WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: FOUR SCORE* ***AGREEMENT NO**: 30-107096*

AUCTION: December 19, 2024 starting at 10:00 a.m., Pacific Cascade Region Office, Castle Rock, WA **COUNTY:** Lewis

SALE LOCATION: Sale located approximately 27 miles west of Centralia, WA

PRODUCTS SOLD AND SALE AREA: All timber, except leave trees bound by yellow "Leave Tree Area" tags, leave trees marked with blue paint, all down timber existing 5 years prior to the day of sale, all timber 60 inches DBH and greater, all downed timber greater than 35 inches diameter, and snags bound by the following;

Unit 1 and 2, white "Timber Sale Boundary" tags, pink flagging, reprod and the L-3042 road;

All forest products above located on part(s) of Sections 9, 10, 15 and 16 all in Township 14 North, Range 5 West, W.M., containing 84 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BVC-SFIFM-018227)

ESTIMATED SALE VOLUMES AND QUALITY:

	Avg	Ring	Total	MBF by Grade								
Species	DBH	Count	MBF	1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	23.7	8	2,998				45		2,335	524	74	20
Hemlock	19.9		783						475	253	52	3
Noble fir	28		149						131	15	2	1
Redcedar	15.8		43							34	9	
Spruce	29.4		35						33	2		
Red alder	18.8		31						18	6	7	
Sale Total			4,039									

MINIMUM BID: $1,195,000.00

BID METHOD: Sealed Bids

PERFORMANCE SECURITY: $100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2026

ALLOCATION: Export Restricted

BID DEPOSIT: $119,500.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable, Cable-Assist, and Shovel. This sale is estimated to be 70 percent shovel and 30 percent cable harvest systems. Shovel harvesting is restricted to sustained slopes of 45 percent or less, self-leveling equipment to 60 percent or less and cable-assist to 75 percent or less.

ROADS: 14.78 stations of required reconstruction. 35.44 stations of optional construction. 510.48 stations of required prehaul maintenance. 14.00 stations of optional prehaul maintenance. 14.00 stations of abandonment.

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the Lincoln Quarry in Section 15, T14N, R5W, W.M. on state land at no charge to the Purchaser.

Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense.

Purchaser shall conduct rock source development and use at the Lincoln Quarry in Section 15, T14N, R5W, W.M., in accordance with the written Rock Source Development Plan prepared by the state and included in this road plan.

Purchaser shall provide a rock drill with operator for 1,500 drill feet of rock exploration as directed by the Contract Administrator at the Lincoln Quarry in Section 15, T14N, R5W, W.M.

On the L-3000, Purchaser shall seal all asphalt cracks in accordance with Section 5-03 of the WSDOT Standard Specifications.

See Road Plan for further details. Road construction will not be permitted from October 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: The sale acres were determined by GPS delineation. Cruise was completed using variable plot cruise methods.

FEES: $69,000.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

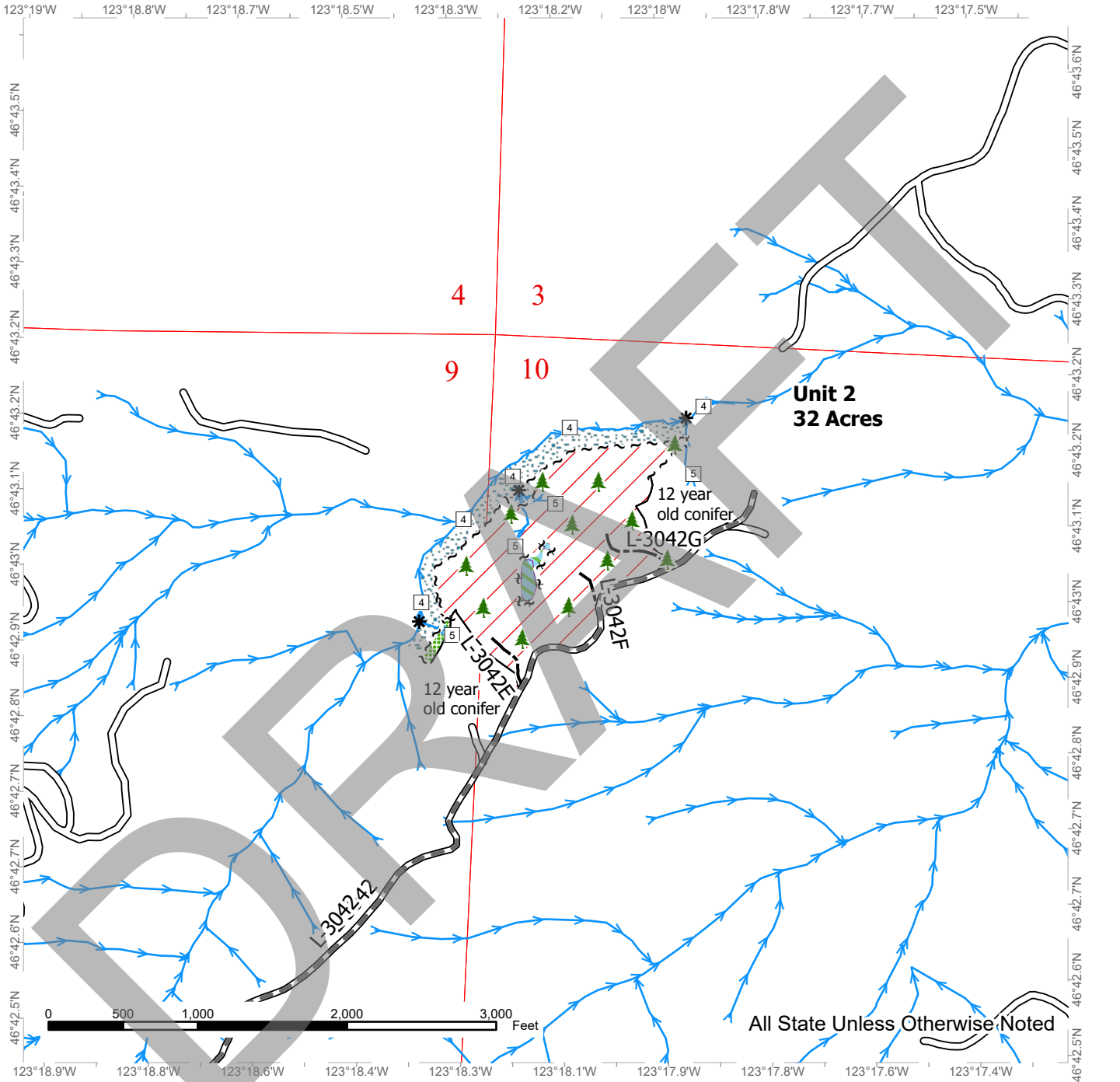
SPECIAL REMARKS: This sale is estimated to contain 45 MBF SM Douglas-fir, 229 MBF of HQ Douglas-fir 2 Saw and better and 23 MBF of HQ Douglas-fir 3 Saw. See Cruise for further details.

This sale was designed with a minimum tower height of 70 feet on all cable settings in Unit 2.

TIMBER SALE MAP

SALE NAME: FOUR SCORE
AGREEMENT #: None
TOWNSHIP(S): T14R5W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 1720-2320



- Variable Retention Harvest
- Non-Tradeable Leave Clump
- Leave Tree Area
- Riparian Mgt Zone
- Potentially Unstable Slopes
- Sale Boundary Tags
- Leave Tree Tags
- Timber Type Change
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Streams
- Stream Type Break
- Leave Tree Area <1/4-acre

N

Prepared By: dsun490
Accessed: 10/01/2024 14:49

Modification Date: mwea490 8/22/2024

TIMBER SALE MAP

SALE NAME: FOUR SCORE
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TOWNSHIP(S): T14R5W
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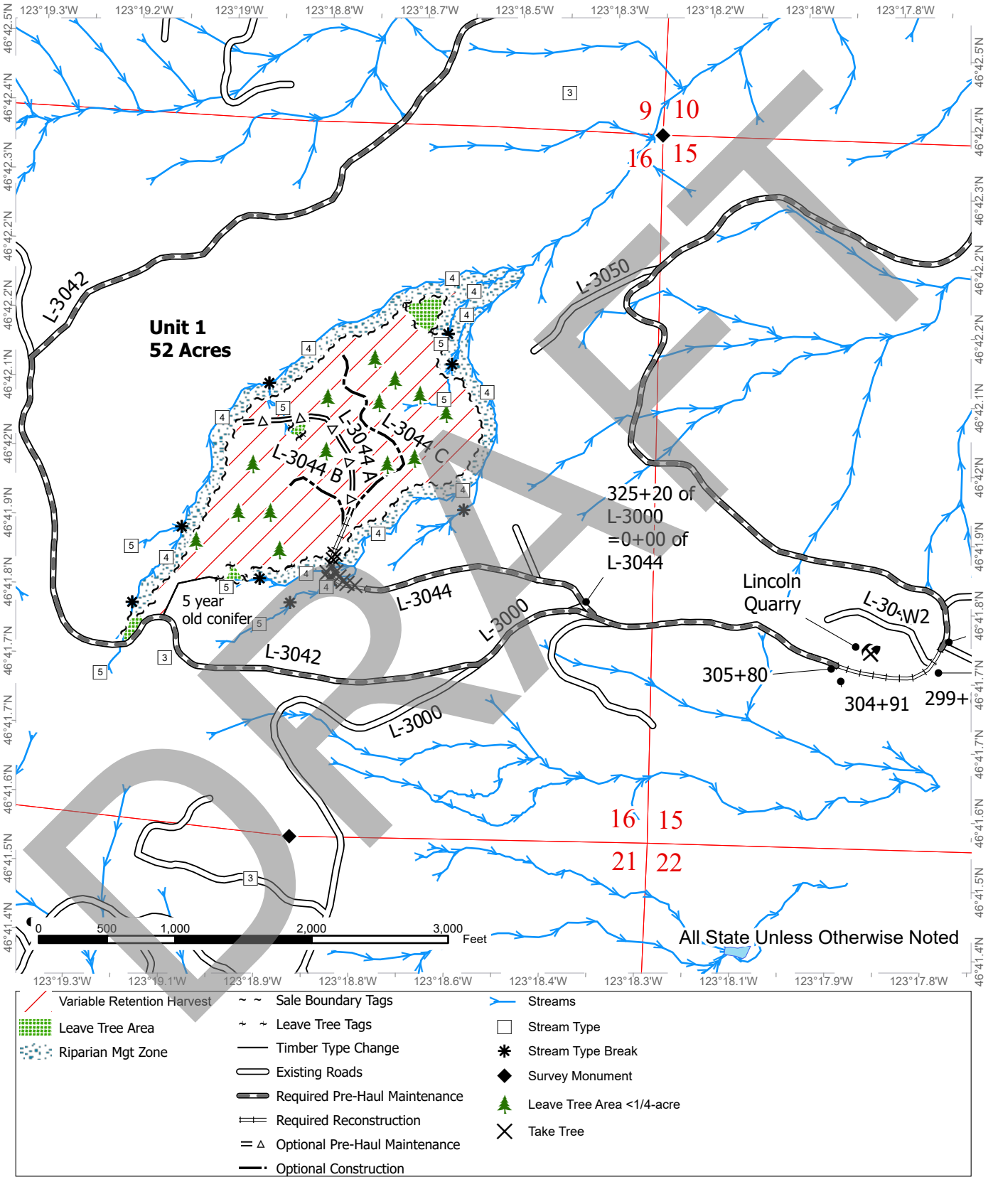

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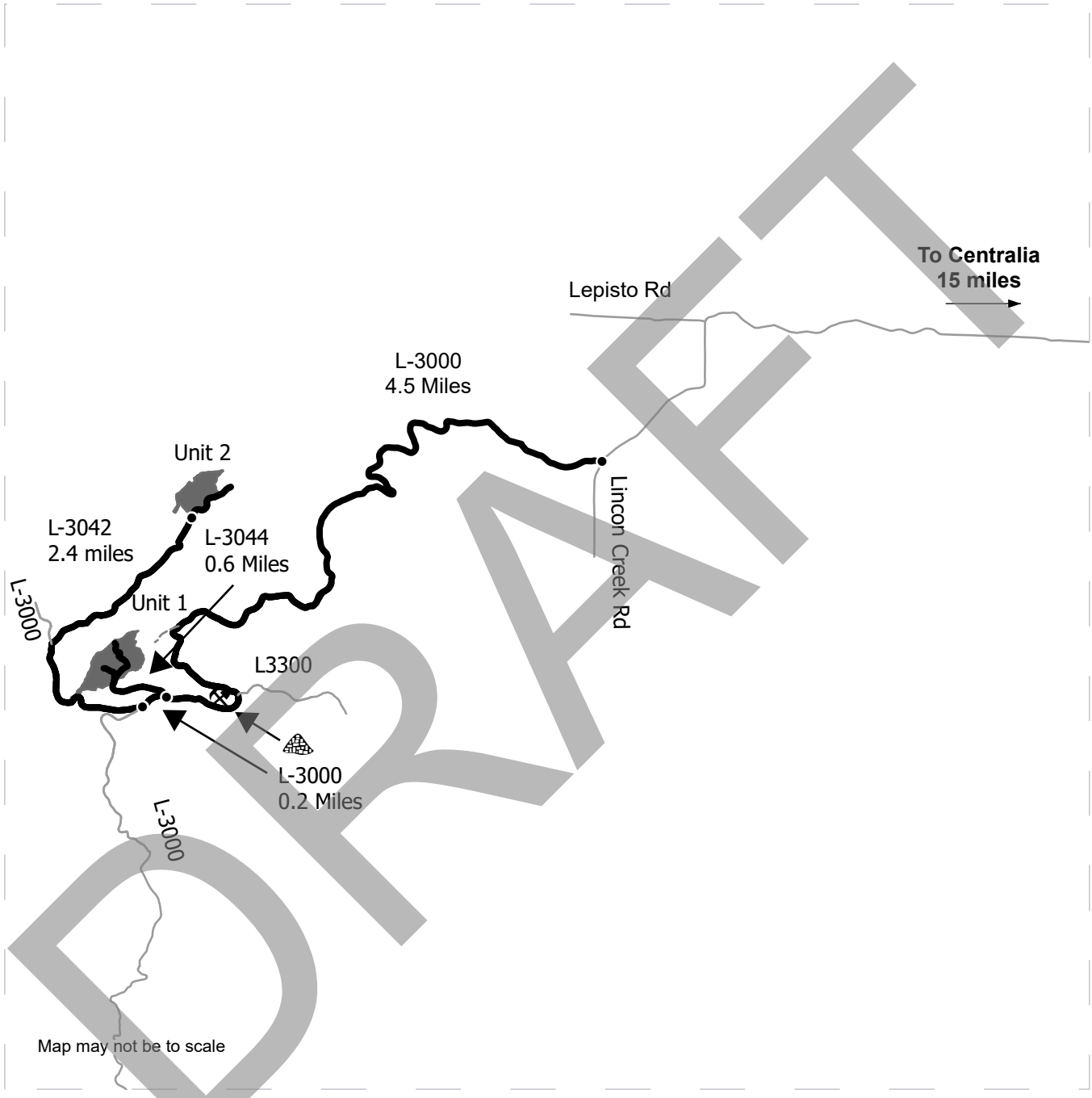
DRIVING MAP

SALE NAME: FOUR SCORE
AGREEMENT#: None
TOWNSHIP(S): T14R5W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 1720-2320



- Timber Sale Unit
- Haul Route
- Other Road
- View Only Route
- Distance Indicator
- Rock Pit
- Stockpile

DRIVING DIRECTIONS:

From I-5, Take Exit 82 for Harrison Avenue Westbound. Take Harrison Avenue westbound for 0.8 Miles. Turn Left onto Galvin Rd and follow for 2 Miles. Turn Left onto Lincoln Creek Rd and follow for 13.2 Miles. Turn Right onto the L-3000 and follow for 4.5 miles and either turn right onto the L-3044 for 0.6 Miles to Unit 1 or continue for 0.2 Miles and turn right on the L-3042. Follow for 2.4 Miles to Unit 2.

N

Prepared By: dsun490
Accessed: 10/01/2024 14:49

Modification Date: mwea490 8/22/2024

Timber Sale Cruise Report
Four Score

Sale Name: FOUR SCORE

Sale Type: LUMP SUM

Region: PACIFIC CASC

District: LEWIS

Lead Cruiser: Dylan Buchanan

Other Cruisers: Blake Warnstadt, Dillon Adair

Cruise Narrative:
Location: The Four Score timber sale is located 6 miles north of Doty. It can be accessed from the east by taking the L-3000 off of Lincoln Creek Rd or from Doty by taking the L-3000 off Chandler Rd.

Cruise Design: Boles were cruised to 40% of the diameter at 16' with smaller trees being cruised to a 5" top. Logs were cruised to preferred lengths of 40' on conifers and 30' for hardwoods. Both timber stands were cruised using a 54.44 BAF sighted at 4.5' with a measure to count plot ratio of 1:1.

Timber Quality: Four Score Unit 1 is DF and WH dominant with a small amount of NF, SS and a trace of RA & MA. The DF carries an average DBH of 22.5" and looks good. There are a fair amount of small spike knots and some small pockets of root disease are present. Logs are mostly domestic with a small amount of High Quality A and B. WH carries an average diameter of 20.7", looks good with little defect. Other average diameters include: NF 28", SS 29.4", and RA 18.8". The NF looks good, RA looks ok, and the SS has some forked trees.

Unit 2 is DF dominant with some WH, RC, and a trace of RA. The DF has an average DBH of 24.6" and looks good. There is a good mix of domestic saw logs and both High Quality A and B logs present. A fair amount of small spike knots are present here and conks were seen on one live DF. There was minimal root disease and insect damage observed. WH and RC both have an average DBH of 15.8" and shows little defect. RA has an average DBH of 19" and looks ok with some forked tops.

Logging and Stand Conditions: This sale is moderate to gently sloped and estimated to be 70% ground based logging and 30% uphill cable. There is fairly dense salmonberry throughout most of Unit 1.

General Remarks:

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	23.7	8.0		2,998	45	2,335	524	74	20
WH	19.9			783		475	253	52	3
NF	28.0			149		131	15	2	1
RC	15.8			44			34	9	
SS	29.4			36		33	2		0
RA	18.8			31		18	6	7	
ALL	21.8	8.0		4,040	45	2,992	834	145	24

Timber Sale Notice Weight (tons)

	Tons by Grade					
Sp	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	20,905	276	15,213	4,464	772	180
WH	7,229		3,892	2,619	688	31
NF	1,012		839	143	17	12
RC	369			275	94	
RA	301		135	51	115	
SS	243		211	30		3
ALL	30,060	276	20,291	7,582	1,686	226

Timber Sale Overall Cruise Statistics

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
280.5	4.0	170.9	2.2	47,985	4.4

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FOUR SCORE U1	B1C: VR, 1 BAF (54.44) Measure/ Count Plots, Sighting Ht = 4.5 ft	52.4	57.9	54	28	0
FOUR SCORE U2	B1C: VR, 1 BAF (54.44) Measure/ Count Plots, Sighting Ht = 4.5 ft	31.8	33.4	32	17	0
All		84.2	91.4	86	45	0

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	16.3	40	26,208	25,012	4.6	13,655.2	2,106.0
DF	LIVE	2 SAW	HQ-A	14.9	40	1,172	1,129	3.7	640.8	95.0
DF	LIVE	2 SAW	HQ-B	14.8	40	1,618	1,591	1.7	917.4	133.9
DF	LIVE	3 SAW	Domestic	9.6	39	6,144	5,947	3.2	4,287.7	500.7
DF	LIVE	3 SAW	HQ-B	11.2	40	277	273	1.5	175.9	23.0
DF	LIVE	4 SAW	Domestic	6.3	27	941	882	6.3	772.3	74.2
DF	LIVE	CULL	Cull	7.8	6	247	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	18.3	40	536	536	0.0	276.2	45.2
DF	LIVE	UTILITY	Pulp	7.8	13	249	234	6.2	179.8	19.7
NF	LIVE	2 SAW	Domestic	17.6	40	1,580	1,555	1.6	839.2	131.0
NF	LIVE	3 SAW	Domestic	10.3	35	178	176	1.3	143.2	14.8
NF	LIVE	4 SAW	Domestic	7.9	20	20	20	0.0	16.8	1.7
NF	LIVE	CULL	Cull	9.2	6	8	0	100.0	0.0	0.0
NF	LIVE	UTILITY	Pulp	9.2	14	16	16	0.0	12.4	1.4
RA	LIVE	2 SAW	Domestic	15.2	30	238	215	9.9	135.5	18.1
RA	LIVE	3 SAW	Domestic	10.7	30	81	72	12.0	50.8	6.0
RA	LIVE	4 SAW	Domestic	6.3	29	95	86	9.7	115.0	7.2
RA	LIVE	CULL	Cull	5.0	2	1	0	100.0	0.0	0.0
RC	LIVE	3 SAW	Domestic	10.2	40	426	407	4.4	275.3	34.3
RC	LIVE	4 SAW	Domestic	5.0	34	115	111	3.6	93.9	9.3
RC	LIVE	CULL	Cull	6.2	3	4	0	100.0	0.0	0.0
SS	LIVE	2 SAW	Domestic	18.6	40	434	394	9.2	210.6	33.2
SS	LIVE	3 SAW	Domestic	9.3	37	34	29	14.9	30.0	2.4
SS	LIVE	CULL	Cull	9.8	3	3	0	100.0	0.0	0.0
SS	LIVE	UTILITY	Pulp	10.0	13	5	5	0.0	2.8	0.4
WH	LIVE	2 SAW	Domestic	15.9	40	6,058	5,640	6.9	3,891.9	474.9
WH	LIVE	3 SAW	Domestic	9.5	39	3,125	3,004	3.9	2,619.1	253.0
WH	LIVE	4 SAW	Domestic	5.6	29	643	621	3.4	687.7	52.3
WH	LIVE	CULL	Cull	7.2	5	57	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	6.7	13	38	32	15.1	30.6	2.7

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Domestic	6.3	30	1,218	5.0	1,065.9	102.6
DF	5 - 7	LIVE	Cull	6.4	6	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Pulp	6.8	13	96	0.0	69.5	8.1

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	8 - 11	LIVE	Pulp	8.9	13	128	10.7	105.4	10.8
DF	8 - 11	LIVE	Cull	9.1	7	0	100.0	0.0	0.0
DF	8 - 11	LIVE	Domestic	9.8	38	5,372	3.3	3,867.9	452.3
DF	8 - 11	LIVE	HQ-B	11.2	40	273	1.5	175.9	23.0
DF	12 - 15	LIVE	Cull	12.0	6	0	100.0	0.0	0.0
DF	12 - 15	LIVE	Pulp	12.5	13	9	0.0	4.9	0.8
DF	12 - 15	LIVE	Domestic	13.8	40	7,863	3.8	4,846.6	662.1
DF	12 - 15	LIVE	HQ-B	14.0	40	1,072	0.0	644.4	90.2
DF	12 - 15	LIVE	HQ-A	14.3	40	652	1.8	366.9	54.9
DF	16+	LIVE	HQ-A	17.6	40	1,013	3.0	550.1	85.3
DF	16+	LIVE	Domestic	19.3	40	17,387	4.9	8,934.8	1,464.0
DF	16+	LIVE	HQ-B	19.5	40	519	5.1	273.0	43.7
DF	16+	LIVE	Cull	23.2	10	0	100.0	0.0	0.0
NF	5 - 7	LIVE	Domestic	7.1	22	11	0.0	10.7	0.9
NF	8 - 11	LIVE	Cull	9.2	6	0	100.0	0.0	0.0
NF	8 - 11	LIVE	Pulp	9.2	14	16	0.0	12.4	1.4
NF	8 - 11	LIVE	Domestic	10.1	33	184	1.3	149.3	15.5
NF	12 - 15	LIVE	Domestic	13.8	40	307	0.0	193.0	25.9
NF	16+	LIVE	Domestic	19.7	40	1,248	1.9	646.2	105.1
RA	5 - 7	LIVE	Cull	5.0	2	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Domestic	6.3	29	86	9.7	115.0	7.2
RA	8 - 11	LIVE	Domestic	10.7	30	72	12.0	50.8	6.0
RA	12 - 15	LIVE	Domestic	14.4	30	156	9.8	100.2	13.1
RA	16+	LIVE	Domestic	16.9	30	59	10.0	35.2	4.9
RC	5 - 7	LIVE	Cull	5.0	3	0	100.0	0.0	0.0
RC	5 - 7	LIVE	Domestic	5.4	35	186	2.2	150.4	15.7
RC	8 - 11	LIVE	Cull	10.0	4	0	100.0	0.0	0.0
RC	8 - 11	LIVE	Domestic	10.0	39	40	2.6	54.7	3.4
RC	12 - 15	LIVE	Domestic	14.2	40	103	2.6	64.4	8.7
RC	16+	LIVE	Domestic	21.1	40	188	7.3	99.7	15.8
SS	8 - 11	LIVE	Domestic	9.3	37	29	14.9	30.0	2.4
SS	8 - 11	LIVE	Cull	9.8	3	0	100.0	0.0	0.0
SS	8 - 11	LIVE	Pulp	10.0	13	5	0.0	2.8	0.4
SS	12 - 15	LIVE	Domestic	14.1	40	54	4.1	38.0	4.5
SS	16+	LIVE	Domestic	20.4	40	340	10.0	172.6	28.6
WH	5 - 7	LIVE	Domestic	5.7	30	781	2.6	855.2	65.7
WH	5 - 7	LIVE	Pulp	6.5	13	32	0.0	30.6	2.7
WH	5 - 7	LIVE	Cull	6.6	5	0	100.0	0.0	0.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	8 - 11	LIVE	Pulp	8.9	13	0	100.0	0.0	0.0
WH	8 - 11	LIVE	Domestic	9.8	39	2,845	4.1	2,451.6	239.5
WH	8 - 11	LIVE	Cull	10.1	5	0	100.0	0.0	0.0
WH	12 - 15	LIVE	Domestic	14.0	40	2,340	5.7	1,688.4	197.0
WH	16+	LIVE	Domestic	18.2	40	3,300	7.7	2,203.5	277.9

Cruise Unit Report
FOUR SCORE U1

Unit Sale Notice Volume (MBF): FOUR SCORE U1

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	22.5	8.0		1,293	928	312	40	13
WH	20.7			660	424	201	33	2
NF	28.0			149	131	15	2	1
SS	29.4			36	33	2		0
RA	18.8			26	14	6	6	
ALL	22.1	8.0		2,163	1,529	536	82	17

Unit Cruise Design: FOUR SCORE U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	52.4	57.9	54	28	0

Unit Cruise Summary: FOUR SCORE U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	76	159	2.9	2
WH	51	92	1.7	0
NF	12	16	0.3	0
SS	4	4	0.1	0
RA	6	6	0.1	0
ALL	149	277	5.1	2

Unit Cruise Statistics: FOUR SCORE U1

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	160.3	74.8	10.2	154.0	25.8	3.0	24,678	79.1	10.6
WH	92.7	111.5	15.2	135.7	24.8	3.5	12,588	114.2	15.6
NF	16.1	233.0	31.7	176.0	21.6	6.2	2,839	234.0	32.3
SS	4.0	356.9	48.6	170.5	27.2	13.6	688	357.9	50.4
RA	6.0	416.2	56.6	81.8	52.4	21.4	495	419.5	60.5
ALL	279.3	40.3	5.5	147.8	28.0	2.3	41,288	49.1	5.9

Unit Summary: FOUR SCORE U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	76	ALL	22.5	86	110	26,326	24,678	6.3	58.1	160.3	33.8	1,293.2
NF	LIVE	CUT	12	ALL	28.0	87	111	2,896	2,839	2.0	3.8	16.1	3.0	148.8
RA	LIVE	CUT	6	ALL	18.8	53	64	553	495	10.7	3.1	6.0	1.4	25.9
SS	LIVE	CUT	4	ALL	29.4	85	109	764	688	10.0	0.9	4.0	0.7	36.0
WH	LIVE	CUT	51	ALL	20.7	74	92	13,449	12,588	6.4	39.7	92.7	20.4	659.6
ALL	LIVE	CUT	149	ALL	22.0	81	102	43,989	41,288	6.1	105.6	279.3	59.4	2,163.5
ALL	ALL	ALL	149	ALL	22.0	81	102	43,989	41,288	6.1	105.6	279.3	59.4	2,163.5

Cruise Unit Report
FOUR SCORE U2

Unit Sale Notice Volume (MBF): FOUR SCORE U2

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	24.6	8.0		1,705	45	1,407	212	34	7
WH	15.8			123		51	52	19	0
RC	15.8			44			34	9	
RA	19.0			5		4		1	
ALL	21.5	8.0		1,877	45	1,463	298	63	8

Unit Cruise Design: FOUR SCORE U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	31.8	33.4	32	17	0

Unit Cruise Summary: FOUR SCORE U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	70	138	4.3	2
WH	11	17	0.5	0
RC	8	10	0.3	0
RA	1	1	0.0	0
ALL	90	166	5.2	2

Unit Cruise Statistics: FOUR SCORE U2

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	234.8	37.9	6.7	228.3	26.5	3.2	53,607	46.2	7.4
WH	28.9	151.1	26.7	134.0	43.5	13.1	3,874	157.2	29.8
RC	17.0	236.1	41.7	80.5	66.2	23.4	1,370	245.2	47.9
RA	1.7	565.7	100.0	100.1	0.0	0.0	170	565.7	100.0
ALL	282.4	30.0	5.3	209.0	37.1	3.9	59,021	47.7	6.6

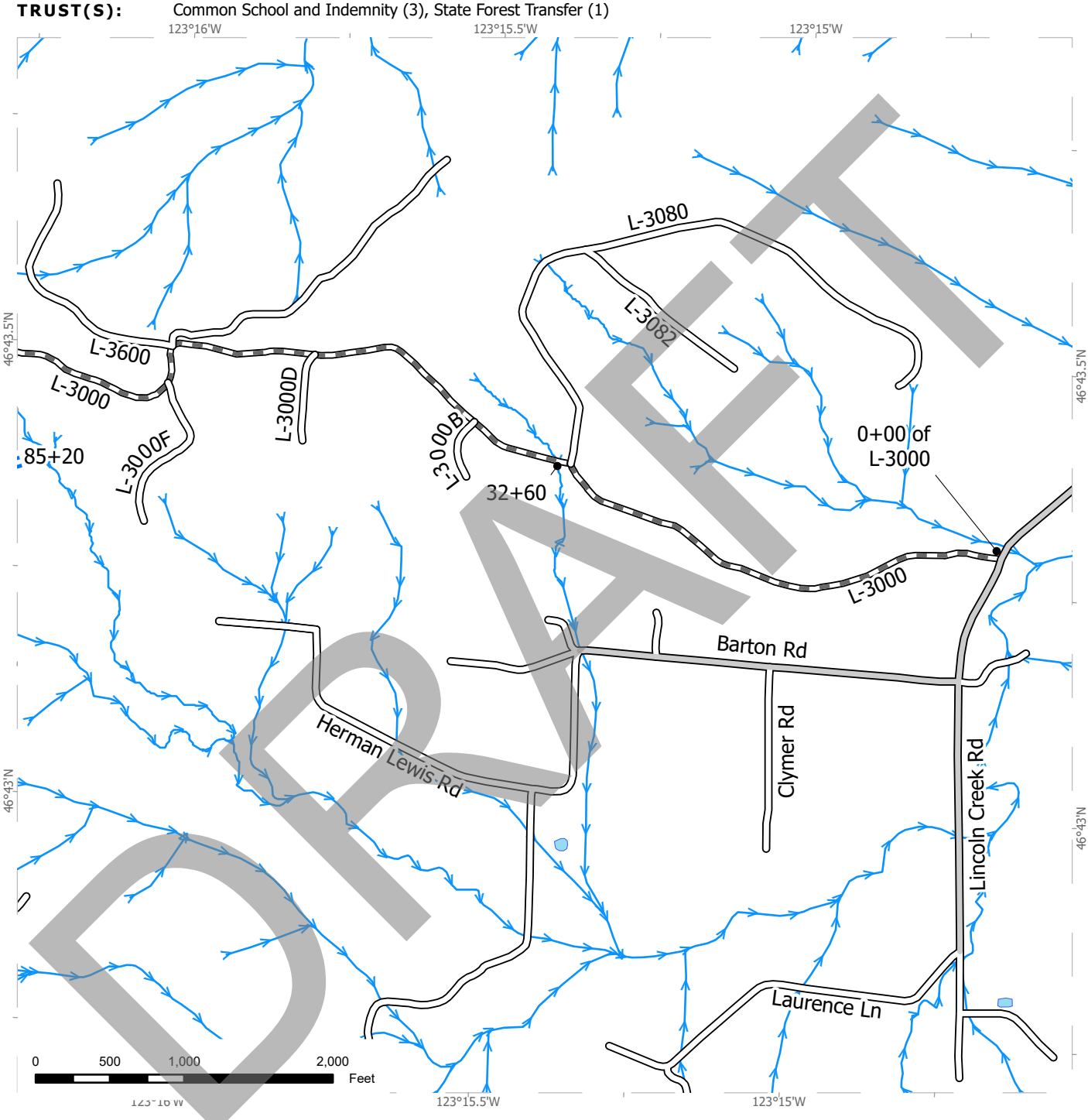
Unit Summary: FOUR SCORE U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	70	ALL	24.6	107	137	55,632	53,607	3.6	71.1	234.8	47.3	1,704.7
RA	LIVE	CUT	1	ALL	19.0	62	76	188	170	9.6	0.9	1.7	0.4	5.4
RC	LIVE	CUT	8	ALL	15.8	43	56	1,442	1,370	5.0	12.5	17.0	4.3	43.6
WH	LIVE	CUT	11	ALL	14.9	58	74	4,106	3,874	5.6	23.9	28.9	7.5	123.2
ALL	LIVE	CUT	90	ALL	21.9	88	113	61,368	59,021	3.8	108.4	282.4	59.5	1,876.9
ALL	ALL	ALL	90	ALL	21.9	88	113	61,368	59,021	3.8	108.4	282.4	59.5	1,876.9

