15	15
0+20	0+20	-1	7	7	10	7	15	16
0+40	0+40	-2	33	19	29	41	50	34
0+60	0+60	-2	33	19	29	41	50	34
0+80	0+80	-1	7	8	11	7	16	16
1+00	1+00	-1	7	7	11	7	16	16
1+20	1+20	-1	7	7	11	7	16	16
1+40	1+40	0	7	7	7	7	15	12
1+50	1+50	0	7	7	7	7	15	12

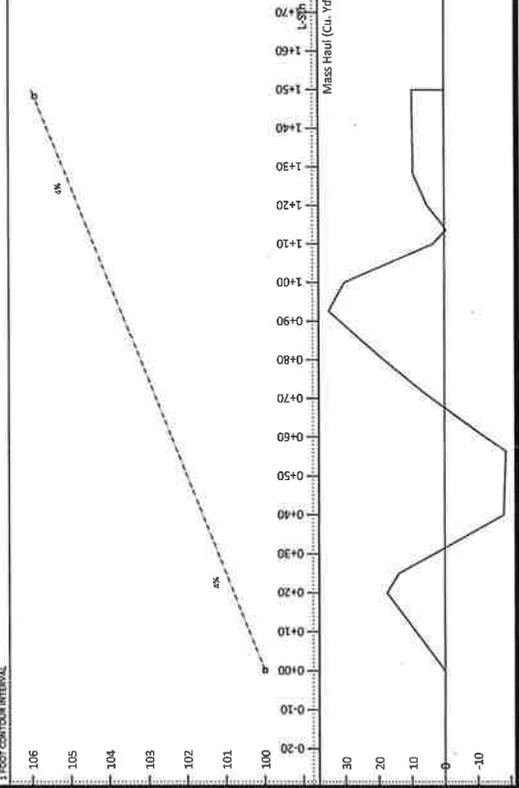
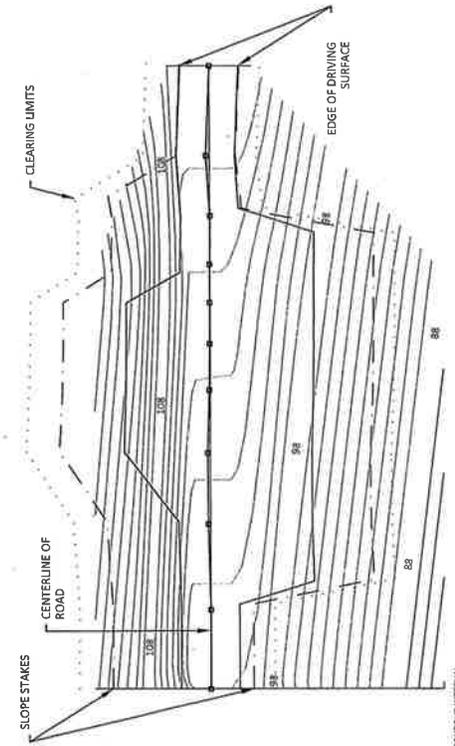


PLAN & PROFILE - ROAD 4408, STA 53+10 J-HOLE, 2 OF 6

OLY MOLY
TIMBER SALE

SHEET
NUMBER
51

TOTAL
SHEETS
56



P-Str	L-Str	H. Offset	Rd. Wd. L	Rd. Wd. R	Slk L	Slk R	Ctr L	Ctr R
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
0+00	0+00	0	7	7	27	10	35	15
0+20	0+20	0	7	7	27	10	35	16
0+40	0+40	-1	7	27	27	40	36	46
0+60	0+60	-1	20	27	40	40	48	46
0+80	0+80	0	20	27	39	41	48	46
1+00	1+00	0	7	27	27	41	35	46
1+20	1+20	0	7	7	27	8	36	13
1+40	1+40	0	7	7	7	7	15	12
1+50	1+50	0	7	7	7	7	15	12

