WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

SALE NAME: *BLUFFIN* ***AGREEMENT NO:*** *30-104863*

AUCTION: February 25, 2025 starting at 10:00 a.m., South Puget Sound Region Office, Enumclaw, WA. **COUNTY:** Snohomish

SALE LOCATION: Sale located approximately 13 miles southeast of Monroe, WA.

PRODUCTS SOLD AND SALE AREA: All timber, except leave trees marked with blue paint or bounded out by yellow leave tree area tags, all trees 60 inches or larger measured at diameter at breast height, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags in Units #1, #2, and #3; white timber sale boundary tags and the 7500 Road in Unit #4;

All timber bounded by orange right of way tags and the 12000 Road, except title to the timber within the right of way boundary tags is not conveyed unless the 12250 Road is actually constructed in Unit #5;

All forest products above located on part(s) of Sections 25 and 36 all in Township 27 North, Range 7 East, Sections 30 and 31 all in Township 27 North, Range 8 East, W.M., containing 198 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:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	16.5	7	5,120						1,834	2,789	486	11
Hemlock	14.2		214						45	136	33	
Redcedar	27.9		73							66	7	
Maple	11.1		59						4	4	50	1
Red alder	15.5		18							8	10	
Cottonwood	19.5		15						15			
Sale Total			5,499									

MINIMUM BID: $1,750,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $100,000.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: October 31, 2026 **ALLOCATION:** Export Restricted

BID DEPOSIT: $175,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvest activities are estimated to be 100 percent ground based harvest. Cable-tethered equipment limited to sustained slopes of 75 percent or less, self-leveling equipment limited to sustained slopes of 65 percent or less, and tracked ground based equipment limited to sustained slopes of 45 percent or less with 6-wheeled rubber tired skidders with

over-the-tire tracks permitted by Contract Administrator approval. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

ROADS: 48.28 stations of optional construction. 541.67 stations of required prehaul maintenance. 35.66 stations of optional prehaul maintenance. 16.33 stations of required abandonment. 48.28 stations of abandonment, if constructed. Purchaser maintenance on the 5210, 5210-5, 5210-5ext., 7000 (from station 0+00 to 152+90), 7010, 7010-1, 7010-1ext., 7050, 7050-1, 7050-2, 7050-3, 7050-4, 7050-5, 7050-8, 7500, 7590, 7590ext., 7590-1, 12000, 12250 and Cedar Ponds roads.

Rock for this proposal may be obtained from the State owned 5210-5 and 7500 rock pits. Up to 1,986 cubic yards of 2-inch crushed rock may be obtained from the existing stockpile at the 7500 Pit at no cost to the Purchaser or from any commercial rock source at the Purchaser's expense.

Operation of road construction equipment and rock haul (except for the fish passage culvert replacement on the 7500 Road as noted below) will not be permitted from November 1 to April 30, nor on weekends or State recognized holidays unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1 to April 30, a maintenance plan may be required per Road Plan clause 1-26.

In addition, fish passage culvert replacement on the 7500 Road at station 132+04 will not be permitted from October 1 to June 30, unless authorized in writing by the **State**.

The hauling of forest products will not be permitted from November 1 to April 30, nor on weekends or State recognized holidays, in all units, unless authorized in writing by the Contract Administrator. If permission is granted to operate from November 1 to April 30, preventive measures may be required to protect water, soil, roads and other forest assets.

ACREAGE DETERMINATION

CRUISE METHOD: Unit #2 acreage was determined by traversing boundaries by GPS. Unit #1, #3, #4, #5, and #6 acreage was determined by GPS and by multiplying length times width for existing roads. GPS data files are available at DNR's website for timber sale auction packets. See cruise narrative for cruise method.

FEES: $93,483.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: There is no timber to be removed from right of way Unit #6. There are only triple-banded blue painted trees within this unit that may be felled and left in the adjacent unit per H-141, if the 5210-5 ext Road is constructed.

This sale contains high quality Douglas-fir saw logs. Previously thinning and root rot affect stocking levels within several harvest units. See cruise and cruise narrative for additional information.

No equipment may operate within, nor logs yarded through or over the non-tradeable leave tree clumps marked with yellow leave tree area tags in Unit #1.

Haul will not be allowed on Stossel Creek Road except for equipment haul and light vehicles.

No damage is permitted to individual non-tradeable leave trees painted with double bands of blue paint in Units #2 and #4.

Cut vine maple stems greater than 6 feet in height within the harvest units, leaving a stump no greater than 12 inches in height.

Snow plowing will require written permission from the Contract Administrator as well as a written "Snow Plowing Agreement" per Road Plan clause 1-33.

Landing locations must be approved by the Contract Administrator prior to construction, per clause C-080.

Purchaser must provide, install and maintain orange traffic signs along Cedar Ponds Road from station 0+00 to the 1029 Gate during hauling warning of truck traffic and timber harvest activities. Signage and locations of placement to be approved by the Contract Administrator, per contract clause H-140.

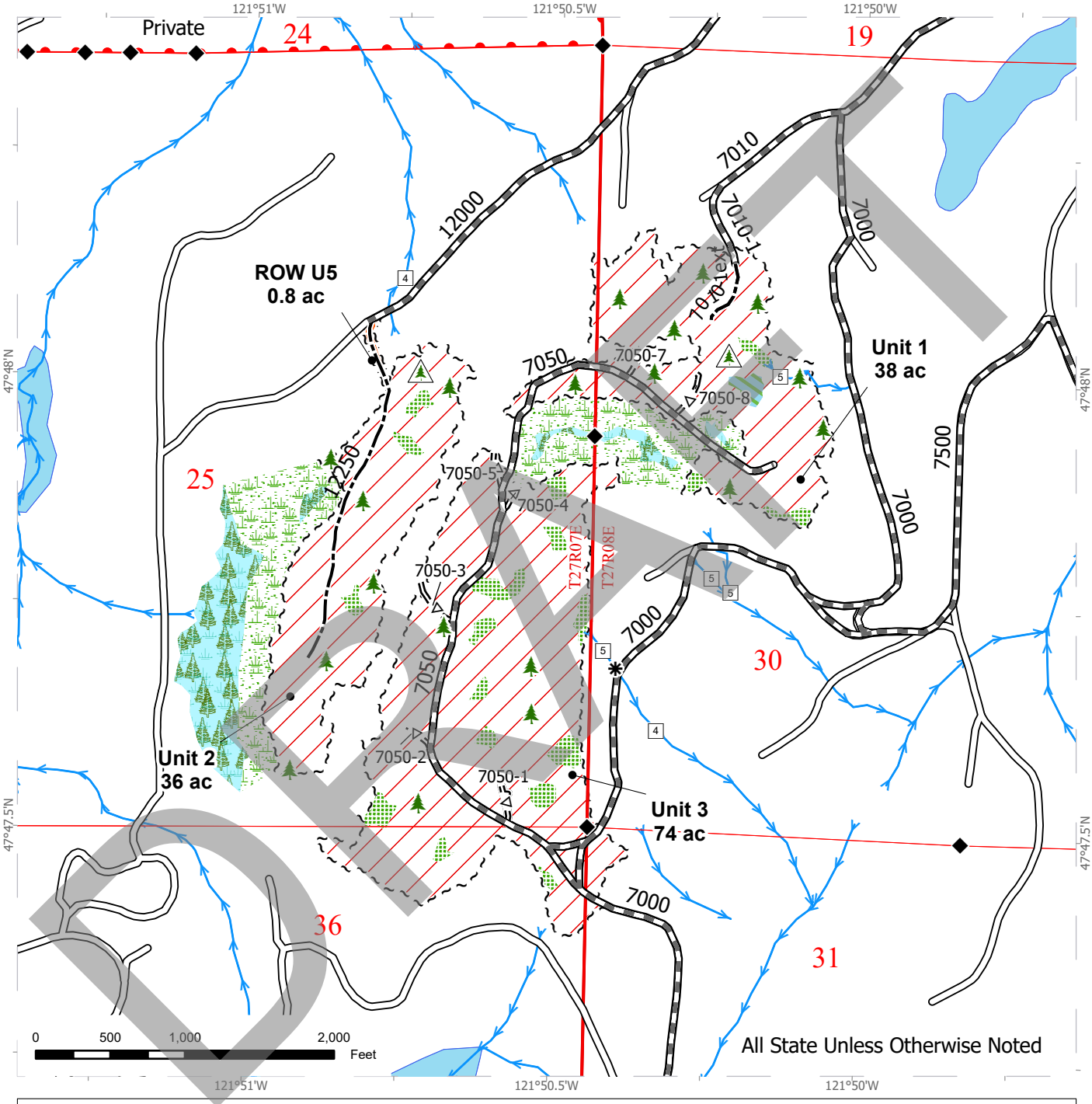
Note to cruisers and appraisers: Please refrain from leaving pink, orange, or blue flagging from your cruises in or around the sale area to avoid confusion with DNR's marking. Additionally, for the safety of the public, please remove from roads all string from string boxes used during appraising or cruising this sale.

See map for gate locations. Gate keys may be obtained by contacting the South Puget Sound Region Office at 360-825-1631 or by contacting Paul Footen at 425-736-1708.

TIMBER SALE MAP

SALE NAME: BLUFFIN
AGREEMENT#: 30-104863
TOWNSHIP(S): T26R8E, T27R7E, T27R8E
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): King, Snohomish
ELEVATION RGE: 480-920



- Sale Area
- Right-of-Way Harvest
- Leave Tree Area
- Non-Tradeable Leave Tree Area
- Forested Wetland
- Wetland Mgt Zone
- Sale Boundary Tags
- Right of Way Tags
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Pre-Haul Maintenance
- Optional Construction
- Leave Tree Area <1/4-acre
- Non-Tradeable Leave Trees
- Streams
- Stream Type
- Stream Break
- Open Water
- Survey Monument
- Property Line

N

Prepared By: kfry490
Accessed: 01/09/2025 13:15

Modification Date: kfry490 12/2/2024

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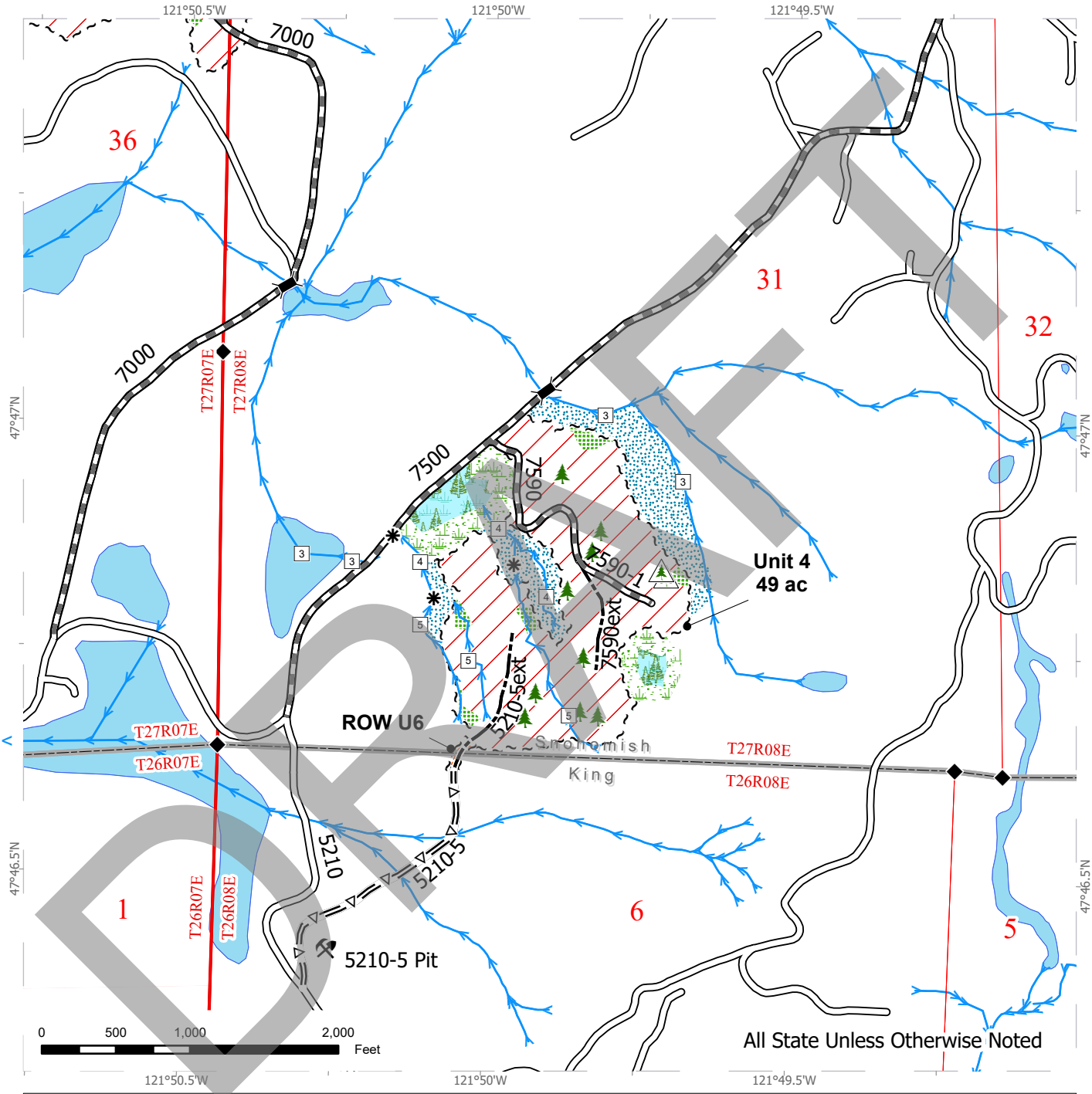

- Sale Area
- Right-of-Way Harvest
- Leave Tree Area
- Forested Wetland
- Wetland Mgt Zone
- Riparian Mgt Zone
- Sale Boundary Tags
- Right of Way Tags
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Pre-Haul Maintenance
- Optional Construction
- Bridge
- Leave Tree Area <1/4-acre
- Non-Tradeable Leave Trees
- Rock Pit
- Streams
- Stream Type
- Stream Break
- Open Water
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N

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DRIVING MAP

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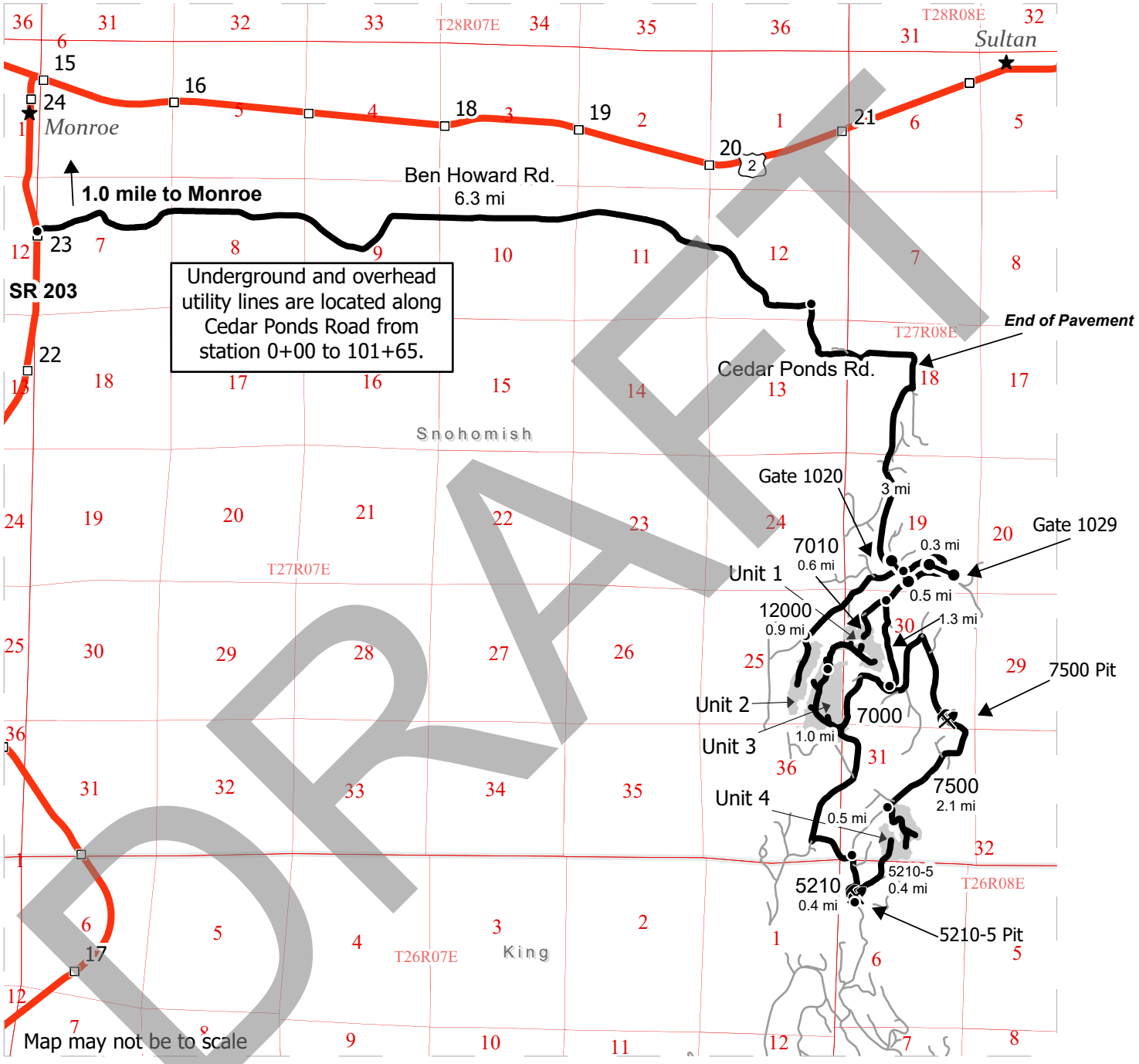

Sale Area
Highway
Haul Route
Other Route
Milepost Marker
Distance Indicator
Gate (Master 383)
Rock Pit
Town
County Boundaries

DRIVING DIRECTIONS:

From Monroe, drive south on SR 203 for 1.0 miles and take a left onto Ben Howard Road. Continue for 6.3 miles and take a right onto Cedar Ponds Road. After 3 miles you will arrive at a junction. To access VRH U2 and ROW U5, turn right and proceed through Gate 1020 and onto the 12000 Road. Continue for 0.9 miles and ROW U5 will be on your left.
To access all other units, continue on Cedar Ponds Road for 0.3 miles to Gate 1029 and 7000 Road will be on the right. To reach the north end of VRH U1, turn right in 0.5 miles onto the 7010 Road and drive 0.6 miles. Otherwise, continue on the 7000 Road for 1.3 miles. To reach VRH U3 and the south end of VRH U1, continue straight for 1.0 miles. To reach VRH U4 and ROW U6, turn left onto the 7500 Road and drive 2.1 miles. VRH U4 will be on your left. To reach ROW U6, continue for 0.5 miles, turn left onto the 5210 Road, drive 0.4 miles, turn left onto the 5210-5 Road and drive another 0.4 miles.

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Timber Sale Cruise Report
Bluffin

Sale Name: BLUFFIN

Sale Type: LUMP SUM

Region: SO PUGET

District: RAINIER

Lead Cruiser: Aaron Coleman

Other Cruisers: Alan Douglas

Cruise Narrative:
This sale consists of 4 variable retention harvest (VRH) units, and 2 right-of-way (ROW) units located off the 7000, 7500, 12000 roads in the Marckworth State Forest. A 383 key is needed to access all units.

The primary species for this sale is:
Douglas-fir (93%) with an average diameter of 16 inches.
Western hemlock (4%) with an average diameter of 14 inches.

Units 1 and 3 were previously thinned and contain skid trails and canopy openings. Root rot pockets affect stocking levels and log quality in these units as well. Skid trails and road edges were sampled, and therefore capture the variability of the units appropriately. Unit 2 contains steep slopes and multiple giant rock outcroppings, as well as old cars and detritus (tread carefully). Unit 4 contains the most well-stocked and highest quality DF, with a small contingent of larger timber on the northern edges. ROW unit 6 contains no reportable volume, it consists of triple-banded blue painted leave trees that are to be cut and left on site.

Most commonly observed defect was broken/forked tops, spike knots and sweep.

Revised on 7/2/2024 by AC: acreage adjustments, removed volume from unit 6

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	16.5	6.8		5,120	1,834	2,789	486	11
WH	14.2			214	45	137	33	
RC	27.9			73		66	7	
MA	11.1			59	4	4	49	1
RA	15.5			18		8	10	
BC	19.5			15	15			
ALL	16.0	6.8		5,499	1,898	3,004	585	12

Timber Sale Notice Weight (tons)

	Tons by Grade				
Sp	All	2 Saw	3 Saw	4 Saw	Utility
DF	38,207	12,681	21,365	4,084	77
WH	1,996	372	1,311	313	

	Tons by Grade				
Sp	All	2 Saw	3 Saw	4 Saw	Utility
RC	526		476	51	
MA	449	22	33	378	16
RA	139		55	84	
BC	110	110			
ALL	41,427	13,185	23,240	4,909	92

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 (%)
179.8	3.2	153.1	1.3	27,844	3.5

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
BLUFFIN U1	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	38.2	42.7	25	17	2
BLUFFIN U2	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	35.7	38.6	20	11	0
BLUFFIN U3	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	74.2	84.6	58	30	3
BLUFFIN U4	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	48.6	55.5	32	17	1
BLUFFIN U5	B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	0.8	0.8	1	1	0
All		197.5	222.2	136	76	6

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	11.3	33	86	76	11.6	110.0	15.0
DF	LIVE	2 SAW	Domestic	14.1	40	6,053	5,919	2.2	8,172.1	1,169.0
DF	LIVE	2 SAW	HQ-B	14.0	39	3,406	3,366	1.2	4,509.1	664.8
DF	LIVE	3 SAW	Domestic	8.8	39	12,617	12,548	0.5	19,169.3	2,478.3
DF	LIVE	3 SAW	HQ-B	10.3	38	1,576	1,572	0.3	2,195.4	310.4
DF	LIVE	4 SAW	Domestic	5.5	27	2,485	2,433	2.1	4,045.6	480.5
DF	LIVE	4 SAW	HQ-B	8.2	32	28	28	0.0	38.8	5.6
DF	LIVE	CULL	Cull	6.2	8	9	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	12.0	36	56	56	0.0	76.8	11.0

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
MA	LIVE	2 SAW	Domestic	15.2	16	20	20	0.0	22.1	4.0
MA	LIVE	3 SAW	Domestic	10.1	30	22	22	0.0	33.2	4.4
MA	LIVE	4 SAW	Domestic	7.0	24	249	248	0.5	377.9	48.9
MA	LIVE	UTILITY	Pulp	3.3	18	8	7	14.5	15.5	1.4
RA	LIVE	3 SAW	Domestic	12.3	25	42	41	1.6	55.0	8.2
RA	LIVE	4 SAW	Domestic	8.0	27	58	50	12.5	84.1	9.9
RA	LIVE	CULL	Cull	12.1	14	32	0	100.0	0.0	0.0
RC	LIVE	3 SAW	Domestic	12.6	34	381	334	12.3	475.7	65.9
RC	LIVE	4 SAW	Domestic	6.4	22	38	38	0.0	50.5	7.5
RC	LIVE	CULL	Cull	15.3	9	18	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	13.3	40	230	229	0.6	371.7	45.2
WH	LIVE	3 SAW	Domestic	8.6	40	716	691	3.4	1,311.5	136.6
WH	LIVE	4 SAW	Domestic	5.3	29	167	165	1.0	312.5	32.6
WH	LIVE	CULL	Cull	15.0	16	22	0	100.0	0.0	0.0

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8 - 11	LIVE	Domestic	8.6	30	8	0.0	12.8	1.6
BC	12 - 15	LIVE	Domestic	12.8	34	68	12.8	97.2	13.4
DF	5 - 7	LIVE	Domestic	5.9	31	5,057	1.1	8,450.8	998.8
DF	5 - 7	LIVE	Cull	6.2	8	0	100.0	0.0	0.0
DF	8 - 11	LIVE	Domestic	9.8	39	9,832	0.7	14,654.0	1,941.9
DF	8 - 11	LIVE	HQ-B	9.9	38	1,415	0.3	1,989.2	279.4
DF	12 - 15	LIVE	Pulp	12.0	36	56	0.0	76.8	11.0
DF	12 - 15	LIVE	Domestic	13.2	39	4,350	1.1	6,270.3	859.1
DF	12 - 15	LIVE	HQ-B	13.7	39	3,163	1.2	4,312.0	624.6
DF	16 - 19	LIVE	HQ-B	16.9	37	389	0.0	442.1	76.8
DF	16 - 19	LIVE	Domestic	17.0	39	1,020	1.9	1,236.3	201.5
DF	20+	LIVE	Domestic	23.5	39	641	9.4	775.7	126.6
MA	< 5	LIVE	Pulp	2.3	17	0	100.0	0.0	0.0
MA	5 - 7	LIVE	Pulp	5.0	20	7	0.0	15.5	1.4
MA	5 - 7	LIVE	Domestic	6.1	26	154	0.8	251.8	30.4
MA	8 - 11	LIVE	Domestic	9.2	21	85	0.0	121.9	16.8
MA	12 - 15	LIVE	Domestic	13.1	17	51	0.0	59.6	10.1
RA	5 - 7	LIVE	Domestic	5.0	27	5	3.4	10.7	0.9
RA	8 - 11	LIVE	Domestic	10.0	28	66	10.5	105.5	13.0
RA	8 - 11	LIVE	Cull	11.7	14	0	100.0	0.0	0.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
RA	12 - 15	LIVE	Cull	12.5	14	0	100.0	0.0	0.0
RA	12 - 15	LIVE	Domestic	13.2	16	22	0.0	22.9	4.2
RC	5 - 7	LIVE	Domestic	5.2	20	28	0.0	37.7	5.6
RC	8 - 11	LIVE	Domestic	8.9	32	60	2.7	103.5	11.9
RC	12 - 15	LIVE	Cull	13.0	12	0	100.0	0.0	0.0
RC	12 - 15	LIVE	Domestic	13.5	36	53	0.0	58.8	10.4
RC	16 - 19	LIVE	Cull	18.1	6	0	100.0	0.0	0.0
RC	16 - 19	LIVE	Domestic	18.1	36	102	17.7	171.4	20.2
RC	20+	LIVE	Domestic	23.0	36	128	15.4	154.7	25.2
WH	5 - 7	LIVE	Domestic	5.8	34	371	2.7	734.5	73.3
WH	8 - 11	LIVE	Domestic	10.0	39	486	3.2	889.4	95.9
WH	12 - 15	LIVE	Domestic	13.4	40	229	0.6	371.7	45.2
WH	12 - 15	LIVE	Cull	15.0	16	0	100.0	0.0	0.0

Cruise Unit Report
BLUFFIN U1

Unit Sale Notice Volume (MBF): BLUFFIN U1

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	14.6			765	75	561	129
WH	15.4			24		21	4
MA	10.3			15			15
RA	14.9			13		4	9
ALL	14.3			817	75	586	157

Unit Cruise Design: BLUFFIN U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	38.2	42.7	25	17	2

Unit Cruise Summary: BLUFFIN U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	59	93	3.7	0
WH	4	4	0.2	0
MA	3	3	0.1	0
RA	3	3	0.1	0
ALL	69	103	4.1	0

Unit Cruise Statistics: BLUFFIN 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	148.8	50.6	10.1	134.6	16.0	2.1	20,025	53.1	10.3
WH	6.4	346.1	69.2	99.4	19.4	9.7	636	346.7	69.9
MA	4.8	366.4	73.3	81.4	5.3	3.1	390	366.5	73.3
RA	4.8	500.0	100.0	72.5	67.6	39.0	348	504.6	107.4
ALL	164.8	39.8	8.0	129.9	21.8	2.6	21,399	45.4	8.4

Unit Summary: BLUFFIN U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	59	ALL	14.6	82	96	20,159	20,025	0.7	128.0	148.8	38.9	764.9
MA	LIVE	CUT	3	ALL	10.3	56	67	390	390	0.0	8.3	4.8	1.5	14.9
RA	LIVE	CUT	3	ALL	14.9	70	87	552	348	37.0	4.0	4.8	1.2	13.3
WH	LIVE	CUT	4	ALL	15.4	72	89	827	636	23.1	4.9	6.4	1.6	24.3
ALL	LIVE	CUT	69	ALL	14.4	80	94	21,929	21,399	2.4	145.2	164.8	43.3	817.5
ALL	ALL	ALL	69	ALL	14.4	80	94	21,929	21,399	2.4	145.2	164.8	43.3	817.5

Cruise Unit Report
BLUFFIN U2

Unit Sale Notice Volume (MBF): BLUFFIN U2

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	16.1			794	258	461	74
WH	13.9			109	20	74	15
ALL	15.5			903	278	536	89

Unit Cruise Design: BLUFFIN U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	35.7	38.6	20	11	0

Unit Cruise Summary: BLUFFIN U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	32	72	3.6	0
WH	10	11	0.6	0
ALL	42	83	4.2	0

Unit Cruise Statistics: BLUFFIN 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	144.0	41.7	9.3	154.4	19.2	3.4	22,235	45.9	9.9
WH	22.0	224.4	50.2	139.3	26.3	8.3	3,064	226.0	50.9
ALL	166.0	30.6	6.8	152.4	20.8	3.2	25,299	37.0	7.5

Unit Summary: BLUFFIN U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	32	ALL	16.1	89	111	22,351	22,235	0.5	101.9	144.0	35.9	793.8
WH	LIVE	CUT	10	ALL	13.9	76	94	3,110	3,064	1.5	20.9	22.0	5.9	109.4
ALL	LIVE	CUT	42	ALL	15.7	87	108	25,461	25,299	0.6	122.8	166.0	41.8	903.2
ALL	ALL	ALL	42	ALL	15.7	87	108	25,461	25,299	0.6	122.8	166.0	41.8	903.2

Cruise Unit Report
BLUFFIN U3

Unit Sale Notice Volume (MBF): BLUFFIN U3

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	16.8			1,790	689	935	155	11
WH	16.9			32	11	18	4	
MA	10.8			15		4	9	1
RC	18.5			13		10	3	
BC	18.0			7	7			
RA	17.0			5		4	1	
ALL	16.4			1,862	707	971	172	12