ROAD PLAN MAP

SALE NAME: FOUR SCORE
AGREEMENT#: 30-107096
TOWNSHIP(S): T14R5W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 1720-2320



County Road
Existing Roads
Required Pre-Haul Maintenance
Streams
Cross-drain Culvert

N

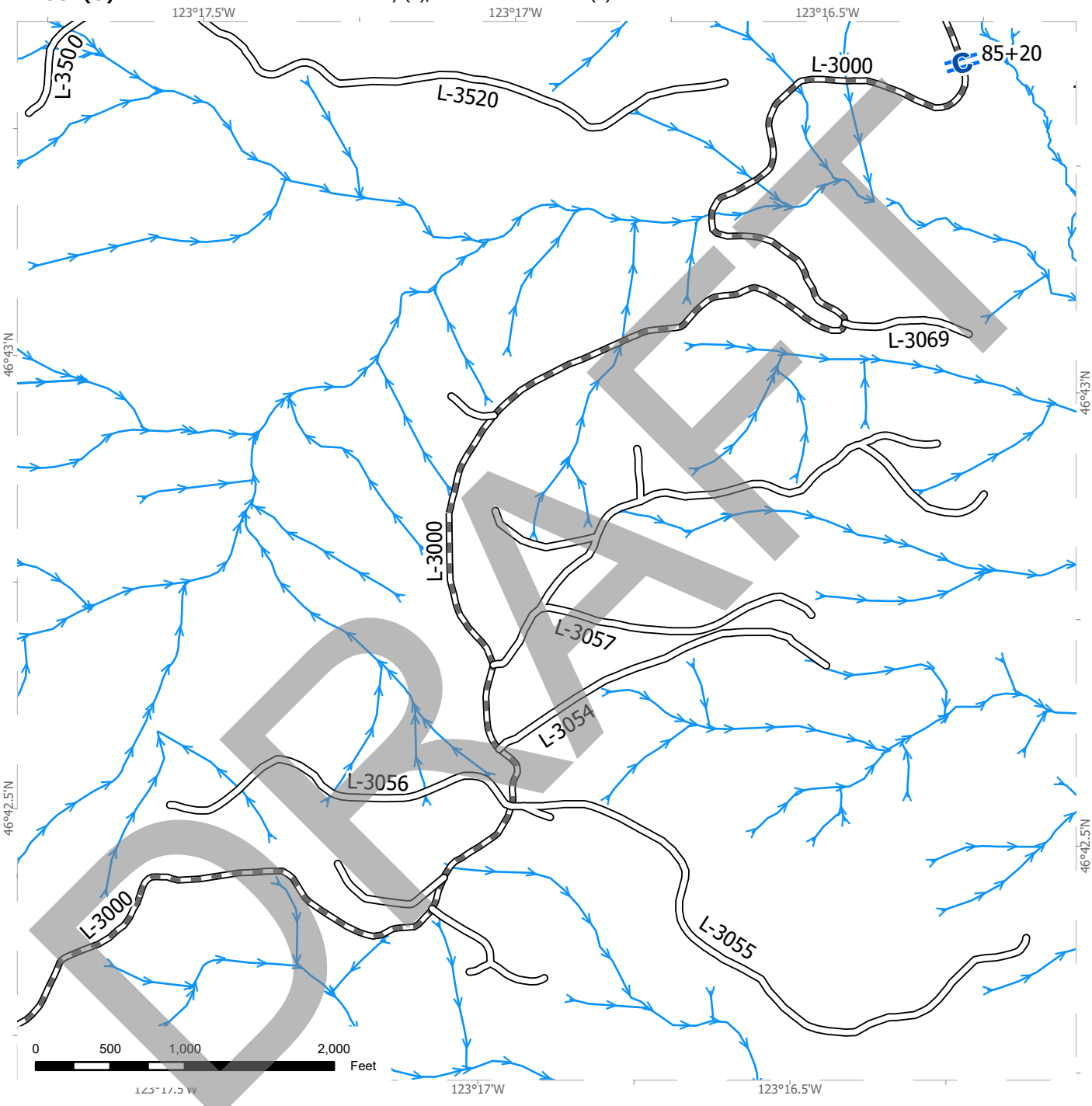
Prepared By: accc490
Accessed: 10/01/2024 14:49

Modification Date: accc490 5/30/2024

ROAD PLAN MAP

SALE NAME: FOUR SCORE
AGREEMENT#: 30-107096
TOWNSHIP(S): T14R5W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 1720-2320



Existing Roads
Required Pre-Haul Maintenance
Streams
Cross-drain Culvert

N

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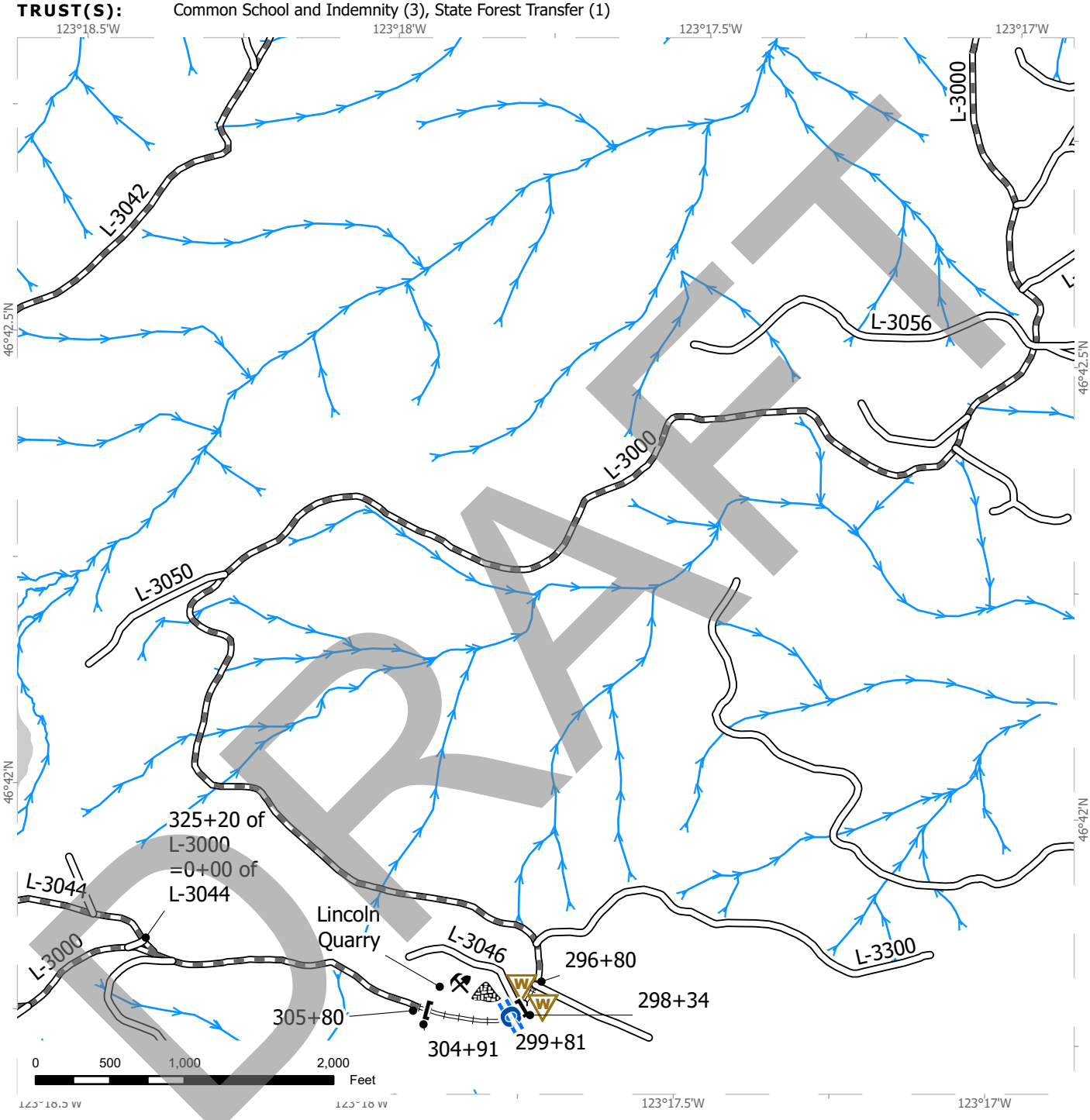

- Existing Roads
- Required Pre-Haul Maintenance
- Required Reconstruction
- Streams
- Cross-drain Culvert
- End Haul Area
- Rock Pit
- Stockpile
- Waste Area
- Harvest Unit

N

Prepared By: accc490
Accessed: 10/01/2024 14:49

Modification Date: accc490 5/30/2024

ROAD PLAN MAP

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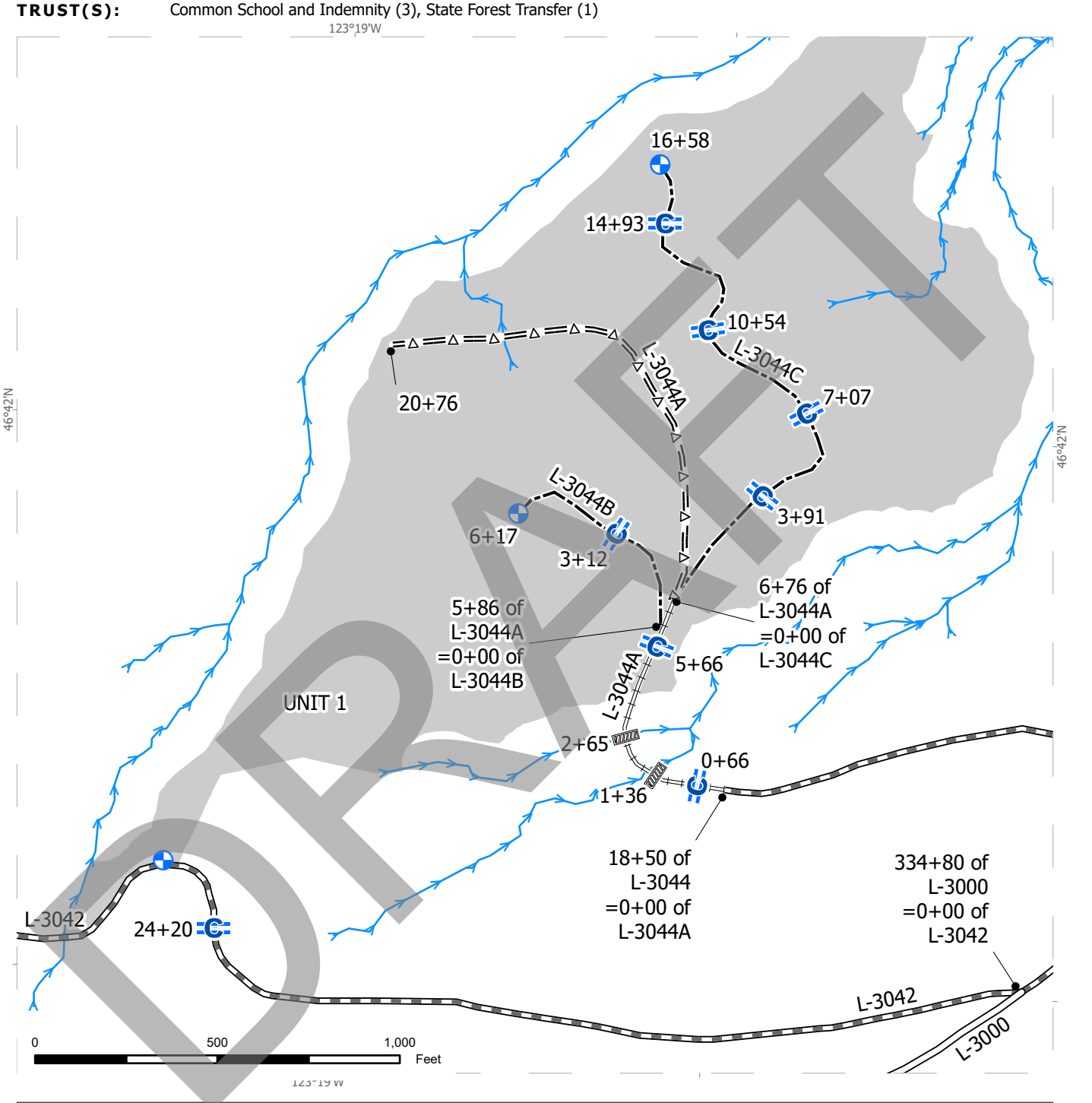

Existing Roads
Required Pre-Haul Maintenance
Required Reconstruction
Optional Pre-Haul Maintenance
Optional Construction
Streams
Cross-drain Culvert
Culvert
Landing - Proposed
Harvest Unit
N

Prepared By: accc490
Accessed: 10/01/2024 14:49

Modification Date: accc490 5/30/2024

ROAD PLAN MAP

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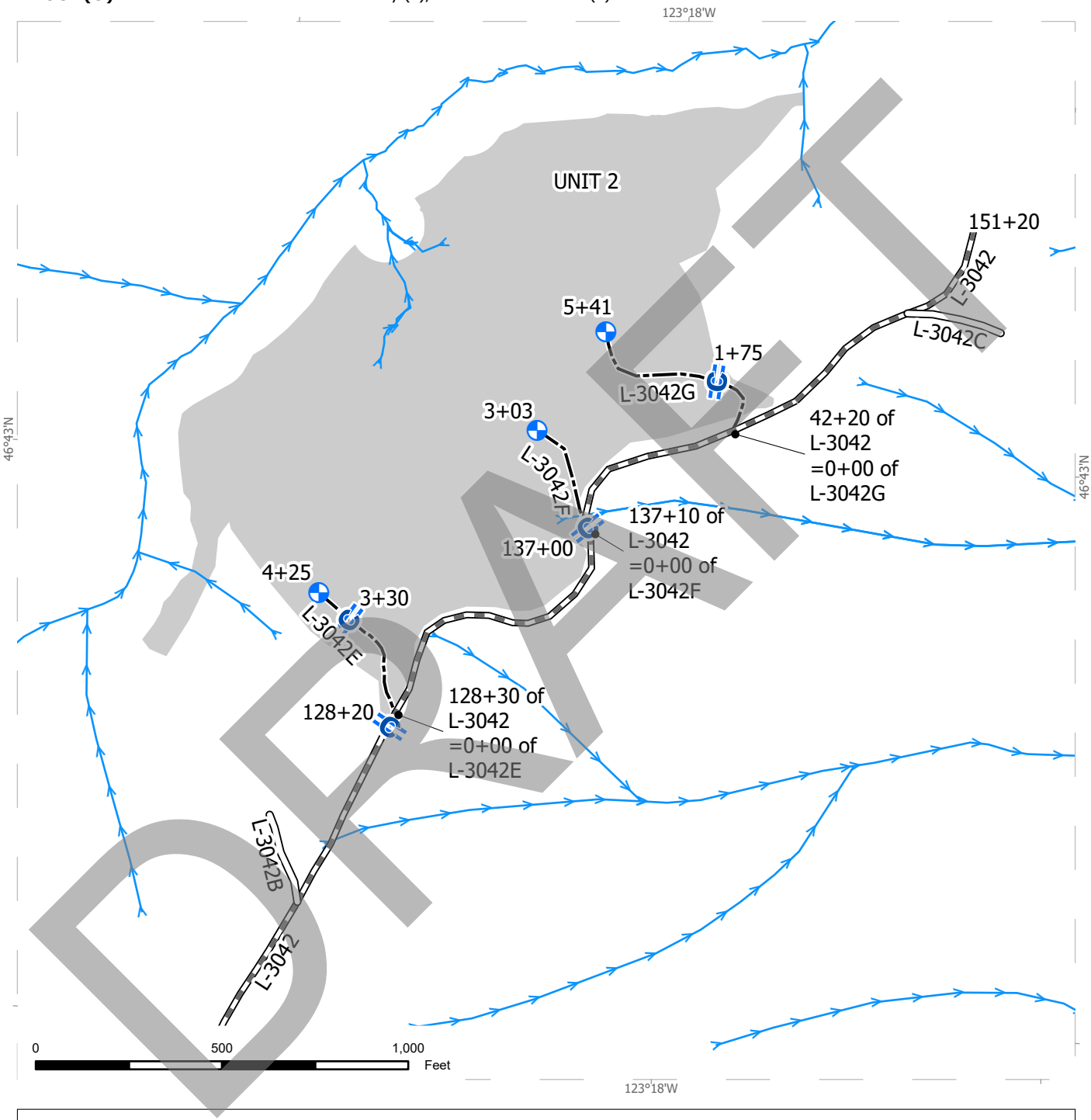


- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Streams
- Cross-drain Culvert
- Landing - Proposed
- Harvest Unit

N

Prepared By: accc490
Accessed: 10/01/2024 14:49

Modification Date: accc490 5/30/2024

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
FOUR SCORE ROAD PLAN
LEWIS COUNTY
LEWIS DISTRICT
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-107096 STAFF ENGINEER: RICH WALLMOW

DRAWN & COMPILED BY: ALICIA COMPTON

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

Clauses in this road plan apply to all road related work, including landings, required rock source exploration and rock source development, unless otherwise noted.

0-2 REQUIRED ROADS

The specified work on the following roads is required.

Road	Stations	Type
L-3000	0+00 to 296+89	Pre-haul Maintenance
	296+89 to 304+91	Reconstruction
	304+91 to 334+80	Pre-haul Maintenance
L-3044	0+00 to 18+50	Pre-haul Maintenance
L-3044A	0+00 to 6+76	Reconstruction
	6+76 to 20+76	Abandonment
L-3042	0+00 to 151+20	Pre-haul Maintenance

0-3 OPTIONAL ROADS

The specified work on the following roads is not required. Any optional roads built by the Purchaser must meet all the specifications in the road plan.

Road	Stations	Type
L-3044A	6+76 to 20+76	Pre-haul Maintenance
L-3044B	0+00 to 6+17	Construction
L-3044C	0+00 to 16+58	Construction
L-3042E	0+00 to 4+25	Construction
L-3042F	0+00 to 3+03	Construction
L-3042G	0+00 to 5+41	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to: clearing; grubbing; right-of-way debris disposal; excavation and/or embankment to subgrade; construct waste areas; end haul of waste; landing construction; acquisition and installation of drainage structures; development, acquisition, manufacture and application of rock.

0-5 RECONSTRUCTION

This project includes, but is not limited to the following reconstruction requirements:

Road	Stations	Requirements
L-3000	296+89 to 304+91	Clear and grub, reconstruct road in accordance L-3000 (296+89 to 304+91) road design and install culvert. Grade, shape and compact prior to rock application; apply rock as shown on the ROCK LIST; grade, shape and compact the applied rock.
L-3044A	0+00 to 6+76	Clear and grub, widen road in accordance with Typical Section Sheet and install culverts. Grade, shape and compact prior to rock application; apply rock as shown on the ROCK LIST; grade, shape and compact the applied rock.

0-6 PRE-HAUL MAINTENANCE

This project includes, but is not limited to the following pre-haul maintenance requirements:

Road	Stations	Requirements
L-3000	0+00 to 11+00; 99+30 to 114+30	Brushing & removal of brush and debris from ditches and roadside; repair pavement in accordance with PAVEMENT REPAIR DETAIL (0+27 to 0+85). Install French drain in accordance with clause 5-35 SUBSURFACE DRAIN. Pavement crack sealing 1+22 to 1+39 and 8+00 to 9+40.
	11+00 to 21+50; 114+30 to 143+00; 177+00 to 274+00	Brushing & brush and debris removal from ditch and roadside; clean ditch in accordance with Clause 2-7. Replace culvert in accordance with CULVERT LIST. Stabilize lower fill slope with light loose rip rap at 32+60. Grade, shape and compact prior to rock application; apply rock as shown on the ROCK LIST; grade, shape and compact the applied rock.

0-6 PRE-HAUL MAINTENANCE CONTINUED

Road	Stations	Requirements
L-3000	21+50 to 99+30 143+00 to 177+00; 274+00 to 296+89; 304+91 to 334+80	Clean ditch in accordance with Clause 2-7. Replace culvert in accordance with CULVERT LIST. Grade, shape and compact prior to rock application; apply rock as shown on the ROCK LIST; grade, shape and compact the applied rock.
L-3044	0+00 to 18+50	Brushing; clean ditch and culverts; spot grade and shape existing road surface prior to spot rock; apply spot rock as shown on the ROCK LIST; grade, shape and compact after rock application.
L-3044A	6+76 to 20+76	Brushing; brush & debris removal; grade as needed.
L-3042	0+00 to 13+50; 24+20 to 52+80; 89+00 to 151+20	Brushing & brush and debris removal from ditch and roadside; clean ditch and culverts in accordance with Clause 2-6 and 2-7. Install culverts in accordance with CULVERT LIST. Construct sediment ponds at 30+60. Grade, shape and compact prior to rock application; apply spot rock as shown on the ROCK LIST; grade, shape and compact the applied rock.
	13+50 to 24+20; 52+80 to 89+00	Grade, shape and compact prior to rock application; apply rock as shown on the ROCK LIST; grade, shape and compact the applied rock.

0-7 POST-HAUL MAINTENANCE

This project includes post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE.

0-10 ABANDONMENT

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source. Rock source development may involve clearing, stripping, end hauling waste, drilling, shooting and manufacturing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

1-1 ROAD PLAN CHANGES

If the Purchaser desires a change from this road plan including, but not limited to, relocation, extension, change in design, or adding roads; a revised road plan must be submitted in writing to the Contract Administrator for consideration. Before work begins, Purchaser shall obtain approval from the State for the submitted plan.

1-2 UNFORESEEN CONDITIONS

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to unforeseen conditions, or Purchaser's choice of construction season or techniques will be at the Purchaser's expense. Unforeseen conditions include, but are not limited to, solid subsurface rock, subsurface springs, saturated ground, and unstable soils.

1-3 ROAD DIMENSIONS

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan, unless controlled by construction stakes or design data (plan, profile, and cross-sections).

1-4 ROAD TOLERANCES

Purchaser shall perform road work within the tolerances listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

Tolerance Class	A	B	C
Road and Subgrade Width (feet)	+1.5	+1.5	+2.0
Subgrade Elevation (feet +/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0

1-6 ORDER OF PRECEDENCE

Any conflict or inconsistency in the road plan will be resolved by giving the documents precedence in the following order:

1. Addenda.
2. Designs or Plans. On designs and plans, figured dimensions shall take precedence over scaled dimensions.
3. Road Plan Clauses.
4. Typical Section Sheet.
5. Standard Lists.
6. Standard Details.
7. Road Plan maps.

In case of any ambiguity or dispute over interpreting the road plan, the Contract Administrator’s or designee’s decision will be final.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer's recommendation, and may not begin without written approval from the Contract Administrator.

1-9 DAMAGED METALLIC COATING

Any cut ends, or damaged galvanized or aluminized coating on existing or new bridge components, culverts, downspouts, and flumes must be cleaned and treated with a minimum of two coats of zinc rich paint or cold galvanizing compound.

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

References in this road plan to "WSDOT Standard Specifications" mean the Washington State Department of Transportation's Standard Specifications for Road, Bridge, and Municipal Construction 2023 (M41-10).

1-15 ROAD MARKING

Purchaser shall perform road work in accordance with the state's marked location. All road work is marked as follows:

- Centerline construction stakes, orange paint, orange flagging and RP's for construction.
- Orange painted trees or construction stakes for pre-haul maintenance and reconstruction.

1-16 CONSTRUCTION STAKES SET BY STATE

Contractor shall perform work on the following road in accordance with the construction stakes and reference points set in the field for grade and alignment. Reconstruction of existing road grades must conform to the original location except where construction staked or designed.

Road	Stations	Type
L-3000	296+80 to 305+80	Slope stakes and RP's
L-3044C	0+00 to 16+58	RP's
L-3042G	0+00 to 5+41	Slope stakes and RP's

1-18 REFERENCE POINT DAMAGE

Purchaser shall reset reference points (RPs) that were moved or damaged at any time during construction to their original locations. Excavation and embankment may not proceed on road segments controlled by said RPs until Purchaser resets all moved or damaged RPs.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan for timber hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 3 business days before work begins.

1-23 ROAD WORK PHASE APPROVAL

Purchaser shall obtain written approval from the Contract Administrator upon completion of each of the following phases of road work:

- Subgrade construction and drainage installation
- Rock application and compaction
- Pavement Repair Preparation
- Pavement Application
- Rock pit exploration
- Rock pit completion

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure period, unless authorized in writing by the Contract Administrator.

Road	Activity	Closure Period
All Roads	Construction, Reconstruction & Pre-haul Maintenance	October 1 to April 30

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense.

1-29 SEDIMENT RESTRICTION

Purchaser shall not allow silt-bearing runoff to enter any streams.

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with Contract Clause G-220 STATE SUSPENDS OPERATION, the Contract Administrator will suspend road work or hauling right-of-way timber, forest products, or rock under the following conditions:

- Wheel track rutting exceeds 6 inches on pit run, jaw run, or native surface roads.
- Wheel track rutting exceeds 2 inches on crushed rock roads.
- Surface or base stability problems persist.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

Operations must stop unless authority to continue working or hauling is granted in writing by the Contract Administrator. In the event that surface or base stability problems persist, Purchaser shall cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

1-32 BRIDGE OR ASPHALT SURFACE RESTRICTION

The use of metal tracked equipment is not allowed on bridge or asphalt surfaces at any time. If Purchaser must run equipment on bridge or asphalt surfaces, then rubber tired equipment or other methods, approved in writing by Contract Administrator, must be used.

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge surface(s) and have surface(s) evaluated by the Region Engineer or their designee for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

Purchaser shall immediately remove any mud, dirt, rock, or other material tracked or spilled on to county roads and state highways.

If additional damage to the surface, signs, guardrails, etc. occurs then the damage will be repaired, at the Purchaser's expense, as directed by the Contract Administrator when authorized by the county or WSDOT.

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

Purchaser shall maintain all roads used under this contract in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS for the entire term of this contract. Maintenance is required even during periods of inactivity.

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

Purchaser shall perform maintenance on roads listed in Contract Clause C-050 PURCHASER ROAD MAINTENANCE AND REPAIR in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

Purchaser may be required to perform maintenance on roads listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER as directed by the Contract Administrator. Purchaser shall maintain roads in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain roads in a condition that will allow the passage of light administrative vehicles.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following roads, Purchaser shall use a grader to shape the existing surface before rock application. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

Road	Stations	Requirements
L-3000	11+00 to 99+30; 114+40 to 296+80; 305+80 to 334+80	Grade existing road prior to rock application, apply rock, grade and compact.
L-3044	0+00 to 18+50	Spot grade existing road prior to rock application, apply spot rock, grade and compact.
L-3042	0+00 to 151+20	Grade existing road prior to rock application, apply spot rock, grade and compact.

2-6 CLEANING CULVERTS

On the following roads, Purchaser shall clean the inlets and outlets of all culverts.

Road	Stations
L-3000	84+80 to 86+30; 177+00 to 178+50
L-3044	0+00 to 18+50
L-3042	45+30 to 53+20; 89+00 to 151+20

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following roads, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before rocking and/or timber haul and must be done in accordance with the TYPICAL SECTION SHEET. Pulling ditch material across the road or mixing in with the road surface is not allowed.

Road	Stations	Requirements
L-3000	0+00 to 21+50; 99+30 to 143+00; 177+00 to 274+00	Removal of brush & debris from ditch and roadside.
	84+80 to 86+30; 177+00 to 178+50	Clean ditch, remove brush & debris from ditch and roadside.
L-3044	0+00 to 18+50	Clean ditch, remove brush & debris from ditch and roadside.
L-3042	0+00 to 13+50; 24+20 to 45+30	Remove brush & debris from ditch and roadside.
	45+30 to 53+20; 89+00 to 151+20	Clean ditch, remove brush & debris from ditch and roadside.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following roads, Purchaser shall cut vegetative material up to 4 inches in diameter, including limbs, as shown on the ROADSIDE BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

Road	Stations
L-3000	0+00 to 21+50; 99+30 to 143+00; 177+00 to 274+00
L-3044	0+00 to 18+50
L-3042	0+00 to 13+50; 24+20 to 52+80; 89+00 to 151+20

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 4 feet high between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-8 PROHIBITED DECKING AREAS

Purchaser shall not deck right-of-way timber in the following areas:

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- Against standing trees, unless approved by the Contract Administrator.

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Grubbing must be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumps adjacent to the road shoulder and in compliance with all other clauses in this road plan.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all components of a tree that remain as by-products after the manufacture of logs, including but not limited to tree tops, branches, limbs, needles, leaves, and stumps that are larger than one cubic foot in volume within the grubbing and brushing area limits as shown on the TYPICAL SECTION SHEET and BRUSHING DETAIL.

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditch lines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, before subgrade compaction, the application of rock, and timber haul.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below or within the cleared right-of-way or in natural openings as designated by the Contract Administrator.

Road	Requirements
L-3000	296+80

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 25 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

Purchaser shall not bury organic debris unless otherwise stated in this plan.

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside of the grubbing limits and in natural openings. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. In addition, the following actions must be taken as pioneering progresses:

- Drainage must be provided on all uncompleted construction.
- Road pioneering operations may not undercut the final cut slope or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations prior to embankment.

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment, except as designed:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 15 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes no steeper than shown on the following table, unless construction staked or designed:

Material Type	Excavation Slope Ratio	Excavation Slope Percent
Common Earth (on side slopes up to 70%)	1:1	100
Common Earth (on slopes over 70%)	¾:1	133
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

4-6 EMBANKMENT SLOPE RATIO

Purchaser shall construct embankment slopes no steeper than shown on the following table, unless construction staked or designed:

Material Type	Embankment Slope Ratio	Embankment Slope Percent
Sandy Soils	2:1	50
Common Earth and Rounded Gravel	1½:1	67
Angular Rock	1¼:1	80

4-7 SHAPING CUT AND FILL SLOPE

Purchaser shall construct excavation and embankment slopes to a uniform line and left rough for easier revegetation.

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

- 6 feet for curves of 50 to 79 feet radius.
- 4 feet for curves of 80 to 100 feet radius.

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

- 2 feet for embankment heights at centerline of 2 to 6 feet.
- 4 feet for embankment heights at centerline of greater than 6 feet.

Purchaser shall apply embankment widening equally to both sides of the road to achieve the required width.

4-10 WIDEN THE EXISTING SUBGRADE

On the following road(s), Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches.