11x17 Blank DWG REV. 01/2003

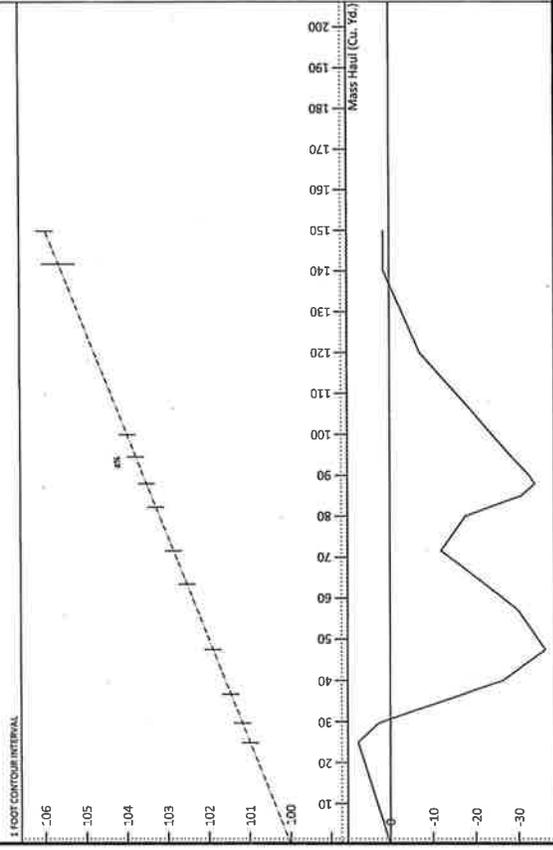
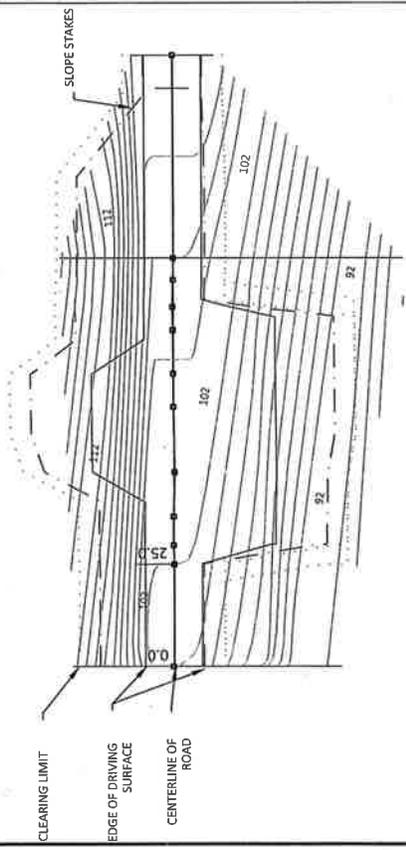
PLAN & PROFILE - ROAD 4408, STA 67+50 J-HOLE, 3 OF 6

**OLY MOLY
TIMBER SALE**

SHEET NUMBER	TOTAL SHEETS
52	56

STAKING NOTES

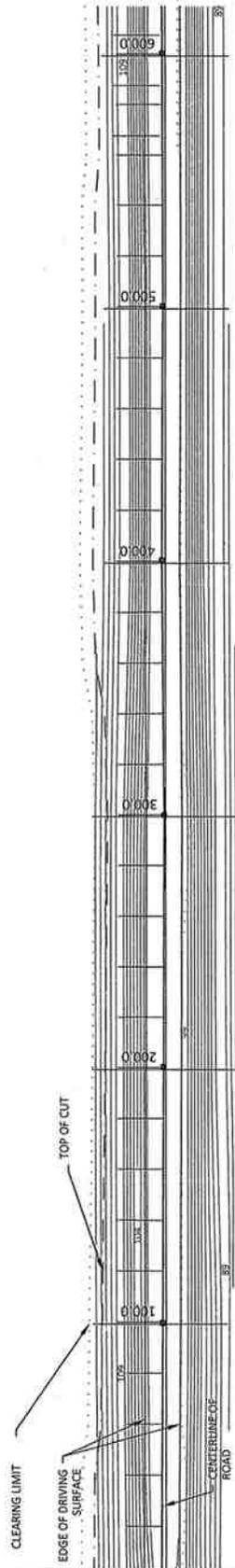
P-Str	L-Str	H. Offset	Rd. Wd. L	Rd. Wd. R	Slk L	Slk R	Clr L	Clr R
0	0	0	7	7	20	7	25	12
20	20	0	7	7	20	7	25	12
40	40	0	7	27	20	39	25	44
60	60	0	20	27	39	41	45	46
80	80	0	20	27	39	41	45	46
100	100	0	7	7	27	8	32	13
120	120	0	7	7	27	8	32	13
140	140	0	7	7	7	7	12	12
150	150	0	7	7	7	7	12	12