Unit Cruise Design: BLUFFIN U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	74.2	84.6	58	30	3

Unit Cruise Summary: BLUFFIN U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	116	224	3.9	0
WH	5	5	0.1	0
MA	5	5	0.1	0
RC	4	4	0.1	0
BC	1	1	0.0	0
RA	1	1	0.0	0
ALL	132	240	4.1	0

Unit Cruise Statistics: BLUFFIN U3

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	154.5	51.4	6.8	156.2	19.3	1.8	24,123	54.9	7.0
WH	3.4	449.8	59.1	125.3	9.4	4.2	432	449.9	59.2
MA	3.4	449.8	59.1	58.0	37.8	16.9	200	451.3	61.4
RC	2.8	598.9	78.6	65.5	48.8	24.4	181	600.9	82.3
BC	0.7	761.6	100.0	142.6	0.0	0.0	98	761.6	100.0

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 (%)
RA	0.7	761.6	100.0	94.5	0.0	0.0	65	761.6	100.0
ALL	165.5	45.8	6.0	151.6	25.2	2.2	25,100	52.3	6.4

Unit Summary: BLUFFIN U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	CUT	1	ALL	18.0	90	112	98	98	0.0	0.4	0.7	0.2	7.3
DF	LIVE	CUT	116	ALL	16.8	92	111	24,486	24,123	1.5	100.4	154.5	37.7	1,790.0
MA	LIVE	CUT	5	ALL	10.8	42	58	206	200	3.0	5.4	3.4	1.0	14.8
RA	LIVE	CUT	1	ALL	17.0	59	70	67	65	3.2	0.4	0.7	0.2	4.8
RC	LIVE	CUT	4	ALL	18.5	60	72	244	181	25.9	1.5	2.8	0.6	13.4
WH	LIVE	CUT	5	ALL	16.9	74	91	445	432	2.8	2.2	3.4	0.8	32.1
ALL	LIVE	CUT	132	ALL	16.6	88	107	25,547	25,100	1.7	110.3	165.5	40.5	1,862.4
ALL	ALL	ALL	132	ALL	16.6	88	107	25,547	25,100	1.7	110.3	165.5	40.5	1,862.4

Cruise Unit Report
BLUFFIN U4

Unit Sale Notice Volume (MBF): BLUFFIN U4

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	17.3	6.8		1,767	812	830	126
RC	31.3			57		56	1
WH	12.6			46	14	24	8
MA	11.7			29	4		25
BC	21.0			8	8		
ALL	16.7	6.8		1,907	838	909	160

Unit Cruise Design: BLUFFIN U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	48.6	55.5	32	17	1

Unit Cruise Summary: BLUFFIN U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	87	160	5.0	4
RC	6	6	0.2	0
WH	6	6	0.2	0
MA	6	6	0.2	0
BC	1	1	0.0	0
ALL	106	179	5.6	4

Unit Cruise Statistics: BLUFFIN U4

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	200.0	40.6	7.2	181.8	23.1	2.5	36,360	46.8	7.6
RC	7.5	477.7	84.5	155.3	20.8	8.5	1,165	478.2	84.9
WH	7.5	315.9	55.8	127.5	25.4	10.4	956	316.9	56.8
MA	7.5	343.7	60.8	79.3	36.1	14.8	595	345.6	62.5
BC	1.3	565.7	100.0	127.2	0.0	0.0	159	565.7	100.0
ALL	223.8	31.1	5.5	175.4	27.4	2.7	39,235	41.4	6.1

Unit Summary: BLUFFIN U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	CUT	1	ALL	21.0	96	120	200	159	20.3	0.5	1.3	0.3	7.7
DF	LIVE	CUT	87	ALL	17.3	91	114	36,870	36,360	1.4	122.5	200.0	48.1	1,767.1
MA	LIVE	CUT	6	ALL	11.7	54	69	595	595	0.0	10.0	7.5	2.2	28.9
RC	LIVE	CUT	6	ALL	31.3	103	133	1,333	1,165	12.6	1.4	7.5	1.3	56.6
WH	LIVE	CUT	6	ALL	12.6	62	76	956	956	0.0	8.7	7.5	2.1	46.5
ALL	LIVE	CUT	106	ALL	16.9	87	109	39,953	39,235	1.8	143.1	223.8	54.0	1,906.8
ALL	ALL	ALL	106	ALL	16.9	87	109	39,953	39,235	1.8	143.1	223.8	54.0	1,906.8

Cruise Unit Report
BLUFFIN U5

Unit Sale Notice Volume (MBF): BLUFFIN U5

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	11.5			4	2	2
RC	8.1			3		3
WH	9.0			2		2
ALL	9.3			9	2	7

Unit Cruise Design: BLUFFIN U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	0.8	0.8	1	1	0

Unit Cruise Summary: BLUFFIN U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	2	2	2.0	0
RC	2	2	2.0	0
WH	1	1	1.0	0
ALL	5	5	5.0	0

Unit Cruise Statistics: BLUFFIN U5

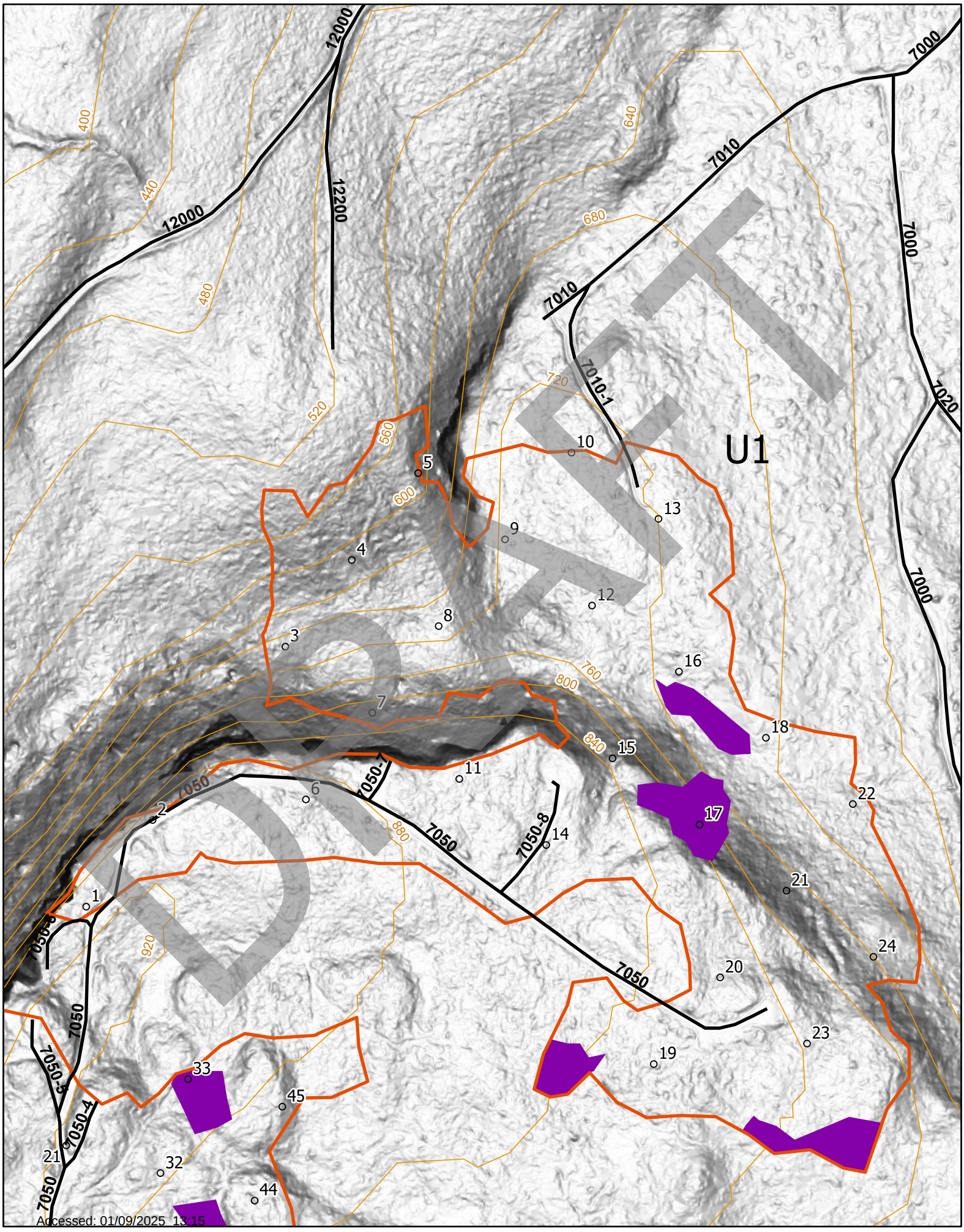
Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	67.2	0.0	0.0	72.7	14.6	10.4	4,886	14.6	10.4
RC	67.2	0.0	0.0	62.0	4.9	3.5	4,169	4.9	3.5
WH	33.6	0.0	0.0	79.2	0.0	0.0	2,663	0.0	0.0
ALL	168.1	0.0	0.0	69.7	13.4	6.0	11,717	13.4	6.0

Unit Summary: BLUFFIN U5

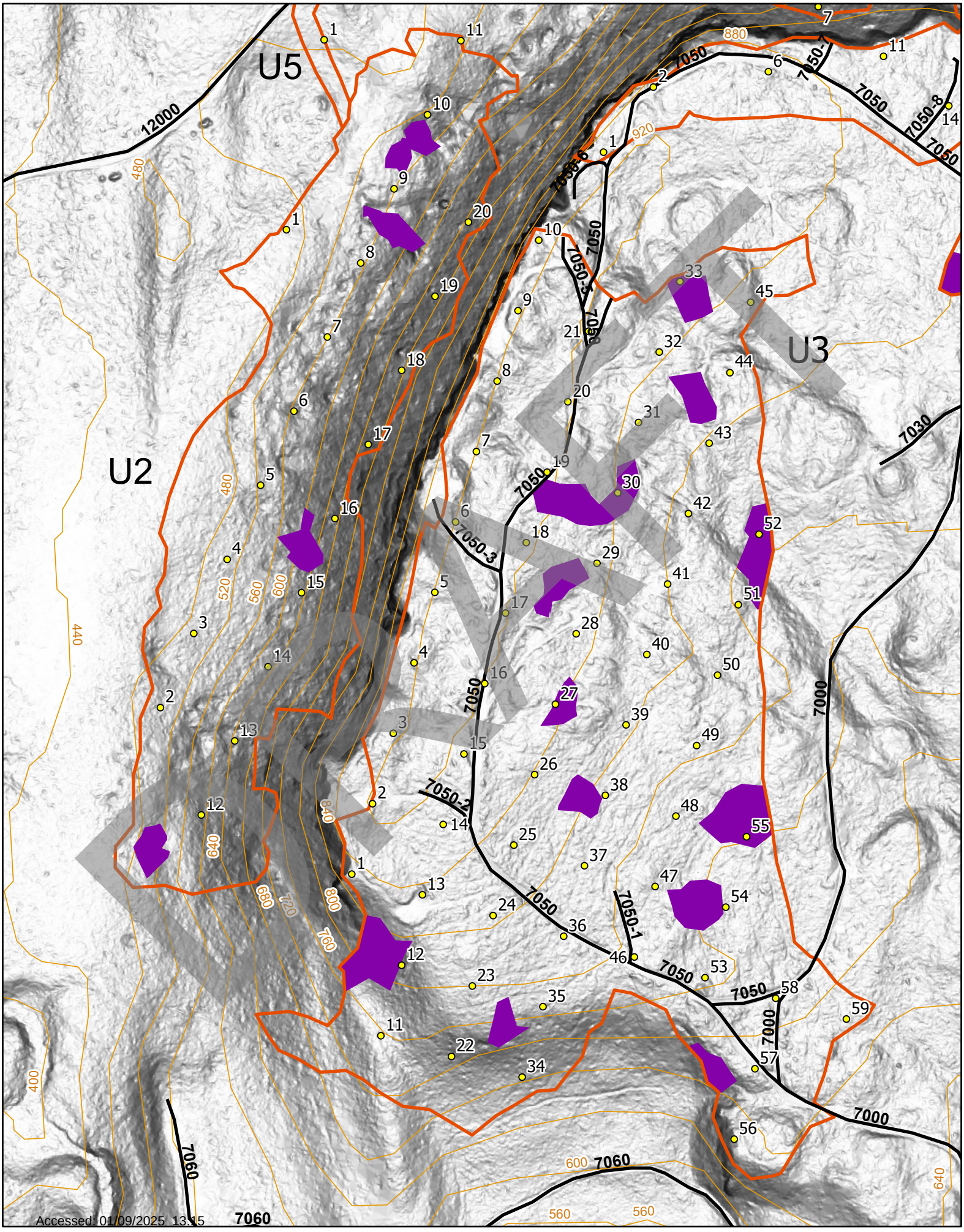
Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	2	ALL	11.5	59	73	4,886	4,886	0.0	93.2	67.2	19.8	3.9
RC	LIVE	CUT	2	ALL	8.1	39	47	4,169	4,169	0.0	187.9	67.2	23.6	3.3
WH	LIVE	CUT	1	ALL	9.0	50	61	2,663	2,663	0.0	76.1	33.6	11.2	2.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	5	ALL	9.3	46	57	11,717	11,717	0.0	357.2	168.1	54.6	9.4
ALL	ALL	ALL	5	ALL	9.3	46	57	11,717	11,717	0.0	357.2	168.1	54.6	9.4

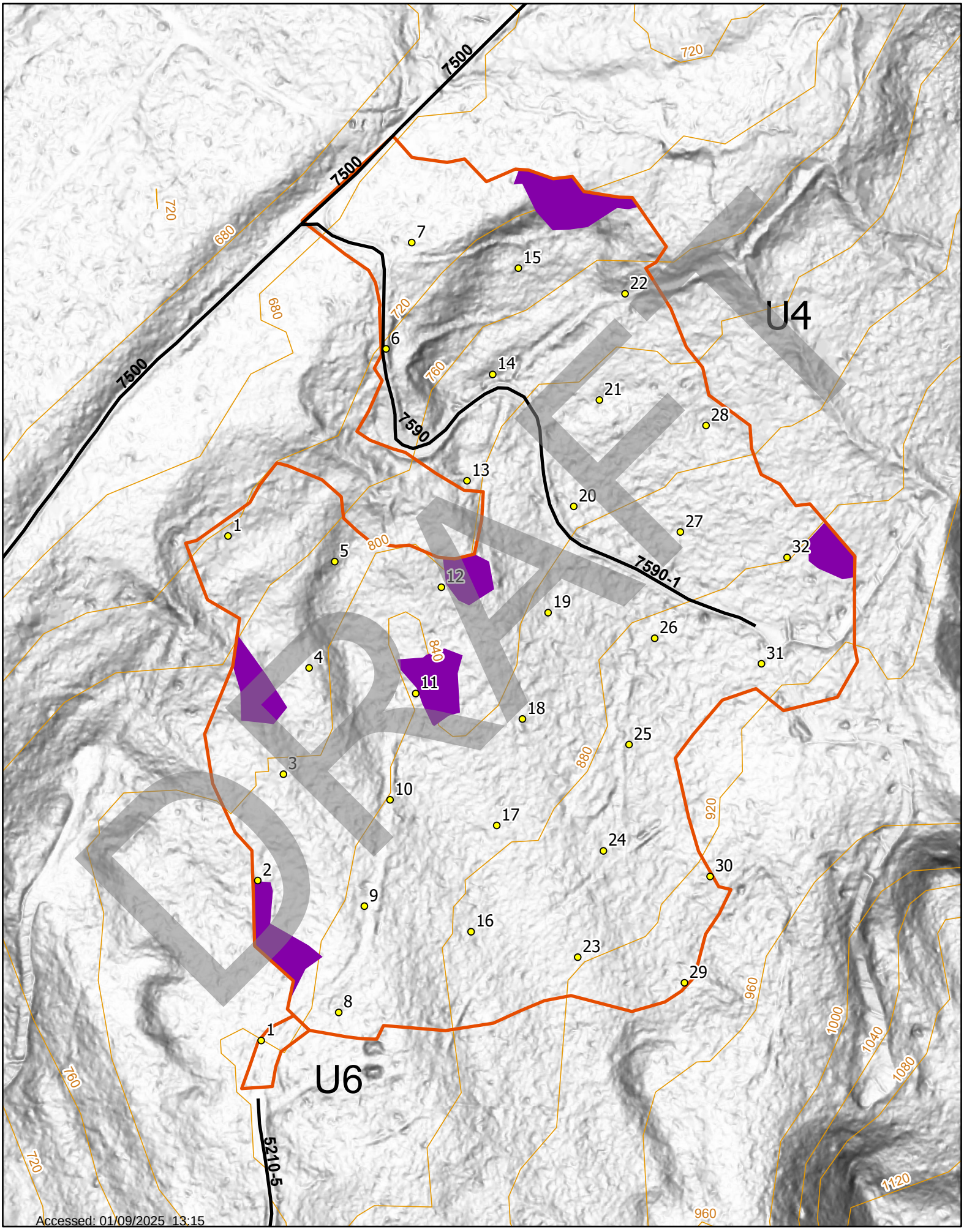
Bluffin Cruise Map



Bluffin Cruise Map



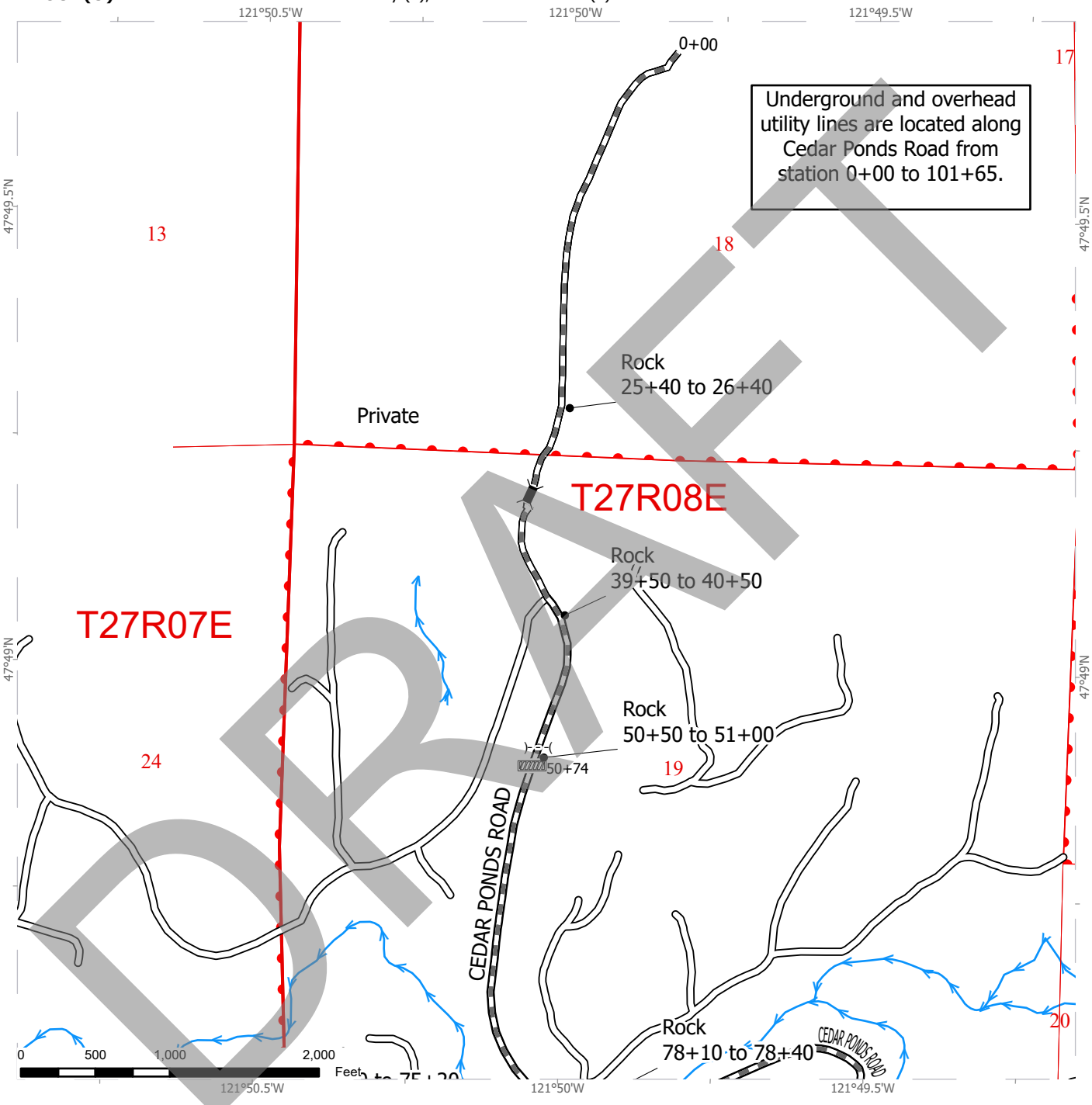
Bluffin Cruise Map



ROAD PLAN MAP

SALE NAME: BLUFFIN
AGREEMENT#: 30-104863
TOWNSHIP(S): T26R8E, T27R7E, T27R8E
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): King, Snohomish
ELEVATION RGE: 480-920



DRAFT

Existing Roads
Required Pre-Haul Maintenance
Clean Culvert
Install/Replace
Bridge
County Boundaries
Property Line

See RoadEng Design Sheets For Culvert Locations

N

Prepared By: kfry490
Accessed: 01/09/2025 13:15
12/05/2024

Modification Date: kfry490 12/2/2024

30-104863

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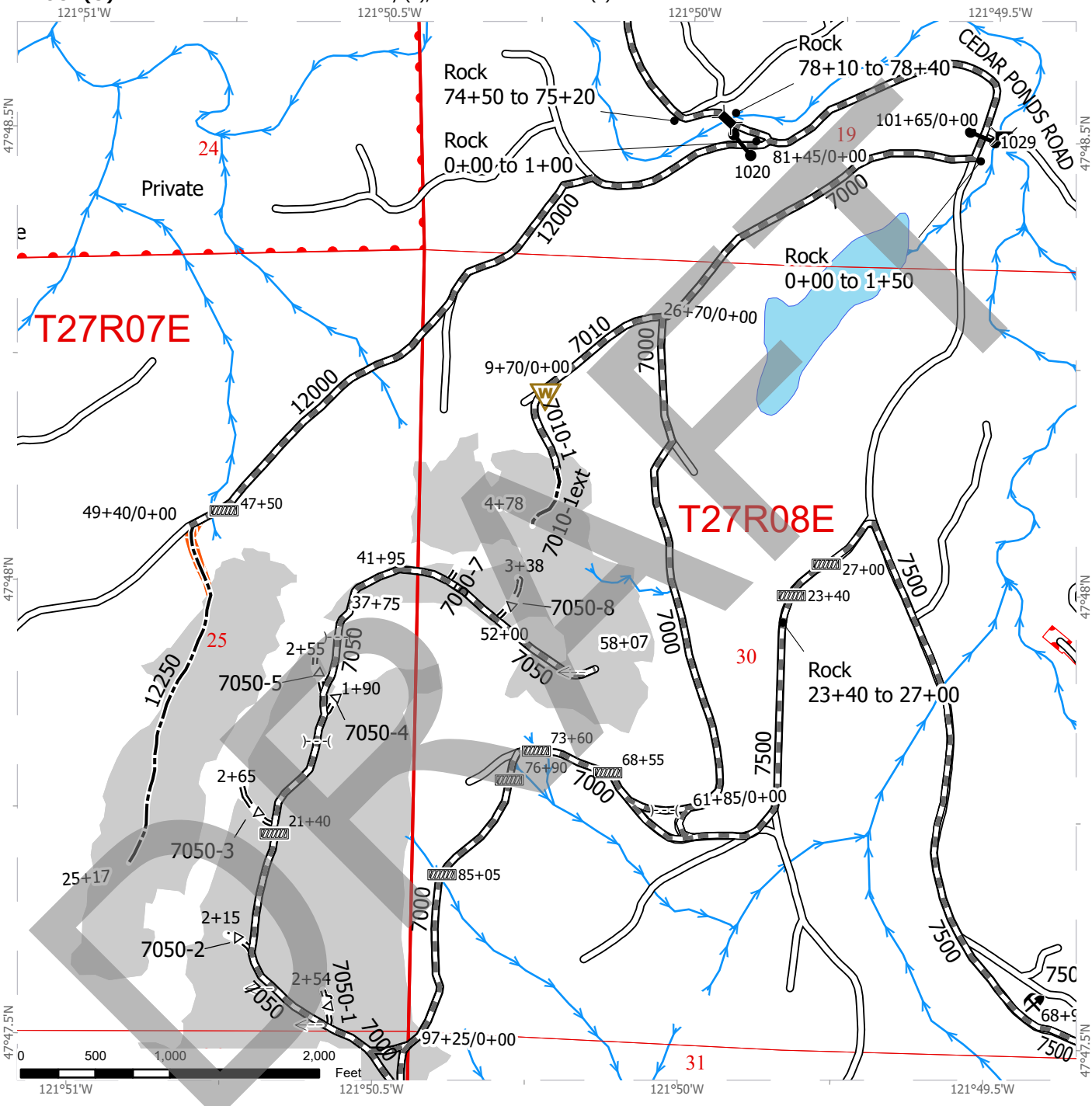

- Existing Roads
- Required Pre-Haul Maintenance
- Optional Pre-Haul Maintenance
- Optional Construction
- Clean Culvert
- Improve Ditchout
- Install/Replace
- Bridge
- Rock Pit
- Gate
- Waste Area
- Sale Area
- Right-of-Way Harvest
- County Boundaries
- Property Line

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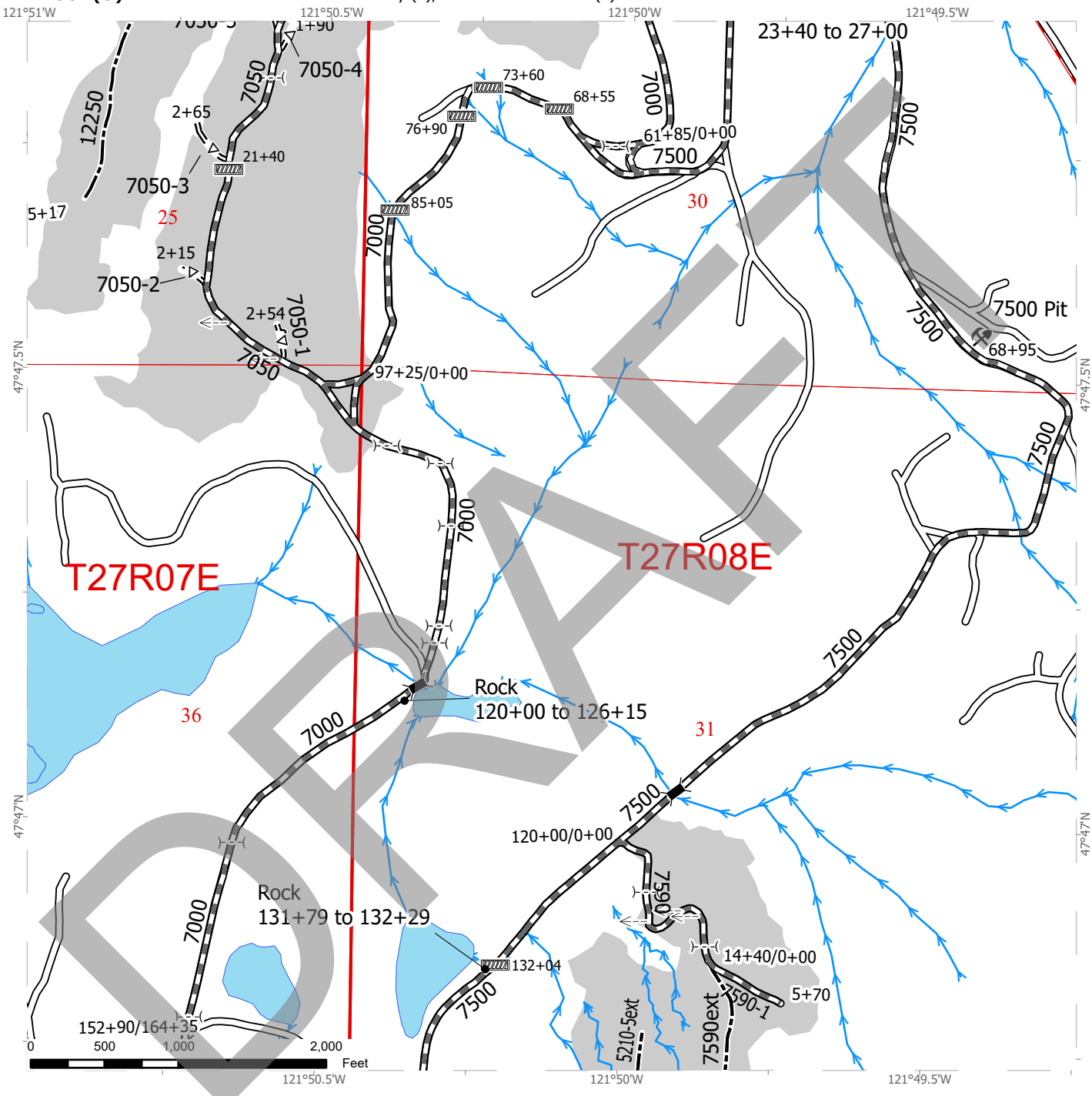

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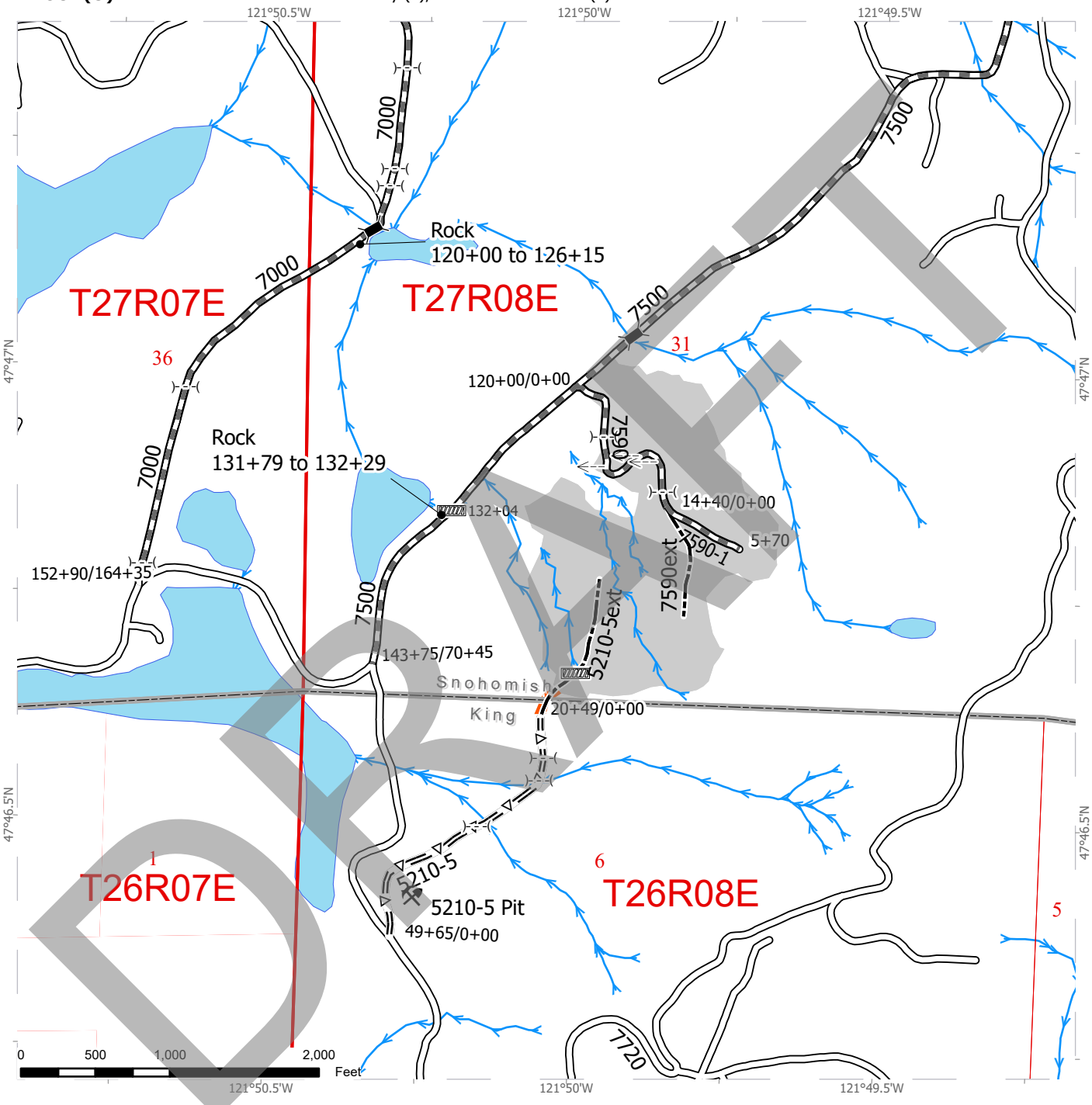

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- Optional Pre-Haul Maintenance
- Optional Construction
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30-104863

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BLUFFIN TIMBER SALE ROAD PLAN
SNOHOMISH AND KING COUNTY
SNOQUALMIE UNIT
RAINIER DISTRICT

AGREEMENT NO.: 30-104863 STAFF ENGINEER: ERIC BAUER

DATE: 02/01/2024 DRAWN & COMPILED BY: ERIC BAUER

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-2 REQUIRED ROADS

The specified work on the following roads is required.