Road	Stations
L-3000	296+80 to 305+80
L-3044A	0+00 to 6+76

4-12 FULL BENCH CONSTRUCTION

On the following road, and where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed.

Road	Full Bench Location	Comments
L-3000	298+34 to 304+91	

4-21 TURNOUTS

Purchaser shall construct turnouts as designated on the ROCK LIST. Locations changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

Purchaser shall construct turnarounds as designated on the ROCK LIST. Turnarounds must be no larger than 30 feet long and 30 feet wide.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

Purchaser shall construct and reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Ditches must be constructed concurrently with construction of the subgrade.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as needed and as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

4-35 WASTE MATERIAL DEFINITION

Waste material is defined as all dirt, rock, mud, or related material that is extraneous or unsuitable for construction material. Waste material, as used in Section 4 EXCAVATION, is not organic debris.

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in the listed designated areas. Additional waste areas may also be identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

Road	Waste Area Location	Comments
L-3000	296+92 to 298+40	Left and right. ~9,800 cy

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

- Within 25 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.

4-48 NATIVE MATERIAL

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 4 inches in any dimension.

4-55 ROAD SHAPING

Purchaser shall shape the subgrade and surface as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape must ensure runoff in an even, un-concentrated manner, and must be uniform, firm, and rut-free.

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width, except ditch.

4-63 EXISTING SURFACE COMPACTION

Purchaser shall compact maintained road surfaces in accordance with the COMPACTION LIST by routing equipment over the entire width.

SECTION 5 – DRAINAGE

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-17 through 10-22.

5-10 CULVERT MARKER INSTALLATION

Purchaser shall provide and install culvert markers at the inlet in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and CULVERT LIST.

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT LIST that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations. Culverts shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet**.** Shorter sections of banded culvert shall be installed at the inlet end.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 24 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

Cross drains, on road grades in excess of 3%, must be skewed at least 30 degrees from perpendicular to the road centerline, except where the cross drain is at the low point in the road culverts will not be skewed. Cross drain culverts must be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 10%.

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover recommended by the culvert manufacturer for the type and size of the pipe.

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

The type of energy dissipater and the amount of material must be consistent with the specifications on the CULVERT LIST, except for temporary culverts. Placement must be by zero drop-height method only. Energy dissipater installation is subject to approval by the Contract Administrator.

5-25 CATCH BASINS

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 3 feet wide and 4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify placement of rock, except for temporary culverts. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culvert, Purchaser shall place select pit run in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT LIST. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be with a zero-drop-height only. Light loose rip rap must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP.

Road	Stations	Rock Type
L-3044A	1+36, 2+65	Select Pit Run

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

5-35 SUBSURFACE DRAIN

On the following road, Purchaser shall install subsurface drain in accordance with the SUBSURFACE DRAIN DETAIL.

Road	Stations
L-3000	0+68

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source, a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 3 business days before starting any operations in the listed locations.

Source	Location
Lincoln Quarry	Sec. 15, T14N R5W

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use.

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written Rock Source Development Plan prepared by the state and included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the Rock Source Development Plan, and approved in writing by the Contract Administrator.

Source	Rock Type
Lincoln Quarry	Sec. 15, T14N R5W

6-13 ROCK EXPLORATION

Purchaser shall provide a rock drill with operator for 1,500 drill feet of rock exploration as directed by the Contract Administrator at the following site. Contractor shall record exploration results in ROCK EXPLORATION LOG DETAIL and provide them to the Contract Administrator upon completion of rock exploration.

Road	Remarks
Lincoln Quarry	Drilling to occur within or adjacent to the rock source.

6-22 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

6-23 ROCK GRADATION TYPES

Purchaser shall provide rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles**.**

6-30 2-INCH MINUS CRUSHED ROCK

% Passing 2" square sieve	100%
% Passing 1" square sieve	55 - 75%
% Passing U.S. #4 sieve	20 - 45%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

6-31 2-INCH CLEAN ROCK

% Passing 2" square sieve	100%
% Passing U.S. #4 sieve	20%
% Passing U.S. #200 sieve	5% maximum

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.1 percent organic debris and trash. All percentages are by weight.

6-41 SELECT PIT RUN ROCK

No more than 50 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Select Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

6-50 LIGHT LOOSE RIP RAP

Light loose rip rap must consist of angular, hard, sound, and durable stone. It must be free from segregation, seams, cracks, and other defects tending to destroy its resistance to weather. Light loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

Quantity	Approximate Size Range
20% to 90%	500 lbs. to 1 ton (18”- 28”)
15% to 80%	50 lbs. to 500 lbs. (8”- 18”)
10% to 20%	3 inch to 50 lbs. (3”- 8”)

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are loose yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

6-56 ROCK MEASURMENT BY TRUCK VOLUME

Measurement of spot, culvert backfill/bedding, fill armor, landing rock and energy dissipaters is on a cubic yard truck measure basis. The Purchaser will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck and shall give them to the Contract Administrator on a weekly basis during rocking operations. Unless otherwise stated in Clause 6-75 OPTIONAL ROCK EXCEPTION.

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile rock as listed below in accordance with the ROCK LIST. Rock stockpiles must be in accordance Clause 6-67 ROCK STOCKPILE SPECIFICATIONS.

Rock Source	Rock Type	Quantity (c.y.)	Stockpile Location
Lincoln Quarry	2 Inch Minus Crushed	1,500	Lincoln Quarry

6-67 ROCK STOCKPILE SPECIFICATIONS

Rock stockpiles listed in Clause 6-65 ROCK STOCKPILE LOCATION must meet the following specifications:

Before placing aggregates upon the stockpile site, the site must be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface.

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 24 feet. Stockpiles in excess of 200 cubic yards must be built up in layers of not more than 5 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

No equipment other than pneumatic tired equipment may be used on stockpiles. Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for SUBGRADE CONSTRUCTION AND DRAINAGE INSTALLATION before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way, unless otherwise specified in the ROCK LIST.

6-74 ROCK ON SHOULDER TO BITUMINOUS SURFACE

On the following road(s), Purchaser shall apply rock on the road shoulder in accordance with the quantities shown on the ROCK LIST. Rock must be applied, shaped, and compacted to insure a smooth transition from the bituminous surface treatment to the shoulder of the road.

Road	Stations	Rock Type
L-3000	0+00 to 0+85	2 Inch Minus Crushed

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, if hauling takes place from June 1 to September 30, Purchaser may provide and place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

If less rock is applied, Purchaser shall submit a written plan, for approval, describing how these roads will be constructed, used, maintained, and treated post-haul. Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

Road	Stations
L-3044B	0+00 to 6+17
L-3044C	7+07 to 16+58
L-3042E	0+00 to 4+25
L-3042F	0+00 to 3+03
L-3042G	0+00 to 5+41

6-76 DRY WEATHER ROCK COMPACTION

On the following roads, The Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

Road	Stations	Comments
L-3000	0+27 to 0+85	Pavement Repair

6-93 ASPHALT REPAIR

If hauled upon, asphalt could deteriorate. Any damage or wear, including but not limited to depressions, sags, cracks, and alligatoring, must be replaced with new material. All pavement repair areas must be saw-cut before removal. The cutting line must be a minimum of 6 inches beyond the damaged area. Damaged areas exceeding 25 square feet must have asphalt placed with an approved paving machine. The replacement asphalt must be Hot Mix Asphalt or equivalent and installed per Clause 5-04.3(4)C of the WSDOT Standard Specifications. Purchaser shall notify the Contract Administrator at least 5 working days before starting any asphalt road repairs. Purchaser shall obtain written approval from the Contract Administrator for all completed repairs.

6-94 HMA WEATHER LIMITATIONS *(WSDOT 5-04.3(1))*

HMA may not be placed on any wet surface, or when the average surface temperatures are less than 45°F, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

When in the opinion of the Contract Administrator the weather is such that satisfactory results cannot be obtained in any phase of operations, the Purchaser shall suspend operations until the weather is favorable.

SECTION 7 – STRUCTURES

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately, and placed in the site(s) designated for stockpiling or disposal. Purchaser shall retrieve all material carried downstream from the jobsite.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, STREAM DIVERSION PROCEDURE and Forest Practice Permit.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following roads, Purchaser shall install sediment traps in accordance with the SEDIMENT TRAP DETAIL.

Road	Stations	Comments
L-3044A	0+99, 2+50, 2+85	On left
L-3042	30+60	On left

Sediment control shall be accomplished using sediment traps, silt fences, or other methods as approved in writing by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils within 25 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-10 STABILIZE SLOPES – ROCK APPLICATION

On the following road, Purchaser shall stabilize embankment slopes by applying rock as specified below. Rock must be applied in quantities specified in the ROCK LIST to exposed soil on the entire embankment to a minimum depth specified below. No placement by end dumping or dropping of rock is allowed. LIGHT LOOSE RIP RAP must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP.

Road	Stations	Rock Type	Slope	Minimum Depth (inches)
L-3000	32+60	LIGHT LOOSE RIP RAP	1:1	48

8-15 REVEGETATION

On the following roads, Purchaser shall spread grass seed on all exposed soils resulting from road work activities using manual dispersion. Other methods of covering must be approved in writing by the Contract Administrator. Required seed not spread by the termination of this contract will become the property of the state.

Road	Location	Qty (lbs)*	Type	Remarks
L-3000	296+80 to 305+80	27	Grass Seed	
L-3044A	0+00 to 6+76	20	Grass Seed	
	6+76 to 20+76	30	Grass Seed	Abandonment only
L-3044B	0+00 to 6+17	18	Grass Seed	
L-3044C	0+00 to 16+58	50	Grass Seed	
L-3042E	0+00 to 4+25	13	Grass Seed	
L-3042F	0+00 to 3+03	9	Grass Seed	
L-3042G	0+00 to 5+41	16	Grass Seed	
L-3000	Waste Area	20	Grass Seed	
	Total:	203 lbs.		

Quantities are estimates only. Actual quantities may vary and are the responsibility of the Purchaser.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the grass seed.

8-17 REVEGETATION TIMING

Purchaser shall revegetate after road work is completed and between March 15 and September 30. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator.

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 2-inch tall grass. Purchaser shall reapply the grass seed in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the grass seed at no addition cost to the state.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
    a. Common name of seed
    b. Net weight
    c. Percent of purity
    d. Percentage of germination
    e. Percentage of weed seed and inert material
5. Seed must conform to the following mixture, unless a comparable mix is approved in writing by the Contract Administrator.

Kind and Variety of Seed in Mixture	% by Weight
Perennial Rye	35-45
Red Fescue	30-40
Highland Bent	5-15
White Clover	10-20
Inert and Other Crop	0.5

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the EARTHEN BARRICADE DETAIL.

Road	Stations
L-3044A	6+76

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

Culverts removed from roads become the property of the Purchaser and must be removed from state land.

9-5 POST-HAUL MAINTENANCE

Purchaser shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads before the termination of this contract. Work must be in accordance with the ROAD ABANDONMENT CROSS SECTIONS DETAIL.

Road	Stations	Type
L-3044A	6+76 to 20+76	Light

9-22 LIGHT ABANDONMENT

- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 150 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove culverts.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.
- Scatter woody debris onto abandoned road surfaces.

10-1 GEOTEXTILE FOR SUBSURFACE DRAINAGE

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for drainage or filtration. Woven slit-film geotextiles are not allowed. Material must be free of defects, cuts, and tears.

	ASTM Test	Requirements
Type	--	Non-woven
Apparent opening size	D 4751	No. 80 max
Water permittivity	D 4491	0.3 sec^{-1}
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	<>= 50%
Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts must meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culverts must be Type S – double walled with a corrugated exterior and smooth interior.

10-22 PLASTIC BAND

Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe joint.

10-35 HOT MIX ASPHALT (HMA)

HMA must be CL ½", PG 58-22. The materials that HMA is composed of must be of such sizes, grading, and quantity that, when proportioned and mixed, they will produce a well-graded mixture within the requirements listed below. The aggregate percentage refers to completed dry mix, and includes mineral filler when used.

% Passing 3/4" square sieve	100%
% Passing 1/2" square sieve	90 - 100%
% Passing 3/8" square sieve	90% max
% Passing U.S. #8 sieve	28 - 58%
% Passing U.S. #200 sieve	2 - 7% max

Emulsified Asphalt: Asphalt binder for the tack coat and must be emulsified asphalt, CSS-1 grade meeting the requirements of Section 9-02.1(6) Cationic Emulsified Asphalt of the WSDOT Standard Specifications.

HMA must conform to Sections 5-04 of the WSDOT Standard Specifications, except 5-04.5.

- Asphalt mixing plants must be capable of meeting the requirements of Section 5-04.3(3)A – HMA Mixing Plant.
- The placement of HMA must be applied in accordance with Section 5-04.3(3)C – Asphalt Pavers.

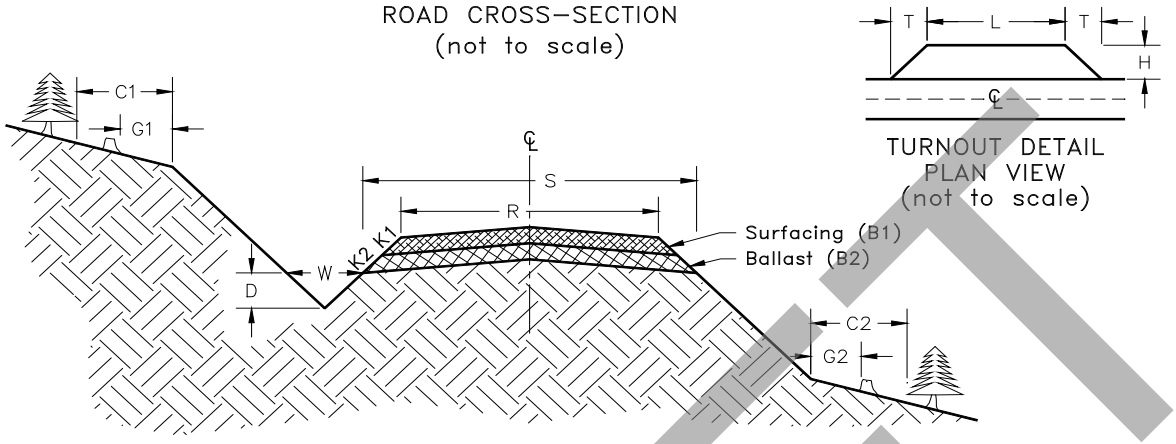
SECTION 11 SPECIAL NOTES

11-1 CRACK SEALING

On the following road(s), Purchaser shall seal all asphalt cracks in accordance with Section 5-03 of the WSDOT Standard Specifications.

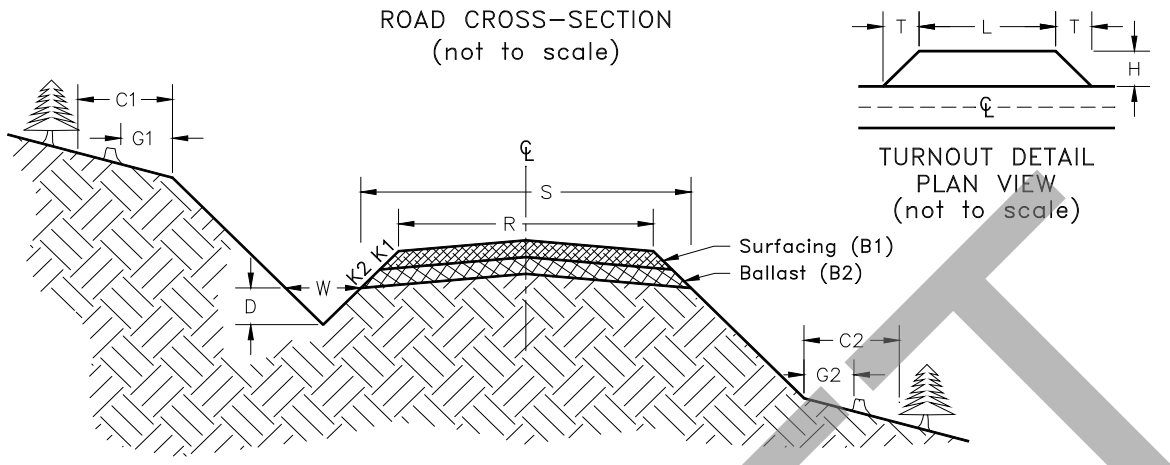
Road	Stations
L-3000	1+22 to 1+39; 8+00 to 9+40.

TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width ft	Road Width ft	Ditch Width ft	Ditch Depth ft	Crown @ CL in	Grubbing Limits ft		Clearing Limits ft	
				S	R	W	D		G1	G2	C1	C2
L-3000	0+00	11+00	A	-	18	3	1	4	-	-	-	-
	11+00	296+80	A	-	14	3	1	4	-	-	-	-
	296+80	305+80	C	20	14	3	1	4	5	5	10	10
	305+80	334+80	A	-	14	3	1	4	-	-	-	-
L-3044	0+00	18+50	A	-	12	3	1	4	-	-	-	-
L-3044 A	0+00	6+76	C	18	12	3	1	4	5	5	10	10
L-3044B	0+00	6+17	C	18	12	3	1	4	5	5	10	10
L-3044C	0+00	16+58	C	18	12	3	1	4	5	5	10	10
L-3042	0+00	151+20	a	-	12	3	1	4	-	-	-	-
L-3042E	0+00	4+25	C	18	12	3	1	4	5	5	10	10
L-3042F	0+00	3+03	C	18	12	3	1	4	5	5	10	10
L-3042G	0+00	5+41	C	18	12	3	1	4	5	5	10	10

ROCK LIST



SELECT PIT RUN

Road Number		From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
				K2	B2				Lincoln Quarry	L (ft)	H (ft)	T (ft)
L-3000		Pavement Ballast				20	1	20				
		296+89	304+91			105.25	8	842				
		Curve Widening						29				
		Energy Dissipater				1	2	2				
		Stock Pile Base Rock (297+00 Left)						120				
L-3044 A		0+00	6+76	1 1/2:1	8	41	6.76	277				
		Turnarounds				22	1	22				
		Curve Widening						10				
		Energy Dissipater				1	2	2				
L-3044B	*	0+00	6+17	1 1/2:1	15	81	6.17	500				
	*	Turnarounds				43	1	43				
	*	Curve Widening						18				
	*	Energy Dissipater				1	1	1				
	*	Landings				50	1	50				
L-3044C		0+00	7+07	1 1/2:1	15	81	7.07	573				
		Turnarounds				43	1	43				
		Curve Widening						20				
		Junctions				15	1	15				
		Energy Dissipater				1	2	2				
	*	7+07	16+58	1 1/2:1	15	81	9.51	770				
	*	Turnarounds				43	1	43				
	*	Turnouts				23	1	23		40	10	25
	*	Curve Widening						27				
	*	Landings				70	1	70				
	*	Energy Dissipater				1	2	2				

ROCK LIST

SELECT PIT RUN

Road Number		From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
				K2	B2				Lincoln Quarry	L (ft)	H (ft)	T (ft)
L-3042		Energy Dissipater				1	3	3				
L-3042E	*	0+00	4+25	1 1/2:1	15	81	4.25	344				
	*	Turnouts				23	1	23		40	10	25
	*	Curve Widening						12				
	*	Junctions				15	1	15				
	*	Energy Dissipater						1				
	*	Landings				70	1	70				
L-3042F	*	0+00	3+03	1 1/2:1	15	81	3.03	245				
	*	Turnouts				23	1	23		40	10	25
	*	Curve Widening						9				
	*	Junctions				15	1	15				
	*	Landings				70	1	70				
L-3042G	*	0+00	5+41	1 1/2:1	15	81	5.41	438				
	*	Turnarounds				43	1	43				
	*	Curve Widening						15				
	*	Junctions				15	1	15				
	*	Energy Dissipater						1				
	*	Landings				70	1	70				

*Optional Rock in accordance with 6-75

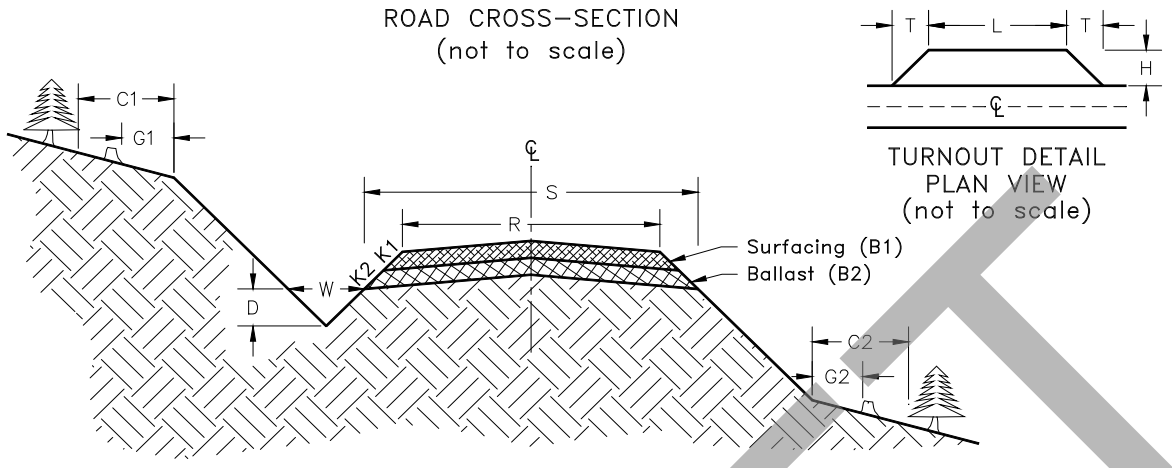
REQUIRED SELECT PIT RUN: 1980 CY
OPTIONAL SELECT PIT RUN: 2956 CY
TOTAL SELECT PIT RUN: 4936 CY

LIGHT LOOSE RIP RAP (FILL ARMOR)

Road Number	Stations	CY Subtotal
L-3000	32+60	16
L-3044A		18

REQUIRED LIGHT LOOSE RIP RAP TOTAL: 34

ROCK LIST



2 INCH MINUS CRUSHED

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
			K1	B1				Lincoln Quarry	L (ft)	H (ft)	T (ft)
L-3000	11+00	32+60	1 1/2:1	6	35	21.60	756				
	Turnouts				10	3	30		40	10	25
	Curve Widening						23				
	267+50	271+00		6	35	3.50	123				
	Curve Widening						8				
	Spot Rock (0+60, 42+60, 73+80, 80+70, 138+50, 181+20, 183+50, 215+00, 238+20, 252+10)				10	10	100				
	Spot Rock (69+00, 316+30)				20	2	40				
	Spot Rock (60+40, 94+00, 177+90, 203+69)				30	4	120				
	Culvert Backfill/Bedding						20				
	Rock Berm						3				
	296+89	304+91			35.125	8	281				
	Curve Widening						8				
L-3044	Spot Rock (3+60, 8+00)				10	2	20				
L-3044A	Culvert Backfill/Bedding						90				
L-3042	Spot Rock (55+20)				20	1	20				
	Culvert Backfill/Bedding				4.5	20	90				
Lincoln Quarry Stock Pile							1500				

REQUIRED 2 INCH MINUS CRUSHED ROCK: 3232 CY

2 INCH CLEAN ROCK

Road Number	Station	CY	Comments
L-3000	0+68	2	Subsurface (French) Drain

CULVERT LIST

Road Number	Location	Culvert			Armoring (C.Y.)			Backfill Material	Bedding Material	Inlet Marker	Remarks
		Dia (In)	Length	Type	Inlet	Outlet	Type				
L-3000	0+68	8	30	PPSW	-	-	-	2CR	CR	N	Subsurface (French) Drain
L-3000	85+20	18	40	PD	0.5	0.5	SP	NT	NT	Y	Replace
	299+81	18	40	PD	1.0	-	SP	NT	NT	Y	
L-3044 A	0+66	18	30	PD	0.5	0.5	SP	CR	CR	Y	
	1+36	24	40	PD	0.5	0.5	SP	CR	CR	Y	
	2+65	30	50	PD	0.5	0.5	SP	CR	CR	Y	
	5+66	18	30	PD	0.5	0.5	SP	CR	CR	Y	
L-3044B	3+12	18	30	PD	0.5	0.5	SP	NT	NT	Y	
L-3044C	3+91	18	30	PD	0.5	0.5	SP	NT	NT	Y	
	7+07	18	40	PD	0.5	0.5	SP	NT	NT	Y	
	10+54	18	40	PD	0.5	0.5	SP	NT	NT	Y	
	14+93	18	30	PD	0.5	0.5	SP	NT	NT	Y	
L-3042	24+20	18	50	PD	0.5	0.5	SP	CR	CR	Y	
	128+20	18	30	PD	0.5	0.5	SP	CR	CR	Y	
	137+00	18	30	PD	0.5	0.5	SP	CR	CR	Y	
L-3042E	3+30	18	30	PD	0.5	0.5	SP	NT	NT	Y	
L-3042G	1+75	18	40	PD	0.5	0.5	SP	NT	NT	Y	

Key:

SP - Select Pit Run
NT - Native (bank run)
CR - 2 Inch Minus Crushed
2CR - 2 Inch Clean Rock
PD - Polyethylene Pipe Double Wall
PPSW - Perforated Polyethylene Single Wall

COMPACTION LIST

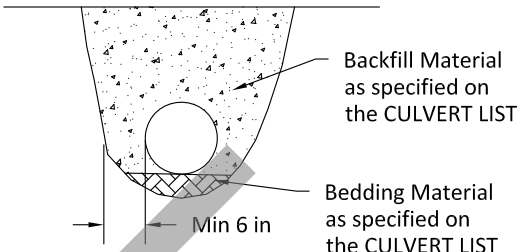
Road	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes
All Roads	Subgrade	12	Vibratory Smooth Drum	20,000	4
All Roads	Embankment or Fill	18	Vibratory Smooth Drum	20,000	4
All Roads	Waste Area	24	Excavation	28,000	-
All Roads	Pre-haul Surface	6	Vibratory Smooth Drum	20,000	5
All Roads	Rock	12	Vibratory Smooth Drum	20,000	3

INSTALLATION REQUIREMENTS:

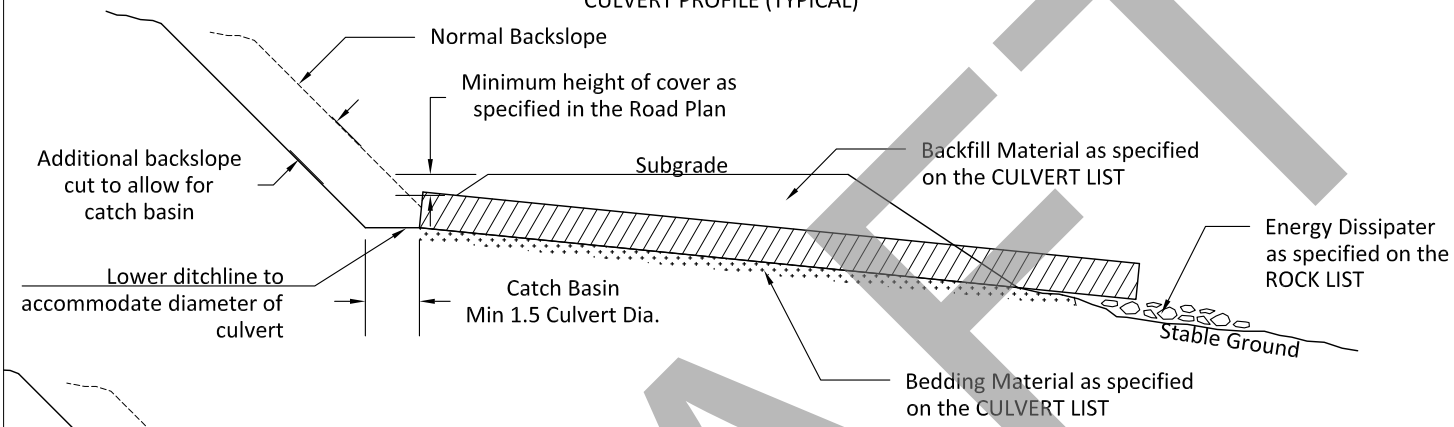
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly supported along the barrel.
2. Backfill material shall be compacted under the culvert haunches, around the sides, and above the culvert in accordance with the COMPACTION LIST.

ALL DRAWINGS ARE NOT TO SCALE

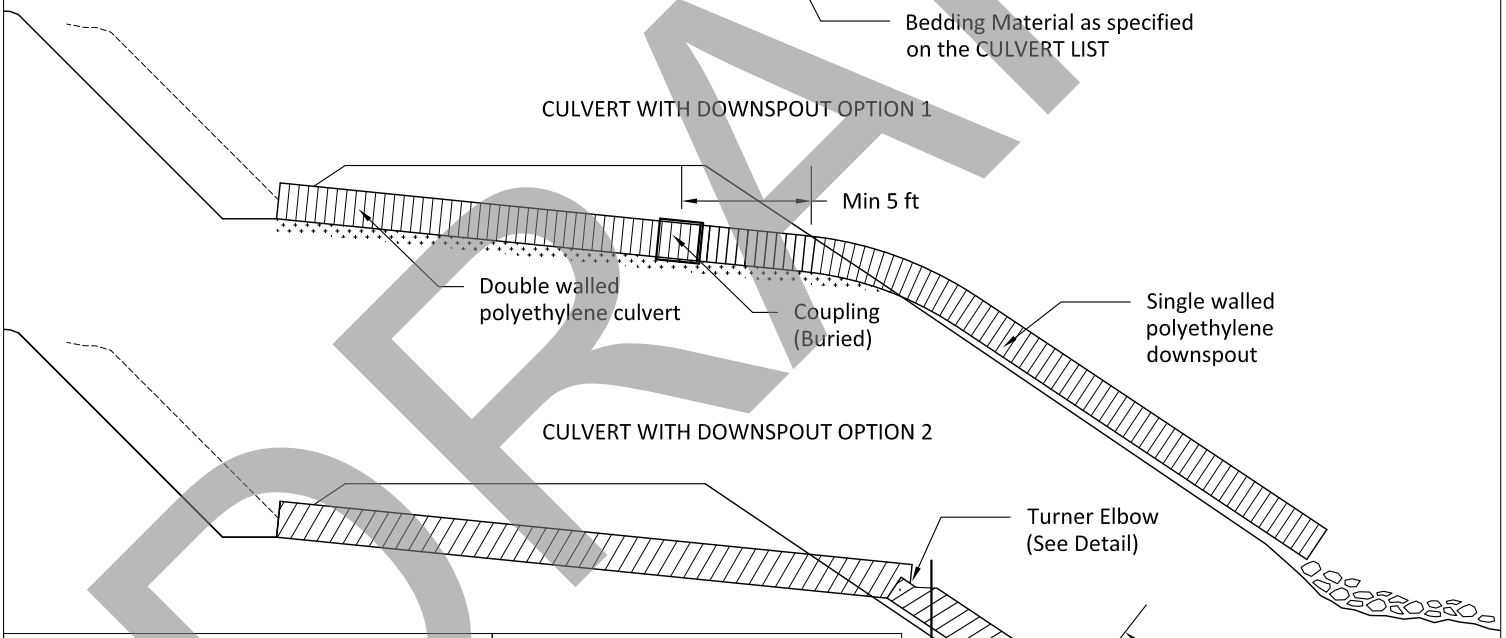
CROSS SECTION



CULVERT PROFILE (TYPICAL)



CULVERT WITH DOWNSPOUT OPTION 1



CULVERT WITH DOWNSPOUT OPTION 2

SUPPORT STAKES

Stake Material: T-post with rust protection coating.
Connections: Bolt support stakes to the culvert with $\frac{5}{8}$" u-bolts, with washers on both the inside and outside of the culvert.
Alternative staking methods may be approved, in writing, by the Contract Administrator.