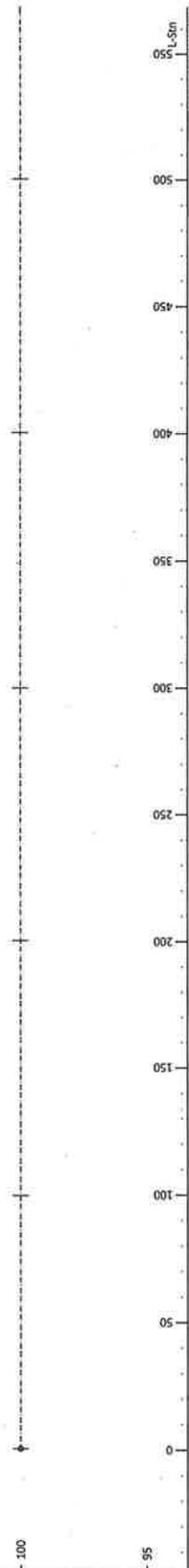
PLAN & PROFILE - RD 4408 STA 5400 WIDENING, 4 OF 6

OLY MOLY
TIMBER SALE

SHEET NUMBER 53
TOTAL SHEETS 56



1 FOOT CONTOUR INTERVAL
105



Mass Haul (Cu. Yds.)

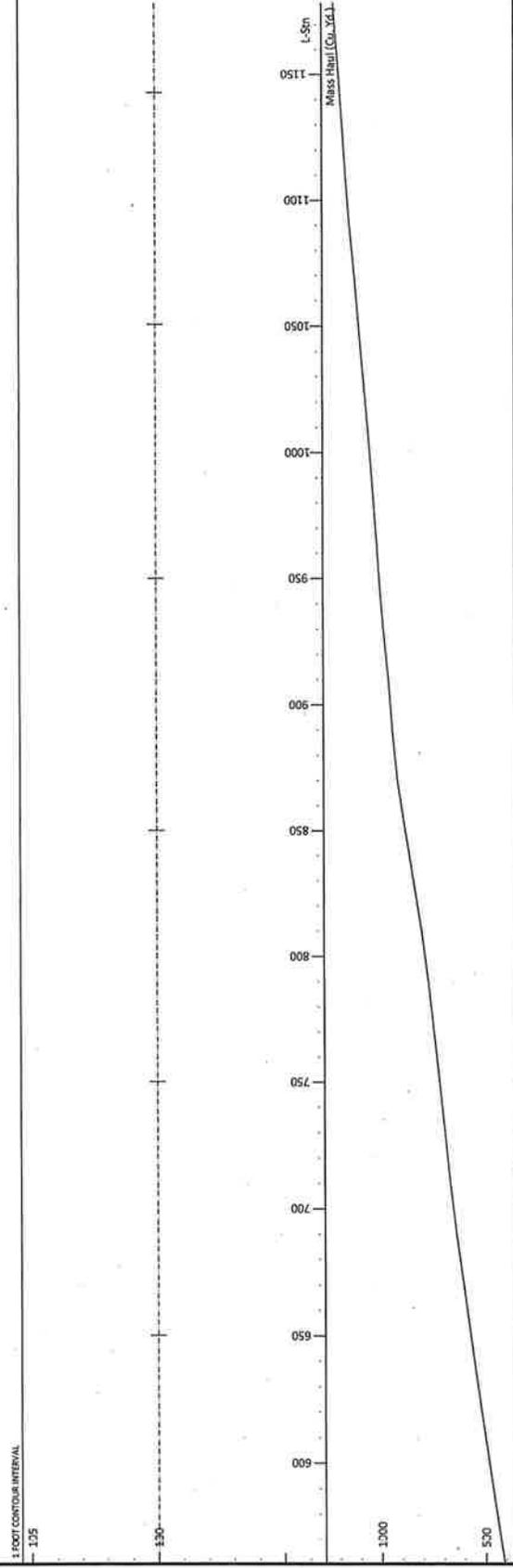
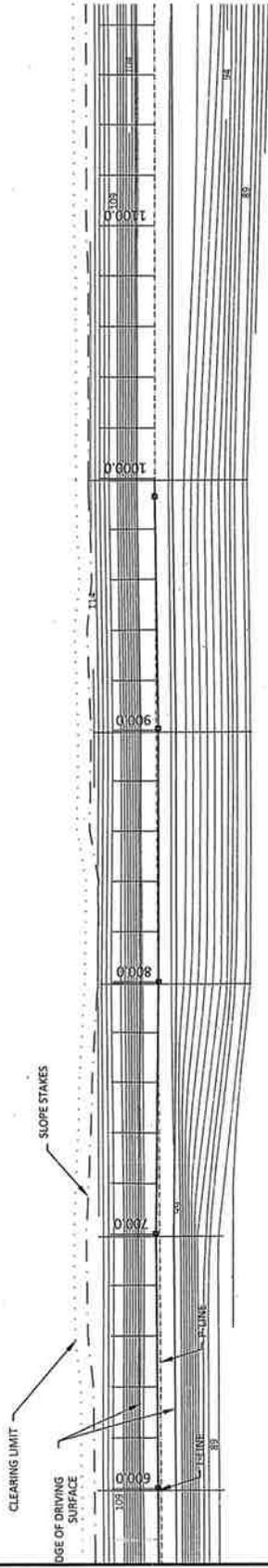