Road	Stations	Type
7000	0+00 to 152+90	Pre-Haul Maintenance
7010	0+00 to 9+70	Pre-Haul Maintenance
7010-1	0+00 to 5+70	Pre-Haul Maintenance
7050	0+00 to 58+07	Pre-Haul Maintenance
7500	0+00 to 144+15	Pre-Haul Maintenance
7590	0+00 to 14+40	Pre-Haul Maintenance
7590-1	0+00 to 5+70	Pre-Haul Maintenance
12000	0+00 to 49+40	Pre-Haul Maintenance
Cedar Ponds Road	0+00 to 101+65	Pre-Haul Maintenance
5210-5ext	0+00 to 10+47	Abandon If Built
7050-1	0+00 to 2+54	Abandon
7050-2	0+00 to 2+15	Abandon
7050-3	0+00 to 2+65	Abandon
7050-4	0+00 to 1+90	Abandon
7050-5	0+00 to 2+55	Abandon
7050-7	0+00 to 1+16	Abandon
7050-8	0+00 to 3+38	Abandon
7010-1ext	0+00 to 4+78	Abandon If Built
7590ext	0+00 to 7+86	Abandon If Built
12250	0+00 to 25+17	Abandon If Built

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
5210-5ext	0+00 to 10+47	New Construction
7010-1ext	0+00 to 4+78	New Construction
7590ext	0+00 to 7+86	New Construction
12250	0+00 to 25+17	New Construction
5210-5	0+00 to 20+49	Pre-Haul Maintenance
7050-1	0+00 to 2+54	Pre-Haul Maintenance
7050-2	0+00 to 2+15	Pre-Haul Maintenance
7050-3	0+00 to 2+65	Pre-Haul Maintenance
7050-4	0+00 to 1+90	Pre-Haul Maintenance
7050-5	0+00 to 2+55	Pre-Haul Maintenance
7050-8	0+00 to 3+38	Pre-Haul Maintenance

0-4 CONSTRUCTION

Construction includes, but is not limited to:

- Clearing
- Grubbing
- Right-of-way debris disposal
- Excavation and/or embankment to subgrade
- Abandonment of road
- Turnout construction
- Landing construction
- Acquisition and installation of drainage structures
- Acquisition, manufacture, and application of rock

0-6 PRE-HAUL MAINTENANCE

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

- Cleaning ditches
- Cleaning culverts, and catchbasins
- Ditch reconstruction
- Reconstructing headwalls
- Constructing catchbasin and headwall
- Road Brushing
- Lock Box Replacement
- Cross drain culvert replacement
- Stream culvert replacement
- Fish Culvert Replacement
- Grading and shaping existing road surface and turnouts
- Acquisition, manufacture, and application of rock

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

Purchaser may develop an existing rock source. Rock source development will involve reducing oversize material, Clearing, Stripping and Crushing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

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 any submitted plan that changes the scope of work or environmental condition from the original road 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 Work Maps.

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 14 calendar days before the closure of any road. Construction may not close the following roads for more than the specified number of hours.

Road	Stations	Number of Allowable Closed Hours
Cedar Ponds Road	50+74	2

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 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.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

- Construction: Orange ribbon tied eye-height along centerline, w/orange pin flags or wooden lath marking centerline

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work in accordance with the construction stakes and/or 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
All Pre-haul	All	2"x48" Wooden Lath
7500	132+04	Metal RP Tags

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.

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete pre-haul road work before the start of timber haul.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan for any 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 as listed below before the following work:

Road	Stations	Notification timeframe
All Pit Locations	Drilling and Blasting	5 calendar days
7500	132+04 Culvert Replace	5 calendar days
Cedar Ponds Road	50+74 Culvert Replace	14 calendar days

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:

- Drainage installation
- Subgrade compaction
- Rock compaction
- Haul approval

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator. The operation of road construction equipment is also not allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator

Road	Activity	Closure Period
All Roads	Operation of road construction equipment and Rock Haul	November 1 to April 30

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the State.

Road	Activity	Closure Period
7500	132+04 Culvert Replace	October 1 to June 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 or Contract Clause H-130 HAULING SCHEDULE, Purchaser shall comply with a maintenance plan, when a plan is determined necessary by the Contract Administrator, 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. Purchaser shall accomplish sediment removal through silt traps, silt fences, settling ponds, or other methods as approved, in writing by the Contract Administrator.

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:

- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.

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 AND 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.

Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated 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. Purchaser shall request a SNOW PLOWING AGREEMENT each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

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.

1-43 ROAD WORK AROUND UTILITIES

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser's responsibility to identify any utilities not listed. The Purchaser shall work in

accordance with all applicable laws or rules concerning utilities. The Purchaser is responsible for all notification, including "call before you dig", and liabilities associated with the utilities and their rights-of-way.

Road	Stations	Utility	Utility Contact
Cedar Ponds Road	0+00 to 101+65	Underground and Overhead	1-800-424-5555

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.

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain the following road in a condition that will allow the passage of light administrative vehicles, except during the 1-7 TEMPORARY ROAD CLOSURE.

Road	Stations
Cedar Ponds Road	0+00 to 101+65

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before rock application and/or timber haul.

Road	Stations	Requirements
5210-5	0+00 to 20+49	Grade before timber haul
7000	0+00 to 152+90	Grade before application of rock
7010	0+00 to 9+70	Grade before application of rock
7010-1	0+00 to 5+70	Grade before timber haul
7050	0+00 to 58+07	Grade before application of rock
7050-1	0+00 to 2+54	Grade before timber haul
7050-2	0+00 to 2+15	Grade before timber haul
7050-3	0+00 to 2+65	Grade before timber haul
7050-4	0+00 to 1+90	Grade before timber haul
7050-5	0+00 to 2+55	Grade before timber haul
7050-8	0+00 to 3+38	Grade before timber haul
7590	0+00 to 14+40	Grade before application of rock
7590-1	0+00 to 5+70	Grade before application of rock

12000	0+00 to 49+40	Grade before application of rock
Cedar Ponds Road	0+00 to 101+65	Grade before application of rock

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of listed culverts before timber haul.

Road	Stations
5210-5	11+10, 16+15, 17+70
7000	63+70, 103+20, 106+90, 111+15, 118+20, 119+40, 139+30, 151+55
7050	28+65, 35+75
7590	4+85, 13+40
Cedar Ponds Road	49+65

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, catchbasins, and outlets. Work must be completed before the application of rock and/or timber haul and must be done in accordance with the TYPICAL SECTION SHEET and CULVERT AND DRAINAGE SPECIFICATION DETAIL. Pulling ditch material across the road or mixing in with the road surface is not allowed.

Road	Stations
5210-5	17+70 to 20+44
7000	139+30 to 151+55, 103+20 to 111+15
7050	0+00 to 37+85, 45+75 to 52+00, 53+75 to 58+07
7590	6+80 to 14+40
7590-1	0+00 to 5+70
12000	33+50 to 41+65
Cedar Ponds Road	20+85 to 22+85, 49+65 to 51+60

2-8 MAINTAINING EROSION CONTROL STRUCTURES

On the following road(s), Purchaser shall clean and maintain all erosion control structures. Work must be completed before timber haul. Excavated material must be scattered outside the grubbing limits.

Road	Stations	Comments
7050	6+25	Improve Ditch-out Right
7050	10+40	Improve Ditch-out Right
7050	58+07	Improve Ditch-out Right and Left
7590	6+80	Improve Ditch-out Left
7590	9+80	Improve Ditch-out Right
7590	11+25	Improve Ditch-out Right

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or 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
5210-5	0+00 to 20+49
7000	0+00 to 96+96
7010	0+00 to 9+70
7010-1	0+00 to 5+70
7050	0+00 to 58+07
7590	0+00 to 14+40
7590-1	0+00 to 5+70
12000	0+00 to 49+40
Cedar Ponds Road	0+00 to 101+65

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries 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.
- Against state owned standing trees.

SUBSECTION GRUBBING

3-10 GRUBBING

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract Clause G-010 PRODUCTS SOLD AND SALE AREA or G-011 RIGHT TO REMOVE FOREST PRODUCTS AND CONTRACT AREA, that is larger than one cubic foot in volume within the grubbing limits as shown on the TYPICAL SECTION SHEET.

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, before the application of rock and/or timber haul.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 55%.
- On locations where brush can fall into the ditch or onto the road surface.
- Against State owned 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 clearing limits 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 as approved, in writing, by the Contract Administrator.
- Road pioneering operations may not undercut the final cut slope, deposit excavated material outside the grubbing limits, or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations

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 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.

- Maximum grade change for sag vertical curves is 6% 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:

Material Type	Excavation Slope Ratio	Excavation Slope Percent
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
Common Earth (on slopes over 70%)	½:1	200
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:

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 less than 6 feet.
- 4 feet for embankment heights at centerline of 6 feet or greater.

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

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

Purchaser may construct turnouts as designated on the TURN OUT AND TURNAROUND LIST. Locations may be adjusted to fit the final subgrade alignment and sight distances. Locations changes are subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

Purchaser shall construct or 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 shall be constructed concurrently with construction of the subgrade. Ditches must drain to cross-drain culverts or ditchouts.

SUBSECTION WASTE MATERIAL (DIRT)

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.

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
7010	9+70	Left Side of Road

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

- Within 50 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.
- Within the operational area for cable landings.
- Against standing timber.

SUBSECTION SHAPING

4-55 ROAD SHAPING

Purchaser shall shape each lift of 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.

4-56 DRY WEATHER SHAPING

At any time of year, the Contract Administrator may require the application of water to facilitate shaping activities. The method of water application is subject to written approval by the Contract Administrator.

SUBSECTION COMPACTION

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 subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width except ditch. On fills deeper than 5 feet at the road shoulder Purchaser shall compact fill material in lifts no greater than 18 inches. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before rock application.

4-62 DRY WEATHER COMPACTION

At any time of year, the Contract Administrator may require the application of water to facilitate compaction activities. The method of water application is subject to written approval by the Contract Administrator.

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Purchaser shall remove berms from road shoulders to permit escape of runoff.

SUBSECTION CULVERTS

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 AND DRAINAGE LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must meet the specifications in Clauses 10-15 through 10-23.

5-7 USED CULVERT MATERIAL

The Purchaser may install used culverts on the following roads. All other roads shall have new culverts installed.

Road	Stations
5210-5ext	0+00 to 10+47
7010-1ext	0+00 to 4+78
7590ext	0+00 to 7+86
12250	0+00 to 25+17

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL and materials listed in Clause 5-13 CONTINGENCY CULVERTS that are not installed shall become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

5-13 CONTINGENCY CULVERTS

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator.

Road	Size
On any portion of road used for timber or rock haul	• 18”x30’ culvert • 24”x40’ culvert • 18” culvert band • 24” culvert band

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert, downspout, flume and energy dissipator 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”. All culverts shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet**.** Shorter section 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 30 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 12%.

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.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. QUARRY SPALLS shall meet the specifications in Clause 6-43.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Purchaser shall construct catch basins to resist erosion in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long.

5-26 HEADWALLS FOR CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culvert(s), Purchaser shall place armoring 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. Rock must be set in place by machine.

Road	Stations	Rock Type
5210-5ext	5+10	Quarry Spalls
7000	73+60, 76+90, 85+05	Quarry Spalls
7500	132+04	Quarry Spalls
12000	47+50	Quarry Spalls

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached 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.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

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(s) 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(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

Source	Location	Rock Type
5210-5	NW ¼ NW ¼ of Sec 6	Pit Run

	T26NR08E W.M.	Quarry Spalls
7500	SE ¼ SE ¼ of Sec 30 T27NR08E W.M.	2 Inch Minus Pit Run Quarry Spalls

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator.

Source	Location	Rock Type	Quantity
7500	SE ¼ SE ¼ of Sec 30 T27NR08E W.M.	2 Inch Minus	1986 CY

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.

SUBSECTION ROCK SOURCE DEVELOPMENT

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. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

Source	Location	Rock Type
7500	SE ¼ SE ¼ of Sec 30 T27NR08E W.M.	2 Inch Minus Pit Run Quarry Spalls

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. 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. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

Source	Rock Type
5210-5 Rock Source	Pit Run Quarry Spalls

Rock source development plans prepared by the Purchaser must show the following information:

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.
- Rock source reclamation plan describing how the area will be left in a condition that will ensure public safety, minimize environmental impacts and meet specifications in clause 6-12 ROCK SOURCE SPECIFICATIONS.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT PLAN:

- Pit walls may not be undermined or over steepened. The maximum slope of the walls must be consistent with recognized engineering standards for the type of material being excavated in accordance with the following table:

Material	Maximum Slope Ratio (Horiz. :Vert.)	Maximum Slope Percent
Sand	2:1	50
Gravel	1.5:1	67
Common Earth	1:1	100
Fractured Rock	0.5:1	200
Solid Rock	0:1	vertical

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 600 cubic yards.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.

- Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 calendar days before any drilling. The drilling and shooting plan must include, at a minimum, the mapped location and spacing of all holes to be loaded, the type of blasting agent used, the powder factor calculated and the units of same, stem amount held per hole. After drilling, the type of rock encountered while drilling e.g. hard black, soft brown, etc shall be amended to submitted plan.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK GRADATION TYPES

Purchaser shall manufacture 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**.** Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

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. This clause applies to 2 INCH MINUS CRUSHED ROCK.

6-23 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- The crushing operation must be concluded within 30 working days from the time it begins.

SUBSECTION ROCK GRADATIONS

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.

6-41 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. 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.

6-43 QUARRY SPALLS

% Passing 8" square sieve	100%
% Passing 3" square sieve	40% maximum
% Passing 3/4" square sieve	10% maximum

Rock may not contain more than 5 percent vegetative debris or trash. All percentages are by weight.

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are compacted 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.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade including: ditches, headwalls, catch basins, culverts, energy dissipaters, ditch-outs, subgrade shaping and compacting 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. The Contract Administrator will direct locations for rock that is to be applied as spot patching. 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.

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, if hauling takes place from May 1 to October 31 the Purchaser may place less rock than shown on the ROCK LIST.

Road	Stations
5210-5ext	0+00 to 10+47
7010-1ext	0+00 to 4+78
7590ext	0+00 to 7+86
12250	0+00 to 25+17

6-76 PREHAUL ROCK APPLICATION

On the following road(s), prior to timber haul, Purchaser shall apply rock in accordance with the quantities shown on the ROCK LIST. After rock has been applied and shaped, Purchaser shall compact maintained road surfaces in accordance with the COMPACTION LIST by routing equipment over the entire width. Rock shall be compacted prior to timber haul.

Road	Stations
7000	0+00 to 1+50
7000	68+30 to 68+80
7000	73+35 to 73+85
7000	76+65 to 77+15
7000	84+80 to 85+30
7000	120+00 to 126+15
7010	0+00 to 9+70
7050	0+00 to 21+60
7050	21+60 to 37+75
7050	41+95 to 52+00
7050	53+75 to 58+07
7500	23+40 to 27+00
7500	131+79 to 132+29
7590	0+00 to 14+40 (Spot Rock)
7590-1	0+00 to 5+70 (Spot Rock)
12000	0+00 to 1+00
12000	1+00 to 47+50 (Spot Rock)
Cedar Ponds	25+40 to 26+40
Cedar Ponds	39+50 to 40+50
Cedar Ponds	50+50 to 51+00
Cedar Ponds	74+50 to 75+20 (Turnout)
Cedar Ponds	78+10 to 78+40 (Turnout)

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

7-1 SIGN INSTALLATION

The Purchaser shall install and maintain the following road signs. Signs will be installed a minimum of 14 days before road closure.

Road	Station	Sign text
Cedar Ponds Road	50+74	Notice of temporary road closure (*insert dates*)

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 and according to Forest Practice Permit.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

Purchaser must construct bank protection in accordance with the stream crossing, design, specifications, and details to prevent the undermining of the structure.

7-55 LARGE CULVERT INSTALLATION

Purchaser shall provide and install large culverts in accordance with the T27R08E-1 MARCKWORTH 7500 CULVERT design.

Road	7500
Station	132+04
Type	Round
Material and Coating Type*	CMP Aluminized
Span	36 in.
Rise	36 in.
Length (ft.)	26.5
Depth of Cover Material	18 in.
Corrugations	2 2/3”x1/2”
Gauge	14

* See Clause 10-15 CORRUGATED STEEL CULVERT for culvert specifications.

7-56 STEEL PIPE, PIPE ARCH, AND STRUCTURAL PLATE INSTALLATION

Purchaser shall install steel pipe in accordance with the National Corrugated Steel Pipe Association "Installation Manual for Corrugated Steel Pipe, Pipe Arches, and Structural Plate.” Installation is subject to the inspection and approval of the Contract Administrator before placement and backfill. The latest edition of the NCSPA Installation Manual can be found at www.ncspa.org.

7-57 CULVERT SHAPE CONTROL

Purchaser shall monitor the culvert shape during backfill and compaction. Special attention must be paid to maintaining the structure’s rise dimensions, concentricity, and smooth uniform curvature. If compaction methods are resulting in peaking or deflection of the culvert, Purchaser shall modify the compaction method to achieve the appropriate end result.

SUBSECTION GATES AND FENCES

7-71 GATE CLOSURE DURING HAUL

On the following road(s), Purchaser shall keep gates closed and locked except during active haul. If the Purchaser elects to use an alternative plan for gate security, the Purchaser must submit a detailed plan to the Contract Administrator for written approval.

Road	Station	Gate No.
7000	0+50	1029
12000	0+50	1020

7-75 GATE MAINTENANCE

Purchaser shall conduct gate maintenance as listed. The removed lock box shall be given to the Contract Administrator.

Road	Station	Gate Number	Requirements
7000	0+50	1029	Install state supplied lock box

7-77 LOCKBOX SUPPLIED BY STATE

The lock box is located at the North Bend DNR Office at 202 Thrasher Ave NE North Bend, WA 98045. After arranging with the Contract Administrator, Purchaser shall transport the lock box to the installation site.

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 3 inch layer of straw to all exposed soils that have potential to deliver to typed water.

SUBSECTION REVEGETATION

8-15 REVEGETATION

On the following road(s), Purchaser shall spread grass seed and 3 inch layer of straw on all exposed soils that have the potential to deliver to typed water. Seed shall be covered within 3 days of application. Alternative methods of seeding and mulching must be approved in writing by the Contract Administator.

Road	Location	Qty	Type	Comments
5210-5ext	5+10	50 lb/acre	Pasture Mix	Apply when constructed
7000	73+60, 76+90, 85+05	50 lb/acre	Pasture Mix	Apply when constructed
7500	132+04	50 lb/acre	Pasture Mix	Apply when constructed
12000	47+50	50 lb/acre	Pasture Mix	Apply when constructed

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed Pasture mix seed and straw.

8-17 REVEGETATION TIMING

Purchaser shall revegetate immediately after road work is completed unless alternative plan approved in writing by the Contract Administrator. 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.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the BARRICADE DETAIL.

Road	Stations
5210-5ext	0+00
7050-1	0+00
7050-2	0+00
7050-3	0+00
7050-4	0+00
7050-5	0+00
7050-7	0+00
7050-8	0+00
7010-1ext	0+00
7590ext	0+00
12250	0+00

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.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

SUBSECTION DECOMMISSIONING AND ABANDONMENT

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads before the termination of this contract**.**

Road	Stations	Type
5210-5ext	0+00 to 10+47	Abandonment
7050-1	0+00 to 2+54	Abandonment

7050-2	0+00 to 2+15	Abandonment
7050-3	0+00 to 2+65	Abandonment
7050-4	0+00 to 1+90	Abandonment
7050-5	0+00 to 2+55	Abandonment
7050-7	0+00 to 1+16	Abandonment
7050-8	0+00 to 3+38	Abandonment
7010-1ext	0+00 to 4+78	Abandonment
7590ext	0+00 to 7+86	Abandonment
12250	0+00 to 25+17	Abandonment

9-22 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 100 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 per cent 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.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Remove culverts from State Land.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Construct earthen barricade as per clause 9-1 EARTHEN BARRICADES

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be aluminized (aluminum type 2 coated meeting AASHTO M-274).

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

Metal coupling and end bands must meet the AASHTO specification designated for the culvert and must have matching corrugations. Culverts over 24 inches must have bands with a minimum width of 24 inches.

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.

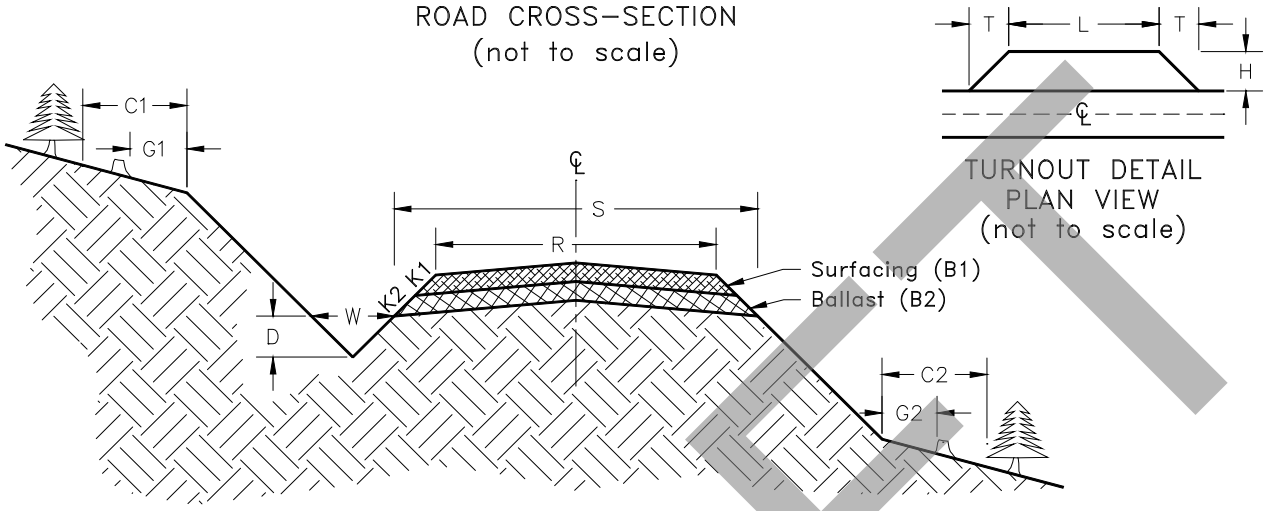
SECTION 11 SPECIAL NOTES

11-4 CLEANING BLOWDOWN FROM ROAD RIGHT OF WAY

On the following road(s), blowdown, including limbs, shall be removed from the road surface, cutslope, and ditchline.

Road	Stations
5210-5	0+00 to 20+49
7050	0+00 to 58+07
7500	120+20 to 144+15
12000	0+00 to 49+40

TYPICAL SECTION SHEET (pg 1 of 2)



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch Width (feet)	Ditch Depth (feet)	Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
				S	R	W	D		G1	G2	C1	C2	Clause	Clause
5210-5	0+00	20+49	C		12	3	1	4					4-5	4-6
5210-5ext	0+00	10+47	C	16	12	3	1	4	0	0	0	0	4-5	4-6
7000	0+00	152+90	C		12	3	1	4					4-5	4-6
7010	0+00	9+70	C		12	3	1	4					4-5	4-6
7010-1	0+00	5+70	C		12	3	1	4					4-5	4-6
7010-1ext	0+00	4+78	C	16	12	3	1	4	0	0	0	0	4-5	4-6
7050	0+00	58+07	C		12	3	1	4					4-5	4-6
7050-1	0+00	2+54	C		12	3	1	4					4-5	4-6
7050-2	0+00	2+15	C		12	3	1	4					4-5	4-6
7050-3	0+00	2+65	C		12	3	1	4					4-5	4-6
7050-4	0+00	1+90	C		12	3	1	4					4-5	4-6
7050-5	0+00	2+55	C		12	3	1	4					4-5	4-6
7050-7	0+00	1+16	C		12	3	1	4					4-5	4-6
7050-8	0+00	3+38	C		12	3	1	4					4-5	4-6
7500	0+00	144+15	C		12	3	1	4					4-5	4-6
7590	0+00	14+40	C		12	3	1	4					4-5	4-6
7590ext	0+00	7+86	C	16	12	3	1	4	0	0	0	0	4-5	4-6

Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch Width (feet)	Ditch Depth (feet)	Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits (feet)		Cut Slope Ratio	Fill Slope Ratio
7590-1	0+00	5+70	C		12	3	1	4					4-5	4-6
12000	0+00	49+40	C		12	3	1	4					4-5	4-6
12250	0+00	5+00	C	16	12	3	1	4	0	0	TAGS	TAGS	4-5	4-6
	5+00	25+17	C	16	12	3	1	4	0	0	0	0	4-5	4-6
Cedar Ponds	0+00	101+65	B		16	3	1	4					4-5	4-6

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout Length	Turnout Width	Turnout Taper
			K2	B2	**Pit Run**				L	H	T
5210-5ext*	0+00	10+47	1 ½ :1	8''	35	10.47	367	5210-5 Rock Source, 7500 Pit or Commercial			
7010-1ext*	0+00	4+78	1 ½ :1	12''	55	4.78	263				
7590ext*	0+00	7+86	1 ½ :1	12''	35	7.86	275				
12250*	0+00	25+17	1 ½ :1	12''	55	25.17	1385				
Landings and Turnouts*							300				
					Quarry Spalls						
Culvert Headwalls and Dissapators							48	5210-5 Rock Source, 7500 Pit or Commercial			

Pit Run Total__2590__Cubic Yards
Quarry Spalls Total__48__Cubic Yards

Ballast Total__2638__Cubic Yards

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K1	B1	**2 Inch Minus**				L	H	T
7000	0+00	1+50	1 ½ :1	6"	26	1.5	39	7500 Stockpile or Commercial			
	68+30	68+80	1 ½ :1	6"	26	0.5	13				
	73+35	73+85	1 ½ :1	6"	26	0.5	13				
	76+65	77+15	1 ½ :1	6"	26	0.5	13				
	84+80	85+30	1 ½ :1	6"	26	0.5	13				
	120+00	126+15	1 ½ :1	6''	26	6.15	160				
7010	0+00	9+70	1 ½ :1	4''	18	9.7	175				
7050	0+00	21+60	1 ½ :1	6''	26	21.6	562				
	21+60	37+75	1 ½ :1	4''	18	16.15	291				
	41+95	52+00	1 ½ :1	4"	18	10.05	181				
	53+75	58+07	1 ½ :1	4''	18	4.32	78				
7500	23+40	27+00	1 ½ :1	6''	26	3.6	94				
	131+79	132+29	1 ½ :1	6''	26	0.5	13				
7590	0+00	14+40	1 ½ :1	Spot Rock			100				
7590-1	0+00	5+70	1 ½ :1	Spot Rock			20				
12000	0+00	1+00	1 ½ :1	6''	26	1	26				
	1+00	47+50	1 ½ :1	Spot Rock			100				
Cedar Ponds	25+40	26+40	1 ½ :1	6''	26	1	26				
	39+50	40+50	1 ½ :1	6''	26	1	26				
	50+50	51+00	1 ½ :1	6''	26	0.5	13				
	74+50	75+20	1 ½ :1	Turnout Left			20				
	78+10	78+40	1 ½ :1	Turnout Left			10				

2 Inch Minus Total ___1986___ Cubic Yards

*Optional Rock: If Purchaser elects to haul on optional rock roads in wet weather, the depth listed above is recommended but not required.