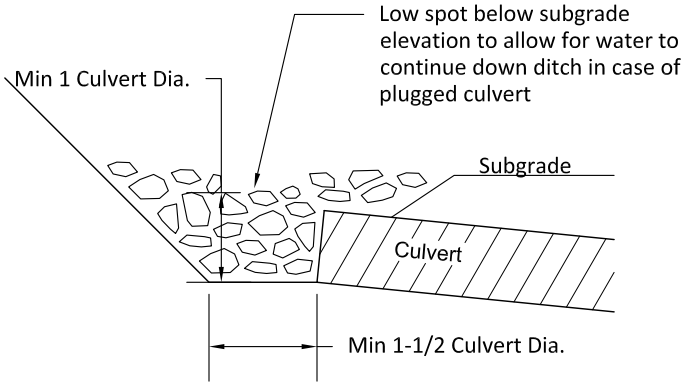
TURNER ELBOW

Bolted with $\frac{5}{8}$" galvanized bolts and washers (both sides)

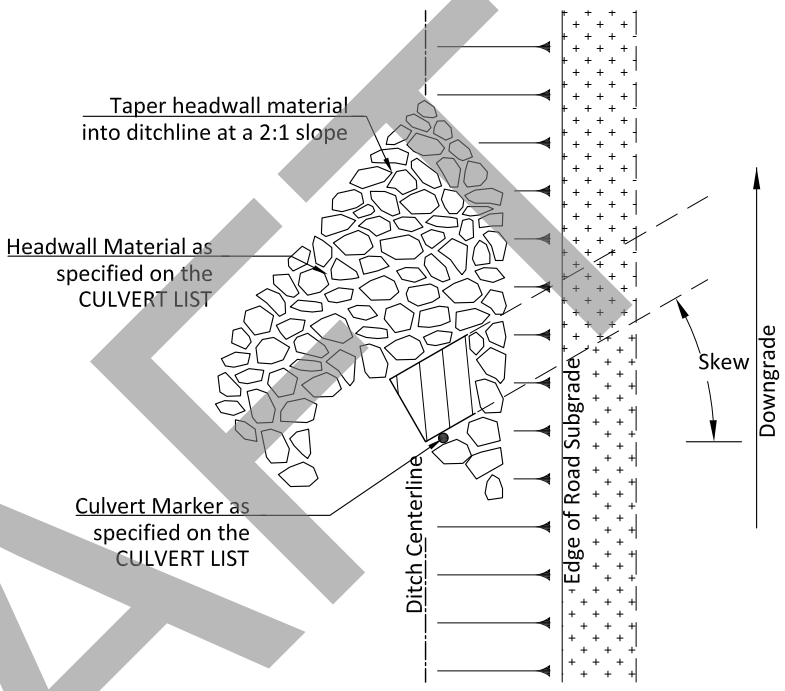
Downspout must be 6 inches larger in diameter than the culvert.

HEADWALLS

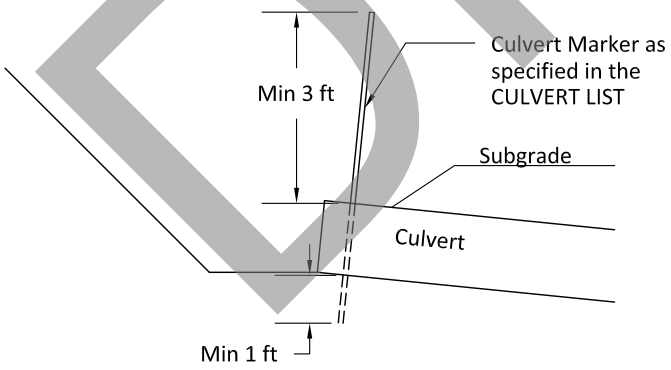
Section View



Plan View

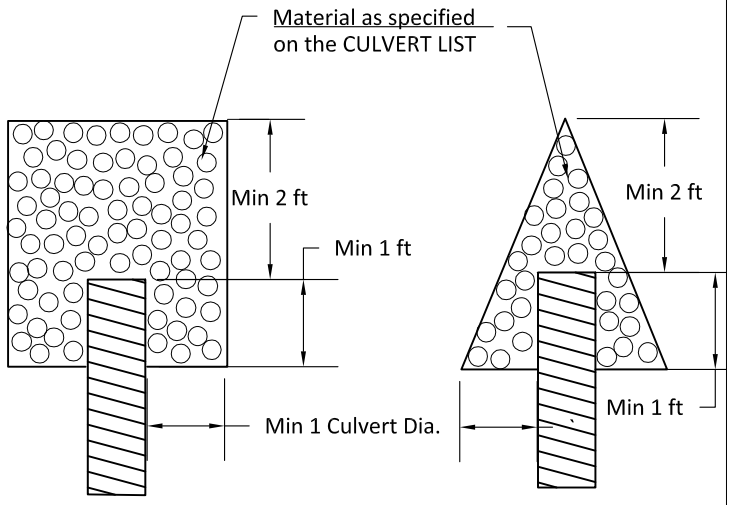


CULVERT MARKERS



Culvert Marker Material: 1 Inch I.D., Schedule 40 PVC Pipe, White. Marker must be capped on the top.
Culvert Marker Placement: Place on uphill side of culvert, between corrugations if possible.
Alternative culvert marker types may be approved, in writing, by the Contract Administrator.

ENERGY DISSIPATERS



Min Energy Dissipater Depth: 1 Culvert Dia.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides from ditches and the roadway. Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

Drainage

- Prevent silt bearing road surface and ditch runoff from delivering sediment to any streams or wetlands.
- Maintain rolling dips and drivable waterbars as needed to keep them functioning as intended.
- Maintain headwalls to the road shoulder level with material that will resist erosion.
- Maintain energy dissipaters at culvert outlets with non-erodible material or rock.
- Keep ditches, culverts, and other drainage structures clear of obstructions and functioning as intended.
- Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This shall be done even during periods of inactivity.

Preventative Maintenance

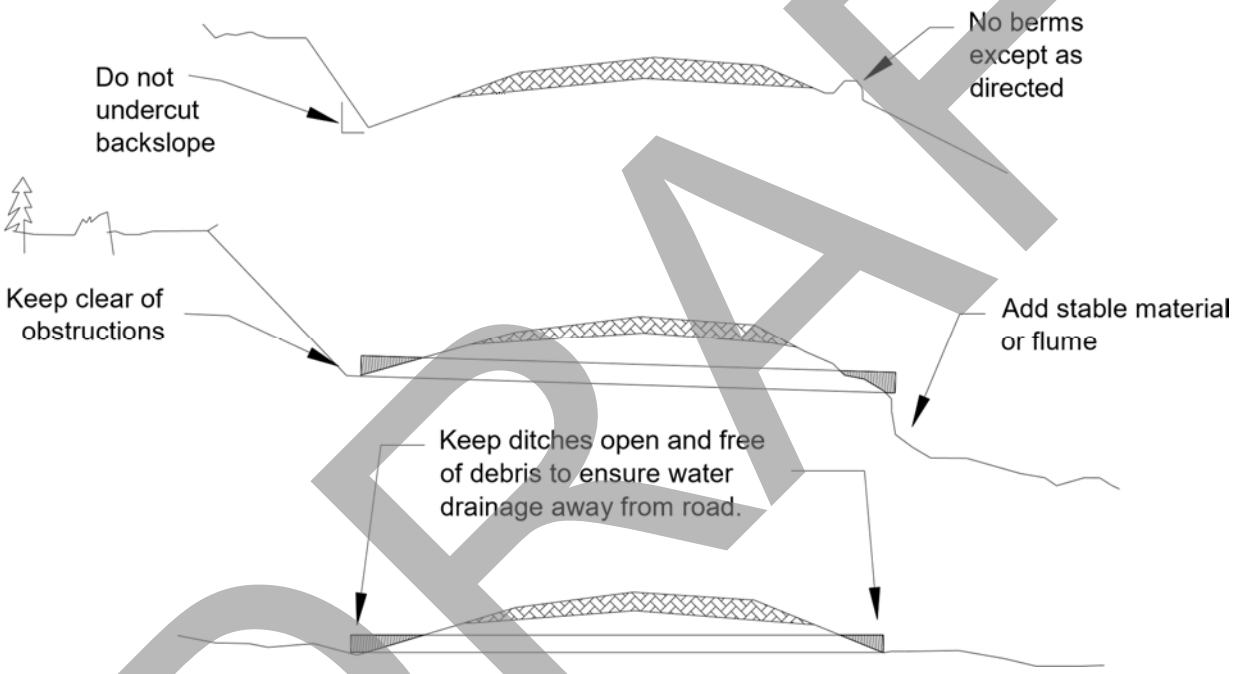
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

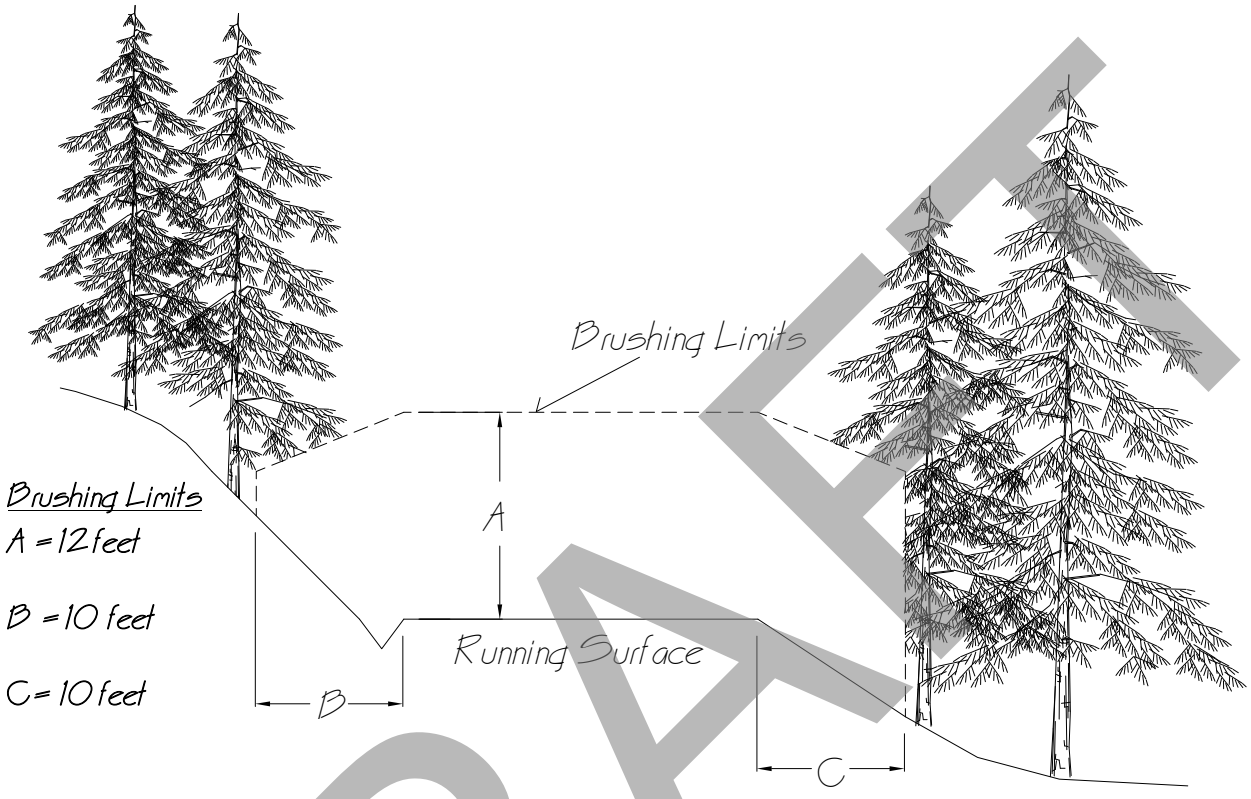
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



ROADSIDE BRUSHING DETAIL



GENERAL NOTES

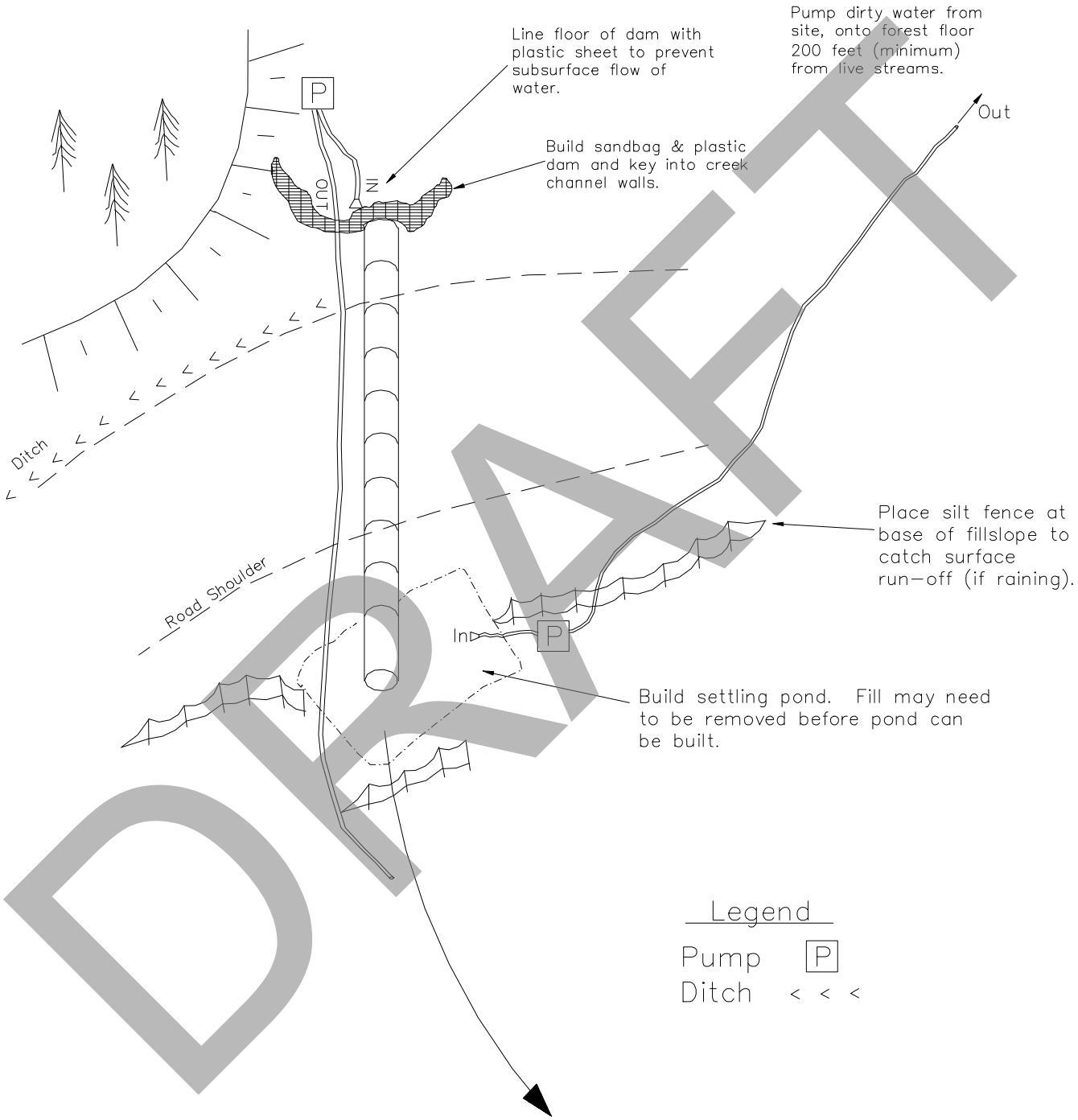
1) Vegetative material, including limbs, up to 4 inches in diameter shall be cut within the brushing limits shown on the drawing above. This includes vegetative material growing on the running surface.
2) Vegetative material shall be cut as near flush with the ground as possible, but shall not extend more than 6 inches above the ground.
3) Brushing Limit C may be increased on the inside of curves to improve sight distance if approved by the Contract Administrator

STREAM DIVERSION PROCEDURE

For culvert installation or removal in live waters, sites shall be dewatered within the area of direct influence of the stream. Stream culvert installations or removals will occur as follows, any deviations shall be approved, in writing, by the Contract Administrator.

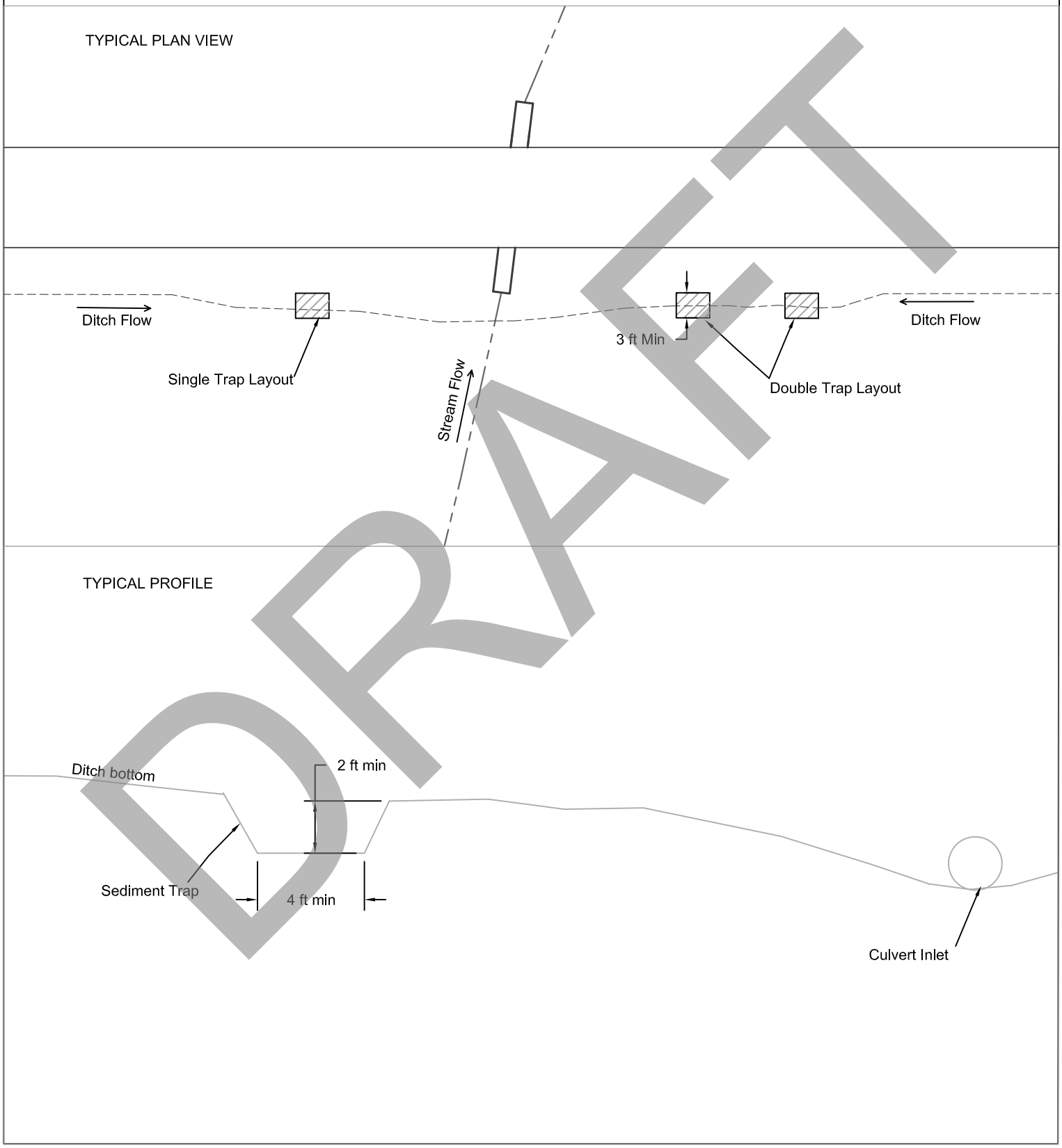
1. Prior to any work within the high waterline, Purchaser shall contact the Contract Administrator for an on-site pre-work to submit a plan for pumping and/or diverting all stream flow around the work area and pumping and/or diverting any groundwater flow from out of the work area, as approved, in writing, by the Contract Administrator. The SETTLING POND AND PUMP DETAIL, included herein, is an example of a pre-approved dewatering plan.
2. Once the stream has been pumped and/or diverted, stream flow shall not be allowed through the work area until all work below the ordinary high water line has been completed and approved, in writing, by the Contract Administrator.
3. Sedimentation shall be avoided during culvert installation or removal in accordance with Road Plan Clause 1-29 SEDIMENT RESTRICTION.
4. Per Road Plan Clause 8-1 SEDIMENT CONTROL STRUCTURES, Purchaser shall install silt fences or other suitable sediment control methods as approved by the Contract Administrator.
5. Backfill any settling ponds and remove any diversion culverts.
6. Maintain a clean jobsite in accordance with Road Plan Clause 7-5 STRUCTURE DEBRIS.

SETTLING POND AND PUMP DETAIL

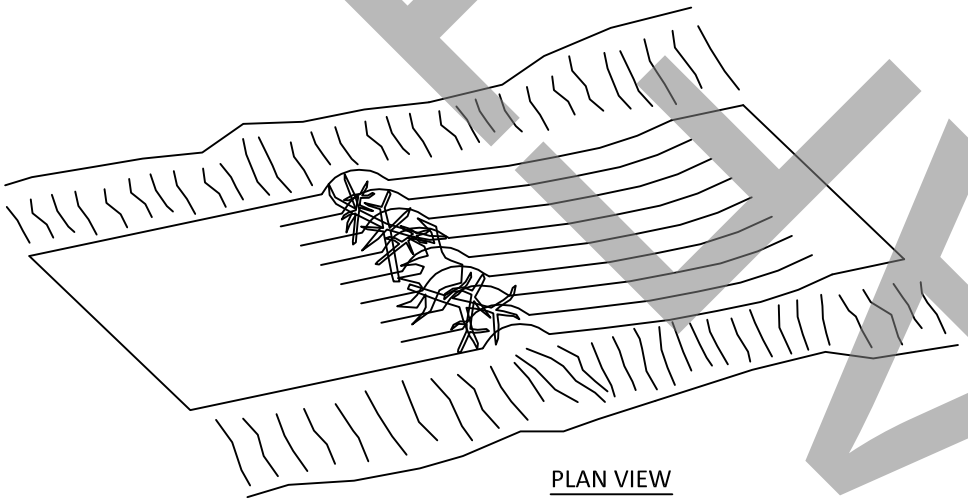


SEDIMENT TRAP DETAIL

No Scale

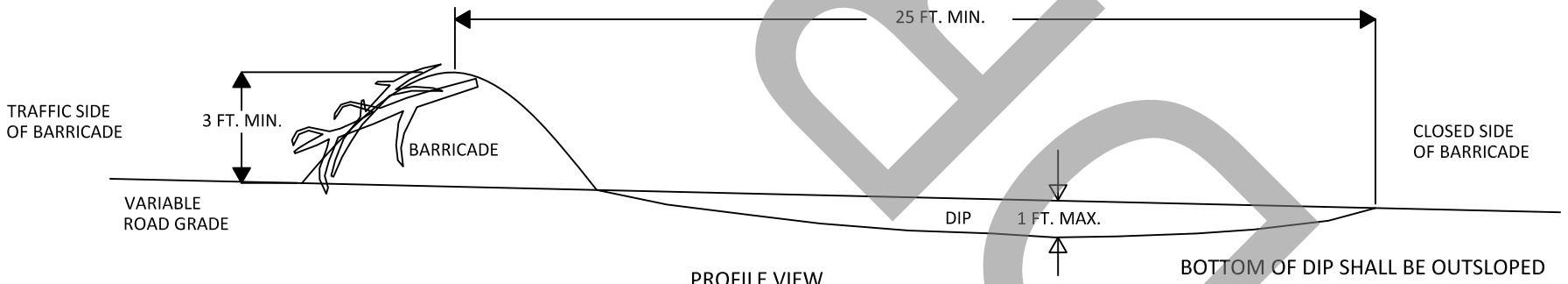


EARTHEN BARRICADE DETAIL



PLAN VIEW

SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.



PROFILE VIEW

BOTTOM OF DIP SHALL BE OUTSLOPED SO AS TO DRAIN FREELY

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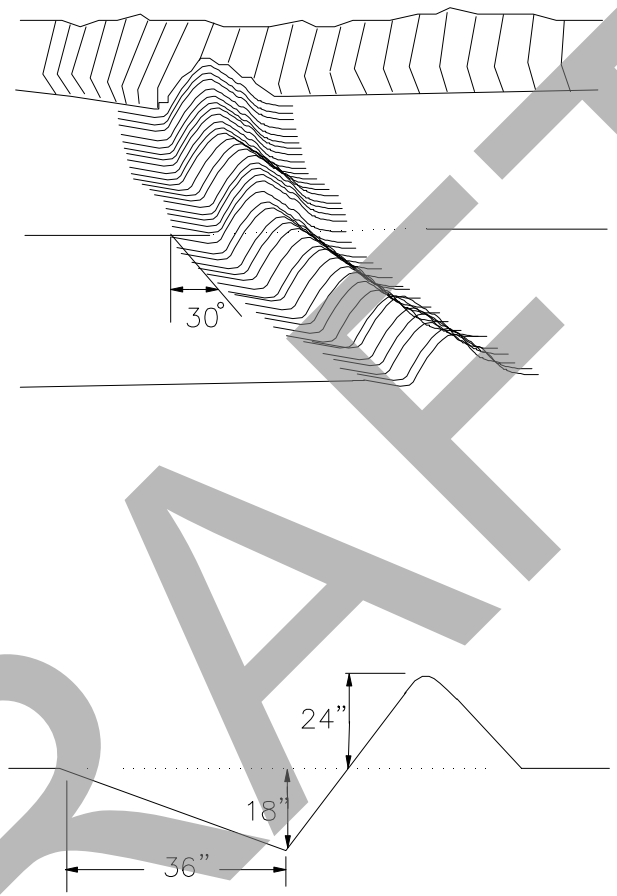
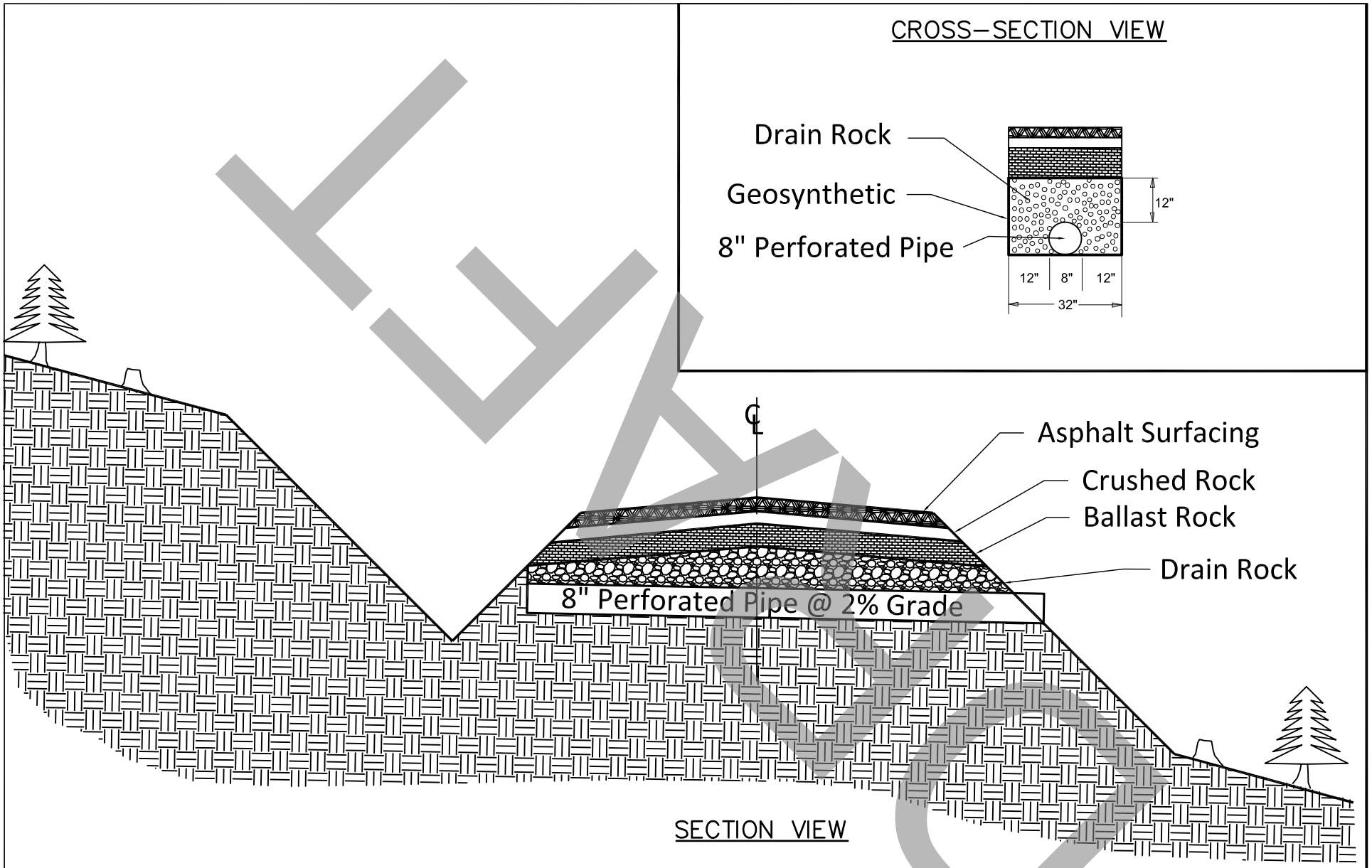
Accessed: 10/01/2024 14:49

NON-DRIVABLE WATER BAR DETAIL

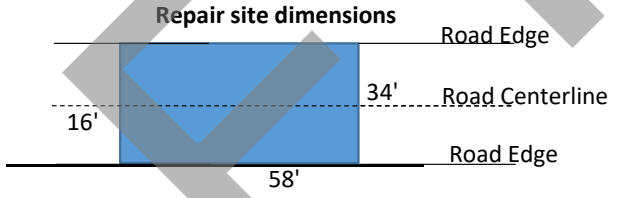




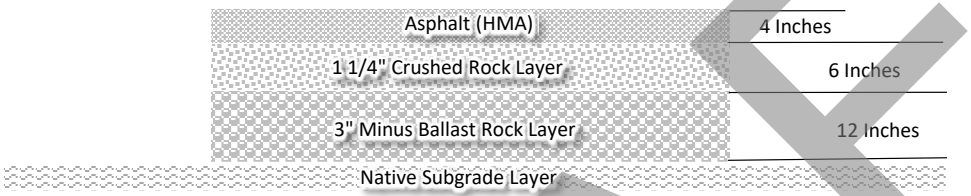
FRENCH DRAIN UNDER ASPHALT DETAIL

SHEET 1 OF 1

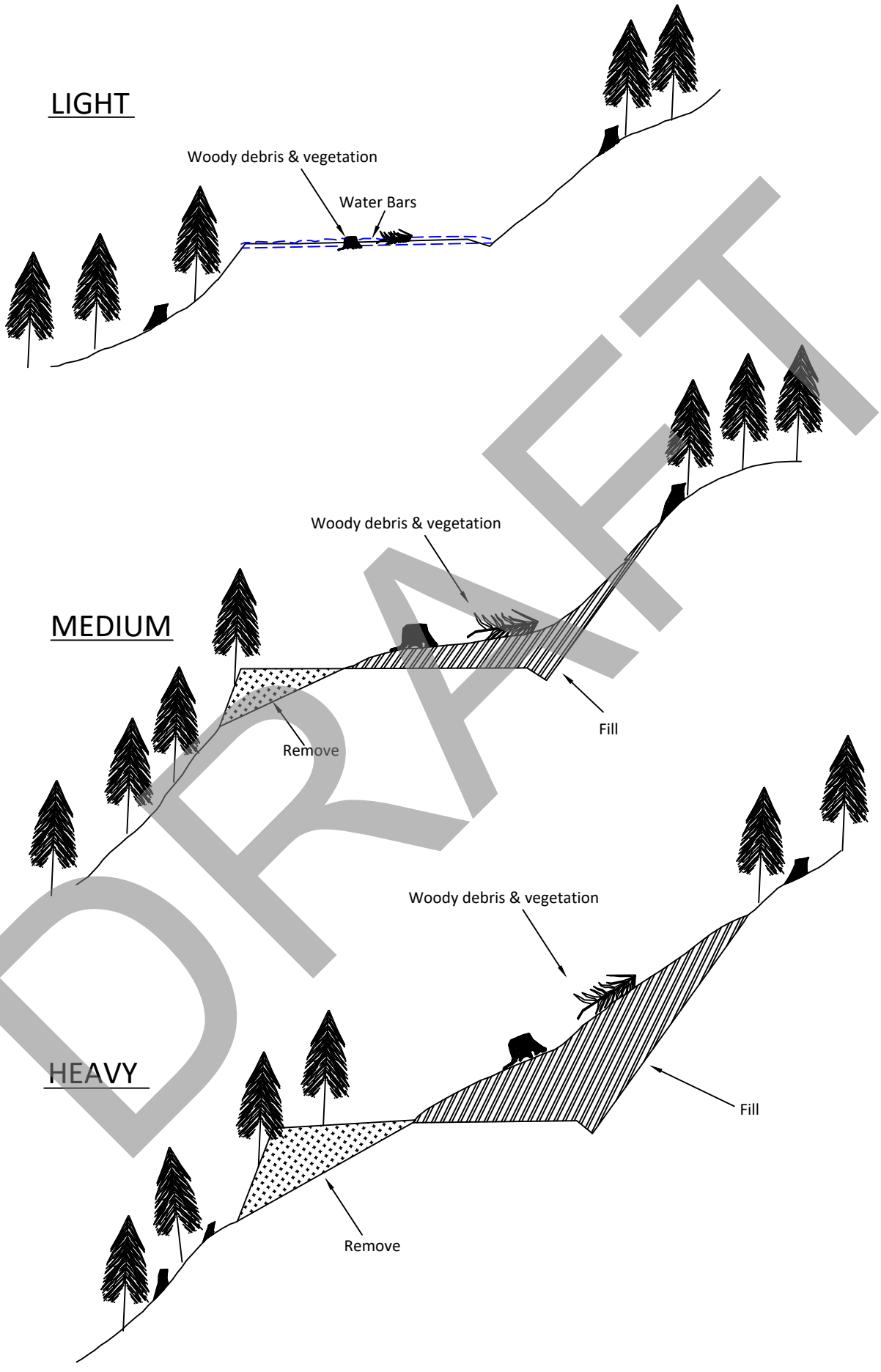
Pavement Repair Detail (0+27 to 0+85)
Road: L-3000
Plan View

Site Number	Station	HMA Depth (inches)		Repair site dimensions	
1	0+27 to 0+85	4	Woods Side		Town Side

Pavement Repair Detail
Road: L-3000
Profile View



ROAD ABANDONMENT CROSS SECTIONS



LINCOLN QUARRY
ROCK SOURCE DEVELOPMENT PLAN
Sec 15 T14N R05W W.M.