PLAN & PROFILE - RD 4408 STA 54+00 WIDENING, 5 OF 6

OLY MOLY
TIMBER SALE

SHEET
NUMBER
54

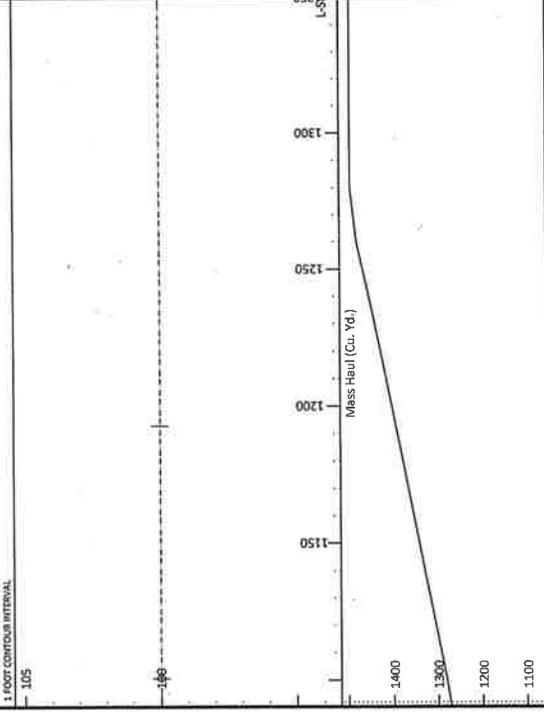
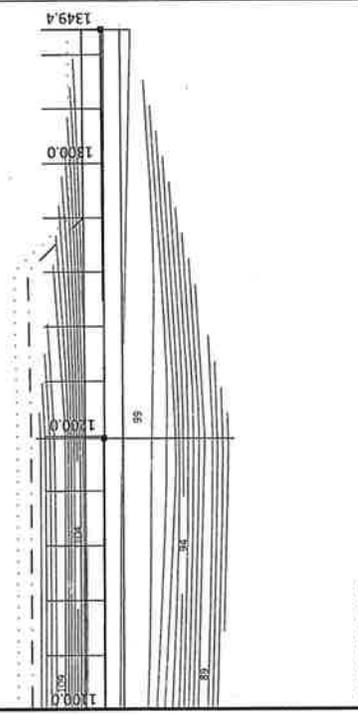
TOTAL
SHEETS
56



STAKING NOTES

ft.	L-Sin ft.	H. Offset ft.	Rd. Wd. L ft.	Rd. Wd. R ft.	Slk L ft.	Slk R ft.	Cir L ft.	Cir R ft.	Mass H. Cu. Yd.
5400	5400	-2	7	7	31	8	36	8	0
5500	5500	-1	7	7	27	8	33	8	113
5600	5600	-1	7	7	26	7	32	7	195
5700	5700	-1	7	7	25	11	31	11	258
5800	5800	-1	7	7	31	8	37	8	403
5900	5900	-1	7	7	30	7	36	7	581
6000	6000	-1	7	7	28	7	34	7	716
6100	6100	-2	7	7	31	8	37	8	891
6200	6200	0	7	7	27	9	33	9	1029
6300	6300	1	7	7	30	8	36	8	1133
6400	6400	0	7	7	30	8	35	8	1207
6500	6500	0	7	7	31	7	36	7	1429
6600	6600	-1	7	7	7	7	12	7	1528

H. OFFSET* = WHEN VALUE IS NEGATIVE (-), L-LINE IS CLOSER TO CUTSLOPE THAN P-LINE
 WHEN VALUE IS POSITIVE, L-LINE IS FURTHER FROM CUTSLOPE THAN P-LINE