NOTE: Yardages are estimated on a compacted (In-Place) basis. Compliance of required rock will be based on compacted depth measurement. **Apply appropriate factors to determine loose amounts for estimating purposes.** Roads and rock quantities are designed for dry weather use. If Purchaser elects to haul in wet weather additional rock may be obtained from the rock pits listed in Section 6 at the Purchaser's expense and with prior written approval from the Contract Administrator.

COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
All New Construction			Subgrade,rock	12	Smooth Drum Vibratory Roller	12,000	4 low freq. vibe on	3
All Reconstruction			Subgrade,rock	6	Smooth Drum Vibratory Roller	12,000	4 low freq. vibe on	3
All Pre-Haul maintenance			After pre-haul grading	6	Smooth Drum Vibratory Roller	12,000	2 low freq. vibe on	3
Culvert Backfill			Backfill material	6	Walk behind plate compactor	175	-	-

TURNOUT AND TURNAROUND LIST

Road Number	Begin L-Station	END L-STATION	TURNOUT WIDTH (H)	FULL WIDTH LENGTH (L)	TAPER LEGNTH (T)	COMMENTS
7010-1EXT			12	50	25	A maximum of 3 turnouts allowed.
7590EXT			12	50	25	A maximum of 5 turnouts allowed.
5210-5EXT			12	50	25	A maximum of 5 turnouts allowed.
12250			12	50	25	A maximum of 7 turnouts allowed.

CULVERT AND DRAINAGE LIST, pg 1 of 1

Road Number	Location	Culvert		Length (ft)			Riprap (C.Y.)			Backfill	Placement	Const.	Remarks
		Dia. (in)	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type	Material*	Method*	Staked*	
5210-5	11+10												Clean Inlet/Outlet
	16+15												Clean Inlet/Outlet
	17+70												Clean Inlet/Outlet
5210-5ext	2+62	24	TEMP	30			1	1.5	QS	NT			Install
	5+10	24	TEMP	30			1	1.5	QS	NT			Type 5 Install
7000	63+70												Clean Inlet/Outlet
	68+55	24	PD	35			2	2.5	QS	NT			Replace
	73+60	24	PD	30			2	2.5	QS	NT			Type 5 Replace
	76+90	24	PD	30			2	2.5	QS	NT			Type 5 Replace
	85+05	24	PD	35			2	2.5	QS	NT			Type 4 Replace
	103+20												Clean Inlet/Outlet
	106+90												Clean Inlet/Outlet
	111+15												Clean Inlet/Outlet
	118+20												Clean Inlet/Outlet
	119+40												Clean Inlet/Outlet
	139+30												Clean Inlet/Outlet
	151+55												Clean Inlet/Outlet
7050	6+25												Improve DOR
	10+40												Improve DOR
	21+40	18	PD	30			1	1.5	QS	NT			Install
	28+65												Clean Inlet/Outlet
	35+75												Clean Inlet/Outlet
	58+07												Improve DOR/DOL
7010-1ext	3+58	18	TEMP	30						NT			Install
7500	23+40	18	PD	30			1	1.5	QS	NT			Install
	27+00	18	PD	30			1	1.5	QS	NT			Install
	132+04	36	AS14	26.5			2	2.5	QS	NT			Type 3 Replace
7590	4+85												Clean Inlet/Outlet
	6+80												Improve DOL
	9+80												Improve DOR
	11+25												Improve DOR
	13+40												Clean Inlet/Outlet
7590ext	0+67	18	TEMP	30						NT			Install
	3+74	24	TEMP	30			1	1.5	QS	NT			Install
	5+45	24	TEMP	30			1	1.5	QS	NT			Install
	7+15	18	TEMP	30						NT			Install
12000	47+50	24	PD	40			2	2.5	QS	NT			Type 4 Replace
12250	6+21	18	TEMP	30						NT			Install
	11+98	18	TEMP	30						NT			Install
	17+71	18	TEMP	30						NT			Install
Cedar Ponds	49+65												Clean Inlet/Outlet
	50+74	18	PD	35			1	1.5	QS	NT			Replace
As		18	PD	30			1	1.5	QS	NT			Contingency
Directed		24	PD	40			1	1.5	QS	NT			Contingency
By C.A.		18	Poly	Band									Contingency
and on any road used by		24	Poly	Band									Contingency

Road Number	Location	Culvert Dia. (in)	Culvert Type	Length (ft) Culvert	Length (ft) Downspt	Length (ft) Flume	Riprap (C.Y.) Inlet	Riprap (C.Y.) Outlet	Riprap (C.Y.) Type	Backfill Material*	Placement Method*	Const. Staked*	Remarks
the sale for timber or rock haul													

* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648

AS12 = Aluminized Steel AASHTO No. M274, 14 Gauge

TEMP = Temporary Culvert

Key:

QS - Quarry Spalls

LL - Light Loose Riprap

SR - Shot Rock

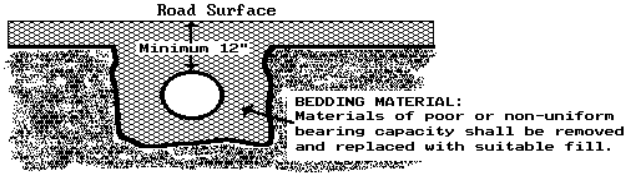
NT - Native (bank run)

SL - Select Fill

Flume - Half round pipe

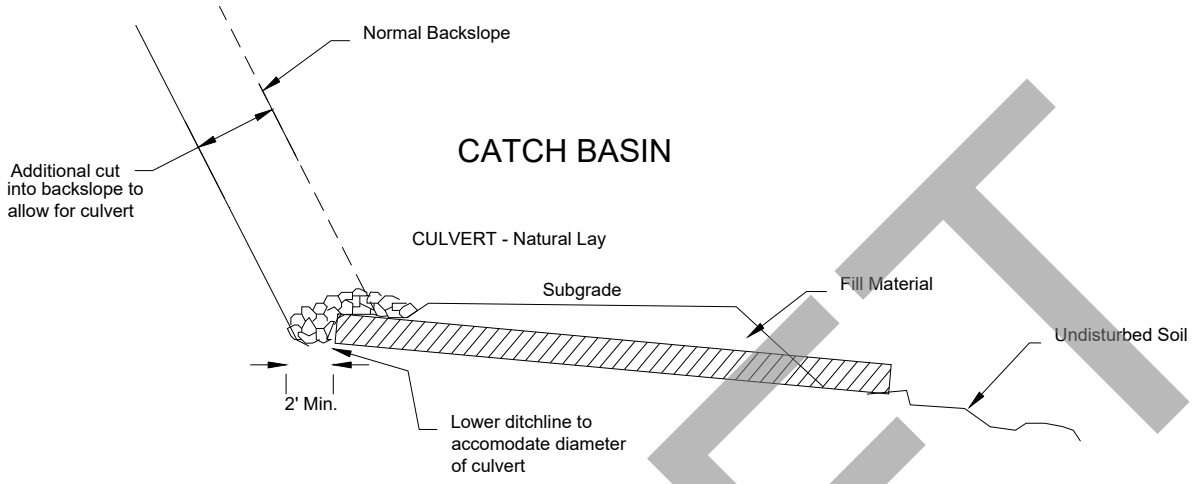
Downspout - Full round pipe

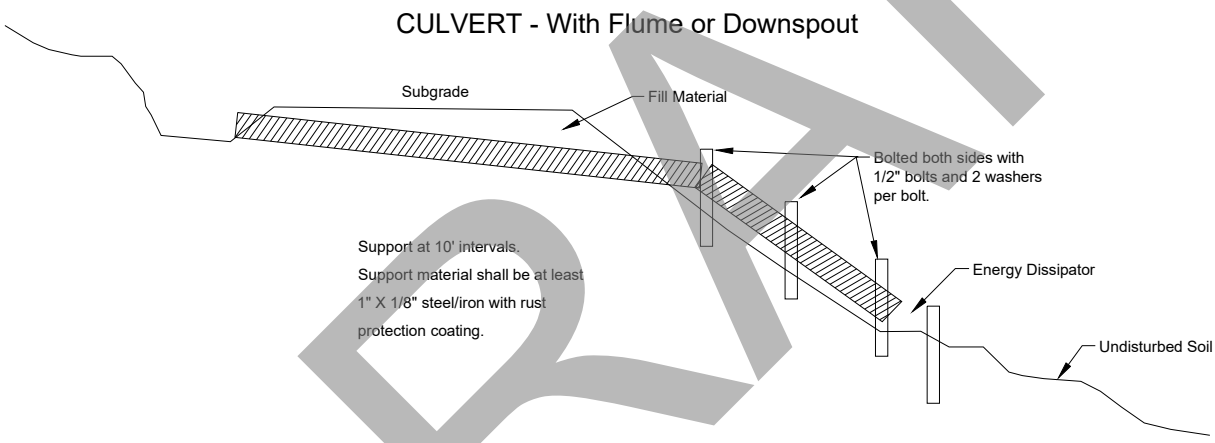
CULVERT BACKFILL AND BASE PREPARATION
(For culverts less than 36")



CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 1 of 3)

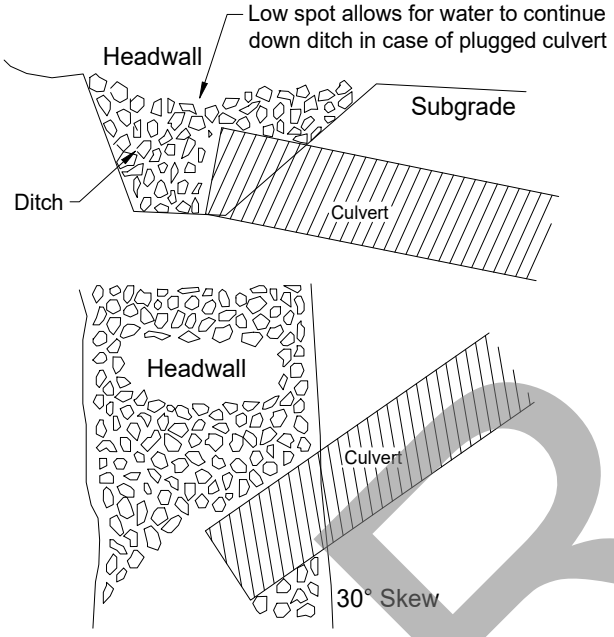




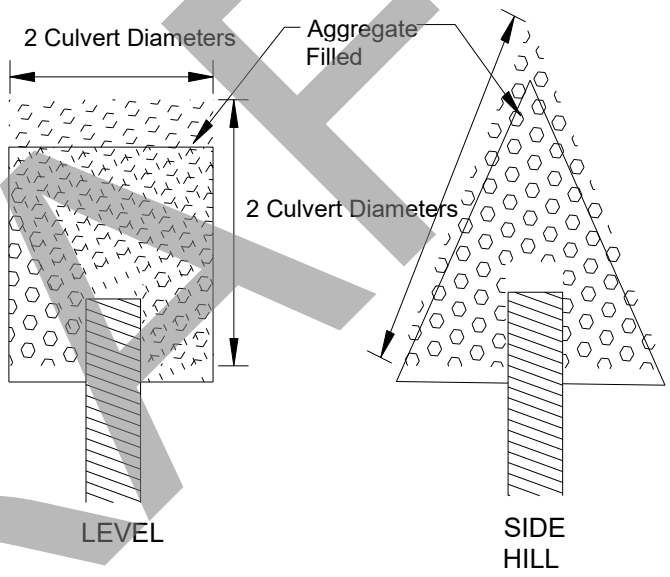
CULVERT AND DRAINAGE SPECIFICATION DETAIL

Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed so that the pipe is uniformly supported along the barrel.

HEADWALLS



ENERGY DISSIPATORS



Headwalls to be constructed of material that will resist erosion.

Dissipator Specifications:
Depth: 1 culvert diameter
Aggregate: as specified in the CULVERT LIST.

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

2. The corrugated pipe shall be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it shall be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.

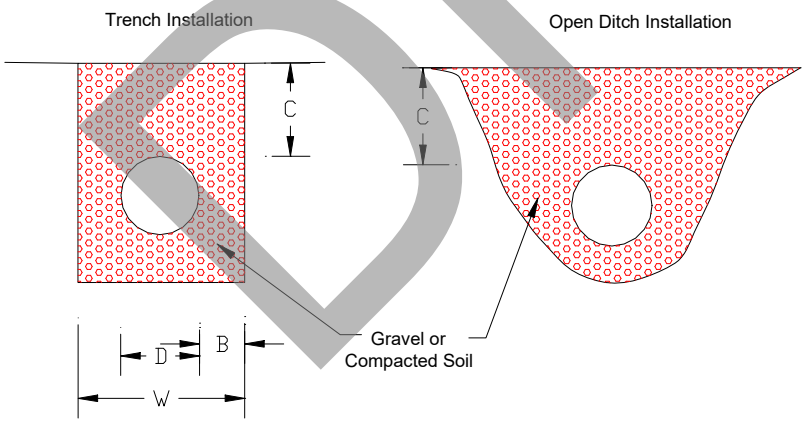
3. Either crushed aggregate or flexible (asphalt) pavement may be laid as part of the minimum cover requirements.

4. Site conditions and availability of bedding materials often dictate the type of installation method used.

5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.

MINIMUM DIMENSIONS

Trench or Open Ditch Installation



Nominal Diameter	Minimum Thickness	Minimum Cover	Min. Trench Width
D	B	C	W
18"	6"	12"	36"
24"	6"	12"	42"
30"	6"	12"	48"
6"	6"	12"	54"

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS
(Sheet 1 of 2)

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides up to 100 cubic yards in volume from ditches and the roadway. Repair fill-failures 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

- Shape 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.
- 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.

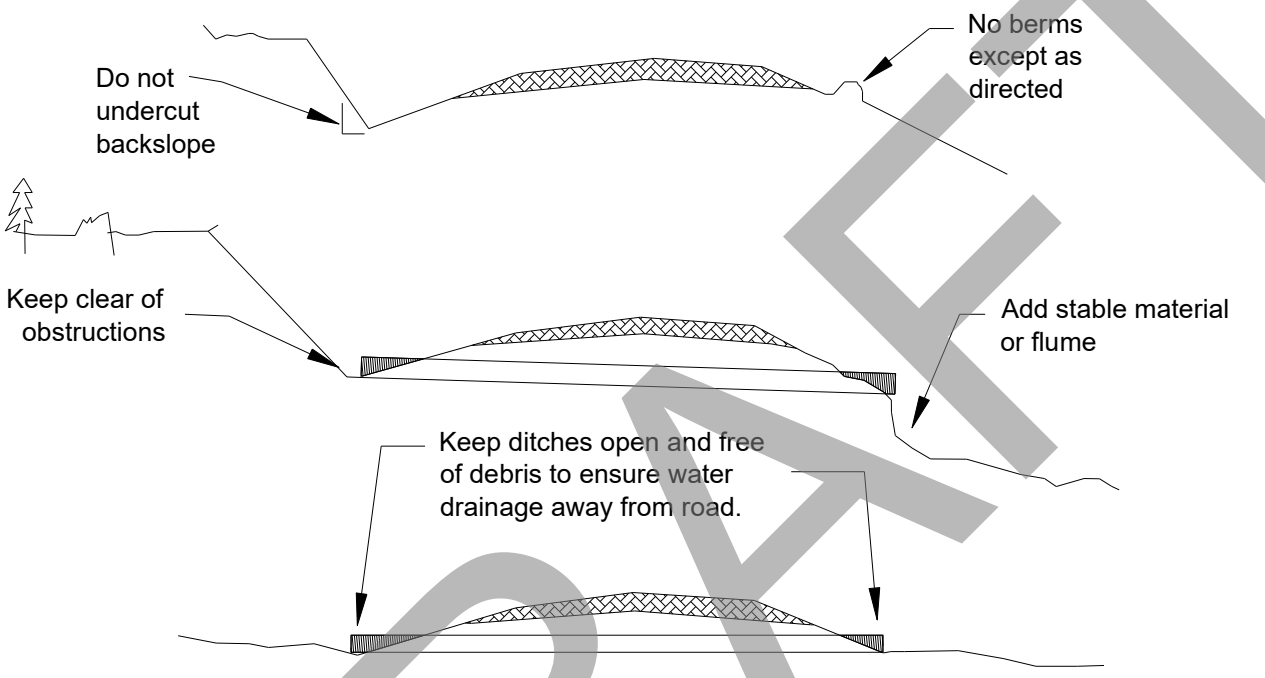
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS
(Sheet 2 of 2)

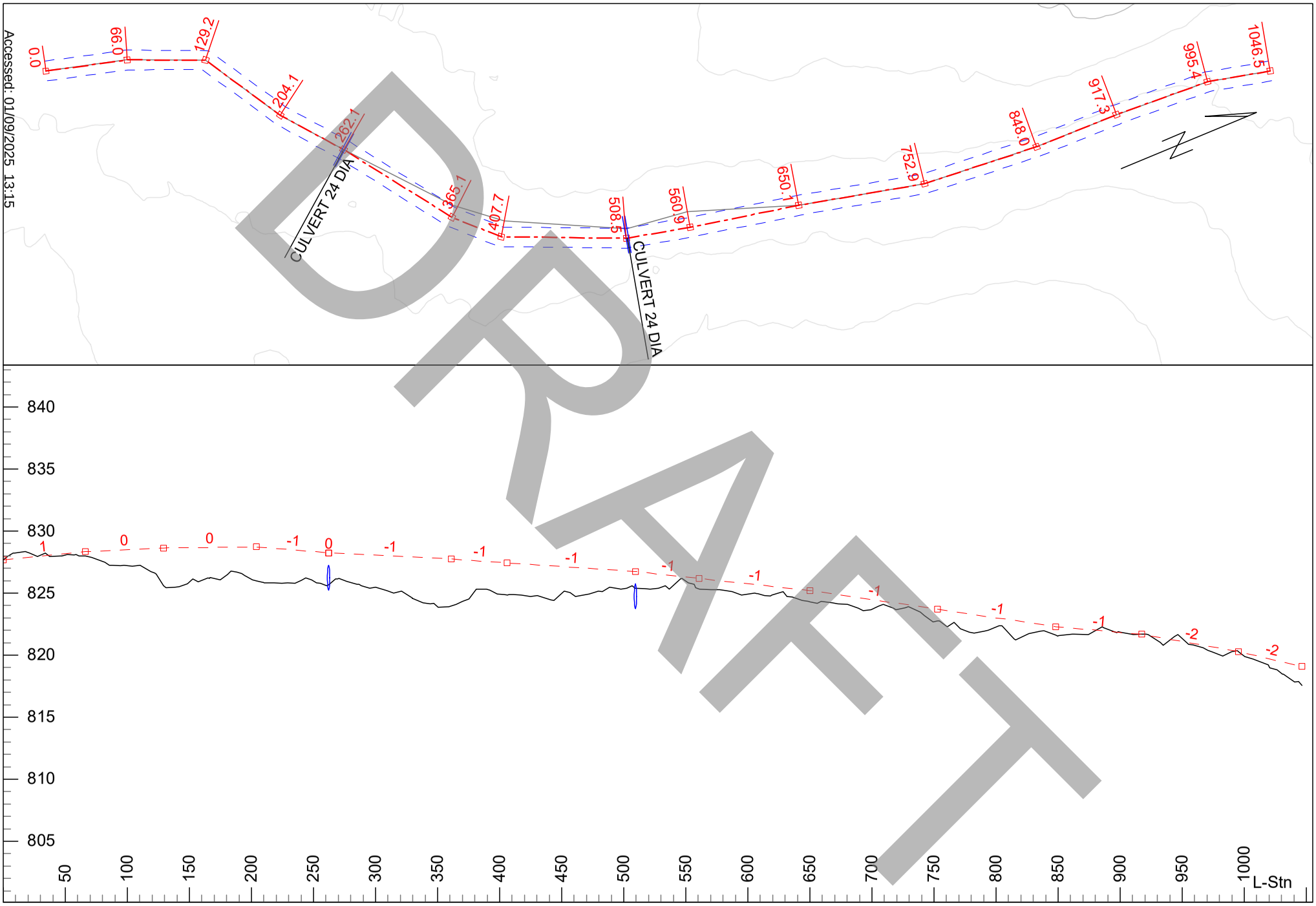
Termination of Use or End of Season

- 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.





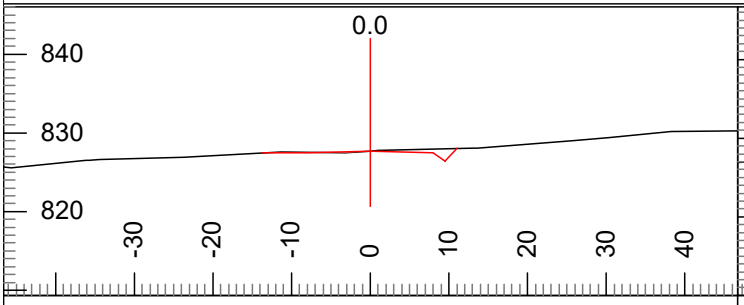
Bluffin Timber Sale
5210-5ext Rd
Contract #: 30-104863
GPS/Lidar Design

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Plan Scale 1:1200	
Profile Vert Scale 1:120	
Profile Horz Scale 1:1200	

Engineer: E. Bauer	
24/01/22	Sheet 1 of 1

Softree Section	Scale 1:293	P. 1
K:\timber_sales\pre_sales\bluffin\engineer\5210-5 ext\5210_5ext		24/01/22



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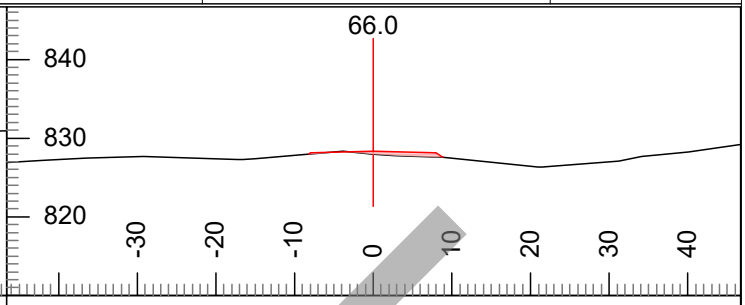
P-Stn :		Grd.Lst:	n/a	Index:		Stk R X:	11.1		



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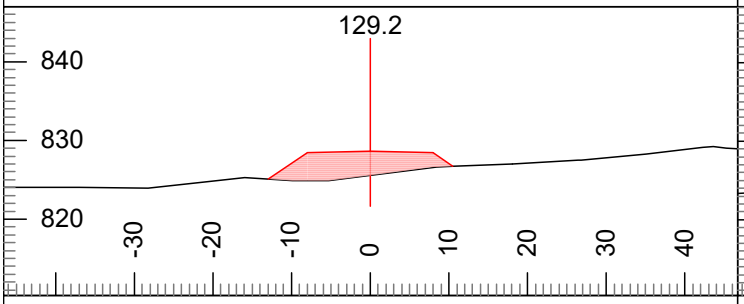

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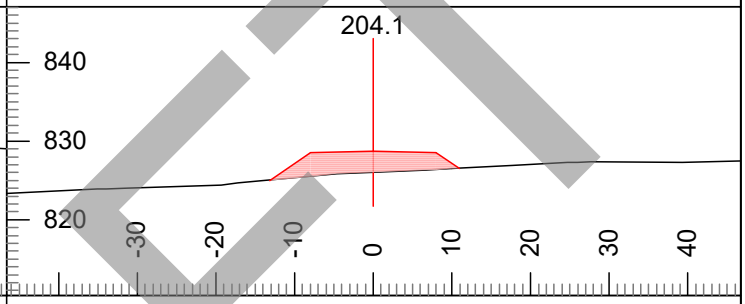
P-Stn :		Grd.Lst:	0	Index:		Stk R X:	10.5		



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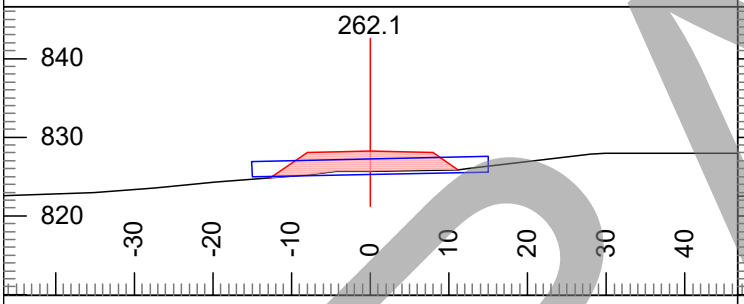
P-Stn :		Grd.Lst:	0	Index:		Stk R X:	10.9		



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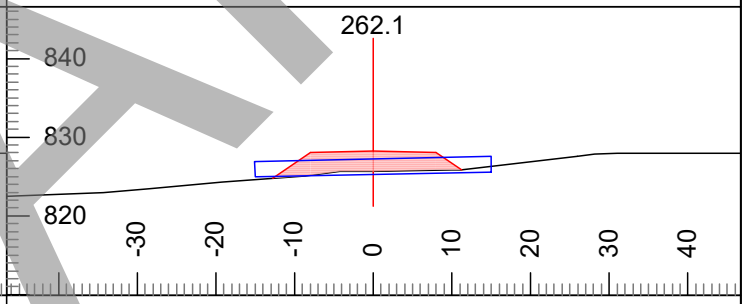
P-Stn :		Grd.Lst:	-1	Index:		Stk R X:	11.2		



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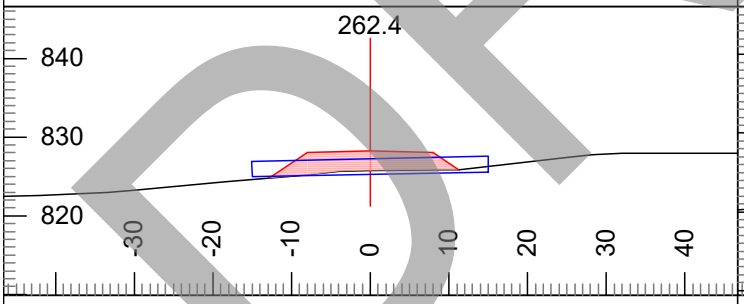
P-Stn :		Grd.Lst:	0	Index:		Stk R X:	11.2		



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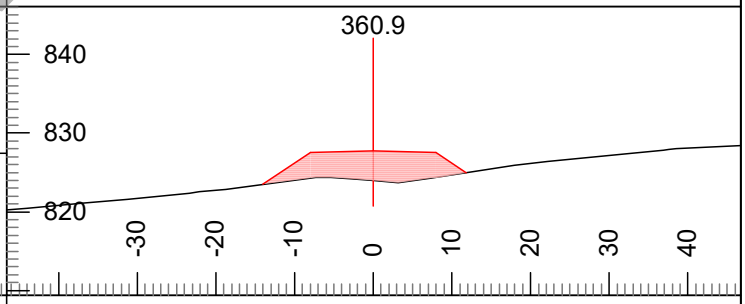

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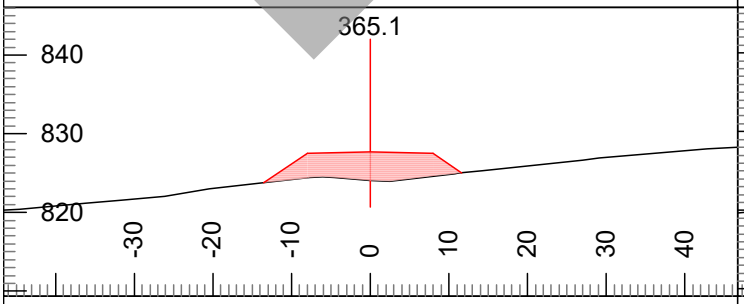

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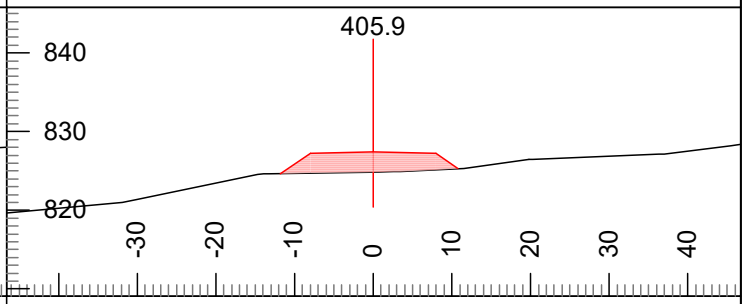