1. All operations shall be carried out in compliance with all the regulations of:
    a. Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
    b. "Safety Standards for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.

2. Development shall be in Area A starting from the south. Development in any other area, must be approved in writing by the Contract Administrator. Pit floor shall be free-draining by daylighting to the south across the L-3000.

3. All vegetation including stumps shall be cleared a minimum of 30 feet beyond the top of all working faces. Trees shall be cleared to a minimum of ¾ of the height of the tallest tree adjacent to the pit.

4. All overburden and soil shall be stripped a minimum of 15 feet beyond the top of all working faces. Overburden shall be end hauled to the designated waste area and compacted in accordance with the COMPACTION LIST.

5. Purchaser shall submit an informational drilling and shooting plan 3 business days before any drilling.

6. Pit faces created or modified by this sale shall not exceed 25 feet in height and shall be sloped no steeper than ¼:1.

7. Working bench width shall be a minimum of 20 feet.

8. Upon request by the Contract Administrator, Purchaser shall submit an informational drilling and shooting report after blasting has occurred.

9. Oversize material remaining in the rock source at the conclusion of use shall not exceed 5 percent of the total volume mined during that operation. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of operations, all remaining oversize material shall be placed as directed by the Contract Administrator.

10. Purchaser shall stockpile all unused rock for this sale in locations designated by the Contract Administrator.

11. Upon completion of pit operations:

    a The pit floor shall be left in a smooth and neat condition. The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.

    b All exposed soil in the waste area shall be grass seeded in accordance with Road Plan Clauses 8-15 REVEGETATION and 8-25 GRASS SEED.

    c Pit faces and walls shall be scaled and cleared of loose and overhanging material.

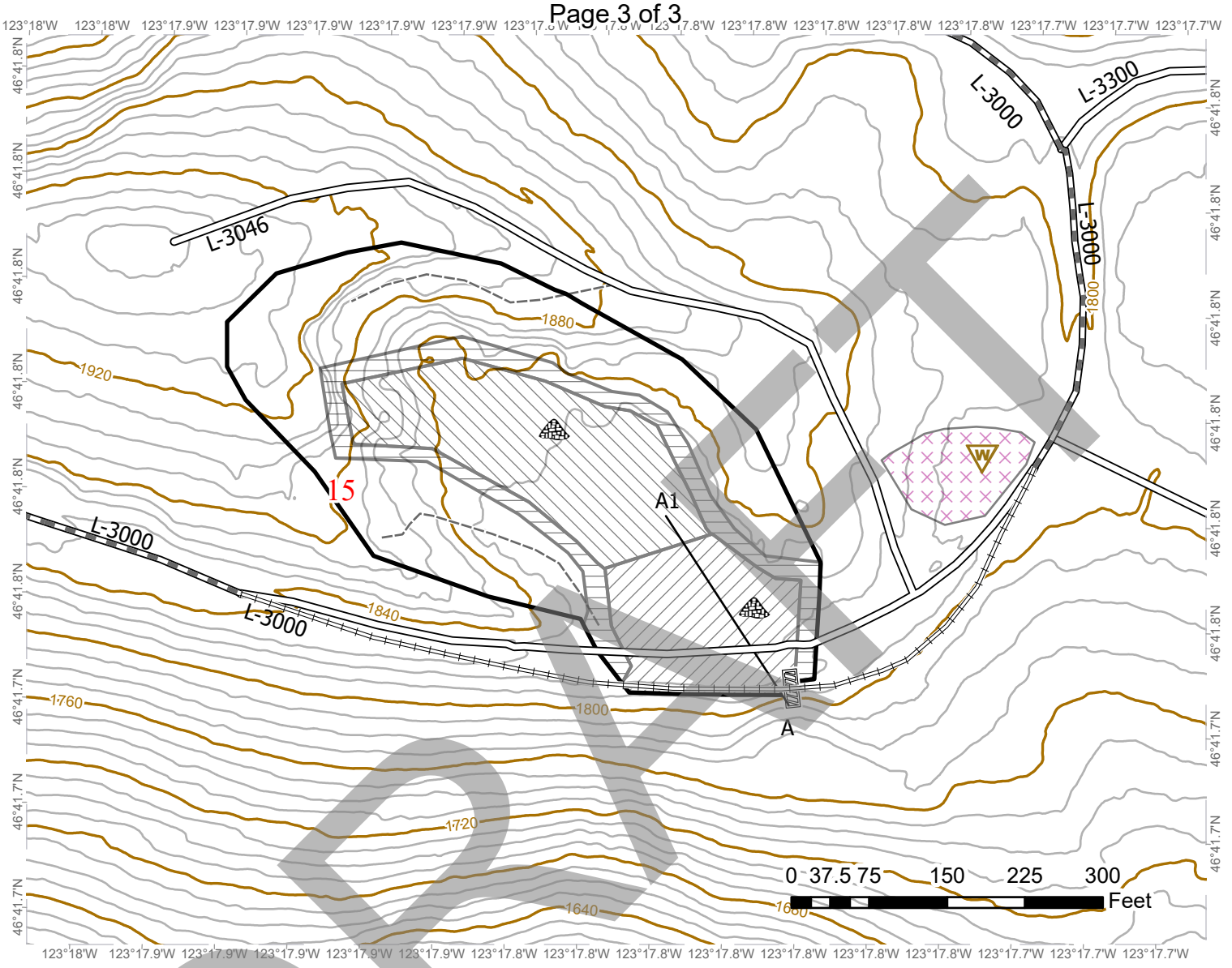
    d Benches and faces shall have safety berms constructed or access blocked to highway vehicles.

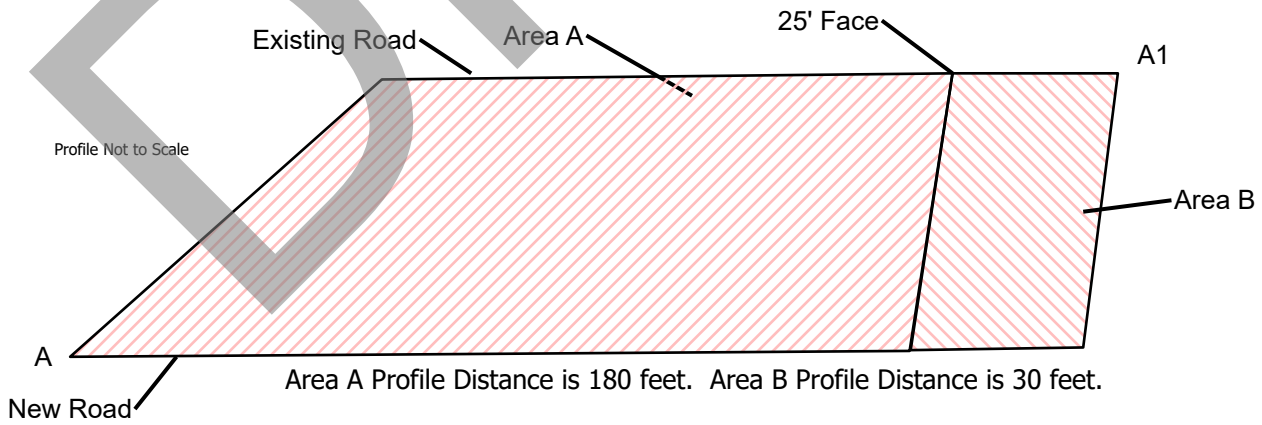
    e The area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition.

    f Prior to termination of the contract, quarry condition and compliance with all terms of the contract shall be approved in writing by the Contract Administrator.

12. Reclamation will not be required following use.

LINCOLN QUARRY DEVELOPMENT PLAN
Sec. 15, T14N, R5W, W.M.





Area A Profile Distance is 180 feet. Area B Profile Distance is 30 feet.

N

Pit Floor | Area B | Waste | Trails
Area A | Required Bench | Quarry Outline | Contours 10 ft

Prepared By: rwal490
Accessed: 10/01/2024 14:49

Modification Date: rwal490 4/23/2024

ROCK EXPLORATION LOG DETAIL

Date:________________ Pit Name:___________________ Timber Sale Name:______________

*Test holes will be numbered and marked with flagging.

Hole #		Hole #		Hole#	
Depth	Material Type	Depth	Material Type	Depth	Material Type

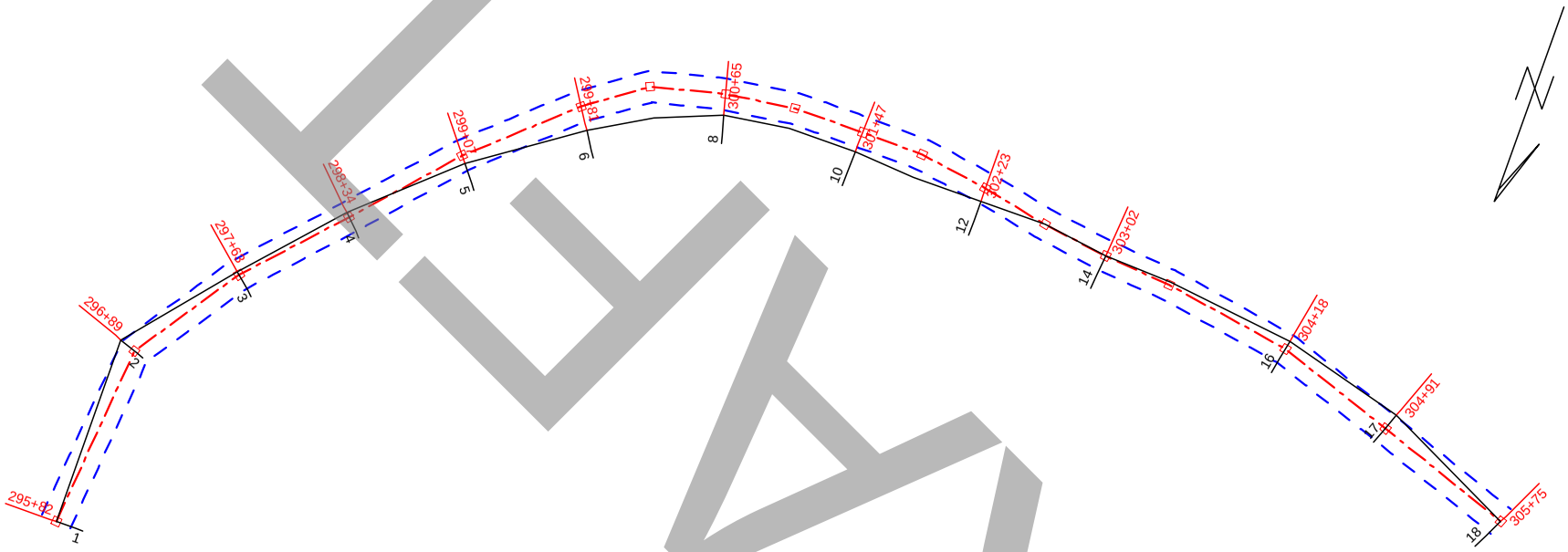
Hole #		Hole #		Hole#	
Depth	Material Type	Depth	Material Type	Depth	Material Type

Hole #		Hole #		Hole#	
Depth	Material Type	Depth	Material Type	Depth	Material Type

Hole #		Hole #		Hole#	
Depth	Material Type	Depth	Material Type	Depth	Material Type

Page ___/___

L-3000 (296+89 to 304+91) L-line P-line Road Edges



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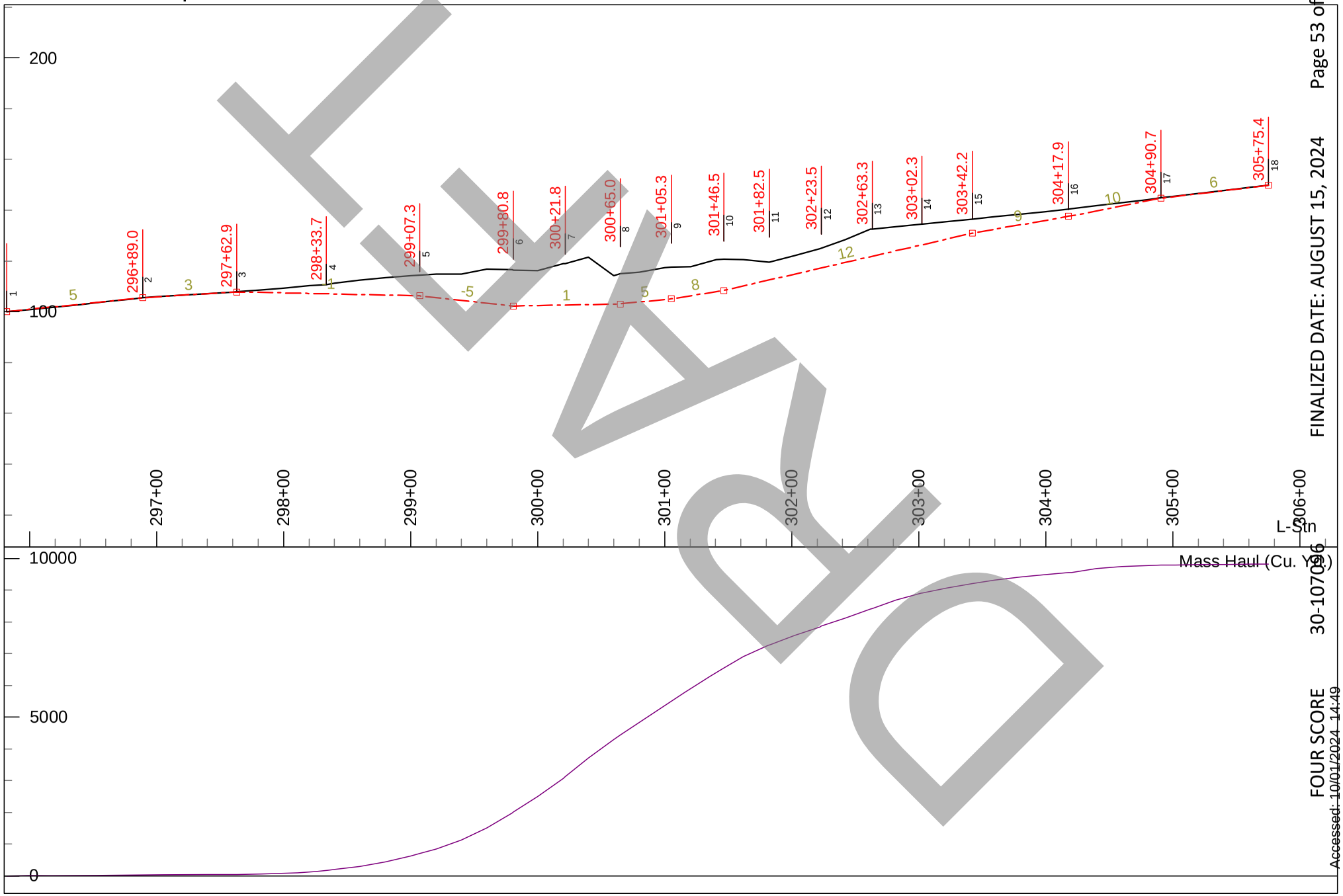
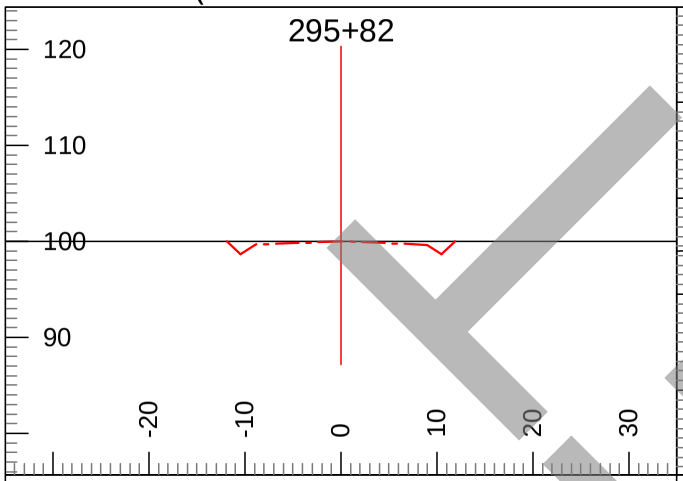
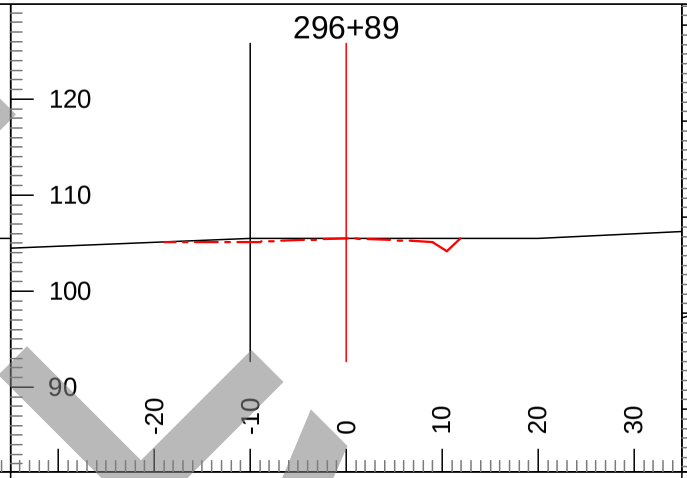
Subgrade Topography

Assumed expansion factors Cut: 1.3 Fill: 0.8 *All volumes are estimates.

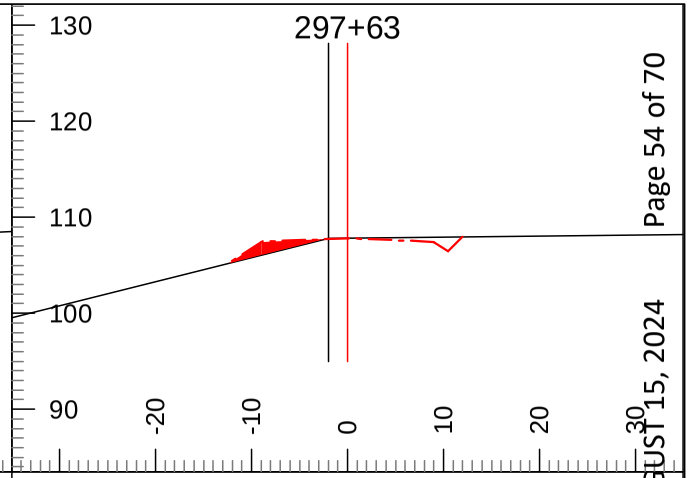




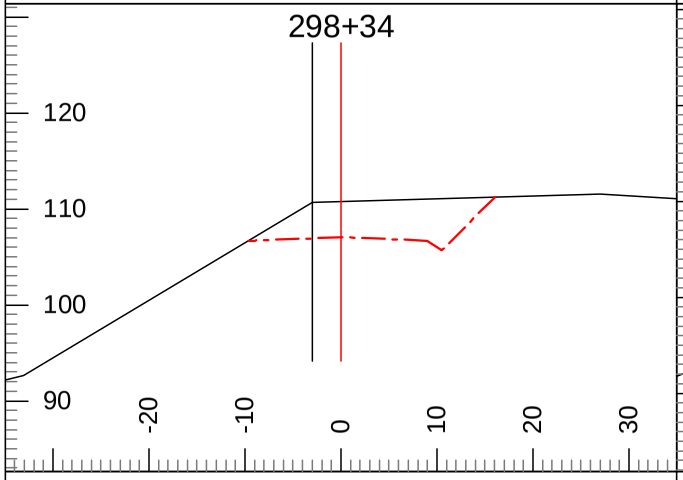
Index:	1	F Slope L:	100
L-Stn :	295+82	SubgradeWidthR:	9
Cut Dp:	0	F Slope R:	100
Grd.Lst:	n/a	H. Offset:	0
Grd.Nxt.:	5	V.Offset:	0
SubgradeWidthL:	9		



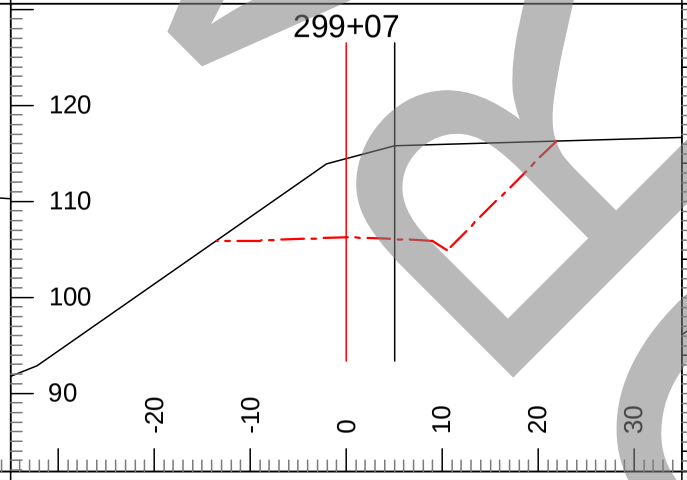
Index:	2	F Slope L:	0
L-Stn :	296+89	SubgradeWidthR:	9
Cut Dp:	0	F Slope R:	100
Grd.Lst:	5	H. Offset:	10
Grd.Nxt.:	3	V.Offset:	0
SubgradeWidthL:	9		



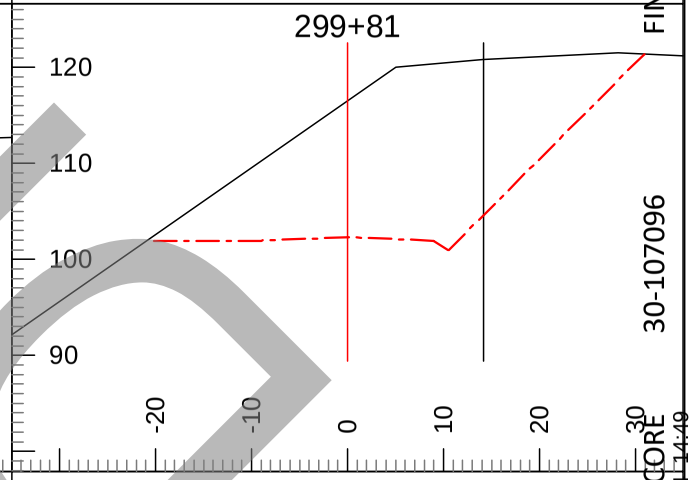
Index:	3	F Slope L:	-6
L-Stn :	297+63	SubgradeWidthR:	9
Cut Dp:	0	F Slope R:	100
Grd.Lst:	3	H. Offset:	
Grd.Nxt.:	-1	V.Offset:	
SubgradeWidthL:	9		



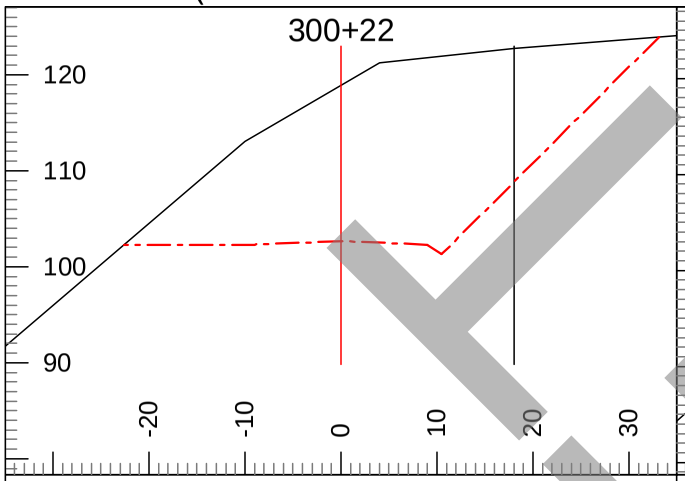
Index:	4	F Slope L:	0
L-Stn :	298+34	SubgradeWidthR:	9
Cut Dp:	4	F Slope R:	100
Grd.Lst:	-1	H. Offset:	3
Grd.Nxt.:	-1	V.Offset:	-4
SubgradeWidthL:	9		



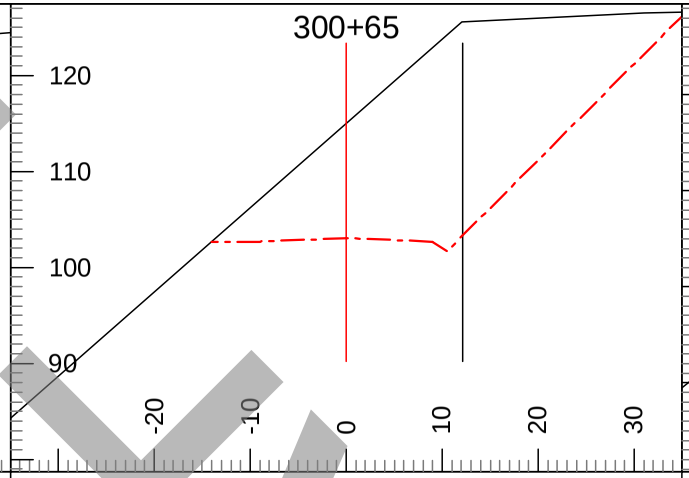
Index:	5	F Slope L:	0
L-Stn :	299+07	SubgradeWidthR:	9
Cut Dp:	8	F Slope R:	100
Grd.Lst:	-1	H. Offset:	-5
Grd.Nxt.:	-5	V.Offset:	-10
SubgradeWidthL:	9		



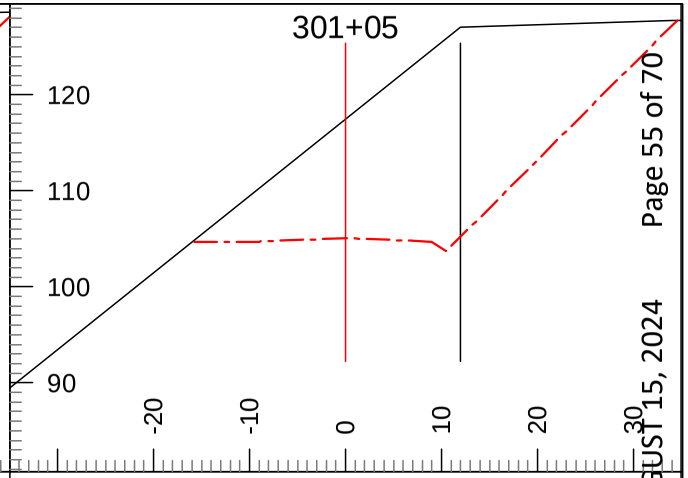
Index:	6	F Slope L:	
L-Stn :	299+81	SubgradeWidthR:	9
Cut Dp:	14	F Slope R:	100
Grd.Lst:	-5	H. Offset:	-14
Grd.Nxt.:	1	V.Offset:	-19
SubgradeWidthL:	9		



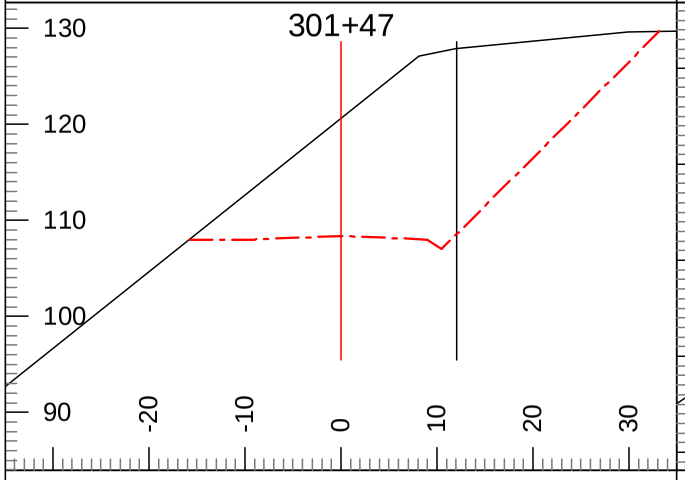
Index:	7	F Slope L:	0
L-Stn :	300+22	SubgradeWidthR:	9
Cut Dp:	16	F Slope R:	100
Grd.Lst:	1	H. Offset:	-18
Grd.Nxt.:	1	V.Offset:	-20
SubgradeWidthL:	9		



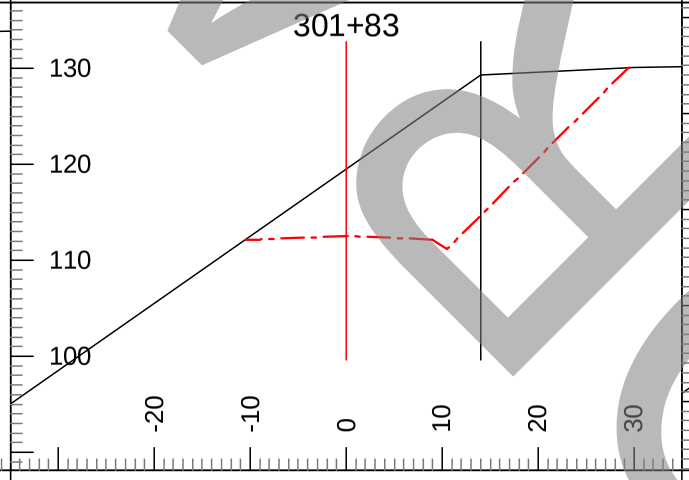
Index:	8	F Slope L:	0
L-Stn :	300+65	SubgradeWidthR:	9
Cut Dp:	12	F Slope R:	100
Grd.Lst:	1	H. Offset:	-12
Grd.Nxt.:	5	V.Offset:	-23
SubgradeWidthL:	9		