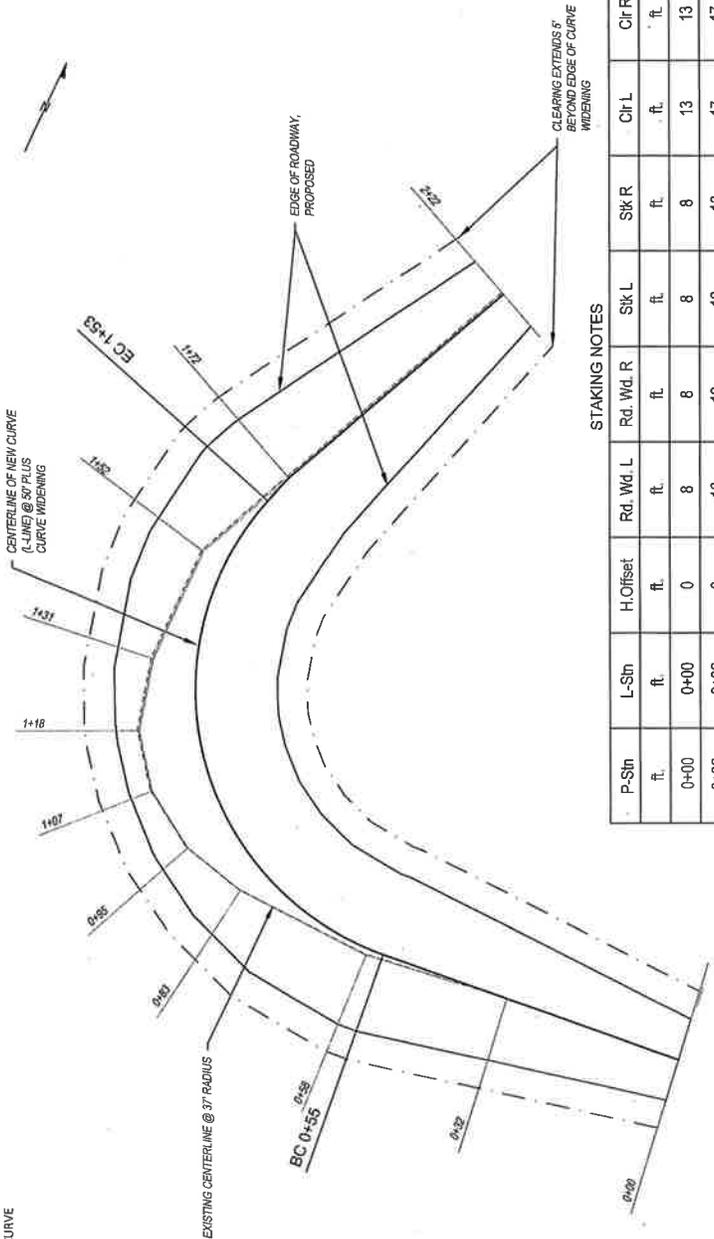


PLAN VIEW - ROAD 4446 - MP 0.7 CURVE WIDENING

OLY MOLY
TIMBER SALE

SHEET NUMBER 56
TOTAL SHEETS 56

- HORIZONTAL CURVES MUST MEET STATED MINIMUMS
- ANY CHANGE IN VERTICAL GRADE >5% WILL HAVE OPERATOR CREATED VERTICAL CURVE UNLESS SPECIFIED
- EXCESS MATERIAL MAY BE WASTED ADJACENT TO ROADWAY
- CURVE WIDENING WIDTH IS SPLIT BETWEEN INSIDE AND OUTSIDE OF CURVE
- SEE STAKING NOTES FOR LAYOUT
- SIDE SLOPE & PROFILE GRADE IS NEARLY FLAT
- EXISTING ROAD IS SLIGHTLY ENTRENCHED



STAKING NOTES

P-Stn	L-Stn	H. Offset	Rd. Wd. L	Rd. Wd. R	Sik L	Sik R	Cir L	Cir R
ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.
0+00	0+00	0	8	8	8	8	13	13
0+32	0+32	0	12	12	12	12	17	17
0+58	0+58	1	15	15	15	15	20	20
0+83	0+83	6	15	15	15	15	20	20
0+95	0+93	9	15	15	15	15	20	20
1+07	1+02	11	15	15	15	15	20	20
1+18	1+09	11	15	15	15	15	20	20
1+31	1+20	9	15	15	15	15	20	20
1+52	1+39	4	15	15	15	15	20	20
1+72	1+59	0	14	14	14	14	19	19
2+22	2+09	0	8	8	8	8	13	13