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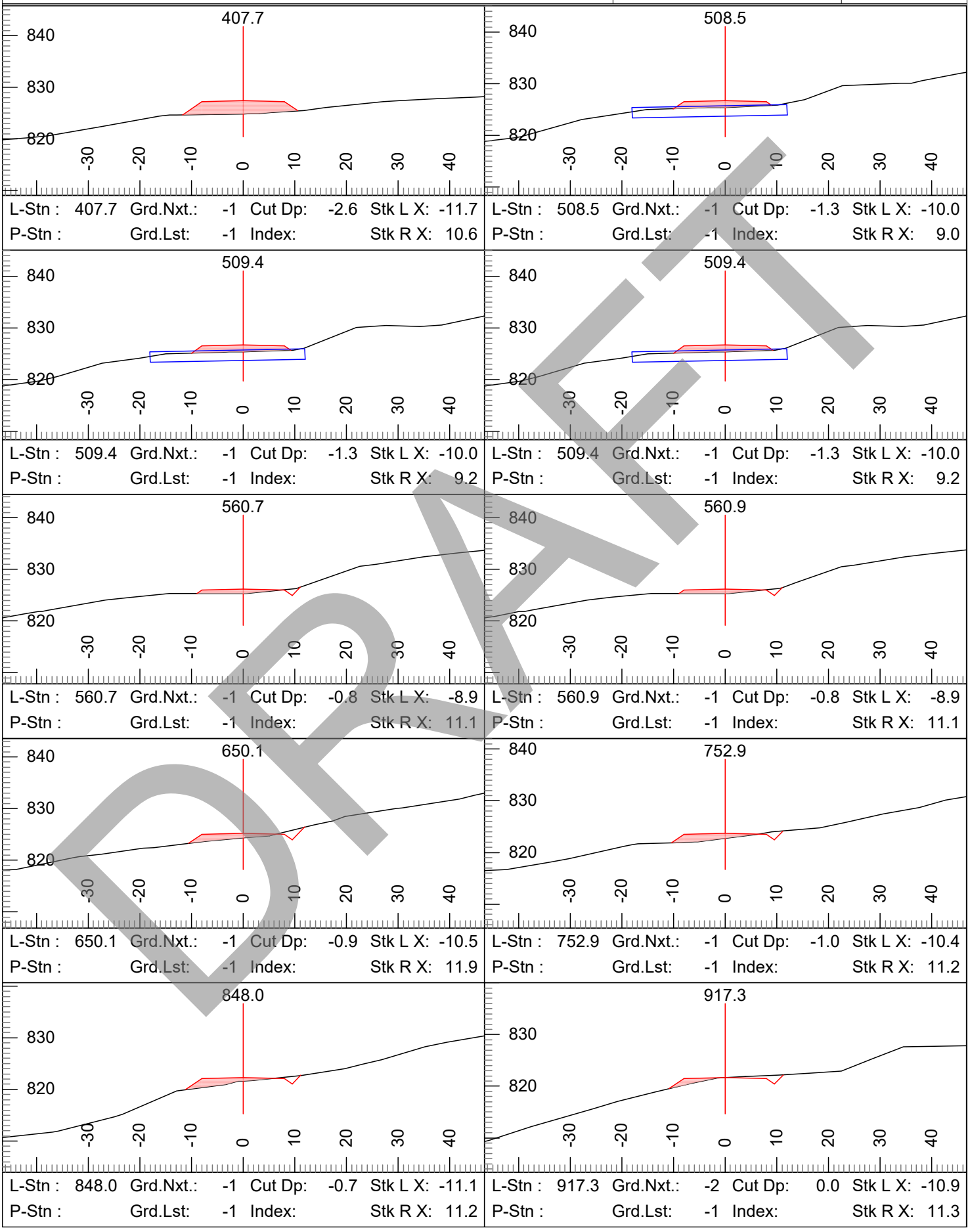
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P-Stn : Grd.Lst: -1 Index: Stk R X: 10.6
508.5
L-Stn : 508.5 Grd.Nxt.: -1 Cut Dp: -1.3 Stk L X: -10.0
P-Stn : Grd.Lst: -1 Index: Stk R X: 9.0
509.4
L-Stn : 509.4 Grd.Nxt.: -1 Cut Dp: -1.3 Stk L X: -10.0
P-Stn : Grd.Lst: -1 Index: Stk R X: 9.2
509.4
L-Stn : 509.4 Grd.Nxt.: -1 Cut Dp: -1.3 Stk L X: -10.0
P-Stn : Grd.Lst: -1 Index: Stk R X: 9.2
560.7
L-Stn : 560.7 Grd.Nxt.: -1 Cut Dp: -0.8 Stk L X: -8.9
P-Stn : Grd.Lst: -1 Index: Stk R X: 11.1
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L-Stn : 560.9 Grd.Nxt.: -1 Cut Dp: -0.8 Stk L X: -8.9
P-Stn : Grd.Lst: -1 Index: Stk R X: 11.1
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L-Stn : 650.1 Grd.Nxt.: -1 Cut Dp: -0.9 Stk L X: -10.5
P-Stn : Grd.Lst: -1 Index: Stk R X: 11.9
752.9
L-Stn : 752.9 Grd.Nxt.: -1 Cut Dp: -1.0 Stk L X: -10.4
P-Stn : Grd.Lst: -1 Index: Stk R X: 11.2
848.0
L-Stn : 848.0 Grd.Nxt.: -1 Cut Dp: -0.7 Stk L X: -11.1
P-Stn : Grd.Lst: -1 Index: Stk R X: 11.2
917.3
L-Stn : 917.3 Grd.Nxt.: -2 Cut Dp: 0.0 Stk L X: -10.9
P-Stn : Grd.Lst: -1 Index: Stk R X: 11.3

Softree Section	Scale 1:293	P. 3
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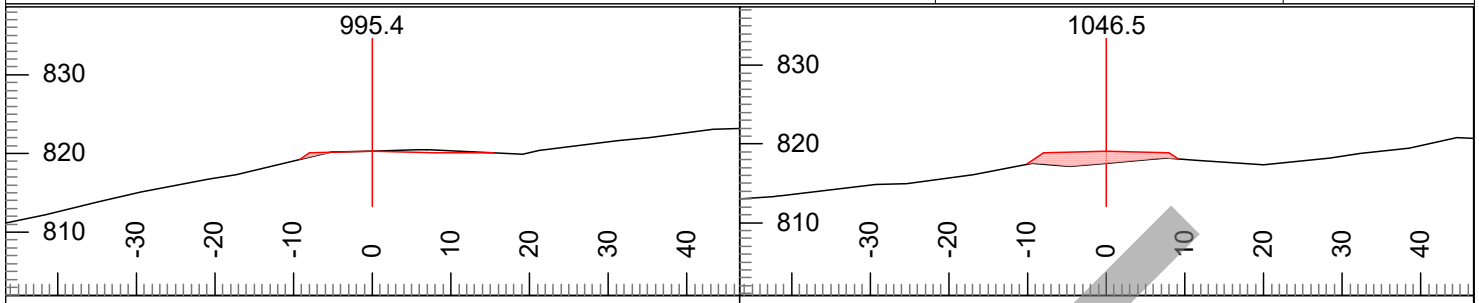

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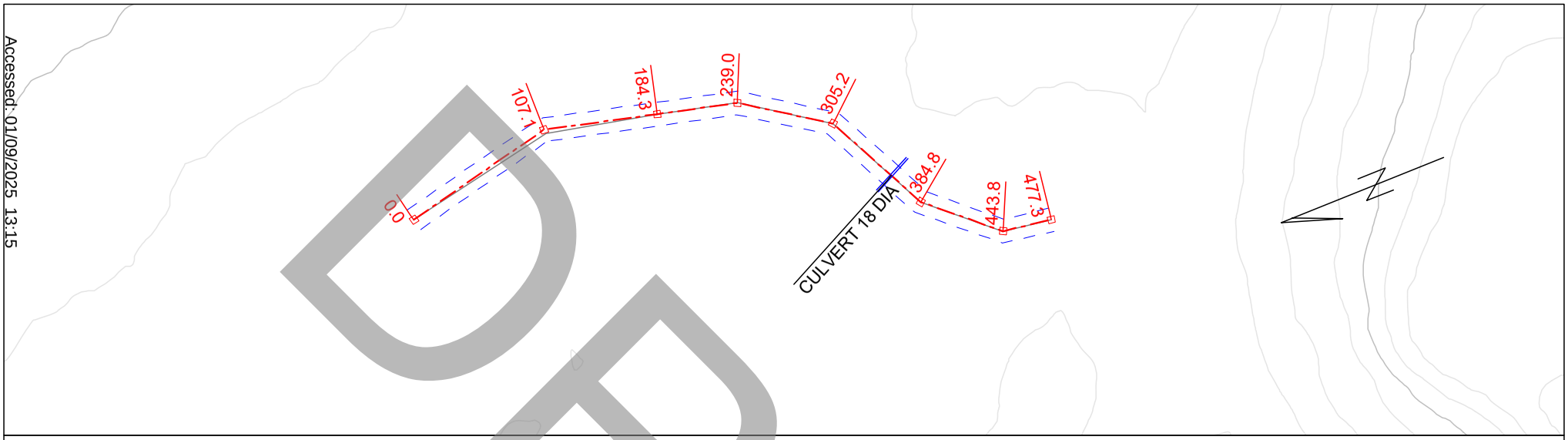
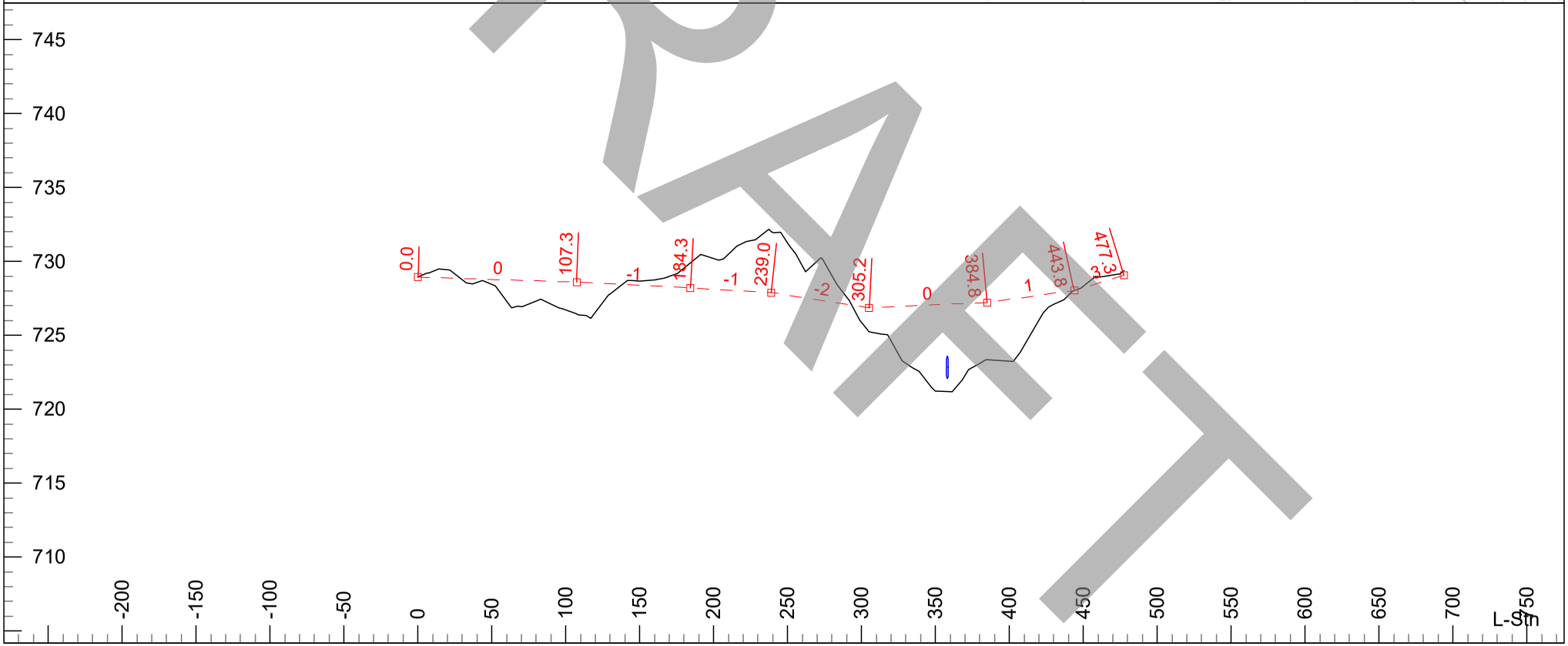
L-Stn : 1046.5	Grd.Nxt.: n/a	Cut Dp: -1.5	Stk L X: -10.1
P-Stn :	Grd.Lst: -2	Index:	Stk R X: 9.1





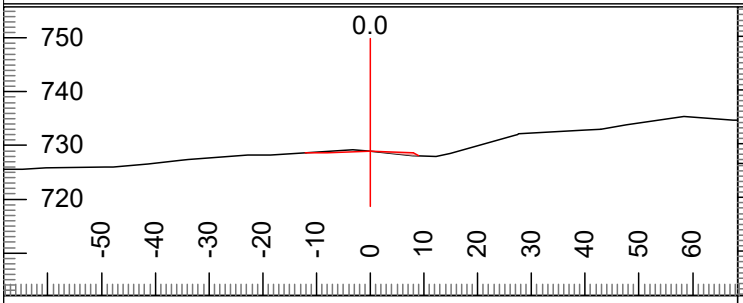
Bluffin Timber Sale
7010-1ext Rd
Contract #: 30-104863
GPS/Lidar Design

WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

Plan Scale 1:1200	
Profile Vert Scale 1:120	
Profile Horz Scale 1:1200	

Engineer: E. Bauer	
24/01/22	Sheet 1 of 1

Softree Section	Scale 1:429	P. 1
K:\timber_sales\pre_sales\bluffin\engineer\7010_1ext\7010_1ext		24/01/22



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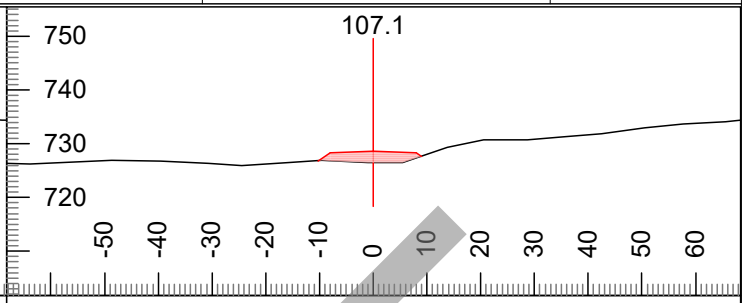
P-Stn :		Grd.Lst:	n/a	Index:		Stk R X:	8.9		



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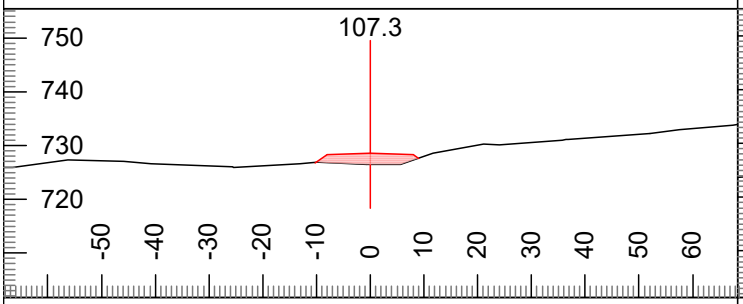

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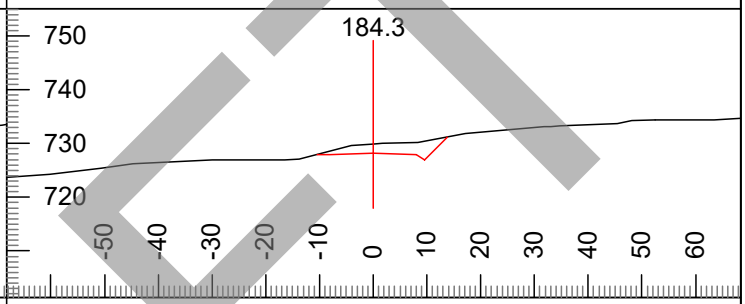
P-Stn :		Grd.Lst:	0	Index:		Stk R X:	9.0		



L-Stn :	184.3	Grd.Nxt.:	-1	Cut Dp:	1.7	Stk L X:	-10.5		
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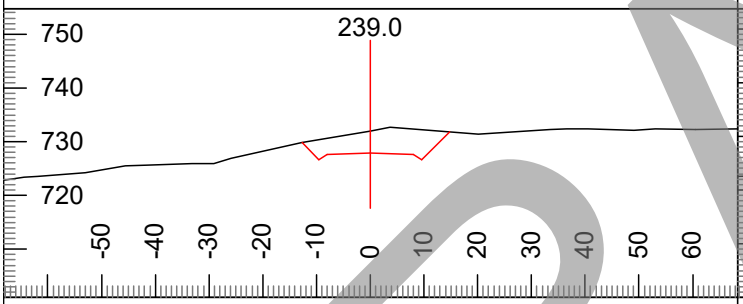

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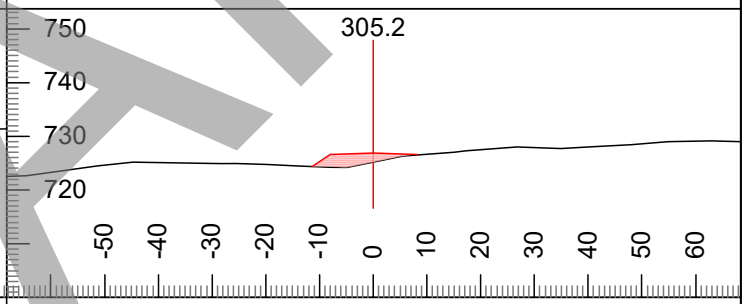

L-Stn :	305.2	Grd.Nxt.:	0	Cut Dp:	-1.6	Stk L X:	-11.3		
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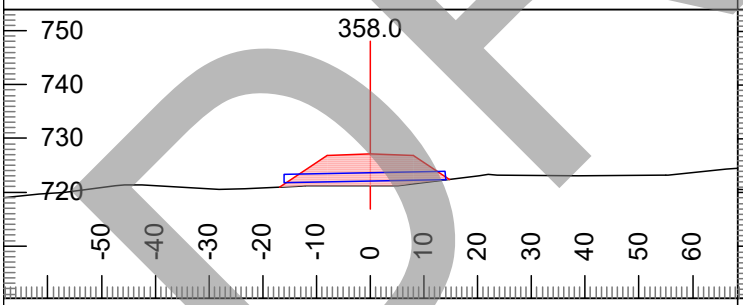

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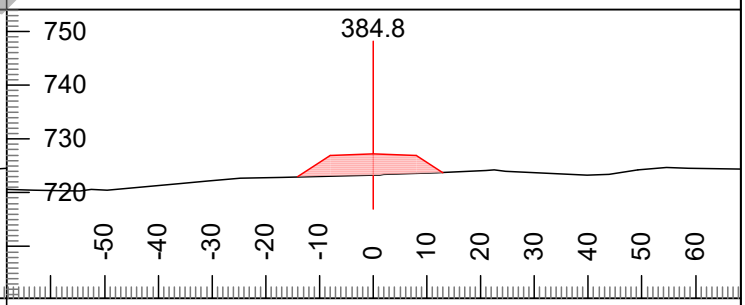

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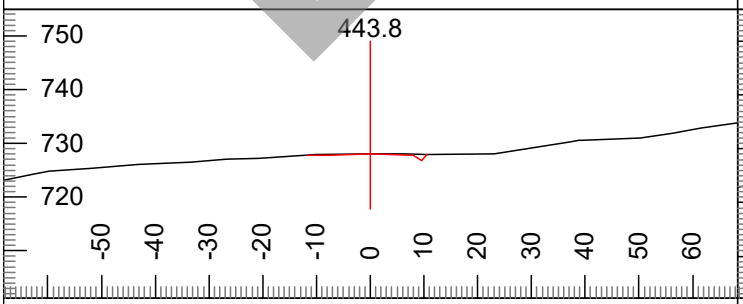

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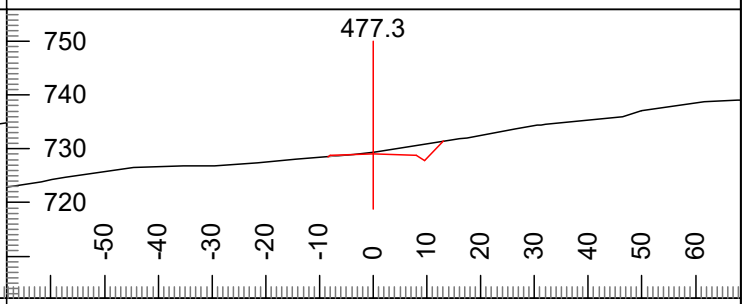

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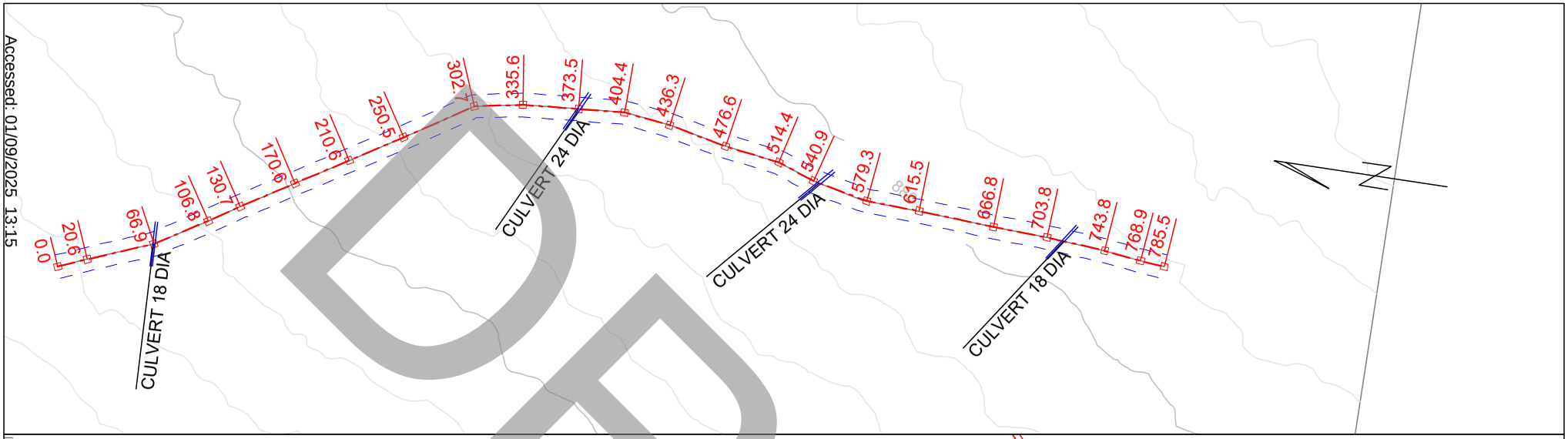
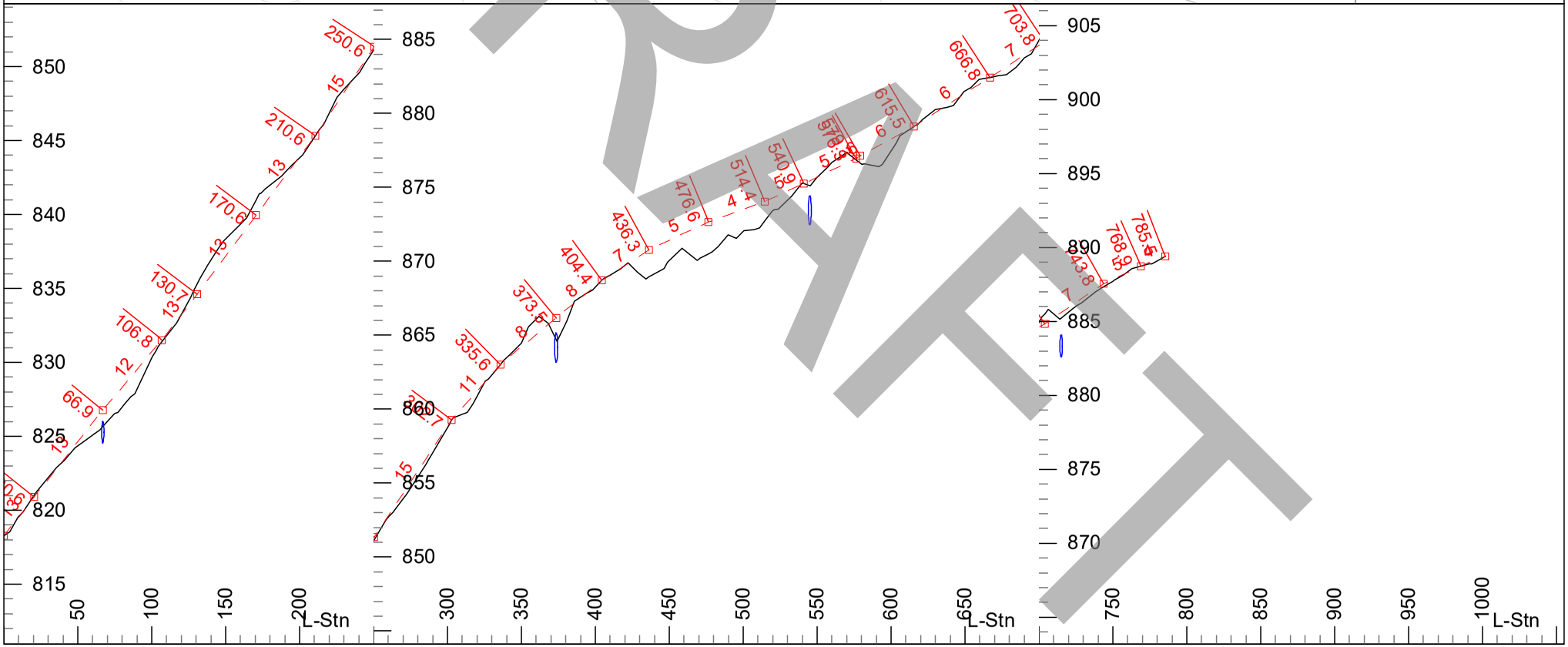
P-Stn :		Grd.Lst:	3	Index:		Stk R X:	13.1		





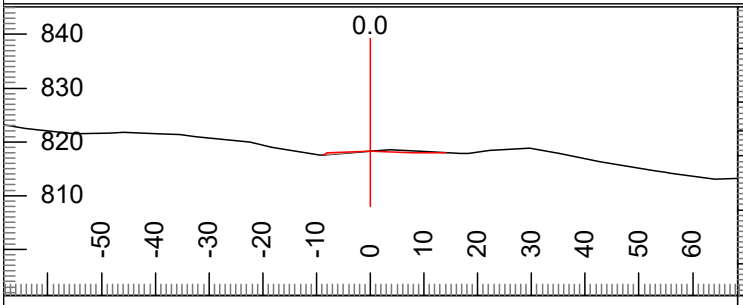
Bluffin Timber Sale
7590ext Rd
Contracrt #: 30-104863
GPS/Lidar Design

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

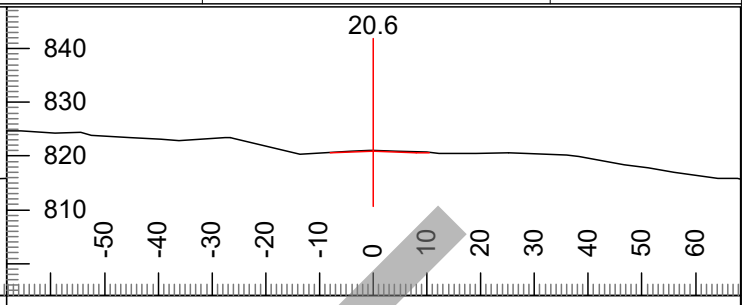
Plan Scale 1:1200	
Profile Vert Scale 1:120 Profile Horz Scale 1:1200	

Engineer: E. Bauer	
24/01/22	Sheet 1 of 1

Softree Section	Scale 1:429	P. 1
K:\timber_sales\pre_sales\bluffin\engineer\7590 Ext\7590ext		24/01/22



L-Stn :	0.0	Grd.Nxt.:	13	Cut Dp:	0.0	Stk L X:	-8.7		
P-Stn :		Grd.Lst:	n/a	Index:		Stk R X:	14.1		



L-Stn :	20.6	Grd.Nxt.:	13	Cut Dp:	0.1	Stk L X:	-8.0		
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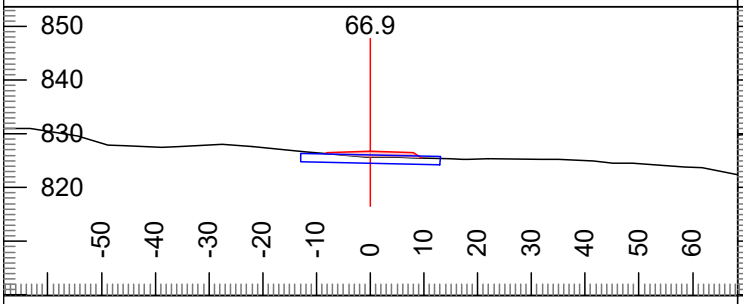

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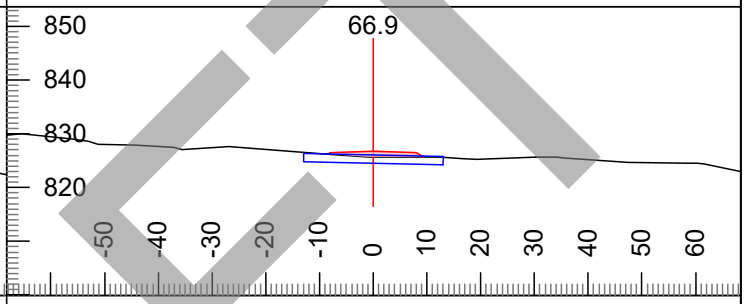
P-Stn :		Grd.Lst:	13	Index:		Stk R X:	9.5		



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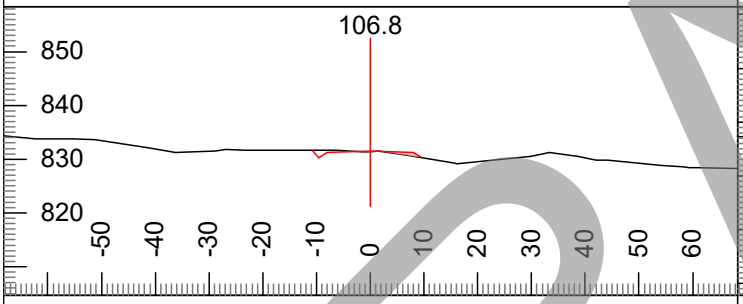
P-Stn :		Grd.Lst:	12	Index:		Stk R X:	9.4		



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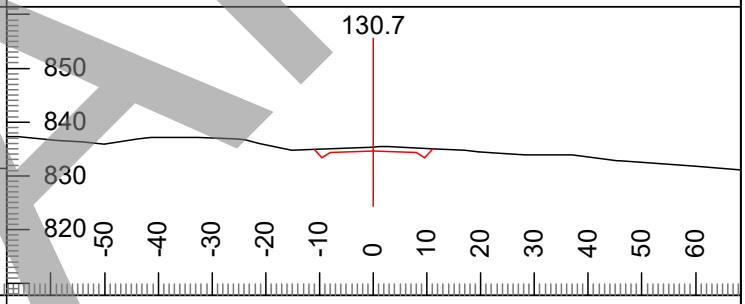

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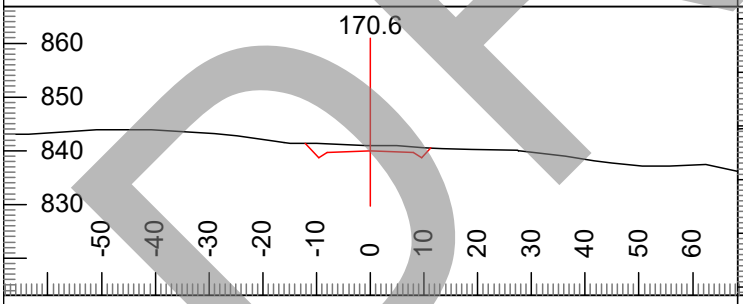
P-Stn :		Grd.Lst:	13	Index:		Stk R X:	11.2		