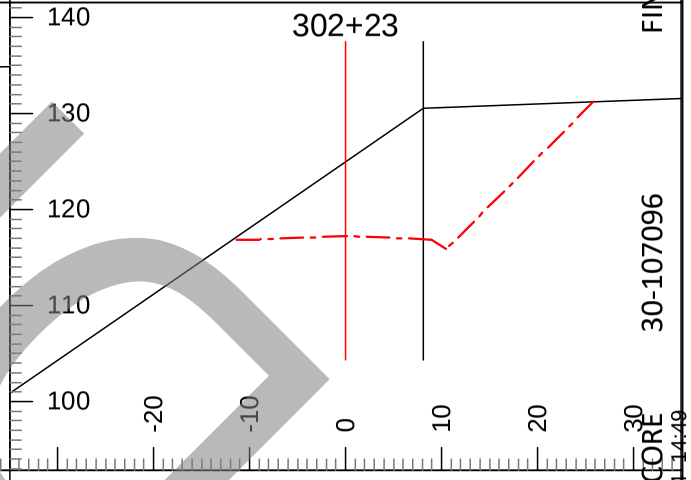
Index:	9	F Slope L:	0
L-Stn :	301+05	SubgradeWidthR:	9
Cut Dp:	12	F Slope R:	100
Grd.Lst:	5	H. Offset:	-11
Grd.Nxt.:	8	V.Offset:	-21
SubgradeWidthL:	9		



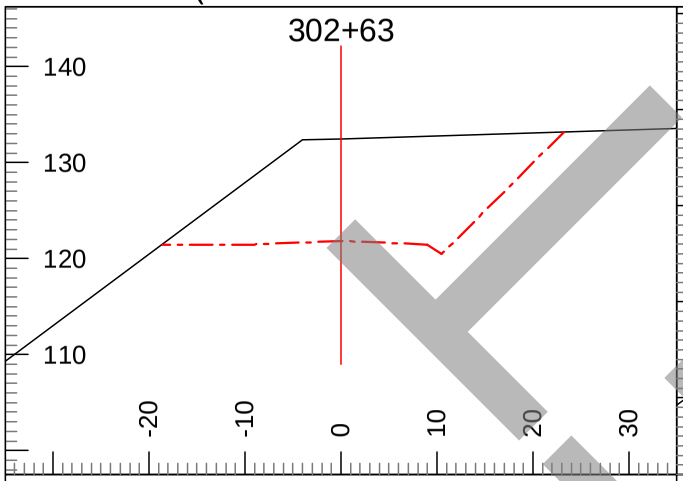
Index:	10	F Slope L:	0
L-Stn :	301+47	SubgradeWidthR:	9
Cut Dp:	12	F Slope R:	100
Grd.Lst:	8	H. Offset:	-12
Grd.Nxt.:	12	V.Offset:	-20
SubgradeWidthL:	9		



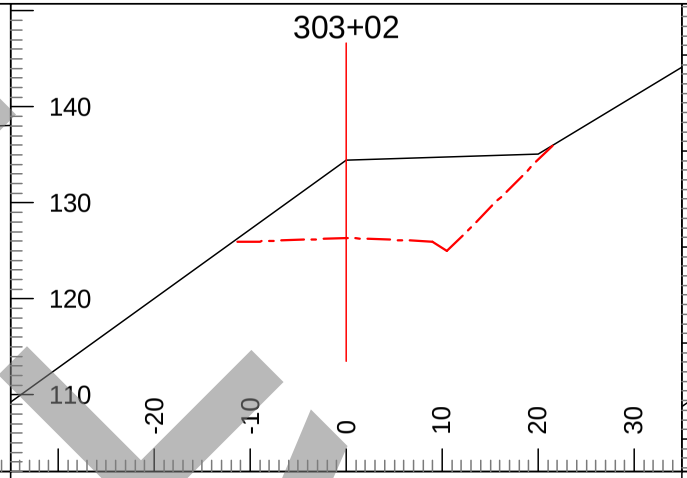
Index:	11	F Slope L:	0
L-Stn :	301+83	SubgradeWidthR:	9
Cut Dp:	7	F Slope R:	100
Grd.Lst:	12	H. Offset:	-14
Grd.Nxt.:	12	V.Offset:	-17
SubgradeWidthL:	9		



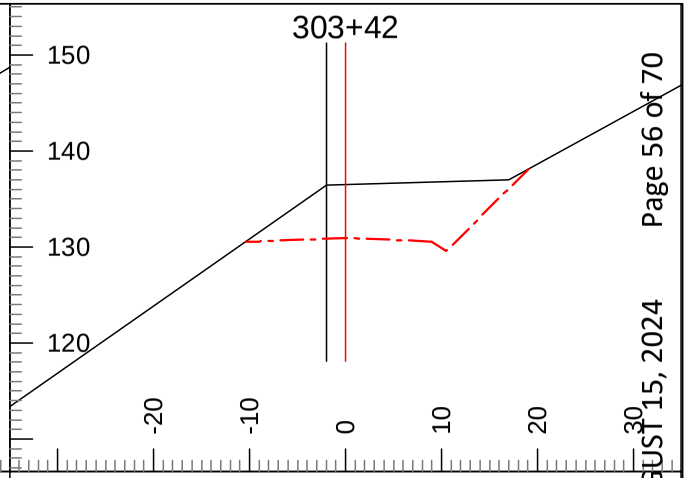
Index:	12	F Slope L:	0
L-Stn :	302+23	SubgradeWidthR:	9
Cut Dp:	8	F Slope R:	100
Grd.Lst:	12	H. Offset:	-8
Grd.Nxt.:	12	V.Offset:	-13
SubgradeWidthL:	9		



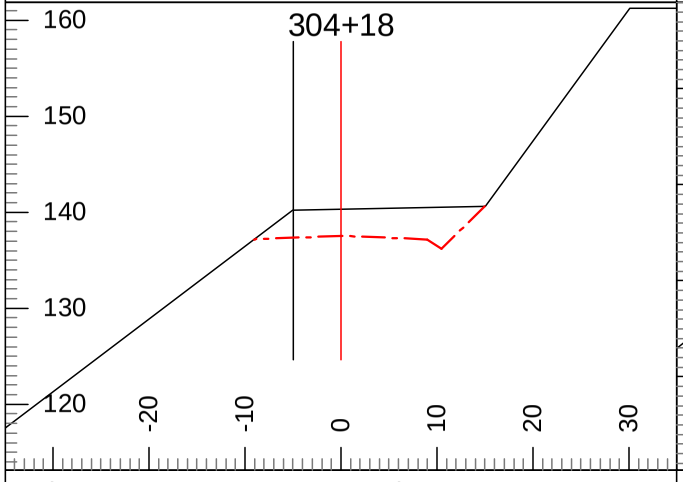
Index:	13	F Slope L:	0
L-Stn :	302+63	SubgradeWidthR:	9
Cut Dp:	11	F Slope R:	100
Grd.Lst:	12	H. Offset:	0
Grd.Nxt.:	12	V.Offset:	-11
SubgradeWidthL:	9		



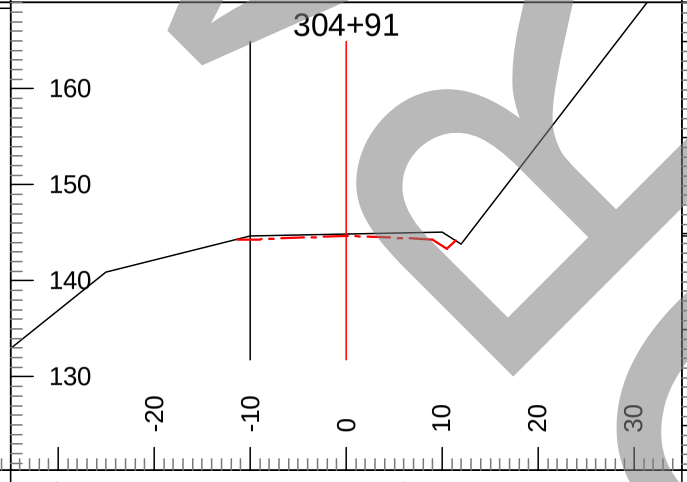
Index:	14	F Slope L:	0
L-Stn :	303+02	SubgradeWidthR:	9
Cut Dp:	8	F Slope R:	100
Grd.Lst:	12	H. Offset:	0
Grd.Nxt.:	12	V.Offset:	-8
SubgradeWidthL:	9		



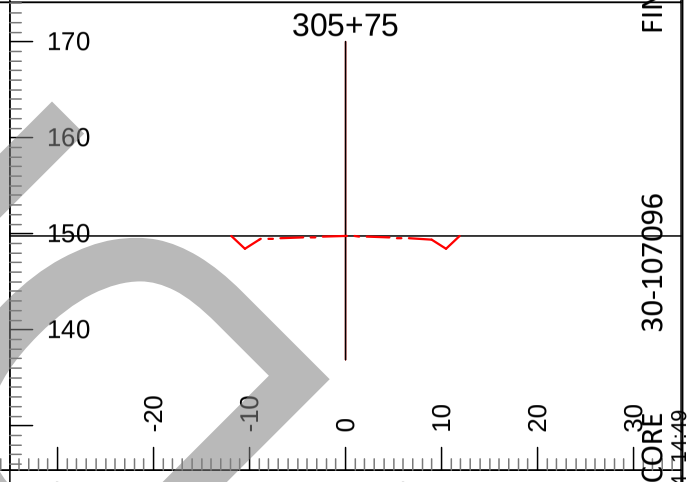
Index:	15	F Slope L:	9
L-Stn :	303+42	SubgradeWidthR:	9
Cut Dp:	6	F Slope R:	100
Grd.Lst:	12	H. Offset:	
Grd.Nxt.:	9	V.Offset:	
SubgradeWidthL:	9		



Index:	16	F Slope L:	0
L-Stn :	304+18	SubgradeWidthR:	9
Cut Dp:	3	F Slope R:	100
Grd.Lst:	9	H. Offset:	5
Grd.Nxt.:	10	V.Offset:	-3
SubgradeWidthL:	9		

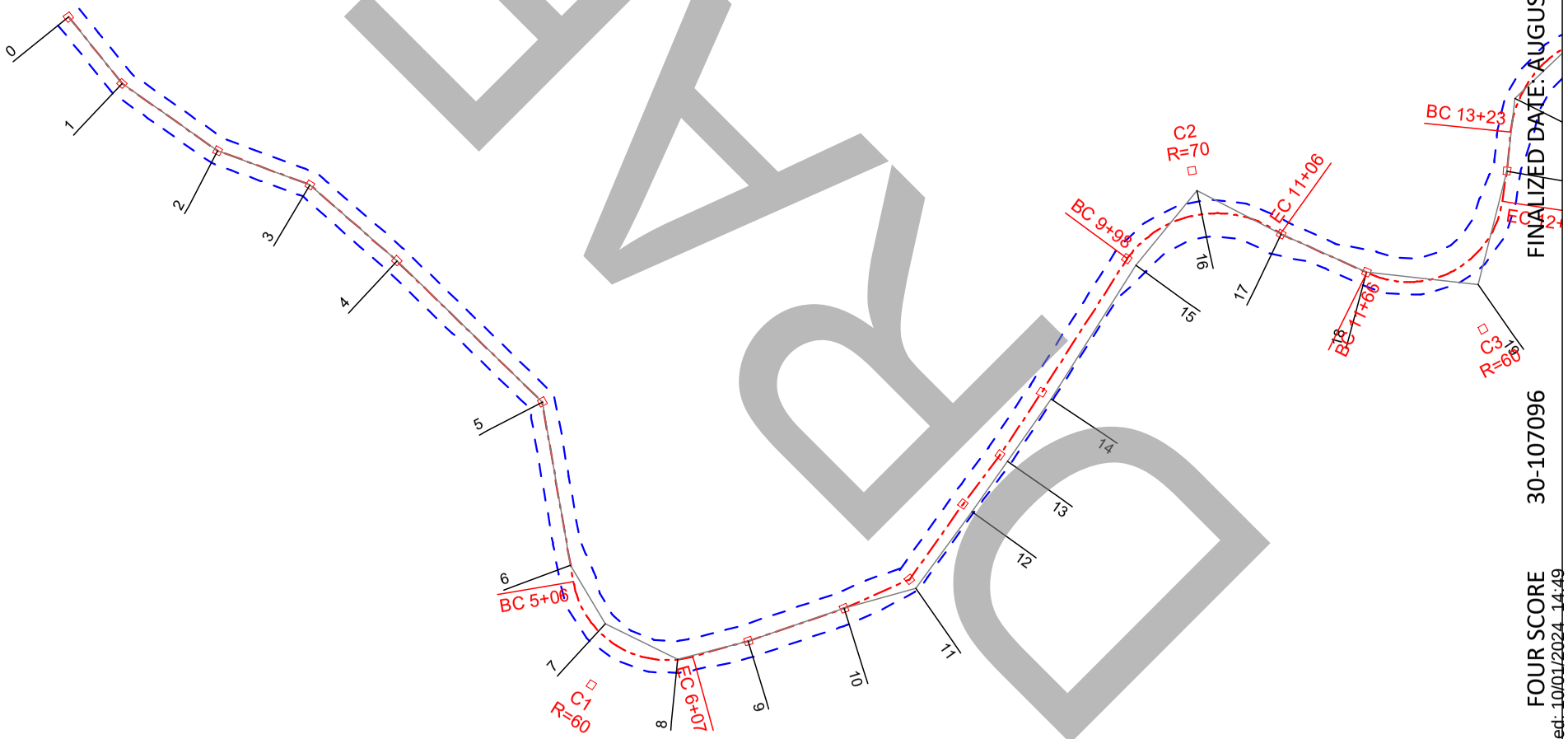


Index:	17	F Slope L:	0
L-Stn :	304+91	SubgradeWidthR:	9
Cut Dp:	0	F Slope R:	100
Grd.Lst:	10	H. Offset:	10
Grd.Nxt.:	6	V.Offset:	0
SubgradeWidthL:	9		

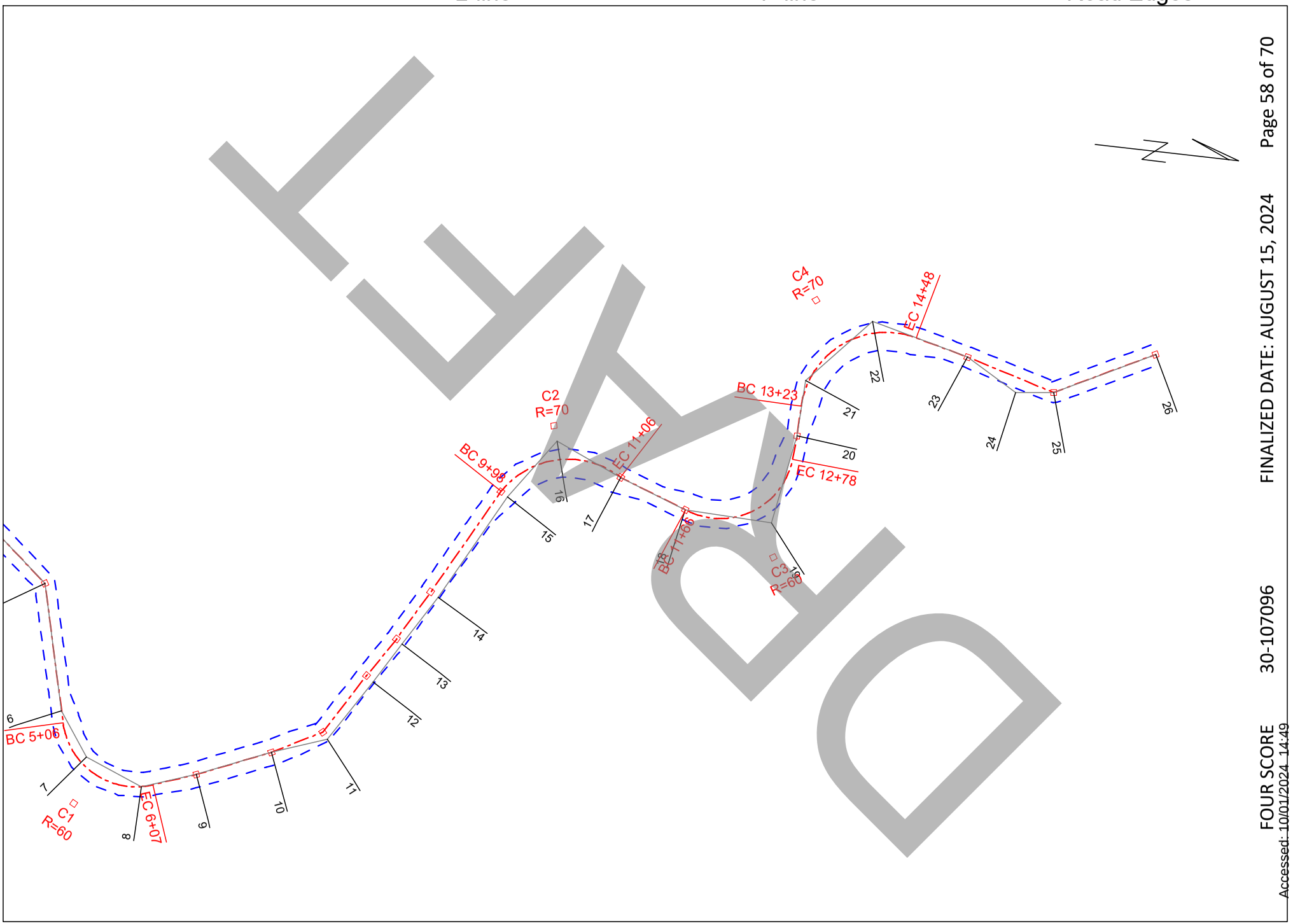


Index:	18	F Slope L:	100
L-Stn :	305+75	SubgradeWidthR:	9
Cut Dp:	0	F Slope R:	100
Grd.Lst:	6	H. Offset:	0
Grd.Nxt.:	n/a	V.Offset:	0
SubgradeWidthL:	9		

L-line P-line Road Edges



L-line P-line Road Edges



Four Score
L-3044-C
Grade %

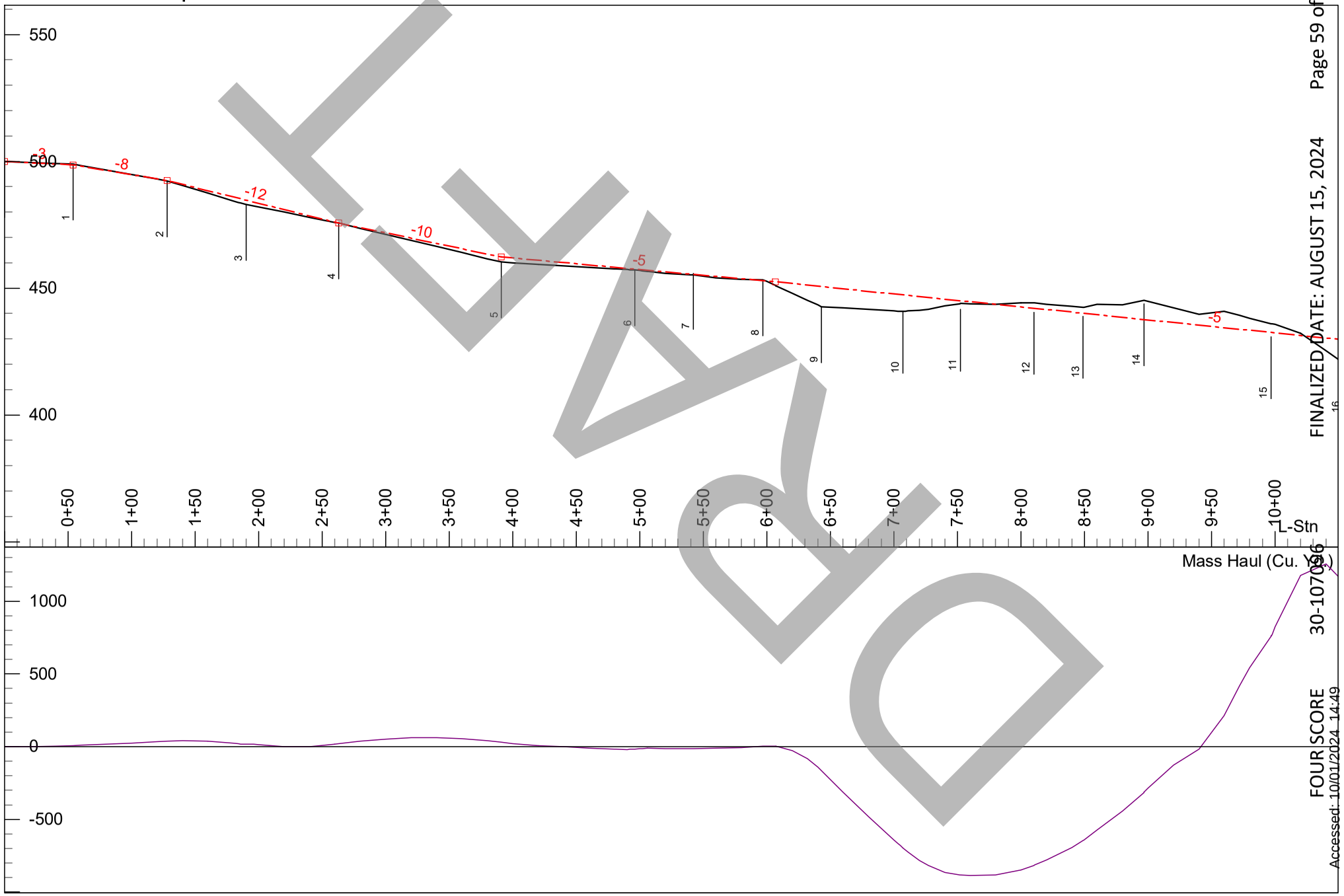
Profile Vert Scale 1:600
Profile Horz Scale 1:1200

Profile View

Subgrade

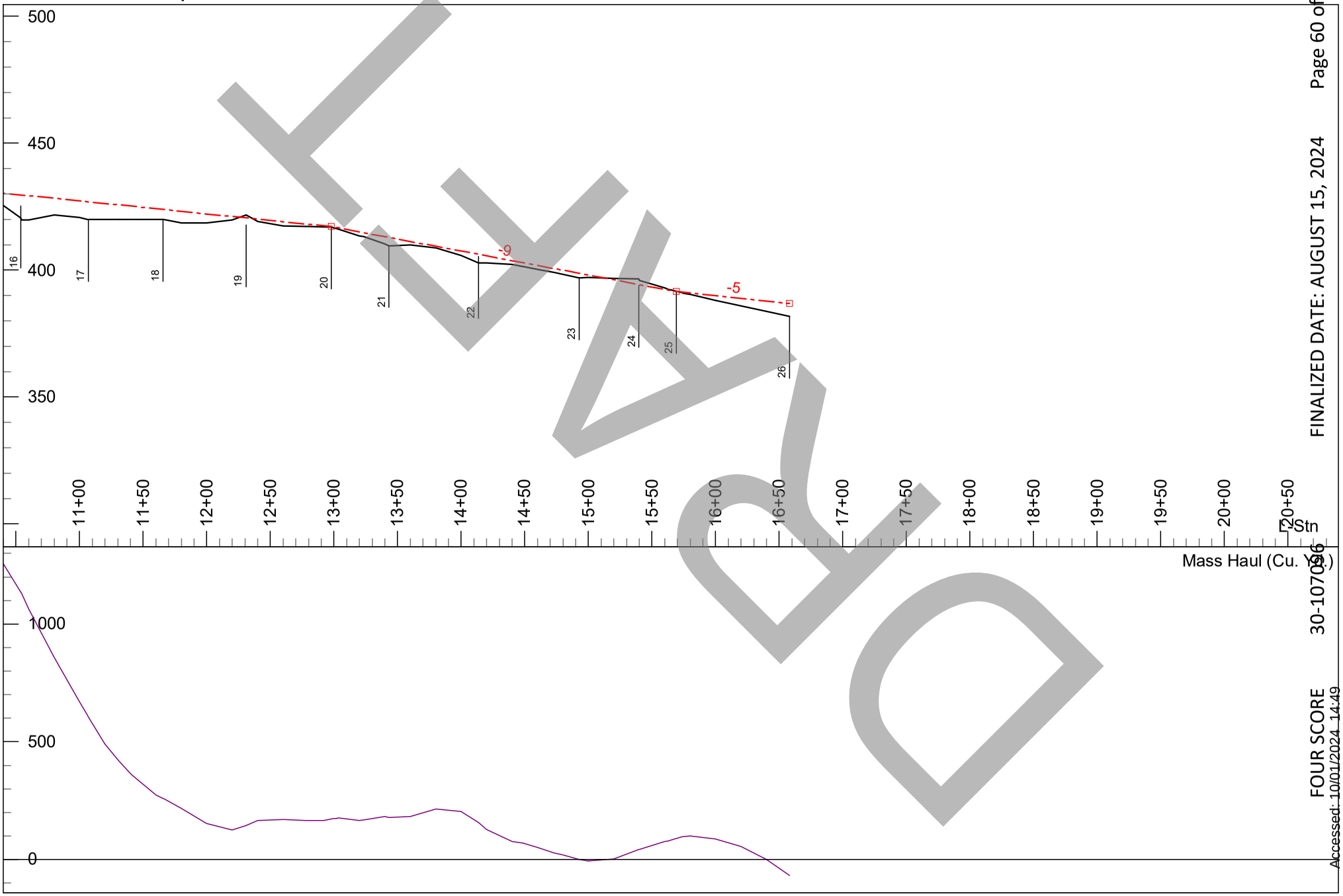
Existing Topography

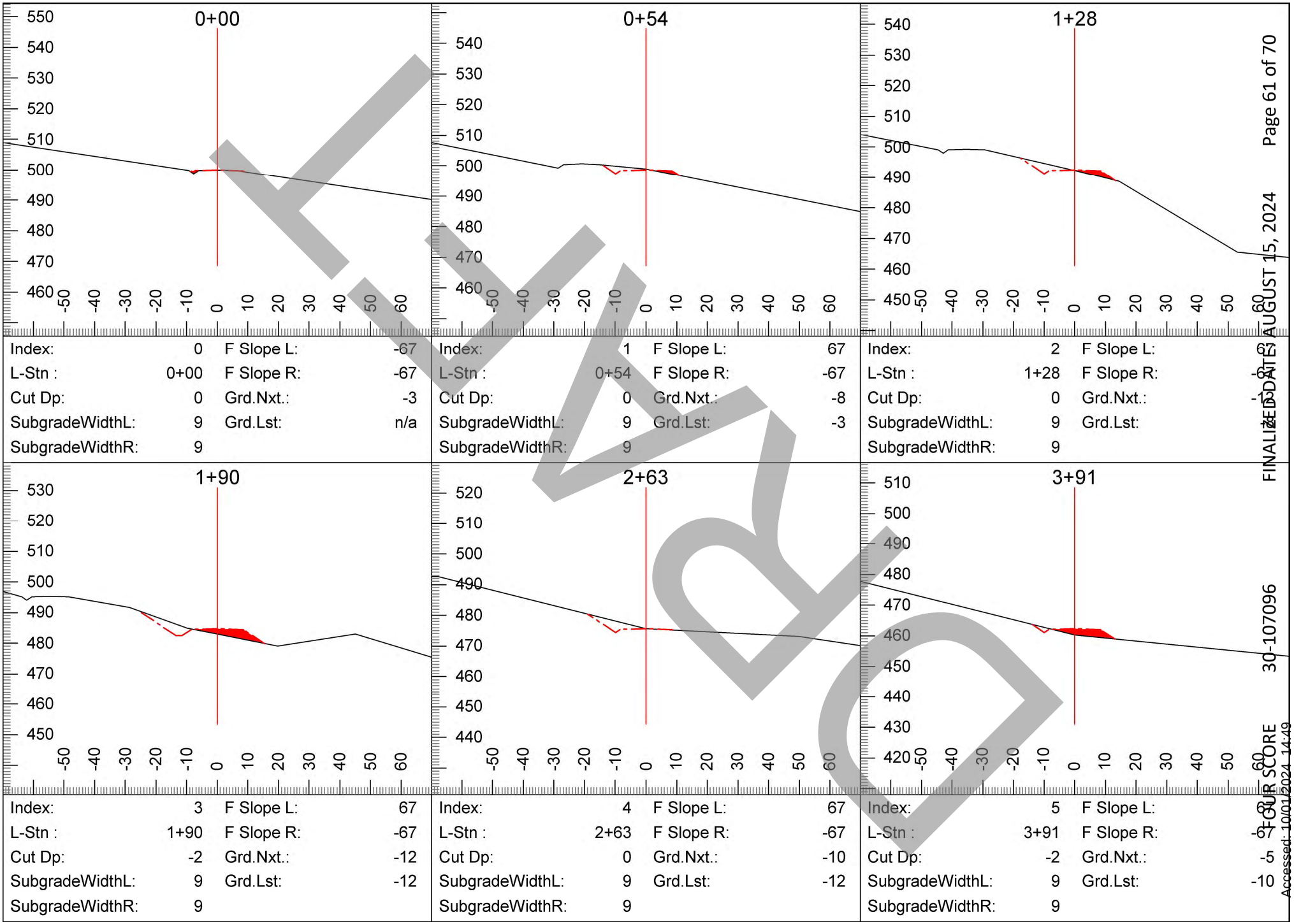
Assumed expansion factors Cut: 1.3 Fill: 0.8 *All volumes are estimates.



Subgrade — Existing Topography

Assumed expansion factors Cut: 1.3 Fill: 0.8 *All volumes are estimates.