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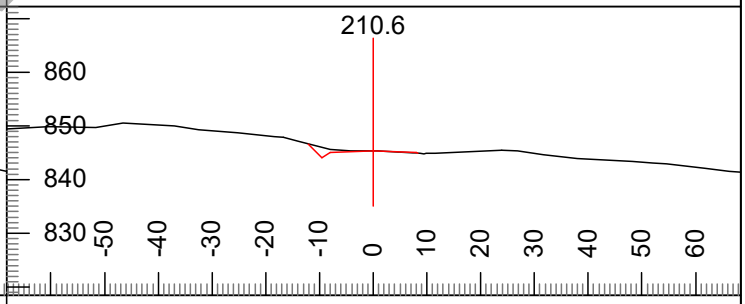
P-Stn :		Grd.Lst:	13	Index:		Stk R X:	11.3		



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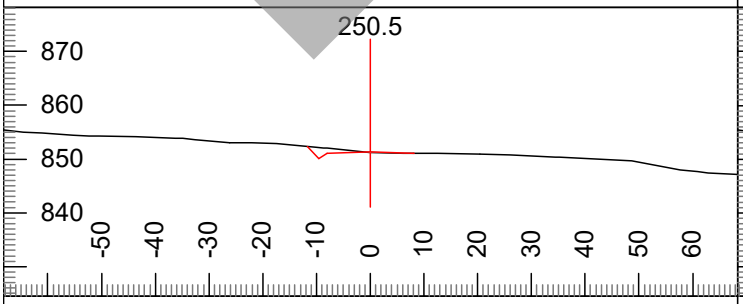

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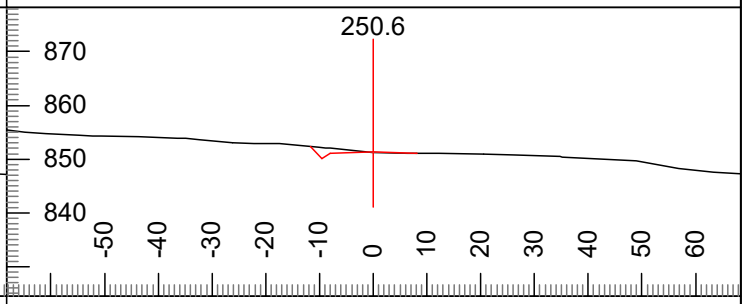
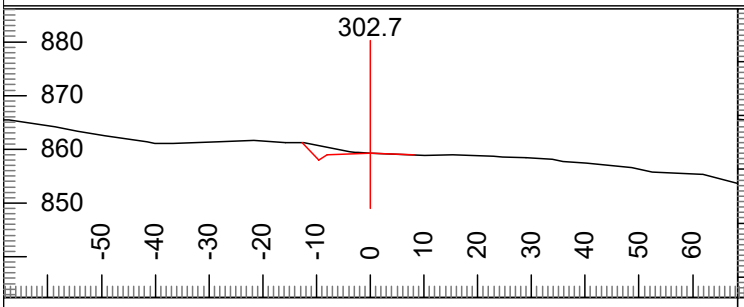
P-Stn :		Grd.Lst:	15	Index:		Stk R X:	8.2		

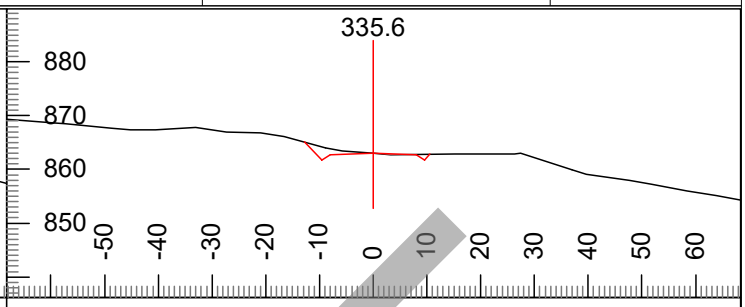


L-Stn :	250.6	Grd.Nxt.:	15	Cut Dp:	-0.2	Stk L X:	-11.7		
P-Stn :		Grd.Lst:	15	Index:		Stk R X:	8.1		

Softree Section	Scale 1:429	P. 2
K:\timber_sales\pre_sales\bluffin\engineer\7590 Ext\7590ext		24/01/22



L-Stn :	302.7	Grd.Nxt.:	11	Cut Dp:	0.0	Stk L X:	-12.7		
P-Stn :		Grd.Lst:	15	Index:		Stk R X:	8.1		



L-Stn :	335.6	Grd.Nxt.:	8	Cut Dp:	0.0	Stk L X:	-12.8		
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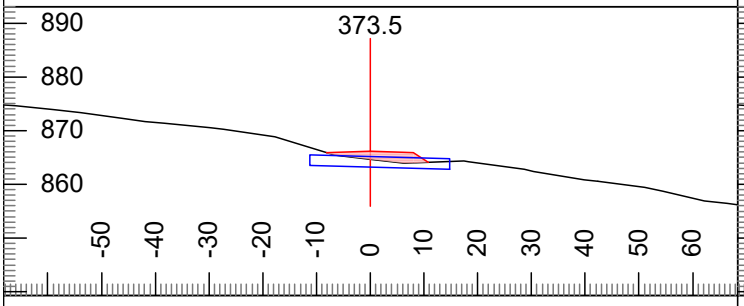
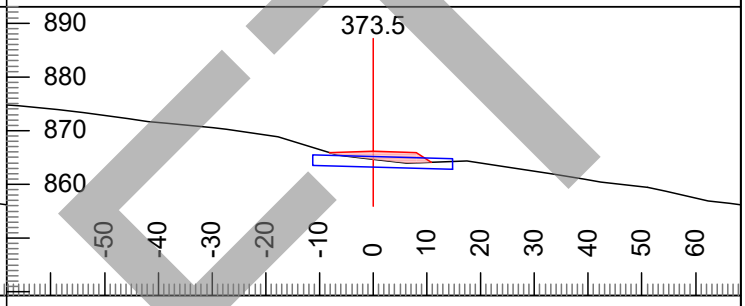


L-Stn :	373.5	Grd.Nxt.:	8	Cut Dp:	-1.5	Stk L X:	-8.1		
P-Stn :		Grd.Lst:	8	Index:		Stk R X:	10.8		



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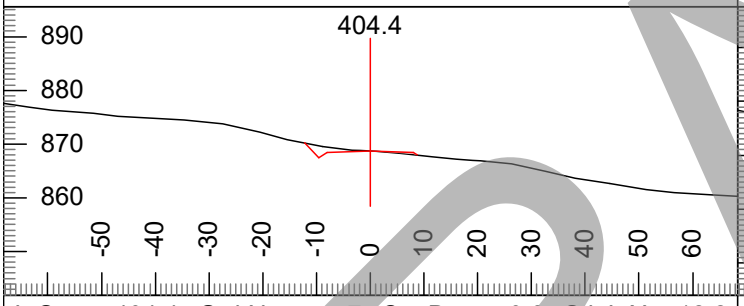
P-Stn :		Grd.Lst:	8	Index:		Stk R X:	10.8		



L-Stn :	404.4	Grd.Nxt.:	7	Cut Dp:	0.0	Stk L X:	-12.2		
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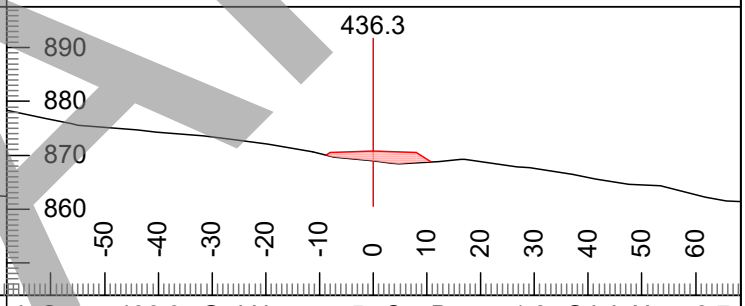

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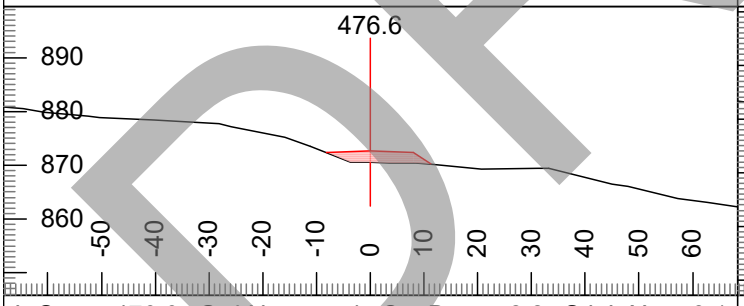
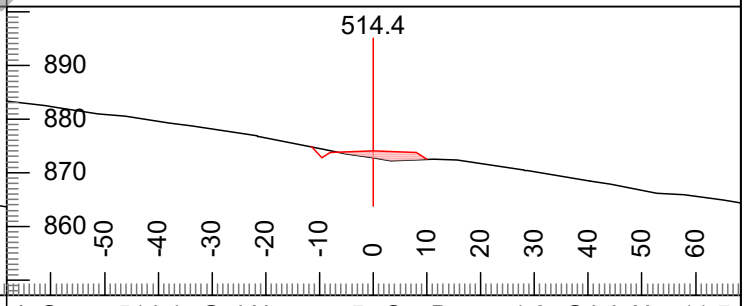
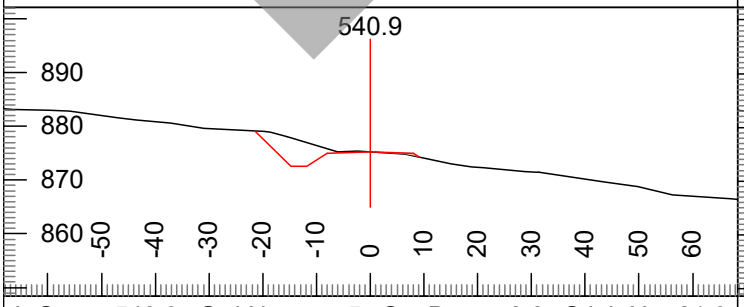
P-Stn :		Grd.Lst:	7	Index:		Stk R X:	10.7		



L-Stn :	476.6	Grd.Nxt.:	4	Cut Dp:	-2.2	Stk L X:	-8.1		
P-Stn :		Grd.Lst:	5	Index:		Stk R X:	11.3		



L-Stn :	514.4	Grd.Nxt.:	5	Cut Dp:	-1.3	Stk L X:	-11.5		
P-Stn :		Grd.Lst:	4	Index:		Stk R X:	10.0		



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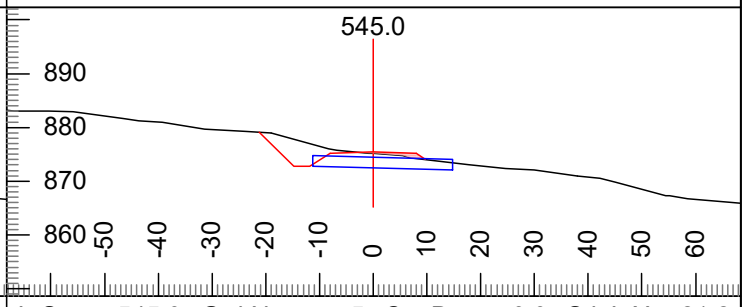
P-Stn :		Grd.Lst:	5	Index:		Stk R X:	9.1		



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P-Stn :		Grd.Lst:	5	Index:		Stk R X:	9.7		

Softree Section	Scale 1:429	P. 3
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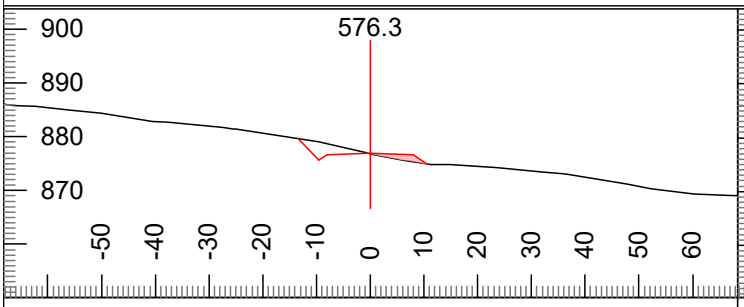

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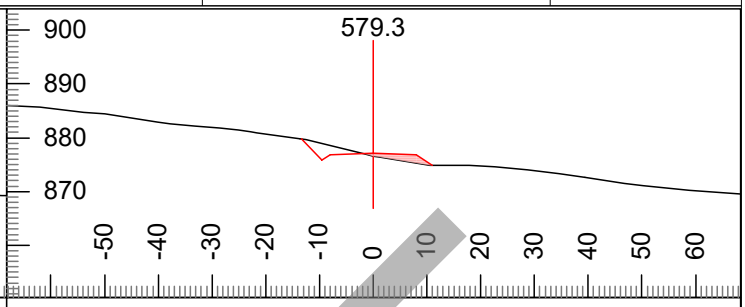
P-Stn :		Grd.Lst:	5	Index:		Stk R X:	10.7



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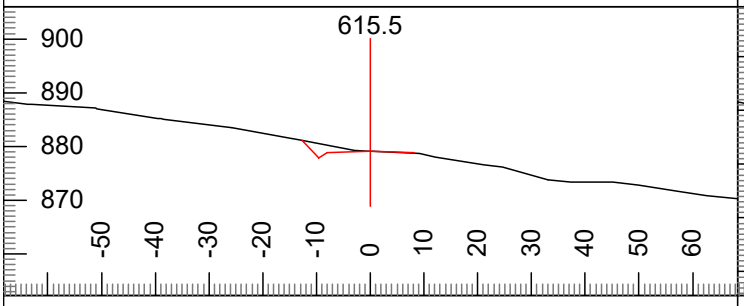
P-Stn :		Grd.Lst:	6	Index:		Stk R X:	11.0



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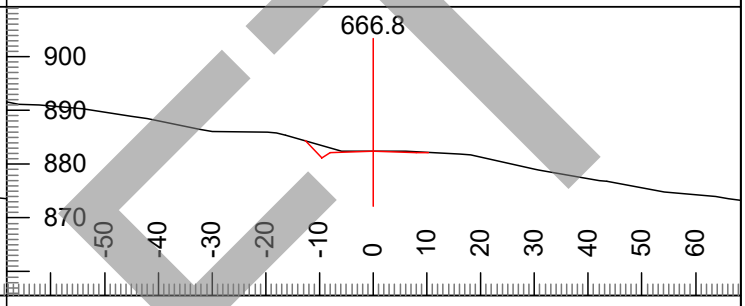

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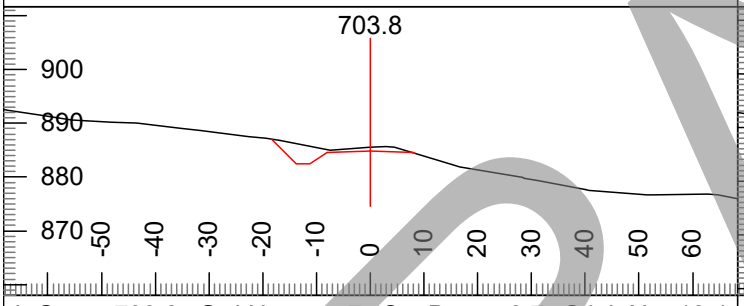

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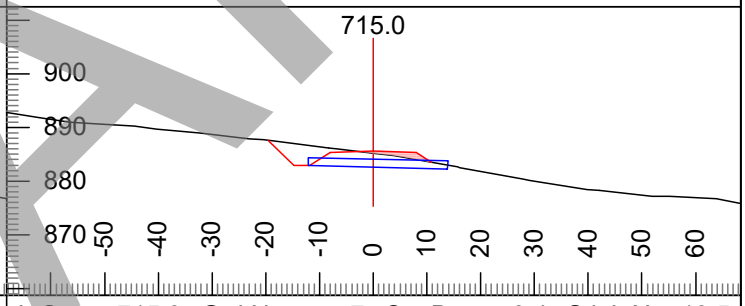

L-Stn :	715.0	Grd.Nxt.:	7	Cut Dp:	-0.4	Stk L X:	-19.5
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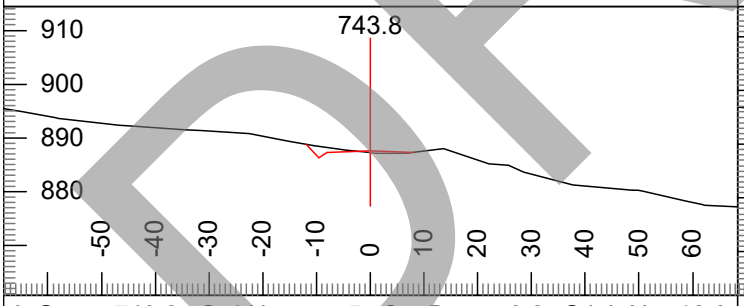

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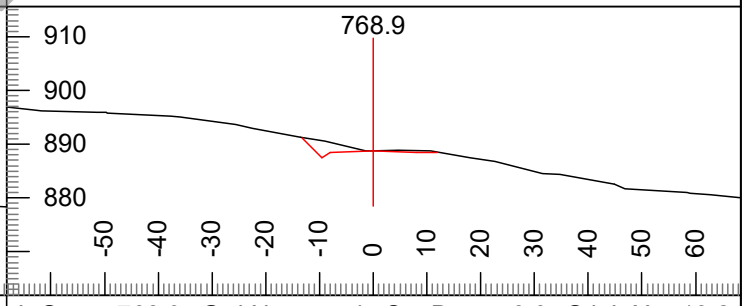
P-Stn :		Grd.Lst:	7	Index:		Stk R X:	8.0



L-Stn :	768.9	Grd.Nxt.:	4	Cut Dp:	0.0	Stk L X:	-13.2
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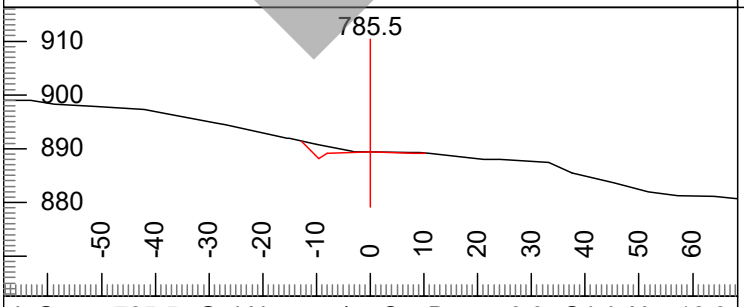

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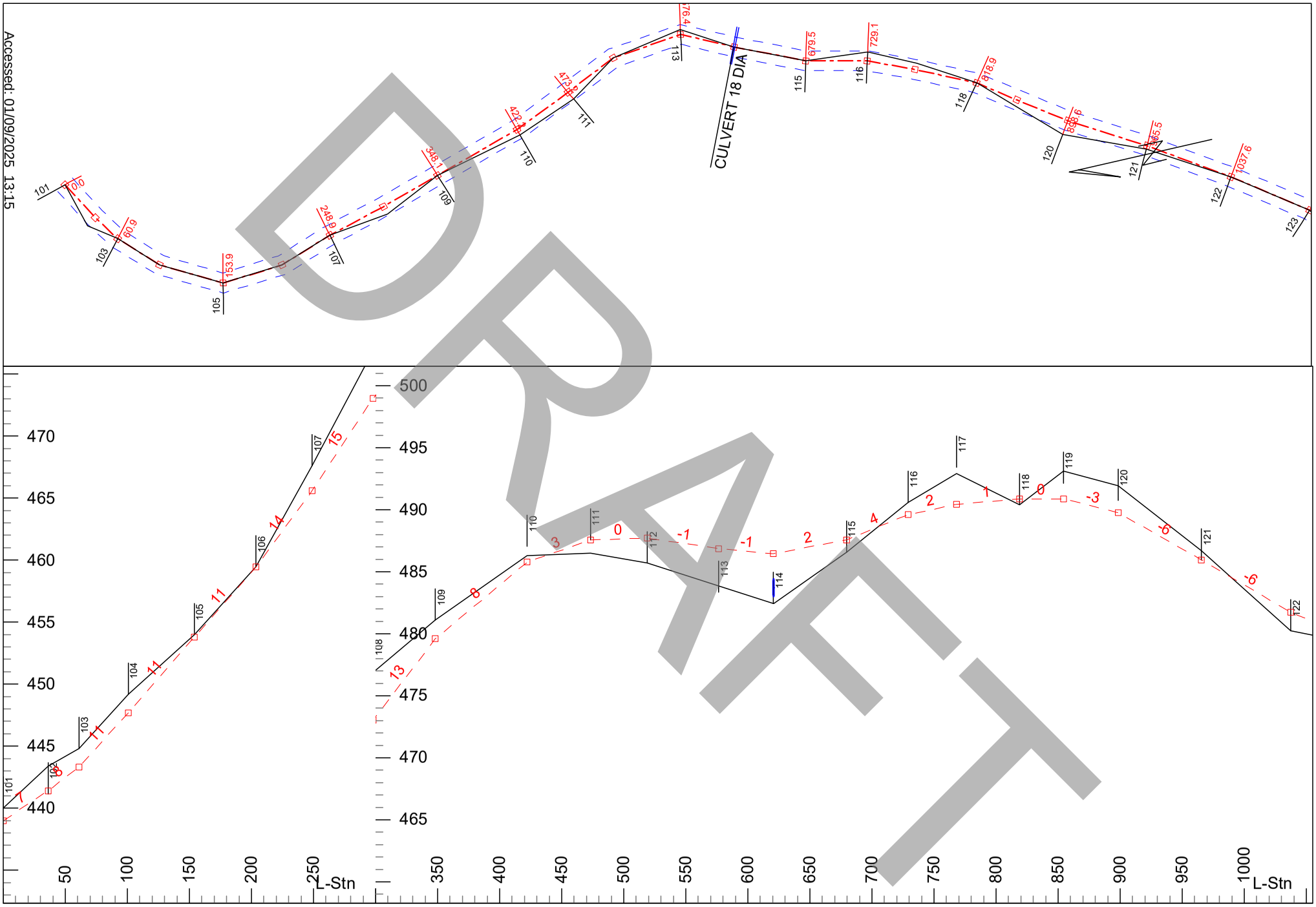
P-Stn :		Grd.Lst:	4	Index:		Stk R X:	10.3



Accessed: 01/09/2025 13:15
12/05/2024

30-104863

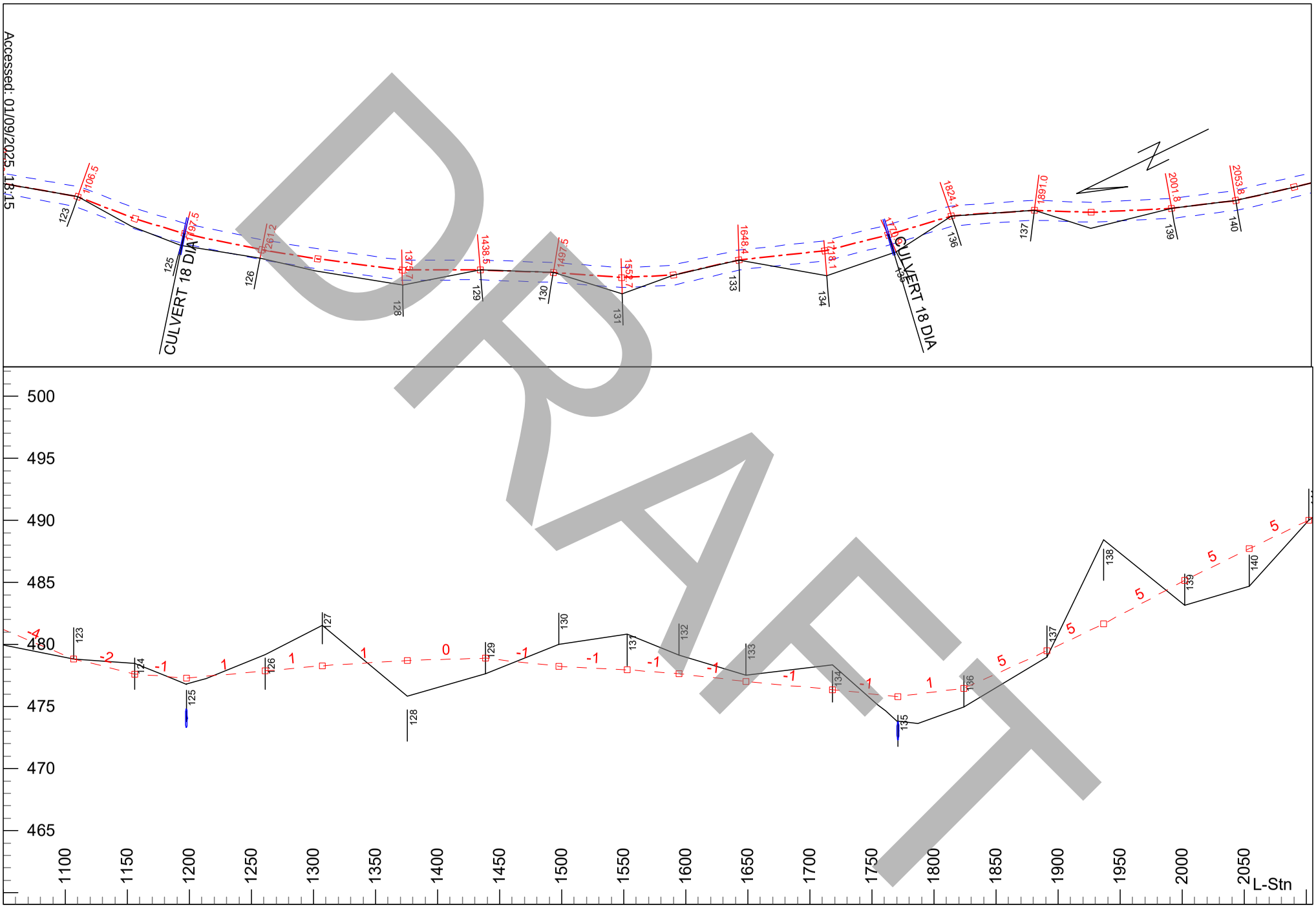
Bluffin Timber Sale
12250 Rd
Contract #: 30-104863
Laser/Prism Design

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Plan Scale 1:1200	
Profile Vert Scale 1:120	
Profile Horz Scale 1:1200	

Engineer: E. Bauer

24/01/22	Sheet 1 of 3



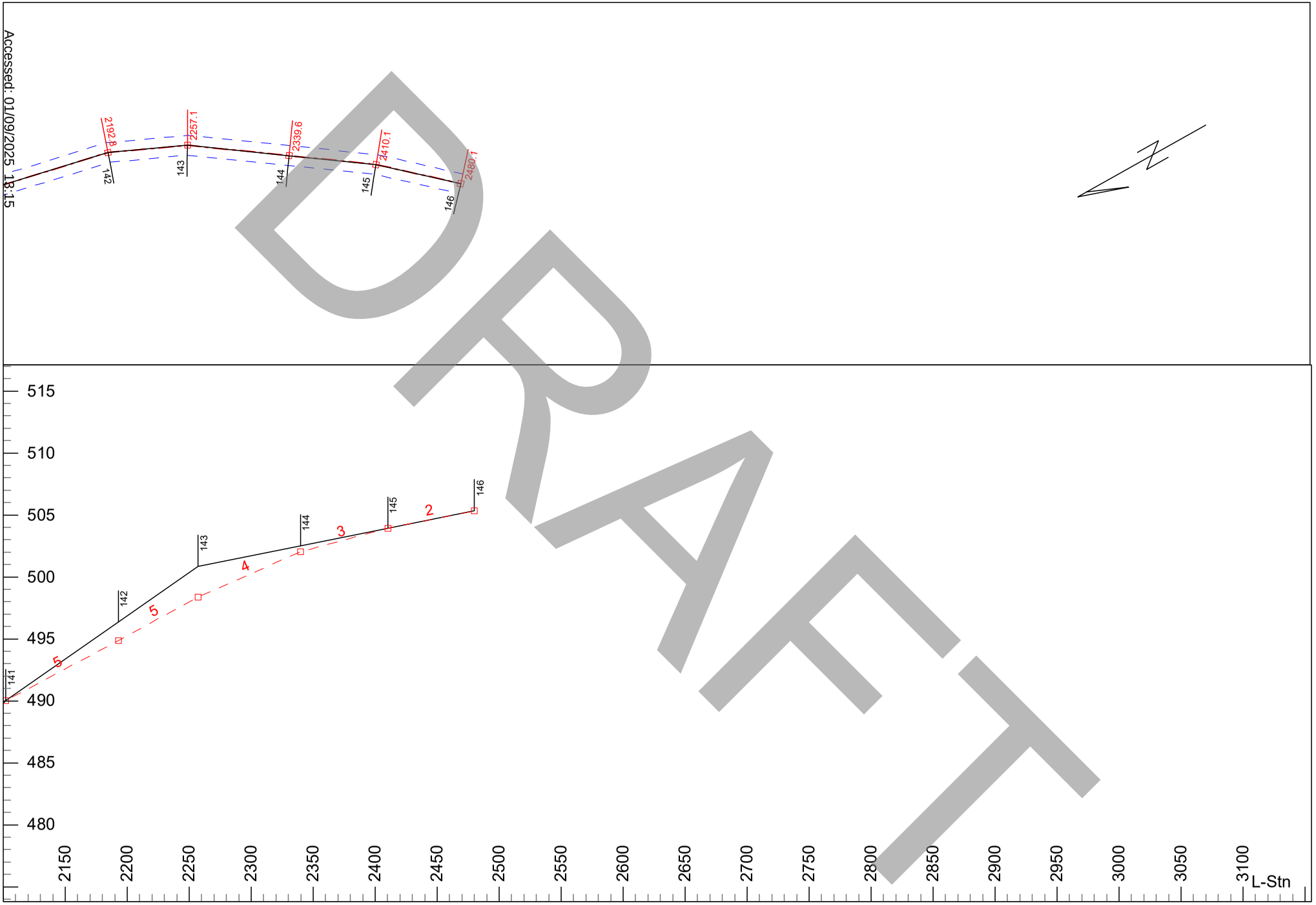
30-104863

Bluffin Timber Sale
12250 Rd
Contract #: 30-104863
Laser/Prism Design

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Plan Scale 1:1200	
Profile Vert Scale 1:120	
Profile Horz Scale 1:1200	