0+00
Index: 0
L-Stn : 0+00
Cut Dp: 0
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -3
Grd.Lst: n/a
0+54
Index: 1
L-Stn : 0+54
Cut Dp: 0
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -8
Grd.Lst: -3
1+28
Index: 2
L-Stn : 1+28
Cut Dp: 0
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L:
F Slope R:
Grd.Nxt.: -1
Grd.Lst:
1+90
Index: 3
L-Stn : 1+90
Cut Dp: -2
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -12
Grd.Lst: -12
2+63
Index: 4
L-Stn : 2+63
Cut Dp: 0
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -10
Grd.Lst: -12
3+91
Index: 5
L-Stn : 3+91
Cut Dp: -2
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L:
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -10
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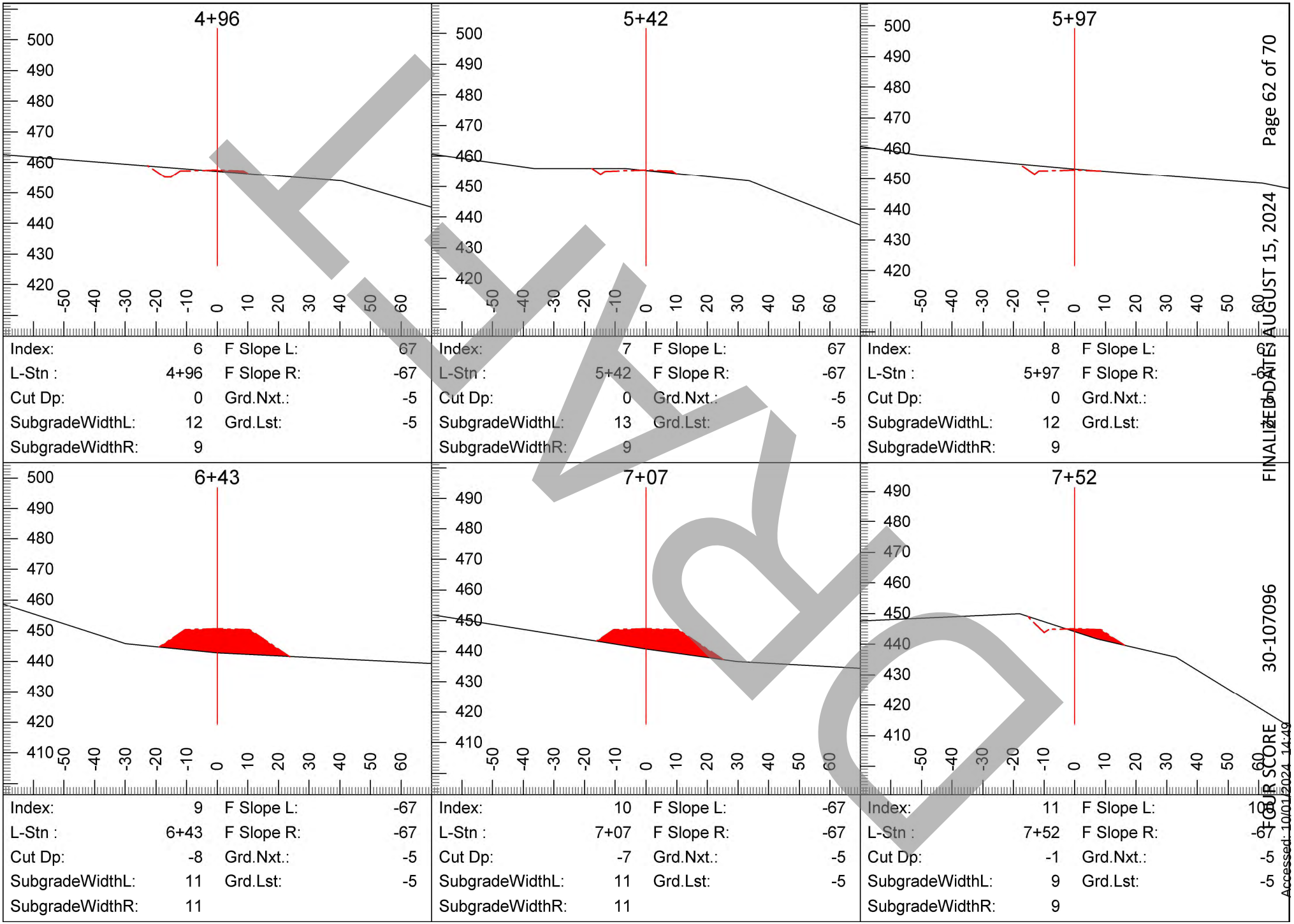
30-107096
FOUR SCORE
Accessed: 10/01/2024 14:49


4+96
Index: 6
L-Stn : 4+96
Cut Dp: 0
SubgradeWidthL: 12
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
5+42
Index: 7
L-Stn : 5+42
Cut Dp: 0
SubgradeWidthL: 13
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
5+97
Index: 8
L-Stn : 5+97
Cut Dp: 0
SubgradeWidthL: 12
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
6+43
Index: 9
L-Stn : 6+43
Cut Dp: -8
SubgradeWidthL: 11
SubgradeWidthR: 11
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
7+07
Index: 10
L-Stn : 7+07
Cut Dp: -7
SubgradeWidthL: 11
SubgradeWidthR: 11
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
7+52
Index: 11
L-Stn : 7+52
Cut Dp: -1
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
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FOUR SCORE
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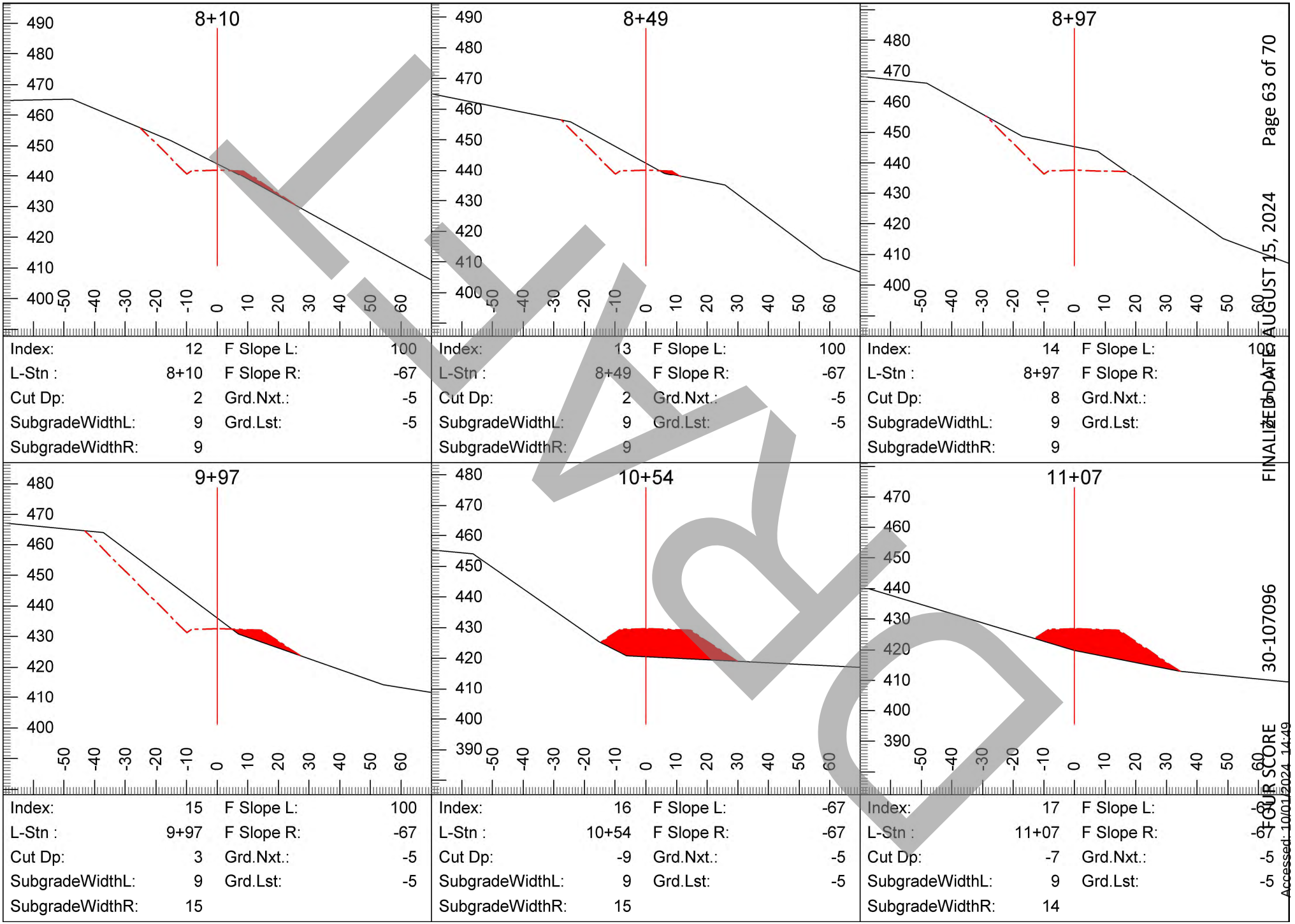
8+10
Index: 12
L-Stn : 8+10
Cut Dp: 2
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 100
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
8+49
Index: 13
L-Stn : 8+49
Cut Dp: 2
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 100
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
8+97
Index: 14
L-Stn : 8+97
Cut Dp: 8
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: 100
F Slope R:
Grd.Nxt.:
Grd.Lst:
9+97
Index: 15
L-Stn : 9+97
Cut Dp: 3
SubgradeWidthL: 9
SubgradeWidthR: 15
F Slope L: 100
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
10+54
Index: 16
L-Stn : 10+54
Cut Dp: -9
SubgradeWidthL: 9
SubgradeWidthR: 15
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
11+07
Index: 17
L-Stn : 11+07
Cut Dp: -7
SubgradeWidthL: 9
SubgradeWidthR: 14
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
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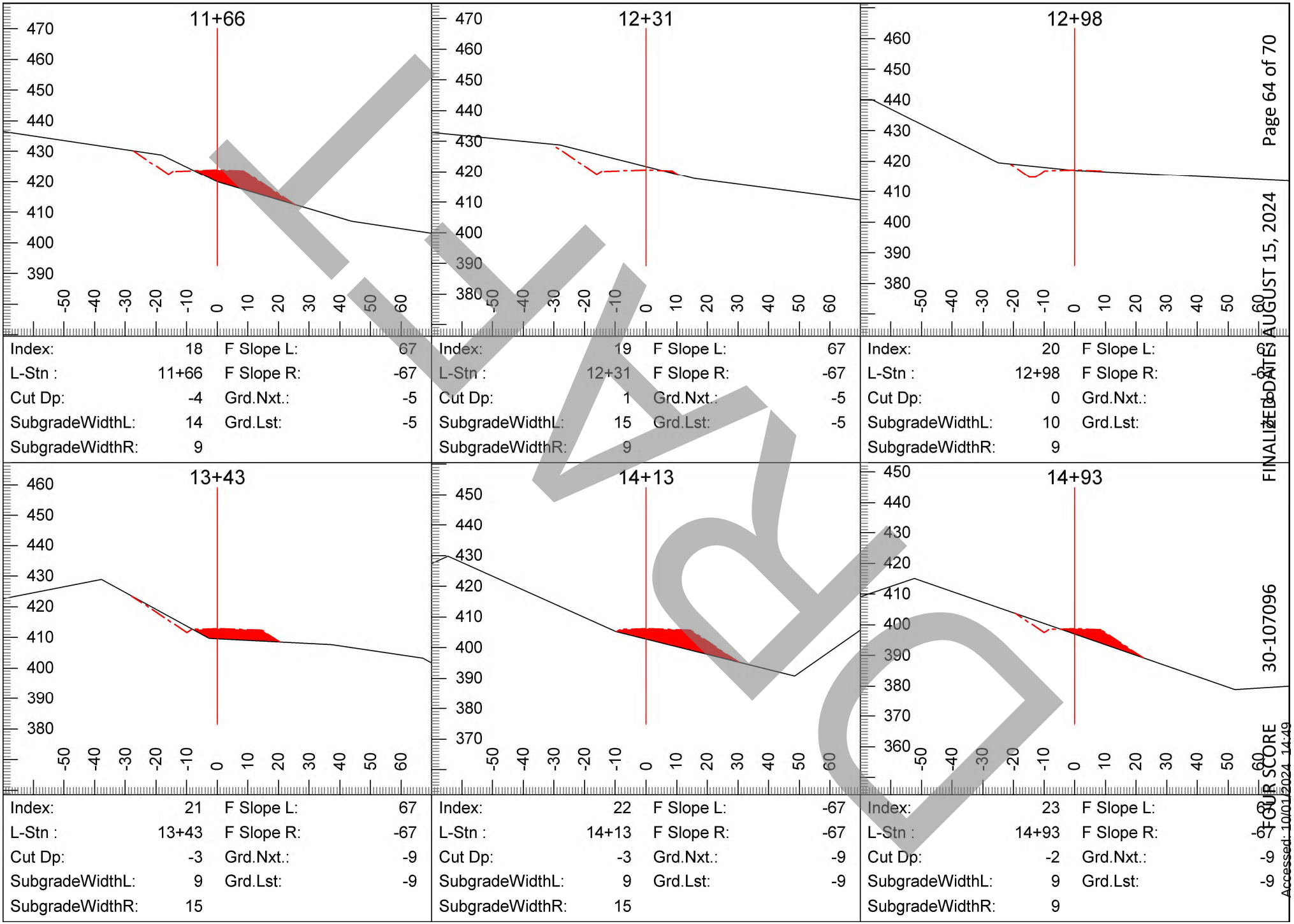
11+66
Index: 18
L-Stn : 11+66
Cut Dp: -4
SubgradeWidthL: 14
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
12+31
Index: 19
L-Stn : 12+31
Cut Dp: 1
SubgradeWidthL: 15
SubgradeWidthR: 9
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -5
Grd.Lst: -5
12+98
Index: 20
L-Stn : 12+98
Cut Dp: 0
SubgradeWidthL: 10
SubgradeWidthR: 9
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -9
Grd.Lst:
13+43
Index: 21
L-Stn : 13+43
Cut Dp: -3
SubgradeWidthL: 9
SubgradeWidthR: 15
F Slope L: 67
F Slope R: -67
Grd.Nxt.: -9
Grd.Lst: -9
14+13
Index: 22
L-Stn : 14+13
Cut Dp: -3
SubgradeWidthL: 9
SubgradeWidthR: 15
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -9
Grd.Lst: -9
14+93
Index: 23
L-Stn : 14+93
Cut Dp: -2
SubgradeWidthL: 9
SubgradeWidthR: 9
F Slope L: -67
F Slope R: -67
Grd.Nxt.: -9
Grd.Lst: -9
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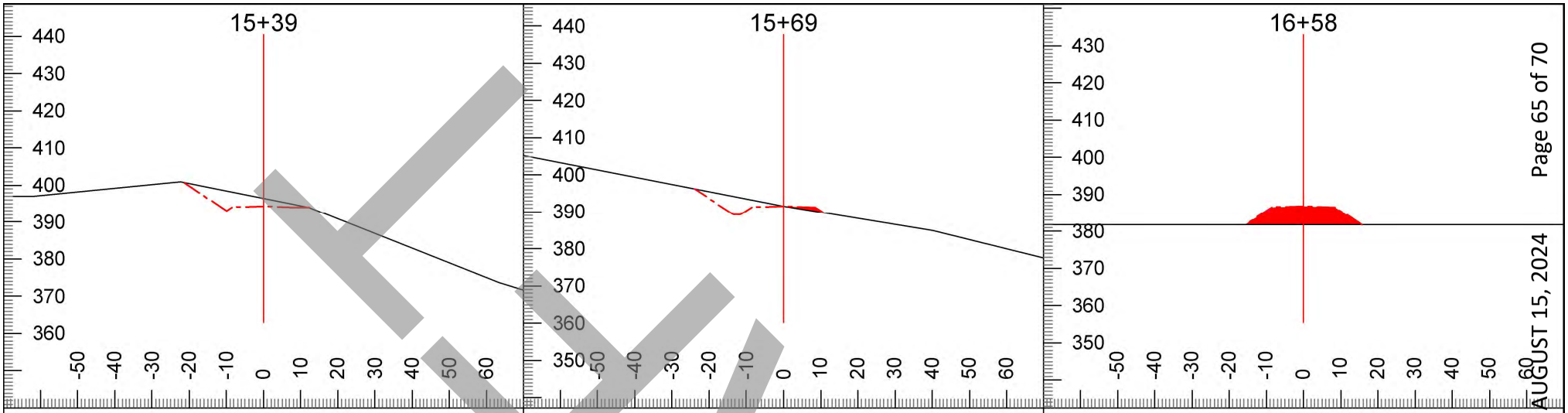
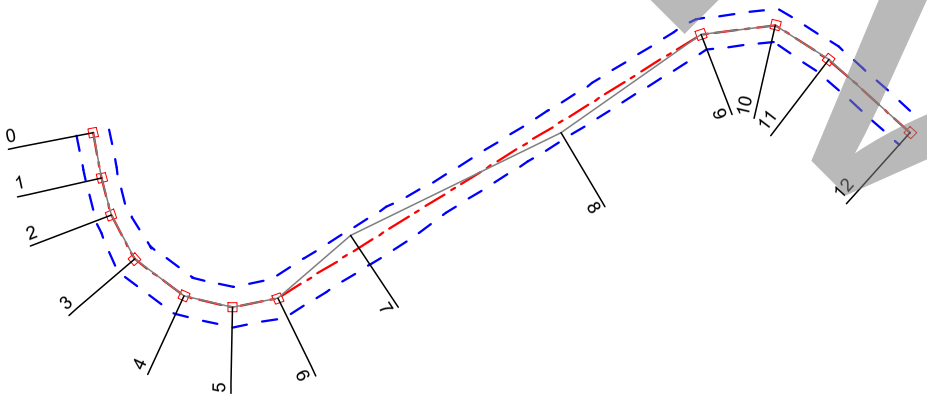


Index:	24	F Slope L:	67
L-Stn :	15+39	F Slope R:	-3
Cut Dp:	2	Grd.Nxt.:	-9
SubgradeWidthL:	9	Grd.Lst:	-9
SubgradeWidthR:	9		

Index:	25	F Slope L:	67
L-Stn :	15+69	F Slope R:	-67
Cut Dp:	0	Grd.Nxt.:	-5
SubgradeWidthL:	9	Grd.Lst:	-9
SubgradeWidthR:	9		

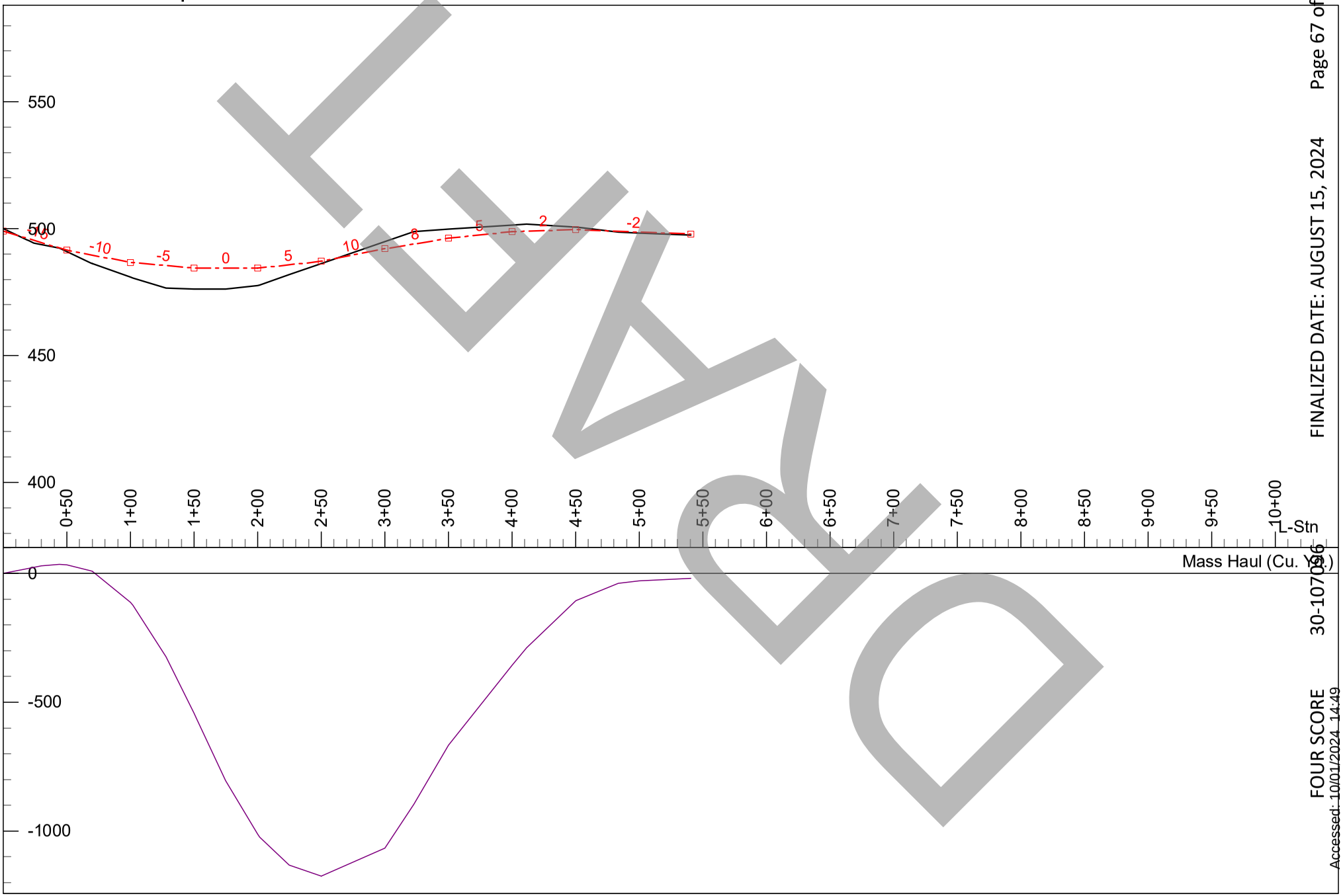
Index:	26	F Slope L:	-6
L-Stn :	16+58	F Slope R:	-6
Cut Dp:	-5	Grd.Nxt.:	n/a
SubgradeWidthL:	9	Grd.Lst:	
SubgradeWidthR:	9		

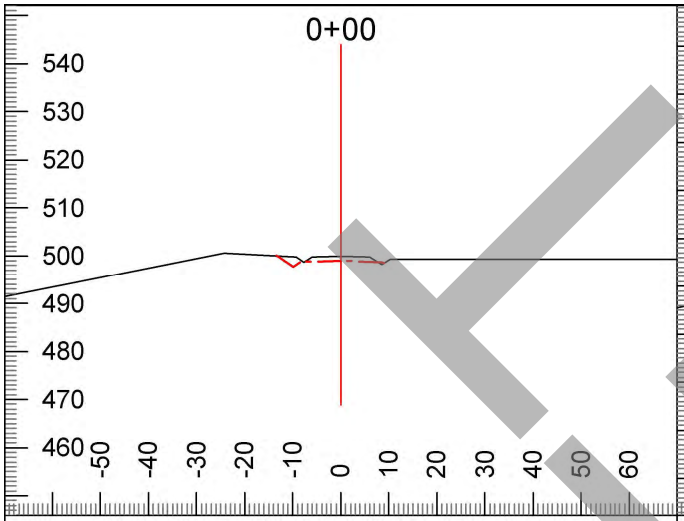
L-line P-line Road Edges



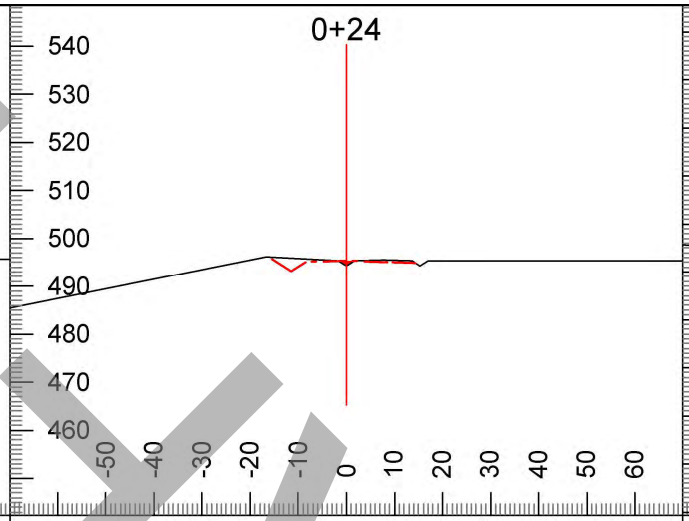
Subgrade — Existing Topography

Assumed expansion factors Cut: 1.3 Fill: 0.8 *All volumes are estimates.

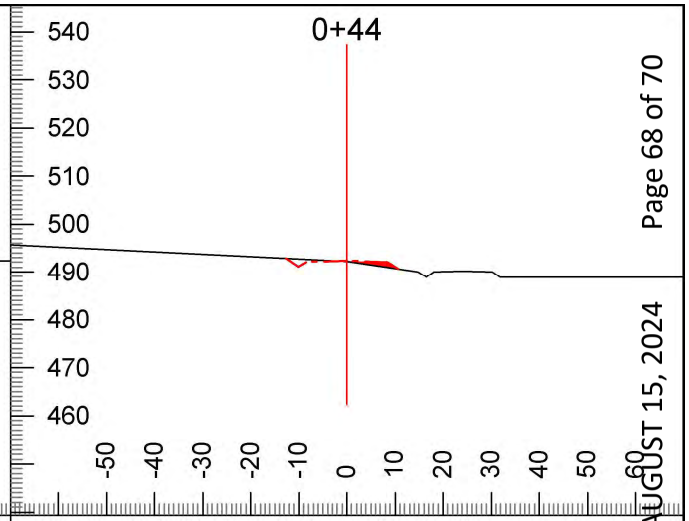




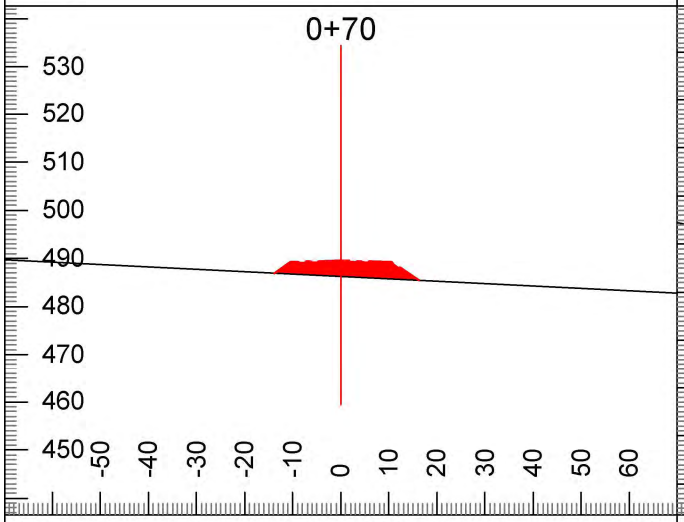
Index:	0	F Slope L:	67
L-Stn :	0+00	F Slope R:	-67
Cut Dp:	1	Grd.Nxt.:	-15
SubgradeWidthL:	9	Grd.Lst:	n/a
SubgradeWidthR:	9		



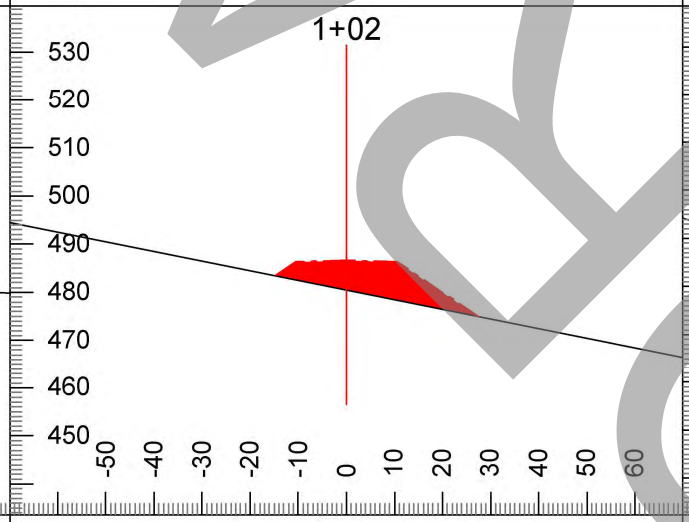
Index:	1	F Slope L:	67
L-Stn :	0+24	F Slope R:	-3
Cut Dp:	-1	Grd.Nxt.:	-15
SubgradeWidthL:	9	Grd.Lst:	-15
SubgradeWidthR:	9		



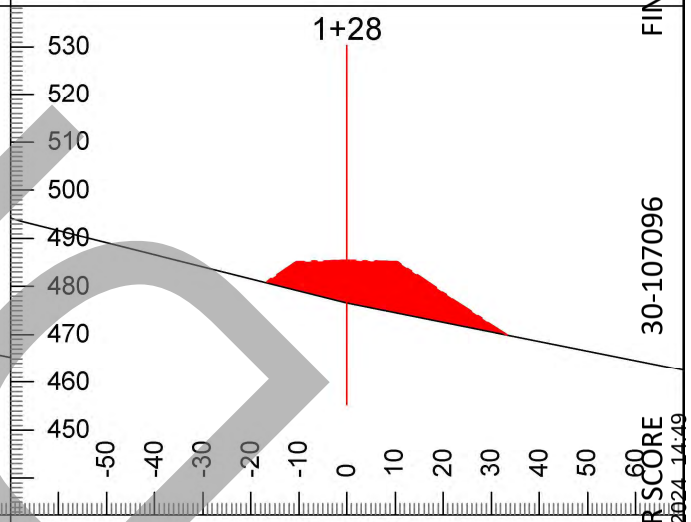
Index:	2	F Slope L:	67
L-Stn :	0+44	F Slope R:	-67
Cut Dp:	0	Grd.Nxt.:	-15
SubgradeWidthL:	9	Grd.Lst:	-15
SubgradeWidthR:	9		



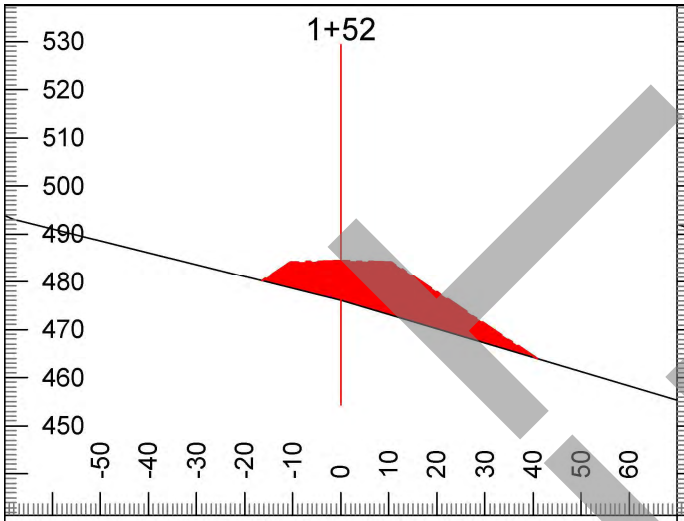
Index:	3	F Slope L:	-67
L-Stn :	0+70	F Slope R:	-67
Cut Dp:	-3	Grd.Nxt.:	-10
SubgradeWidthL:	11	Grd.Lst:	-10
SubgradeWidthR:	11		



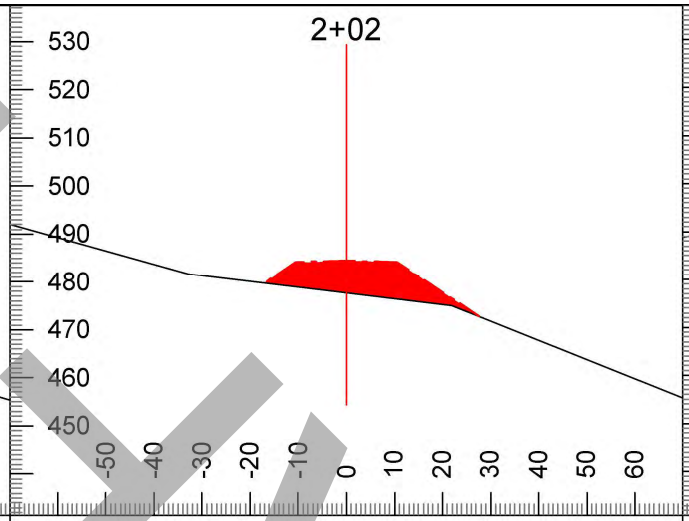
Index:	4	F Slope L:	-67
L-Stn :	1+02	F Slope R:	-67
Cut Dp:	-6	Grd.Nxt.:	-5
SubgradeWidthL:	11	Grd.Lst:	-5
SubgradeWidthR:	11		



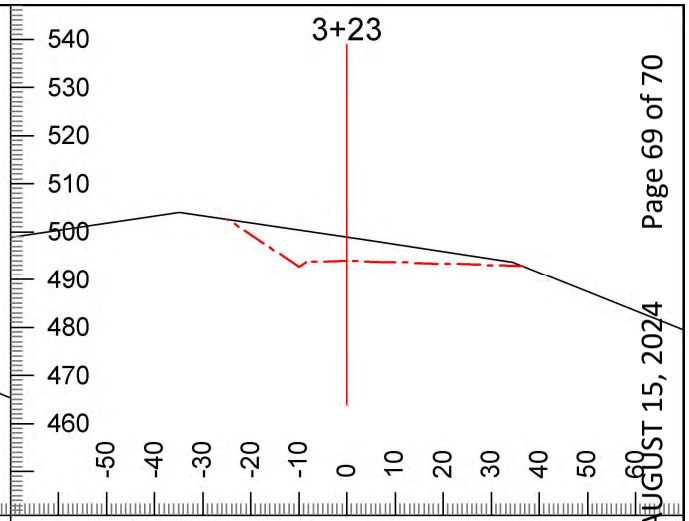
Index:	5	F Slope L:	-67
L-Stn :	1+28	F Slope R:	-67
Cut Dp:	-9	Grd.Nxt.:	-5
SubgradeWidthL:	11	Grd.Lst:	-5
SubgradeWidthR:	11		



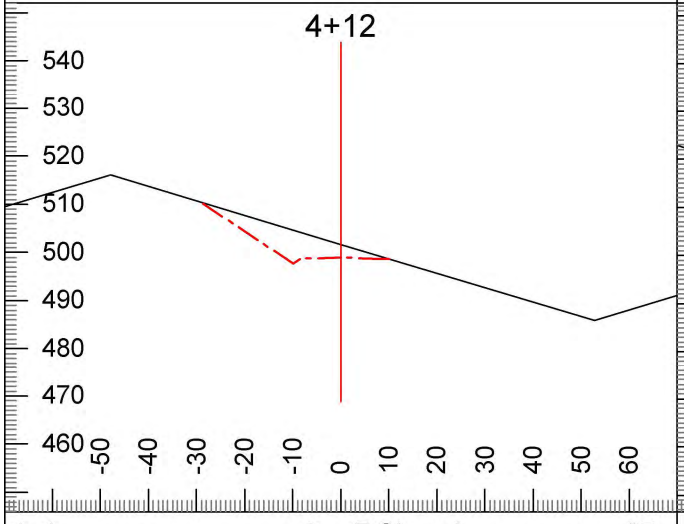
Index:	6	F Slope L:	-67
L-Stn :	1+52	F Slope R:	-67
Cut Dp:	-8	Grd.Nxt.:	0
SubgradeWidthL:	11	Grd.Lst:	0
SubgradeWidthR:	11		