Engineer: E. Bauer	
24/01/22	Sheet 2 of 3



Bluffin Timber Sale
12250 Rd
Contract #: 30-104863
Laser/Prism Design

WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

Plan Scale 1:1200	
Profile Vert Scale 1:120 Profile Horz Scale 1:1200	
Engineer: E. Bauer	
24/01/22	Sheet 3 of 3

Softree Section	Scale 1:354	P. 1
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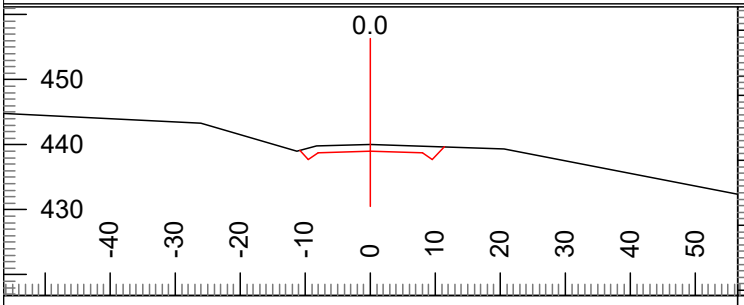
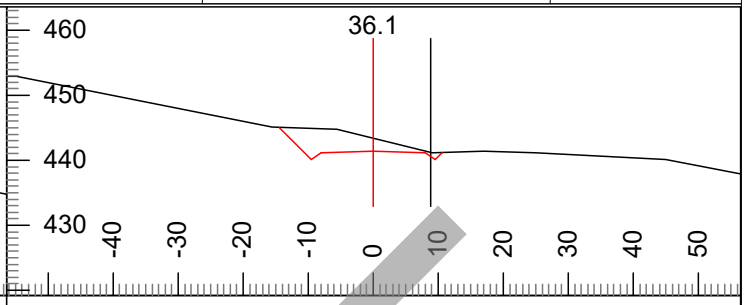


L-Stn :	0.0	Grd.Nxt.:	7	Cut Dp:	1.0	Stk L X:	-10.9		
P-Stn :	0.0	Grd.Lst:	n/a	Index:	101	Stk R X:	11.4		



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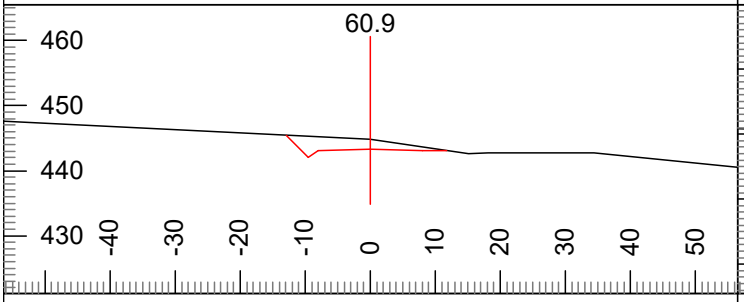

L-Stn :	60.9	Grd.Nxt.:	11	Cut Dp:	1.5	Stk L X:	-12.9		
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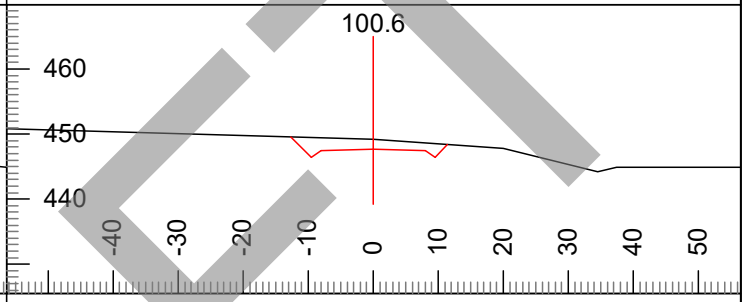

L-Stn :	100.6	Grd.Nxt.:	11	Cut Dp:	1.5	Stk L X:	-12.6		
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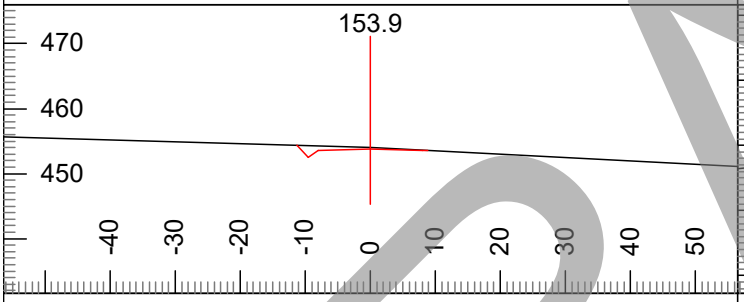

L-Stn :	153.9	Grd.Nxt.:	11	Cut Dp:	0.2	Stk L X:	-11.3		
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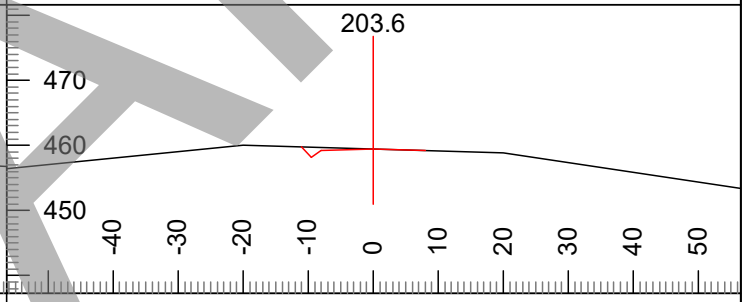

L-Stn :	203.6	Grd.Nxt.:	14	Cut Dp:	0.0	Stk L X:	-11.1		
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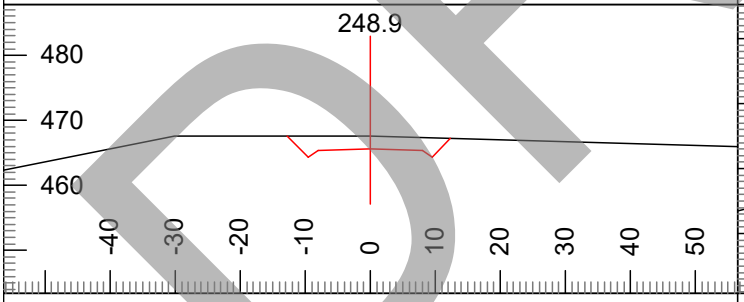
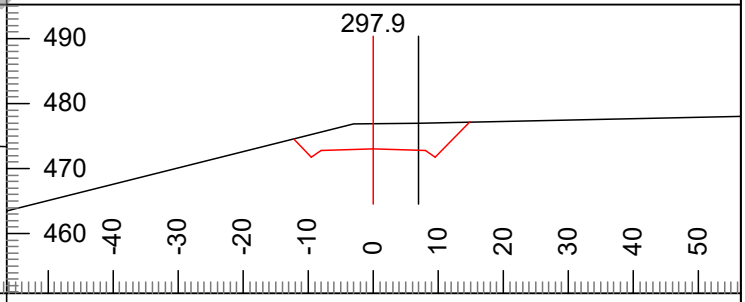
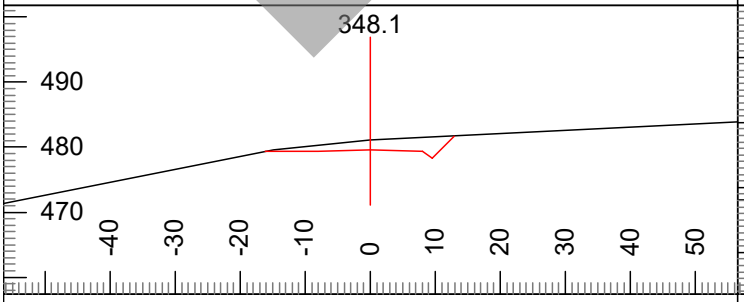


L-Stn :	248.9	Grd.Nxt.:	15	Cut Dp:	2.0	Stk L X:	-12.7		
P-Stn :	252.2	Grd.Lst:	14	Index:	107	Stk R X:	12.4		



L-Stn :	297.9	Grd.Nxt.:	13	Cut Dp:	3.9	Stk L X:	-12.2		
P-Stn :	301.9	Grd.Lst:	15	Index:	108	Stk R X:	14.9		



L-Stn :	348.1	Grd.Nxt.:	8	Cut Dp:	1.5	Stk L X:	-16.2		
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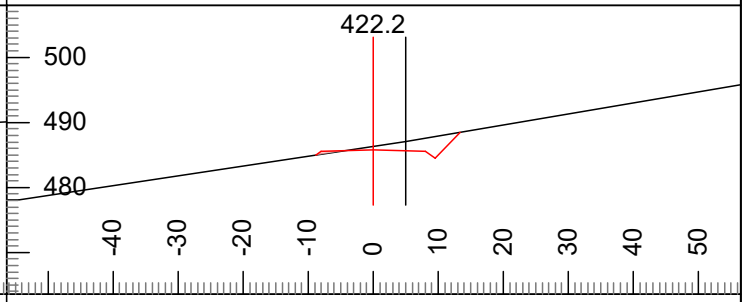
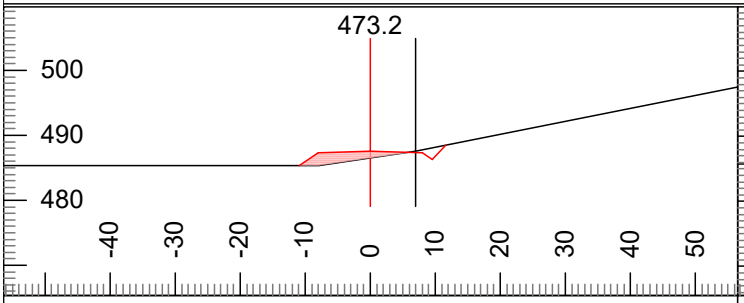


L-Stn :	422.2	Grd.Nxt.:	3	Cut Dp:	0.5	Stk L X:	-8.9		
P-Stn :	427.0	Grd.Lst:	8	Index:	110	Stk R X:	13.4		



L-Stn :	473.2	Grd.Nxt.:	0	Cut Dp:	-1.1	Stk L X:	-11.0		
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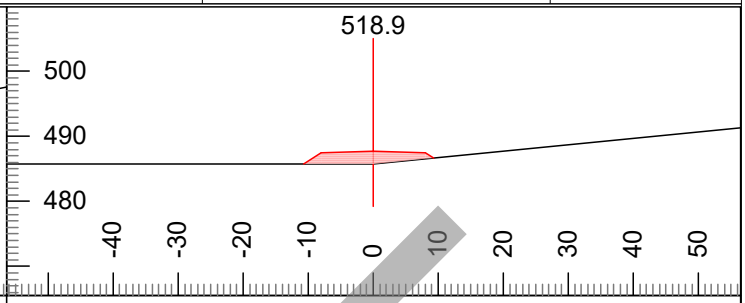

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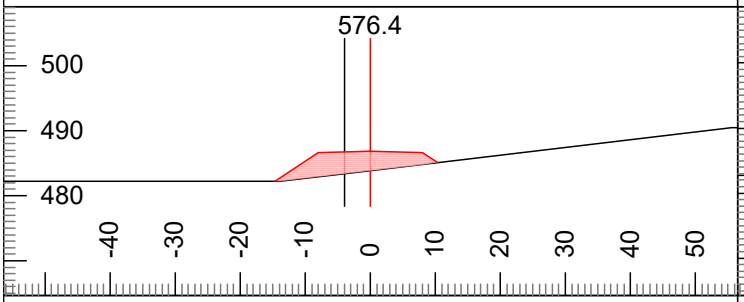

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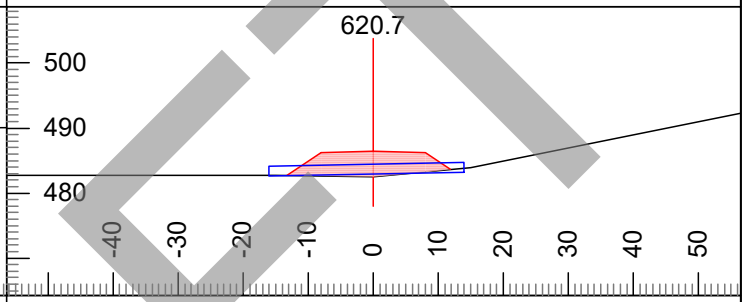

L-Stn :	620.7	Grd.Nxt.:	2	Cut Dp:	-4.0	Stk L X:	-13.2		
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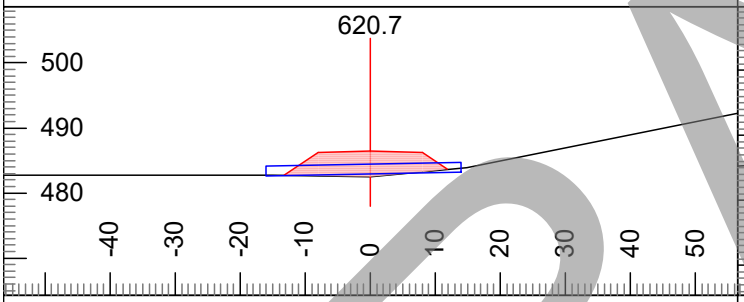
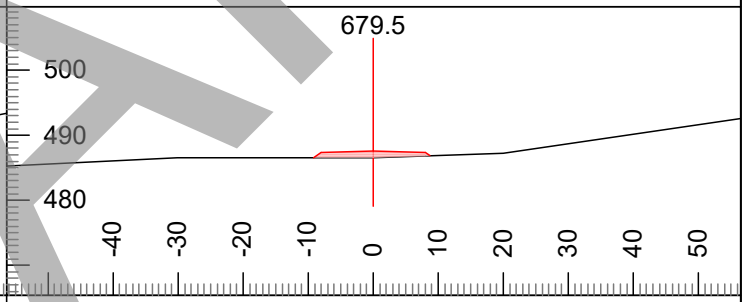
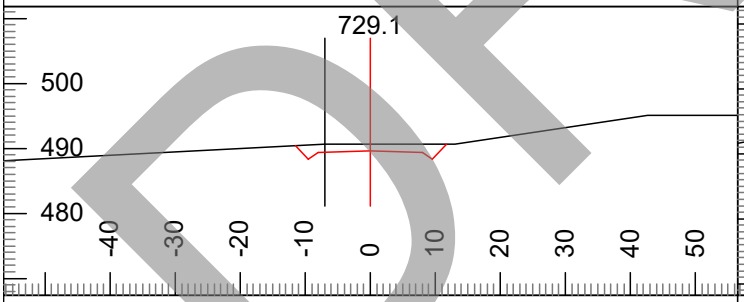


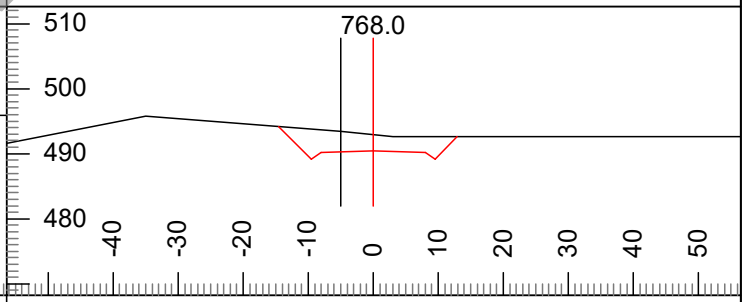
L-Stn :	620.7	Grd.Nxt.:	2	Cut Dp:	-4.0	Stk L X:	-13.2		
P-Stn :	629.2	Grd.Lst:	2	Index:		Stk R X:	11.9		



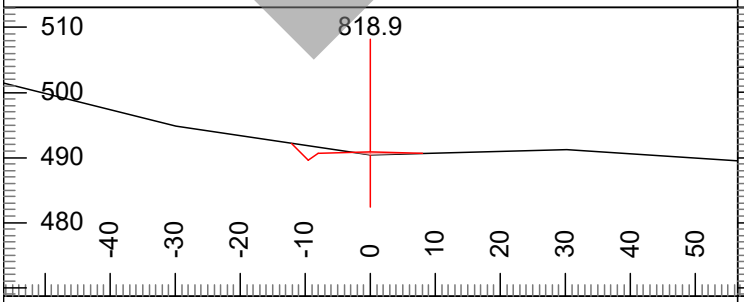
L-Stn :	679.5	Grd.Nxt.:	4	Cut Dp:	-1.0	Stk L X:	-9.1		
P-Stn :	688.0	Grd.Lst:	2	Index:	115	Stk R X:	8.7		



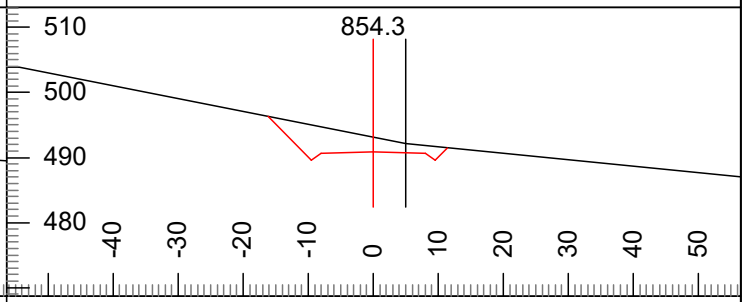
L-Stn :	729.1	Grd.Nxt.:	2	Cut Dp:	1.0	Stk L X:	-11.5		
P-Stn :	738.4	Grd.Lst:	4	Index:	116	Stk R X:	11.7		



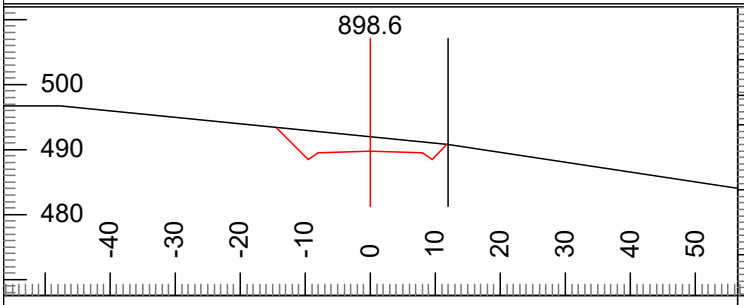
L-Stn :	768.0	Grd.Nxt.:	1	Cut Dp:	2.5	Stk L X:	-14.5		
P-Stn :	778.8	Grd.Lst:	2	Index:	117	Stk R X:	12.9		



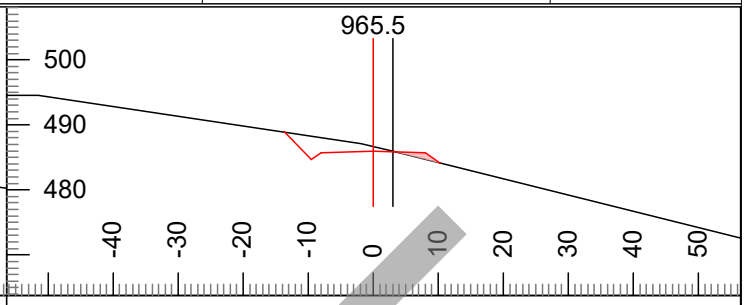
L-Stn :	818.9	Grd.Nxt.:	0	Cut Dp:	-0.5	Stk L X:	-12.0		
P-Stn :	829.7	Grd.Lst:	1	Index:	118	Stk R X:	8.0		



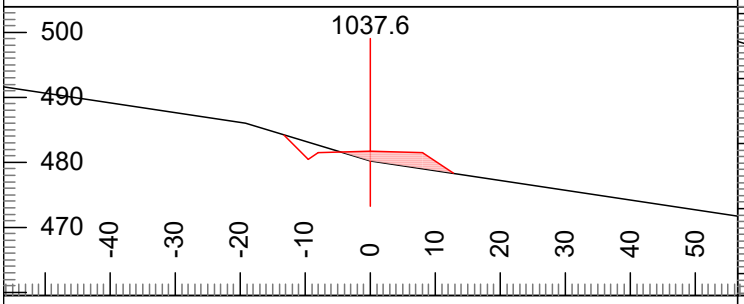
L-Stn :	854.3	Grd.Nxt.:	-3	Cut Dp:	2.3	Stk L X:	-16.2		
P-Stn :	864.6	Grd.Lst:	0	Index:	119	Stk R X:	11.4		



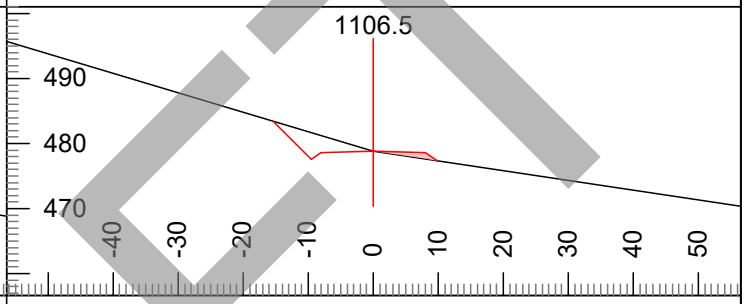
L-Stn :	898.6	Grd.Nxt.:	-6	Cut Dp:	2.2	Stk L X:	-14.4		
P-Stn :	910.6	Grd.Lst:	-3	Index:	120	Stk R X:	11.8		



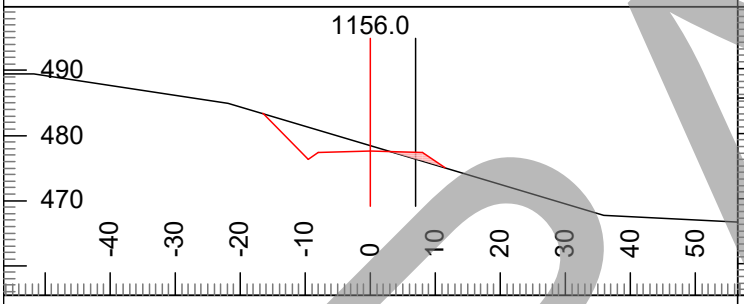
L-Stn :	965.5	Grd.Nxt.:	-6	Cut Dp:	0.8	Stk L X:	-13.7		
P-Stn :	978.9	Grd.Lst:	-6	Index:	121	Stk R X:	10.4		



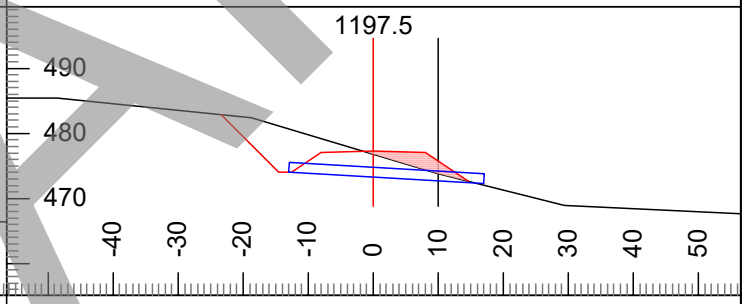
L-Stn :	1037.6	Grd.Nxt.:	-4	Cut Dp:	-1.5	Stk L X:	-13.2		
P-Stn :	1050.7	Grd.Lst:	-6	Index:	122	Stk R X:	12.8		



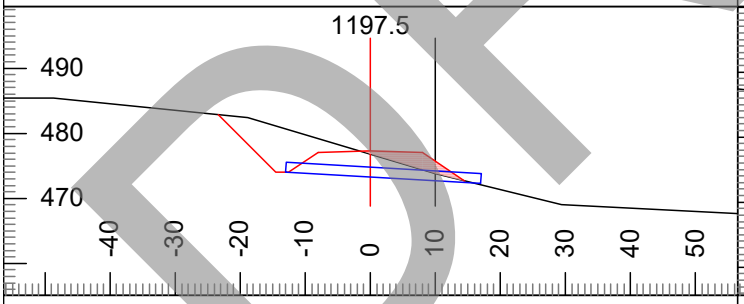
L-Stn :	1106.5	Grd.Nxt.:	-2	Cut Dp:	0.0	Stk L X:	-15.3		
P-Stn :	1119.7	Grd.Lst:	-4	Index:	123	Stk R X:	9.9		



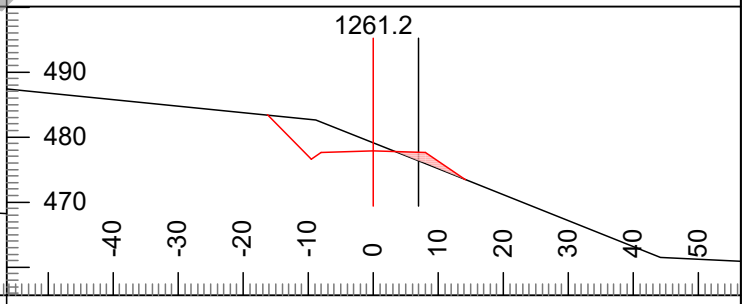
L-Stn :	1156.0	Grd.Nxt.:	-1	Cut Dp:	0.8	Stk L X:	-16.5		
P-Stn :	1169.1	Grd.Lst:	-2	Index:	124	Stk R X:	11.5		



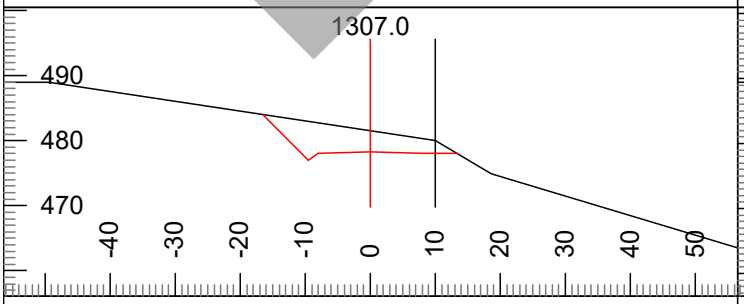
L-Stn :	1197.5	Grd.Nxt.:	1	Cut Dp:	-0.5	Stk L X:	-23.3		
P-Stn :	1212.1	Grd.Lst:	-1	Index:	125	Stk R X:	14.6		



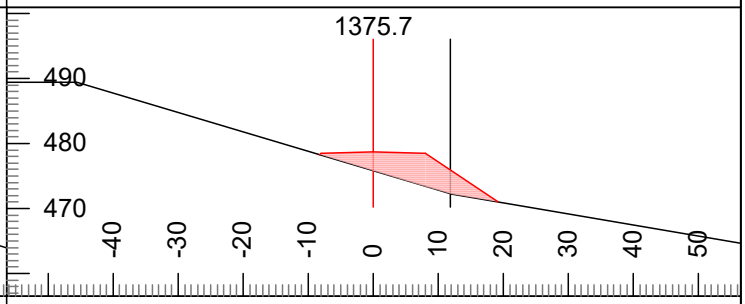
L-Stn :	1197.5	Grd.Nxt.:	1	Cut Dp:	-0.5	Stk L X:	-23.4		
P-Stn :	1213.1	Grd.Lst:	1	Index:		Stk R X:	14.5		



L-Stn :	1261.2	Grd.Nxt.:	1	Cut Dp:	1.3	Stk L X:	-16.3		
P-Stn :	1276.5	Grd.Lst:	1	Index:	126	Stk R X:	14.2		

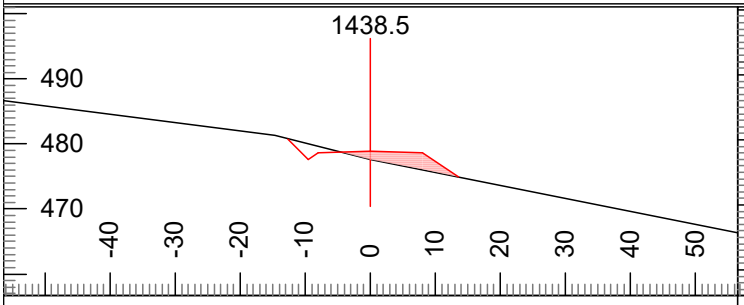


L-Stn :	1307.0	Grd.Nxt.:	1	Cut Dp:	3.2	Stk L X:	-16.5		
P-Stn :	1322.4	Grd.Lst:	1	Index:	127	Stk R X:	13.3		

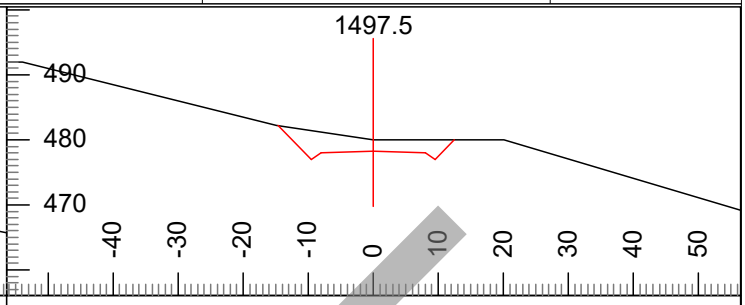


L-Stn :	1375.7	Grd.Nxt.:	0	Cut Dp:	-2.9	Stk L X:	-8.3		
P-Stn :	1393.4	Grd.Lst:	1	Index:	128	Stk R X:	19.2		

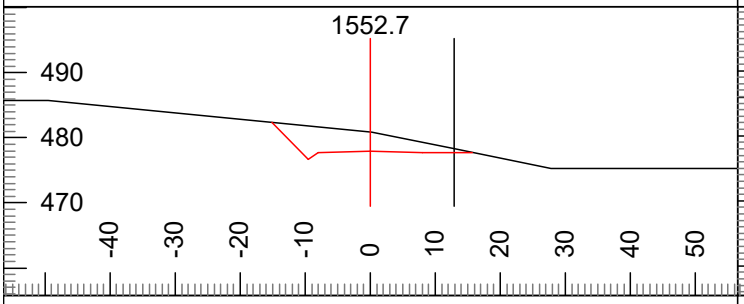
Softree Section	Scale 1:354	P. 4
J:\SHARED\TimberSales\Snoqualmie\Marckworth\Bluffin' 30-104863\Engineer\Trav\12250\12250		24/01/22