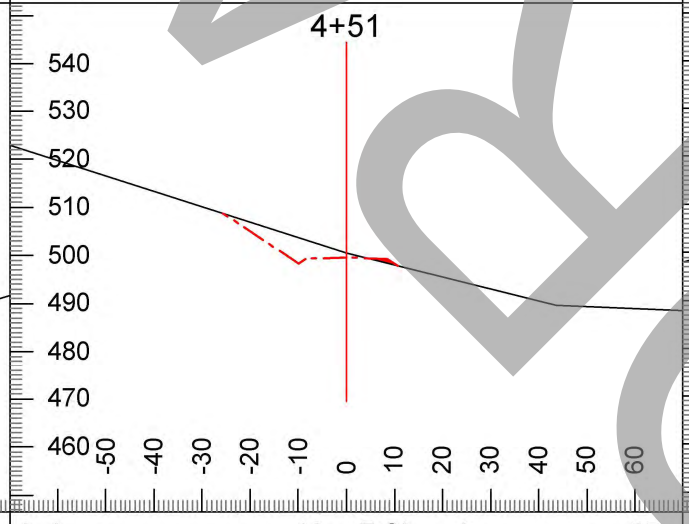
Index:	7	F Slope L:	-67
L-Stn :	2+02	F Slope R:	-67
Cut Dp:	-7	Grd.Nxt.:	5
SubgradeWidthL:	11	Grd.Lst:	5
SubgradeWidthR:	11		



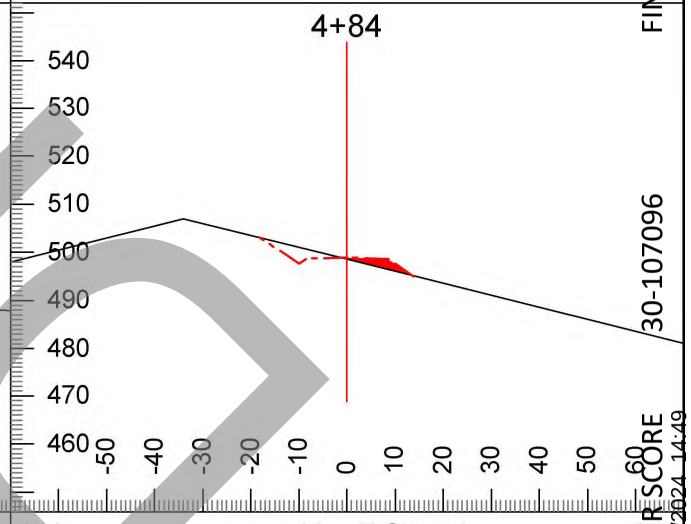
Index:	8	F Slope L:	67
L-Stn :	3+23	F Slope R:	
Cut Dp:	5	Grd.Nxt.:	
SubgradeWidthL:	9	Grd.Lst:	
SubgradeWidthR:	9		



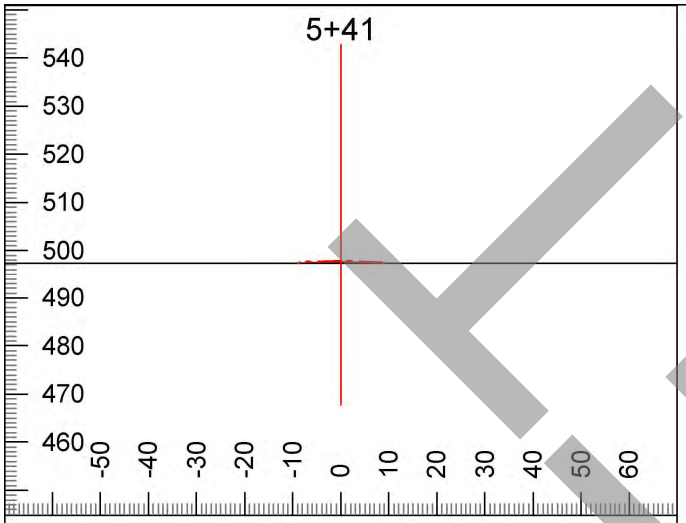
Index:	9	F Slope L:	67
L-Stn :	4+12	F Slope R:	-3
Cut Dp:	3	Grd.Nxt.:	2
SubgradeWidthL:	9	Grd.Lst:	2
SubgradeWidthR:	9		



Index:	10	F Slope L:	67
L-Stn :	4+51	F Slope R:	-67
Cut Dp:	1	Grd.Nxt.:	-2
SubgradeWidthL:	9	Grd.Lst:	-2
SubgradeWidthR:	9		



Index:	11	F Slope L:	67
L-Stn :	4+84	F Slope R:	-3
Cut Dp:	0	Grd.Nxt.:	-2
SubgradeWidthL:	9	Grd.Lst:	-2
SubgradeWidthR:	9		



Index:	12	F Slope L:	-67
L-Stn :	5+41	F Slope R:	-67
Cut Dp:	0	Grd.Nxt.:	n/a
SubgradeWidthL:	9	Grd.Lst:	-2
SubgradeWidthR:	9		

SUMMARY - Road Development Costs

REGION: Pacific Cascade
DISTRICT: Lewis

SALE/PROJECT NAME: FOUR SCORE AGREEMENT #: 30-107096

ROAD NUMBERS:
Optional: L-3044A (6+76 to 20+76), L-3044B, L-3044C, L-3042E, L-3042F, L-3042G
Required: L-3000, L-3044, L-3044A (0+00 to 6+76), L-3042

ROAD STANDARD:		Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:		35.44	14.78	510.48
CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.:		$24,815.50	$69,307.90	$32,956.47
ROAD ROCK:				
	Optional:	$50,452.95	$0.00	$0.00
	Required:	$0.00	$21,991.89	$29,210.28
	Total:	$50,452.95	$21,991.89	$29,210.28
STOCKPILE:		-	-	$24,060.00
CULVERTS AND FLUMES:		$7,376.00	$7,143.20	$4,599.00
ASPHALT REPAIR:		-	-	$7,310.00
MOBILIZATION:		$2,050.07	$5,725.71	$2,722.62
TOTAL COSTS:		$84,694.52	$104,168.70	$100,858.37
COST PER STATION:		$2,390	$7,048	$198
ROAD DEACTIVATION & ABANDONMENT COSTS:		$0.00	$0.00	$0

10% OVERHEAD AND GENERAL EXPENSE = $28,972.16
TOTAL (All Roads) = $318,693.75
TOTAL (Minus Optional Rock) = $268,240.80
SALE VOLUME MBF = 4,040
TOTAL $/MBF = $78.88
TOTAL $/MBF (Minus Optional Rock) = $66.40

Profit and Risk costs are accounted on an individual basis.

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3000 (Pre-haul maintenance)**

Required Pre-Haul Maintenance-	326+78	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	6.19	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

PRE-HAUL MAINTENANCE

CLEARING

Roadside Brushing	3.07	miles	@	$1,560.00	per mile =	$4,789.20

EXCAVATION

Clean ditch, culverts and/or remove debris from ditch & roadside-	165.10	stations	@	$35.00	per station	$5,778.50
Remove culverts from state lands -	1.00		@	$209.12	total	$209.12

MISC.

Grade and shape existing road surface -	308.70	stations	@	$18.25	per station	$5,633.78
Roll shaped road surface w/ vibratory roller prior to rocking -	308.70	stations	@	$9.70	per station	$2,994.39

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **$19,404.99**

CULVERTS - MATERIALS & INSTALLATION

Culverts

40	LF of 18"	$1,220.00	0	LF of 24"	$0.00
		$1,220.00			$0.00

Culvert Stakes & Markers

1	markers	$8.00

TOTAL CULVERTS **$1,220.00**

ROCK

11+00 to	32+60	809	cy. of	Crushed	@	$22.24	per c.y.=	$17,992.16
Culvert Backfill	85+20	20	cy. of	Crushed	@	$20.55	per c.y.=	$411.00
Rock Berm	See Rock List	3	cy. of	Crushed	@	$21.21	per c.y.=	$63.63
Fill Armor (Left)	32+60	16	cy. of	Riprap	@	$30.92	per c.y.=	$494.72
Spot Rock	See Rock List	260	cy. of	Crushed	@	$19.73	per c.y.=	$5,129.80
Energy Dissipator	85+20	1	cy. of	Riprap	@	$22.36	per c.y.=	$22.36
267+50 to	271+00	131	cy. of	Crushed	@	$16.33	per c.y.=	$2,139.23
Pavement Ballast	0+60	20	cy. of	Pit-Run	@	$18.73	per c.y.=	$374.60
Pavement Crushed	0+60	0	cy. of	1 1/4" Crushe	@	$25.67	per c.y.=	$0.00

TOTAL ROCK **$26,627.50**

ADDITIONAL REQUIREMENTS

L	1.00	days	@	$2,500.00	per day	$2,500.00
Asphalt Repair (area prep)	0.50	days	@	$2,500.00	per day	$1,250.00
Asphalt Repair (purchase/haul)	8.00	tons	@	$120.00	per ton	$960.00
Asphalt Repair (application)	8.00	tons	@	$325.00	per ton	$2,600.00

TOTAL ADDITIONAL REQUIREMENTS **$7,310.00**

SUBTOTAL **$54,562.49**

MOBILIZATION

SUBTOTAL **$1,603.10**

OVERHEAD & GENERAL EXPENSES 10%

SUBTOTAL **$5,616.56**

TOTAL **$61,782.15**

Optional Rock? NO

COST PER STATION **$189.06**

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3000 (Reconstruct)**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	8+02	stations	Required Construction -	0+00	stations
	0.00	miles		0.15	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

RECONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	8.02	sta @	$140.00	per sta	$1,122.80	
Endhaul organic Debris	0.400	acres @	$1,500.00	per acre	$600.00	
Construct waste areas -	5.00	hours @	$350.00	per hour	$1,750.00	
EXCAVATION						
Construct ditch-	8.02	stations @	$67.19	per station	$538.86	
Full Bench	9,800	cy. @	$2.00	per c.y.	$19,600.00	
Grade and shape subgrade -	8.02	stations @	$14.60	per station	$117.09	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	8.02	stations @	$12.12	per station	$97.20	
Grass seed and fertilize -	27.00	lbs @	$4.00	per lbs	$108.00	
ENDHAUL						
Full Bench	9800	cy. @	$2.27	per c.y.	$22,246.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$65,779.95**

CULVERTS - MATERIALS & INSTALLATION

Culverts

40	LF of 18"	$1,220.00	0	LF of 24"	$0.00	
		$1,220.00			$0.00	
Culvert Stakes & Markers						
1	markers	$8.00				
		$8.00			TOTAL CULVERTS	**$1,228.00**

ROCK

296+89	to 304+91	289	cy. of	Crushed	@	$16.13	per c.y.=	$4,661.57	
296+89	to 304+91	871	cy. of	Pit Run	@	$11.74	per c.y.=	$10,225.54	
Stock Pile Ballast	297+00	120	cy. of	Pit-Run	@	$11.71	per c.y.=	$1,405.20	
Energy Dissipator	0+00	1	cy. of	Pit-Run	@	$16.94	per c.y.=	$16.94	
								TOTAL ROCK	**$16,309.25**

	SUBTOTAL	**$83,317.20**
MOBILIZATION	SUBTOTAL	**$5,434.25**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$8,875.15**
	TOTAL	**$97,626.60**
	COST PER STATION	**$12,172.89**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3044**

Required Pre-Haul Maintenance-	18+50	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.35	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

PRE-HAUL MAINTENANCE

CLEARING							
Roadside Brushing	0.35	miles	@	$1,560.00	per mile =	$546.00	
EXCAVATION							
Clean ditch & culverts-	18.50	stations	@	$50.39	per station	$932.22	
MISC.							
Spot Grade and shape road shoulders -	18.50	stations	@	$18.25	per station	$337.63	
Roll shaped road surface w/ vibratory roller prior to rocking -	18.50	stations	@	$9.70	per station	$179.45	
					TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$1,995.30**

ROCK

Spot Rock	3+60, 8+00	20	cy. of	Crushed	@	$16.33	per c.y.=	$326.60	
							TOTAL ROCK		**$326.60**

	SUBTOTAL	**$2,321.90**
MOBILIZATION	SUBTOTAL	**$164.84**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$248.67**
	TOTAL	**$2,735.41**
	COST PER STATION	**$147.86**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3044 A**

Required Pre-Haul Maintenance-	14+00 stations 0.27 miles	Required Reconstruction -	6+76 stations 0.13 miles	Required Construction -	0+00 stations 0.00 miles
Required Abandonment-	0+00 stations 0.00 miles	Optional Reconstruction -	0+00 stations 0.00 miles	Optional Construction -	0+00 stations 0.00 miles

PRE-HAUL MAINTENANCE

CLEARING

Roadside Brushing	0.27	miles @	$1,560.00	per mile =	$421.20	

EXCAVATION

Remove debris from ditches & roadside -	14.00	stations @	$67.19	per station	$940.66	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$1,361.86**

RECONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris	6.76	sta @	$140.00	per sta	$946.40	

EXCAVATION

Construct settling ponds at stations 0+99, 2+50, 2+85 -	6.00	@	$53.75	each	$322.50	
Reconstruct Ditch -	6.76	stations @	$67.19	per station	$454.20	
Grade and shape subgrade -	6.76	stations @	$14.60	per station	$98.70	

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	6.76	stations @	$12.12	per station	$81.93	
Reconstruct turnaround @ sta. 5+16 -	1.00	@	$134.62	each	$134.62	
Grass seed and fertilize -	20.00	lbs @	$4.00	per lbs	$80.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$2,118.35**

CULVERTS - MATERIALS & INSTALLATION

Culverts

60	LF of 18"	$1,830.00	40	LF of 24"	$1,345.20		
50	LF of 30"	$2,708.00	0	LF of 36"	$0.00		
		$4,538.00			$1,345.20		

Culvert Stakes & Markers

4 markers	$32.00					
	$32.00			TOTAL CULVERTS		**$5,915.20**

ROCK

Culvert Backfill	See Culvert List	90	cy. of	Crushed	@	$17.11	per c.y.=	$1,539.90
Fill Armor	1+36, 2+65	18	cy. of	Riprap	@	$17.72	per c.y.=	$318.96
Energy Dissipator	0+66, 5+66	2	cy. of	Pit-Run	@	$17.72	per c.y.=	$35.44
0+00 to	6+76	309	cy. of	Pit Run	@	$12.26	per c.y.=	$3,788.34
							TOTAL ROCK	**$5,682.64**

ADDITIONAL REQUIREMENTS

Stream diversion installation-	4.00	hrs @	$256.60	per hr	$1,026.40	
Stream pumping	1.00	days @	$183.20	per day	$183.20	
Mulching (straw/hay)	8.00	bales @	$25.00	per bale	$200.00	
				TOTAL ADDITIONAL REQUIREMENTS		**$1,409.60**

SUBTOTAL		**$16,487.65**
MOBILIZATION SUBTOTAL		**$287.51**
OVERHEAD & GENERAL EXPENSES 10% SUBTOTAL		**$1,677.52**
TOTAL		**$18,452.68**
COST PER STATION		**$888.86**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3044B**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	6+17	stations
	0.00	miles		0.00	miles		0.12	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	6.17	sta @	$280.00	per sta	$1,727.60	
EXCAVATION						
Road Construction Earthwork	6.17	sta. @	$152.17	per sta. =	$938.89	
Grade and shape subgrade -	6.17	stations @	$14.60	per station	$90.08	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	6.17	stations @	$12.12	per station	$74.78	
Construct turnouts @ sta. - 2+51	1.00	@	$134.62	each	$134.62	
Construct landing - 6+17	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	18.00	lbs @	$4.00	per lbs	$72.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$3,576.43**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	$915.00	0	LF of 24"	$0.00	
		$915.00			$0.00	

Culvert Stakes & Markers

1	markers	$8.00				
		$8.00			TOTAL CULVERTS	**$923.00**

ROCK

0+54	to	6+17	611	cy. of	Pit Run	@	$12.79	per c.y.=	$7,814.69
Energy Dissipator		3+12	1	cy. of	Pit-Run	@	$17.79	per c.y.=	$17.79
								TOTAL ROCK	**$7,832.48**

	SUBTOTAL	**$12,331.91**
MOBILIZATION	SUBTOTAL	**$295.46**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,262.74**
	TOTAL	**$13,890.11**
Optional Rock? YES	**COST PER STATION**	**$2,251.23**

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3044C**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles			miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	16+58	stations
	0.00	miles		0.00	miles		0.31	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	16.58	sta @	$280.00	per sta	$4,642.40	
EXCAVATION						
Road Construction Earthwork	16.58	sta. @	$269.23	per sta. =	$4,463.83	
Grade and shape subgrade -	16.58	stations @	$14.60	per station	$242.07	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	16.58	stations @	$12.12	per station	$200.95	
Construct turnouts @ sta. - 15+69	1.00	@	$134.62	each	$134.62	
Construct turnaround @ sta. - 5+42, 12+31	2.00	@	$134.62	each	$269.24	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	50.00	lbs @	$4.00	per lbs	$200.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$10,691.57**

CULVERTS - MATERIALS & INSTALLATION

Culverts

140	LF of 18"	$4,270.00	0	LF of 24"	$0.00	
		$4,270.00			$0.00	

Culvert Stakes & Markers

4 markers	$32.00	
	$32.00	TOTAL CULVERTS **$4,302.00**

ROCK

0+00 to	16+58	0	cy. of	Crushed	@	$12.02	per c.y.=	$0.00
Culvert Backfill	0+00	0	cy. of	Crushed	@	$12.02	per c.y.=	$0.00
In-Stream Structure	0+00	0	cy. of	Riprap	@	$17.02	per c.y.=	$0.00
Fill Armor	0+00	0	cy. of	Riprap	@	$17.02	per c.y.=	$0.00
Spot Rock	0+00	0	cy. of	Crushed	@	$12.02	per c.y.=	$0.00
Slope Stabilization	0+00	0	cy. of	Riprap	@	$17.02	per c.y.=	$0.00
Energy Dissipator	0+00	0	cy. of	Riprap	@	$17.02	per c.y.=	$0.00
7+07 to	16+58	933	cy. of	Pit Run	@	$12.98	per c.y.=	$12,110.34
0+00 to	7+07	651	cy. of	Pit Run	@	$12.88	per c.y.=	$8,384.88
Ditch/Embankment Fill	0+00	0	cy. of	Pit-Run	@	$12.02	per c.y.=	$0.00
Energy Dissipator	See Culvert List	4	cy. of	Pit-Run	@	$17.88	per c.y.=	$71.52
Backfill	0+00	0	cy. of	Pit-Run	@	$12.02	per c.y.=	$0.00
Bedding/Backfill	0+00	0	cy. of	Pit-Run	@	$12.02	per c.y.=	$0.00
							TOTAL ROCK	**$20,566.74**

	SUBTOTAL	**$35,560.31**
MOBILIZATION	SUBTOTAL	**$883.26**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$3,644.36**
	TOTAL	**$40,087.93**
	COST PER STATION	**$2,417.85**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3042**

Required Pre-Haul Maintenance-	151+20	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	2.86	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

PRE-HAUL MAINTENANCE

CLEARING

Roadside Brushing	1.98	miles	@	$1,560.00	per mile =	$3,088.80	

EXCAVATION

Construct sediment ponds - 30+60	1.00	@		$53.75	each	$53.75	
Clean ditch/culverts and/or remove debris from ditches & road prism	70.10	stations @		$40.31	per station	$2,825.73	

MISC.

Grade and shape existing road surface -	151.20	stations @		$18.25	per station	$2,759.40	
Roll shaped road surface w/ vibratory roller prior to rocking -	151.20	stations @		$9.70	per station	$1,466.64	
					TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$10,194.32**

CULVERTS - MATERIALS & INSTALLATION

Culverts							
110	LF of 18"	$3,355.00		0	LF of 24"	$0.00	
Culvert Stakes & Markers							
3 markers		$24.00					
		$24.00				TOTAL CULVERTS	**$3,379.00**

ROCK

Culvert Backfill	See Culvert List	90	cy. of	Crushed	@	$19.95	per c.y.=	$1,795.50	
Spot Rock	55+20	20	cy. of	Crushed	@	$19.95	per c.y.=	$399.00	
Energy Dissipator	See Culvert List	3	cy. of	Pit-Run	@	$20.56	per c.y.=	$61.68	
								TOTAL ROCK	**$2,256.18**

	SUBTOTAL	**$15,829.50**
MOBILIZATON	SUBTOTAL	**$842.18**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,667.17**
	TOTAL	**$18,338.85**
	COST PER STATION	**$121.29**

Optional Rock? NO

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3042E**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	4+25	stations
	0.00	miles		0.00	miles		0.08	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	4.25	sta @	$280.00	per sta	$1,190.00	
EXCAVATION						
Road Construction Earthwork	4.25	sta. @	$194.44	per sta. =	$826.37	
Grade and shape subgrade -	4.25	stations @	$14.60	per station	$62.05	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	4.25	stations @	$12.12	per station	$51.51	
Construct turnouts @ sta. - 2+22	1.00	@	$134.62	each	$134.62	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	13.00	lbs @	$4.00	per lbs	$52.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$2,855.01**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	$915.00	0	LF of 24"	$0.00	
		$915.00			$0.00	
Culvert Stakes & Markers						
1	markers	$8.00				
		$8.00			TOTAL CULVERTS	**$923.00**

ROCK

Energy Dissipator	3+30	1	cy. of	Pit-Run	@	$20.45	per c.y.=	$20.45
0+00 to	4+25	464	cy. of	Pit Run	@	$15.45	per c.y.=	$7,168.80
							TOTAL ROCK	**$7,189.25**

	SUBTOTAL	**$10,967.26**
MOBILIZATION	SUBTOTAL	**$235.86**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,120.31**
	TOTAL	**$12,323.43**
Optional Rock? YES	**COST PER STATION**	**$2,899.63**

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3042F**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	3+03	stations
	0.00	miles		0.00	miles		0.06	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	3.03	sta @	$280.00	per sta	$848.40	
EXCAVATION						
Road Construction Earthwork	3.03	sta. @	$152.17	per sta. =	$461.08	
Grade and shape subgrade -	3.03	stations @	$14.60	per station	$44.24	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	3.03	stations @	$12.12	per station	$36.72	
Construct turnouts @ sta. - 1+92	1.00	@	$134.62	each	$134.62	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	9.00	lbs @	$4.00	per lbs	$36.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$2,099.52**

ROCK

0+00	to	3+03	362	cy. of	Pit Run	@	$15.63	per c.y.=	$5,658.06
								TOTAL ROCK	**$5,658.06**

	SUBTOTAL	**$7,757.58**
MOBILIZATION	SUBTOTAL	**$173.45**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$793.10**
	TOTAL	**$8,724.13**
	COST PER STATION	**$2,879.25**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **FOUR SCORE** Road: **L-3042G**

Required Pre-Haul Maintenance-	0+00 stations 0.00 miles	Required Reconstruction -	0+00 stations 0.00 miles	Required Construction -	0+00 stations 0.00 miles
Required Abandonment-	0+00 stations 0.00 miles	Optional Reconstruction -	0+00 stations 0.00 miles	Optional Construction -	5+41 stations 0.10 miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	5.41	sta @	$280.00	per sta	$1,514.80	
Endhaul organic Debris	0.000	acres @	$1,500.00	per acre	$0.00	
Remove large stumps -	0.00	@	$350.00	each	$0.00	
Construct waste areas -	0.00	hours @	$350.00	per hour	$0.00	
EXCAVATION						
Road Construction Earthwork	5.41	sta. @	$269.23	per sta. =	$1,456.53	
Construct ditchouts @ 5+00	1.00	@	$60.00	each	$60.00	
Grade and shape subgrade -	5.41	stations @	$14.60	per station	$78.99	
FILL						
Fill roadway @ area of 0+50 to 2+50 -	6.00	hours @	$280.00	per hour	$1,680.00	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	5.41	stations @	$12.12	per station	$65.57	
Construct turnaround @ sta. - 3+23	1.00	@	$134.62	each	$134.62	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	16.00	lbs @	$4.00	per lbs	$64.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$5,592.97**

CULVERTS - MATERIALS & INSTALLATION

Culverts							
40	LF of 18"	$1,220.00		0	LF of 24"	$0.00	
		$1,220.00				$0.00	
Culvert Stakes & Markers							
1 markers		$8.00					
		$8.00				TOTAL CULVERTS	**$1,228.00**

ROCK

0+00 to	5+41	581	cy. of	Pit Run	@	$15.81	per c.y.=	$9,185.61
Energy Dissipator	1+75	1	cy. of	Pit-Run	@	$20.81	per c.y.=	$20.81
							TOTAL ROCK	**$9,206.42**

	SUBTOTAL	**$16,027.39**
MOBILIZATION	SUBTOTAL	**$462.05**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,648.94**
	TOTAL	**$18,138.38**
Optional Rock? YES	**COST PER STATION**	**$3,352.75**

ROCK DEVELOPMENT COST SUMMARY

Pit:	Lincoln Quarry	Location:	Sec. 15, T14N R5W		
Sale:	**FOUR SCORE**		Road:		4970 c.y.
Swell:	1.40		Stockpile:		c.y.
Shrinkage	1.16		Total Truck Loads:		4970 c.y.
Drill Pct.:	100%		In Place Total:		3550 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area near pit, place overburden in Waste Area, spread and compact.	$3.44	/cu.yd	x	3000	cu.yds.	$10,320.00
Drill & Shoot:	$4.50	/cu.yd	x	3550	cu.yds.	$15,975.00
Push Rock:	$0.67	/cu.yd	x	4970	cu.yds.	$3,329.90
Load Dump Truck:	$1.00	/cu.yd	x	4970	cu.yds.	$4,970.00
					Subtotal	$34,594.90

Rock Exploration (Rock Drill)	16	hrs @	$430.00	=	$6,880.00
Move In and set up Drill and Compressor	1	@	$748.47	=	$748.47
Move in D-8	2	@	$637.59	=	$1,275.18
				Subtotal	$8,903.65
			TOTAL PRODUCTION COSTS		$43,498.55

Base Cost= $8.75 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Application Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	Speed (Mi/hr.)	One-Way Dist (ft)	ROCK COST
L-3000 (Pre-haul maintenance)	$10.17	$12.00	$8.75	$30.92	16	25	27000	$494.72
L-3000 (Pre-haul maintenance)	$7.61	$6.00	$8.75	$22.36	1	20	21500	$22.36
L-3000 (Pre-haul maintenance)	$8.98	$1.00	$8.75	$18.73	20	25	30700	$374.60
L-3044 A Fill Armor	$2.97	$6.00	$8.75	$17.72	18	22	4900	$318.96
L-3044 A Energy Dissipator	$2.97	$6.00	$8.75	$17.72	2	22	4900	$35.44
L-3044 A	$2.51	$1.00	$8.75	$12.26	309	22	4900	$3,788.34
L-3044B	$3.04	$1.00	$8.75	$12.79	611	22	5200	$7,814.69
L-3044B Energy Dissipator	$3.04	$6.00	$8.75	$17.79	1	22	5200	$17.79
L-3044C	$3.23	$1.00	$8.75	$12.98	933	22	6000	$12,110.34
L-3044C	$3.13	$1.00	$8.75	$12.88	651	22	5600	$8,384.88
L-3044C Energy Dissipator	$3.13	$6.00	$8.75	$17.88	4	22	5600	$71.52
L-3042 Energy Dissipator	$5.81	$6.00	$8.75	$20.56	3	22	17000	$61.68
L-3042E Energy Dissipator	$5.70	$6.00	$8.75	$20.45	1	22	16545	$20.45
L-3042E	$5.70	$1.00	$8.75	$15.45	464	22	16545	$7,168.80
L-3042F	$5.88	$1.00	$8.75	$15.63	362	22	17305	$5,658.06
L-3042G	$6.06	$1.00	$8.75	$15.81	581	22	18050	$9,185.61
L-3042G Energy Dissipator	$6.06	$6.00	$8.75	$20.81	1	22	18050	$20.81
L-3000 (Reconstruct)	$1.99	$1.00	$8.75	$11.74	871	15	500	$10,225.54
L-3000 (Reconstruct) Stock Pile Ballast	$1.96	$1.00	$8.75	$11.71	120	15	400	$1,405.20
L-3000 (Reconstruct) Energy Dissipator	$2.19	$6.00	$8.75	$16.94	1	15	500	$16.94
				Total C.Y.	4970		Sub Total	$67,196.73

TOTAL ROCKING COSTS $67,196.73

ROCK DEVELOPMENT COST SUMMARY

Pit:	Lincoln Quarry	Location:	Sec. 15 T14N R5W		
Sale:	**FOUR SCORE**		Road:		1732 c.y.
Swell:	1.40		Stockpile:		1500 c.y.
Shrinkage	1.16		Total Truck Loads:		3232 c.y.
Drill Pct.:	100%		In Place Total:		2309 c.y.

Drill & Shoot:	$4.50	/cu.yd	x	2309	cu.yds.	$10,390.50
Load Crusher:	$1.00	/cu.yd	x	3232	cu.yds.	$3,232.00
Crush 2" Rock:	$6.50	/cu.yd	x	3232	cu.yds.	$21,008.00
Load Dump Truck:	$1.00	/cu.yd	x	1732	cu.yds.	$1,732.00
					Subtotal	$36,362.50

Move In/Set-up 3 Stage Crusher	1	@	$5,604.63	=	$5,604.63
Move in Loader	1	@	$491.67	=	$491.67
				Subtotal	$6,096.30
			TOTAL PRODUCTION COSTS		$42,458.80

Base Cost= $13.14 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Application Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	Speed (Mi/hr.)	One-way Dist (ft)	ROCK COST
L-3000 (Pre-haul maintenance)	$8.10	$1.00	$13.14	$22.24	809	22	28700	$17,992.16
L-3000 (Pre-haul maintenance)	$6.41	$1.00	$13.14	$20.55	20	22	21500	$411.00
L-3000 (Pre-haul maintenance)	$2.07	$6.00	$13.14	$21.21	3	22	3000	$63.63
L-3000 (Pre-haul maintenance)	$5.59	$1.00	$13.14	$19.73	260	22	18000	$5,129.80
L-3000 (Pre-haul maintenance)	$2.19	$1.00	$13.14	$16.33	131	22	3500	$2,139.23
L-3044 Spot Rock	$2.19	$1.00	$13.14	$16.33	20	22	3500	$326.60
L-3044 A Culvert Backfill	$2.97	$1.00	$13.14	$17.11	90	22	4900	$1,539.90
L-3042 Culvert Backfill	$5.81	$1.00	$13.14	$19.95	90	22	17000	$1,795.50
L-3042 Spot Rock	$5.81	$1.00	$13.14	$19.95	20	22	17000	$399.00
L-3000 (Reconstruct)	$1.99	$1.00	$13.14	$16.13	289	15	500	$4,661.57
Stock Pile	$1.90	$1.00	$13.14	$16.04	1500	10	500	$24,060.00
				Total C.Y.	3232		Sub Total	$58,518.39

TOTAL ROCKING COSTS $58,518.39

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Pacific Cascade

Timber Sale Name: Four Score

Application Number: 30- 107096

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 3,544 **linear feet**
Road to be constructed (optional and required) but not abandoned

Reconstruction: 1,478 **linear feet**
Road to be reconstructed (optional and required) but not abandoned

Abandonment: 1400 **linear feet**
Abandonment of existing roads not reconstructed under the contract

Decommission: 0 **linear feet**
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 51,048 **linear feet**
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 0 **linear feet**
Roads to be constructed (optional and required) and then abandoned

Temporary Reconstruction: 0 **linear feet**
Roads to be reconstructed (optional and required) and then abandoned

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contact. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.
(Revised 9/18)