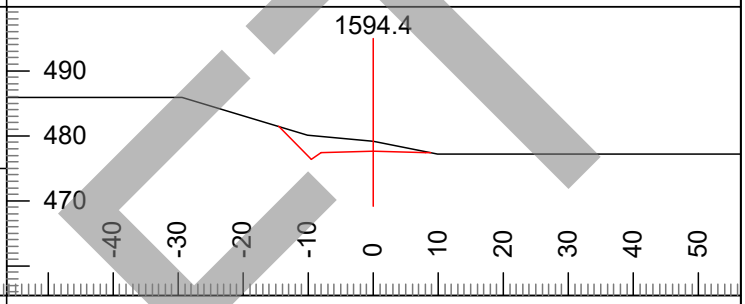
L-Stn :	1438.5	Grd.Nxt.:	-1	Cut Dp:	-1.3	Stk L X:	-12.6		
P-Stn :	1457.2	Grd.Lst:	0	Index:	129	Stk R X:	13.6		



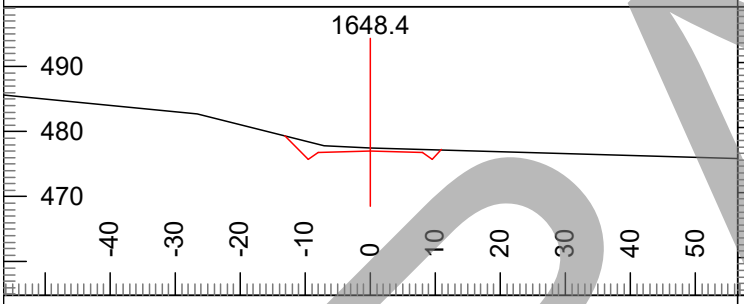
L-Stn :	1497.5	Grd.Nxt.:	-1	Cut Dp:	1.8	Stk L X:	-14.7		
P-Stn :	1516.1	Grd.Lst:	-1	Index:	130	Stk R X:	12.5		



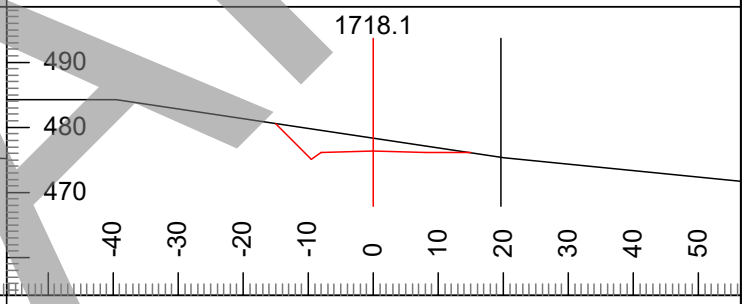
L-Stn :	1552.7	Grd.Nxt.:	-1	Cut Dp:	2.9	Stk L X:	-15.1		
P-Stn :	1574.1	Grd.Lst:	-1	Index:	131	Stk R X:	15.7		



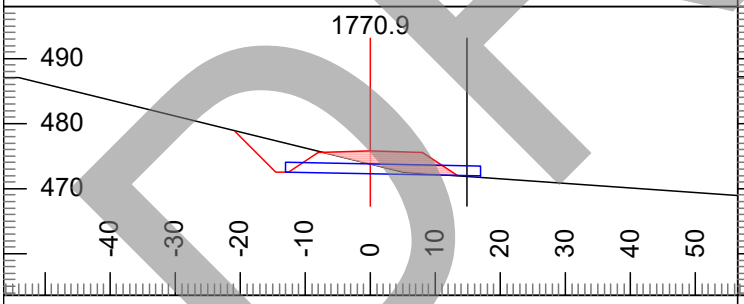
L-Stn :	1594.4	Grd.Nxt.:	-1	Cut Dp:	1.5	Stk L X:	-14.6		
P-Stn :	1618.1	Grd.Lst:	-1	Index:	132	Stk R X:	8.8		



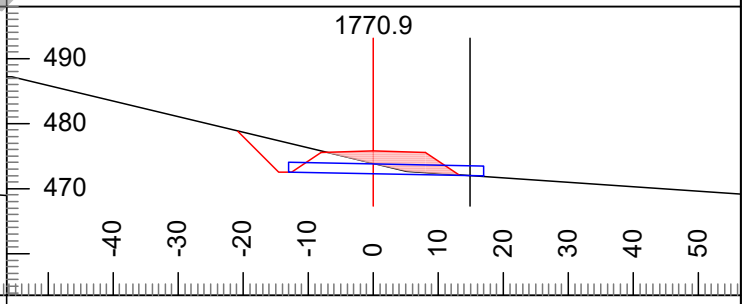
L-Stn :	1648.4	Grd.Nxt.:	-1	Cut Dp:	0.5	Stk L X:	-13.1		
P-Stn :	1672.1	Grd.Lst:	-1	Index:	133	Stk R X:	10.9		



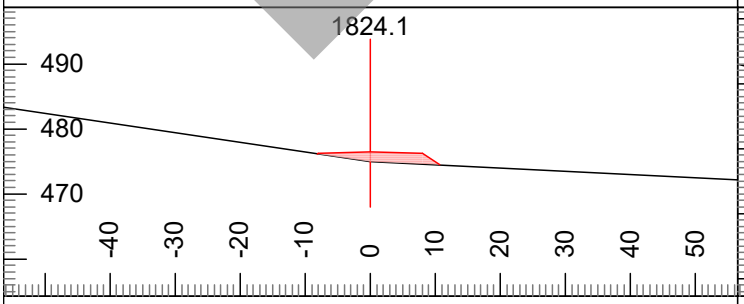
L-Stn :	1718.1	Grd.Nxt.:	-1	Cut Dp:	2.0	Stk L X:	-15.0		
P-Stn :	1744.1	Grd.Lst:	-1	Index:	134	Stk R X:	15.0		



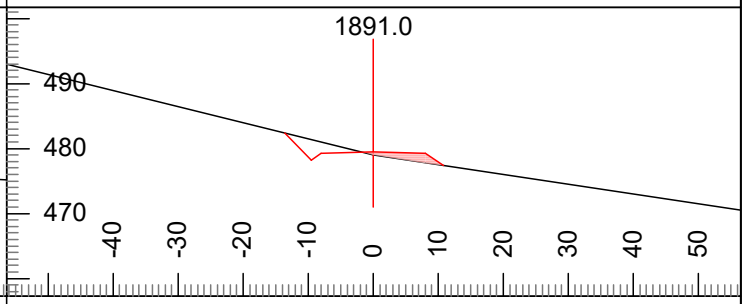
L-Stn :	1770.9	Grd.Nxt.:	1	Cut Dp:	-2.0	Stk L X:	-20.8		
P-Stn :	1803.5	Grd.Lst:	-1	Index:	135	Stk R X:	13.5		



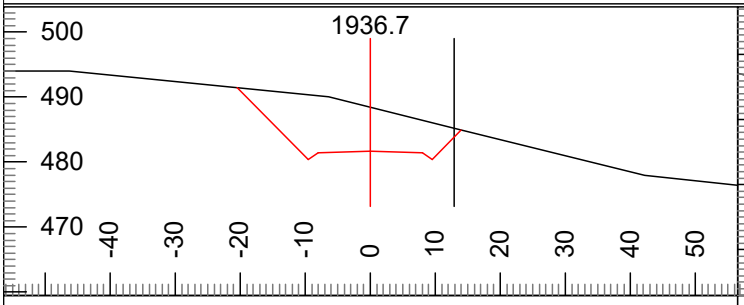
L-Stn :	1770.9	Grd.Nxt.:	1	Cut Dp:	-2.0	Stk L X:	-20.8		
P-Stn :	1805.3	Grd.Lst:	1	Index:		Stk R X:	13.2		



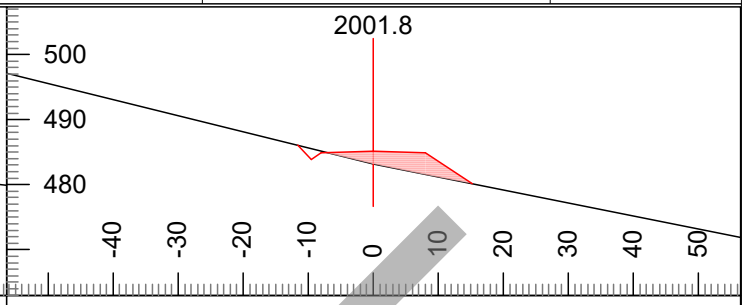
L-Stn :	1824.1	Grd.Nxt.:	5	Cut Dp:	-1.5	Stk L X:	-8.1		
P-Stn :	1856.4	Grd.Lst:	1	Index:	136	Stk R X:	10.7		



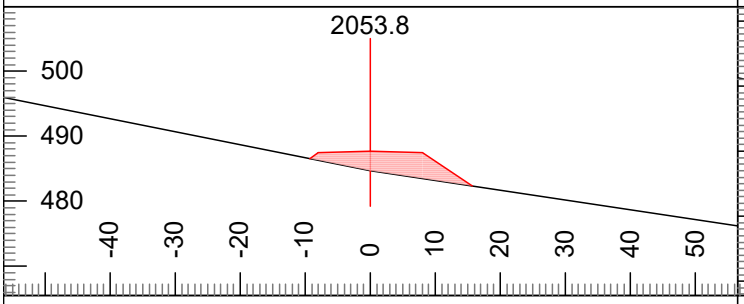
L-Stn :	1891.0	Grd.Nxt.:	5	Cut Dp:	-0.5	Stk L X:	-13.6		
P-Stn :	1923.2	Grd.Lst:	5	Index:	137	Stk R X:	10.8		



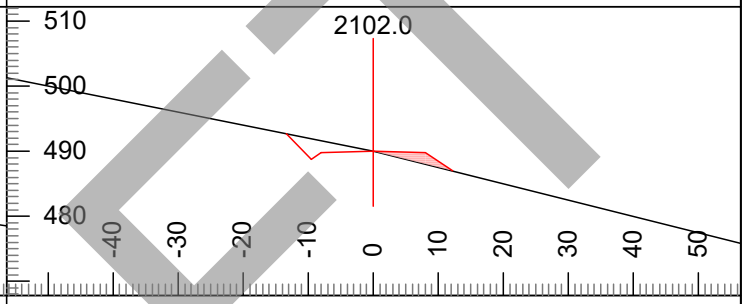
L-Stn :	1936.7	Grd.Nxt.:	5	Cut Dp:	6.8	Stk L X:	-20.5		
P-Stn :	1970.8	Grd.Lst:	5	Index:	138	Stk R X:	14.0		



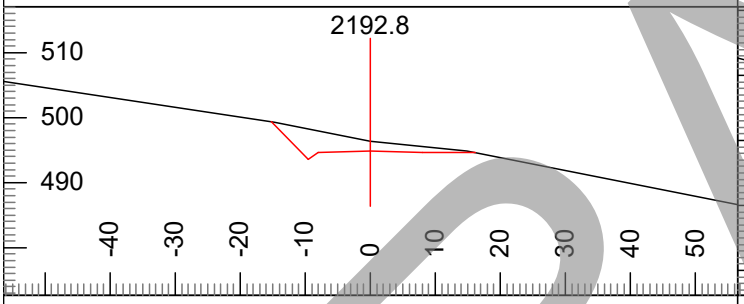
L-Stn :	2001.8	Grd.Nxt.:	5	Cut Dp:	-2.0	Stk L X:	-11.6		
P-Stn :	2038.3	Grd.Lst:	5	Index:	139	Stk R X:	15.2		



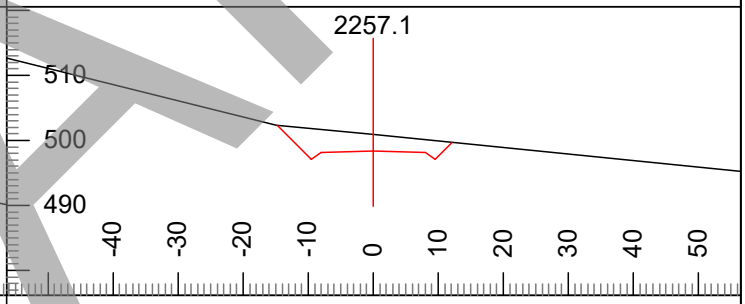
L-Stn :	2053.8	Grd.Nxt.:	5	Cut Dp:	-3.0	Stk L X:	-9.3		
P-Stn :	2090.3	Grd.Lst:	5	Index:	140	Stk R X:	15.7		



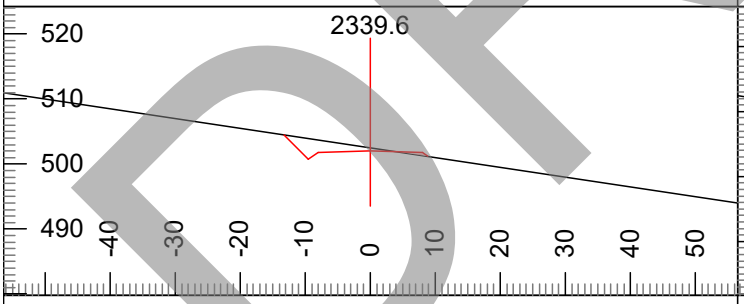
L-Stn :	2102.0	Grd.Nxt.:	5	Cut Dp:	0.0	Stk L X:	-13.4		
P-Stn :	2138.5	Grd.Lst:	5	Index:	141	Stk R X:	12.2		



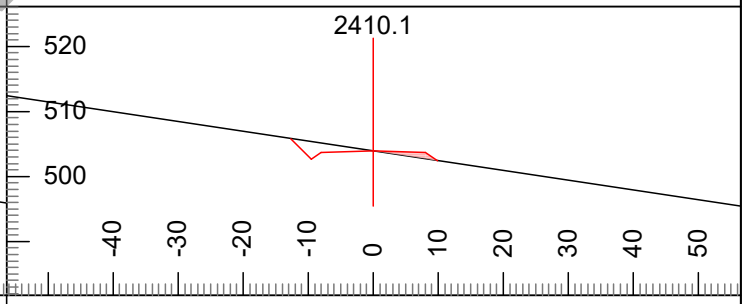
L-Stn :	2192.8	Grd.Nxt.:	5	Cut Dp:	1.5	Stk L X:	-15.3		
P-Stn :	2229.3	Grd.Lst:	5	Index:	142	Stk R X:	16.2		



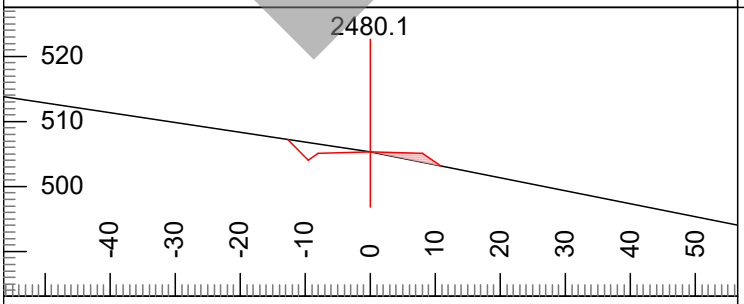
L-Stn :	2257.1	Grd.Nxt.:	4	Cut Dp:	2.5	Stk L X:	-14.7		
P-Stn :	2293.6	Grd.Lst:	5	Index:	143	Stk R X:	12.0		



L-Stn :	2339.6	Grd.Nxt.:	3	Cut Dp:	0.5	Stk L X:	-13.2		
P-Stn :	2376.1	Grd.Lst:	4	Index:	144	Stk R X:	8.9		



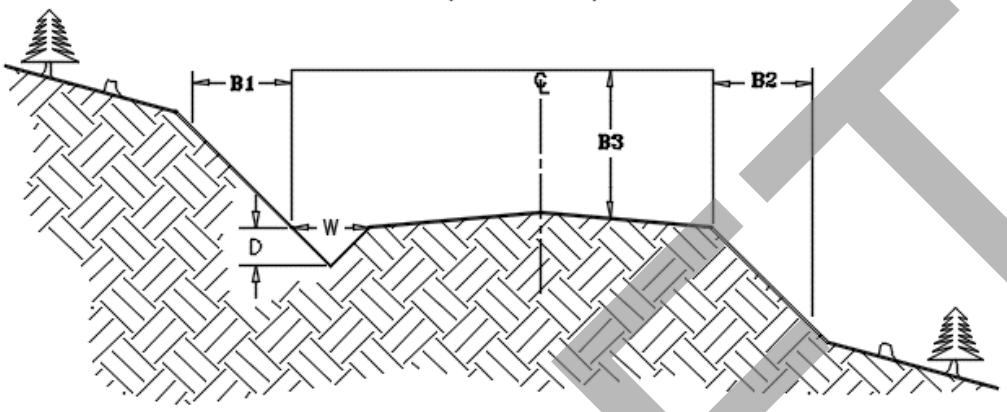
L-Stn :	2410.1	Grd.Nxt.:	2	Cut Dp:	0.0	Stk L X:	-12.6		
P-Stn :	2446.6	Grd.Lst:	3	Index:	145	Stk R X:	9.9		



L-Stn :	2480.1	Grd.Nxt.:	n/a	Cut Dp:	0.0	Stk L X:	-12.6		
P-Stn :	2516.6	Grd.Lst:	2	Index:	146	Stk R X:	10.9		

BRUSHING DETAIL

(not to scale)



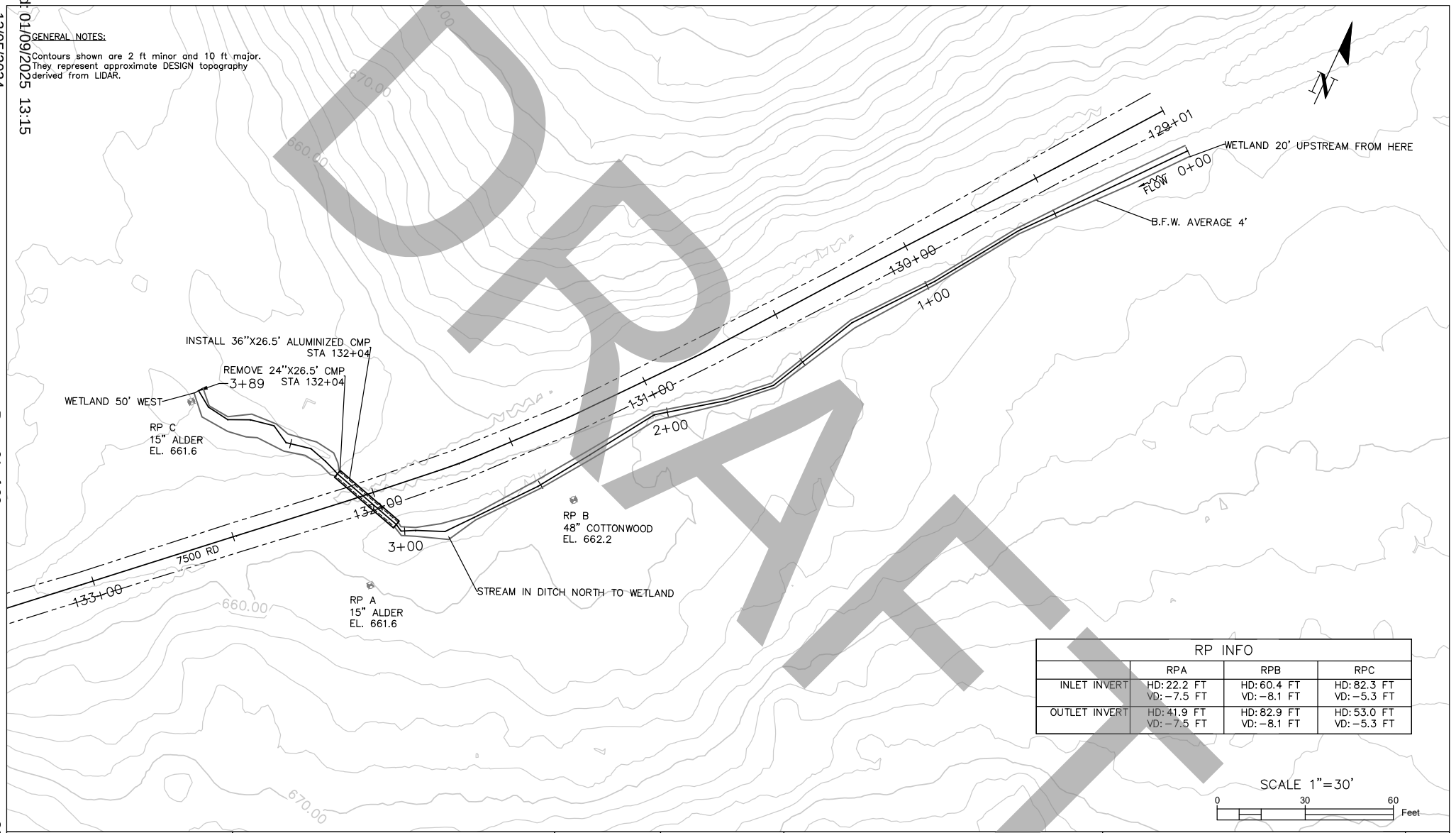
BRUSHING LIST

Road Number	From station	To station	Road Width (feet)	Ditch		Brushing Limits (feet)			Remarks
				Width (feet)	Depth (feet)				In addition to brushing…
				W	D	B1	B2	B3	
5210-5	0+00	20+49	16	3	1	8	8	14	
7000	0+00	96+96	16	3	1	8	8	14	
7010	0+00	9+70	16	3	1	8	8	14	
7010-1	0+00	5+70	16	3	1	8	8	14	Cut brush and extra 16 feet on the inside of a curve to provide visibility on switchbacks and curves.
7050	0+00	58+07	16	3	1	8	8	14	
7590	0+00	14+40	16	3	1	8	8	14	
7590-1	0+00	5+70	16	3	1	8	8	14	
12000	0+00	49+40	16	3	1	8	8	14	
Cedar Ponds Road	0+00	101+65	20	3	1	8	8	14	

B1 extends horizontally the specified distance in feet from the back of the ditch. B2 extends horizontally the specified distance in feet from the outside edge of the running surface. Brush is defined as all non-merchantable vegetative material found within the specified limits. Brush must be cut to a height of 3 inches above the ground. Brush that is cut shall be removed to the downhill side of the road and placed such that it will not block ditches, ditch-outs, or drainage structures. Signs, culvert location markers, culverts or any other identification features damaged by brushing shall be replaced at the Purchasers expense.

GENERAL NOTES:

Contours shown are 2 ft minor and 10 ft major. They represent approximate DESIGN topography derived from LIDAR.



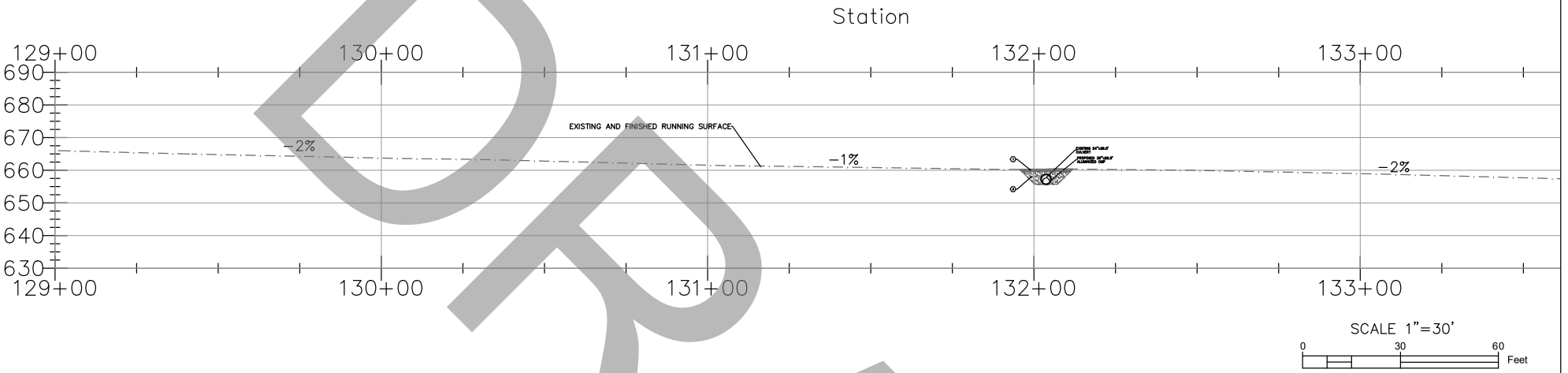
RP INFO			
	RPA	RPB	RPC
INLET INVERT	HD: 22.2 FT VD: −7.5 FT	HD: 60.4 FT VD: −8.1 FT	HD: 82.3 FT VD: −5.3 FT
OUTLET INVERT	HD: 41.9 FT VD: −7.5 FT	HD: 82.9 FT VD: −8.1 FT	HD: 53.0 FT VD: −5.3 FT

SCALE 1"=30'

0 30 60 Feet

DESIGN BY: E. BAUER DRAWN BY: E. BAUER CHECKED BY: DATE: 26 February 2024	SEC. TWNSHIP RANGE: SEC 31 T27N R08E LAT & LONG: 47.780733 −121.836736 LANDOWNER: WA−DNR		1.0" VERIFY SCALE If bar does not measure 1.0", adjust scales accordingly	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES	T27R08E−1 MARCKWORTH 7500 CULVERT PLAN VIEW	SHEET 1 OF 3

ROAD PROFILE
AT ROAD CENTERLINE LOOKING UPSTREAM

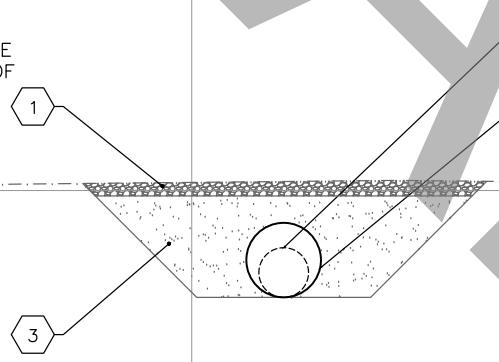


SCALE 1"=30'
0 30 60 Feet

ROAD PROFILE
AT ROAD CENTERLINE LOOKING UPSTREAM

CONSTRUCTION NOTES:

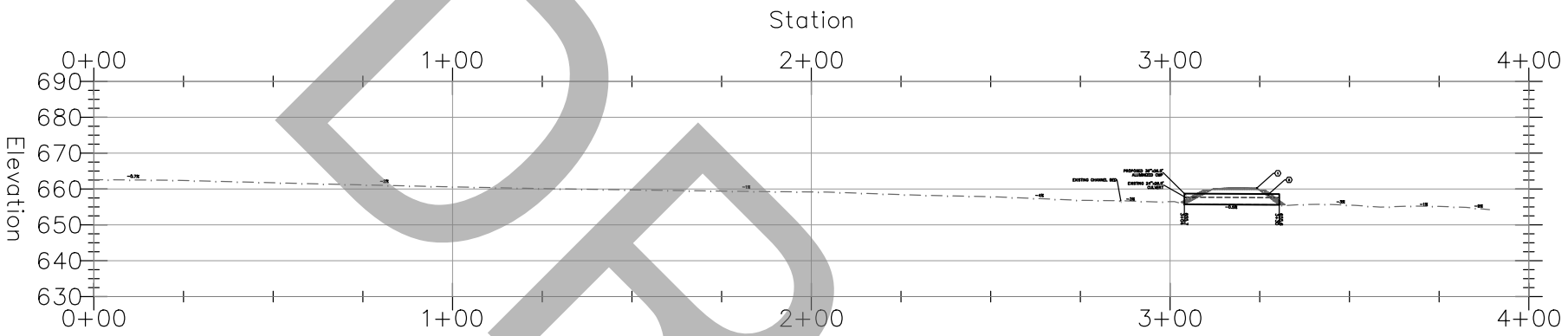
1. 2" MINUS AGGREGATE SURFACING
2. 8 INCH QUARRY SPALLS 12 INCHES DEEP FROM TOE OF SLOPE TO ROAD SHOULDER EDGE AT A WIDTH OF 5' ON BOTH SIDES OF CULVERT EDGES
3. SELECT BORROW BACKFILL MATERIAL



SCALE 1"=20'
0 5 10 Feet

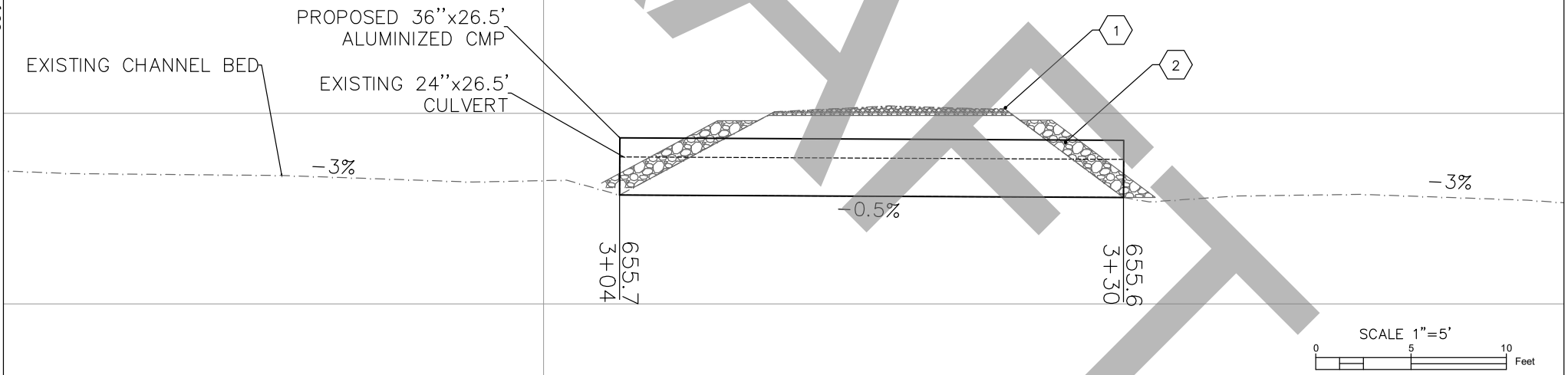
DESIGN BY: E. BAUER DRAWN BY: E. BAUER CHECKED BY: DATE: 26 February 2024	SEC. TWNSHIP RANGE: SEC 31 T27N R08E LAT & LONG: 47.780733 -121.836736 LANDOWNER: WA-DNR		1.0" VERIFY SCALE If bar does not measure 1.0", adjust scales accordingly	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES	T27R08E-1 MARCKWORTH 7500 CULVERT ROAD PROFILE	SHEET 2 OF 3

STREAM PROFILE AT THALWEG



SCALE 1"=30'
0 30 60 Feet

STREAM PROFILE AT THALWEG

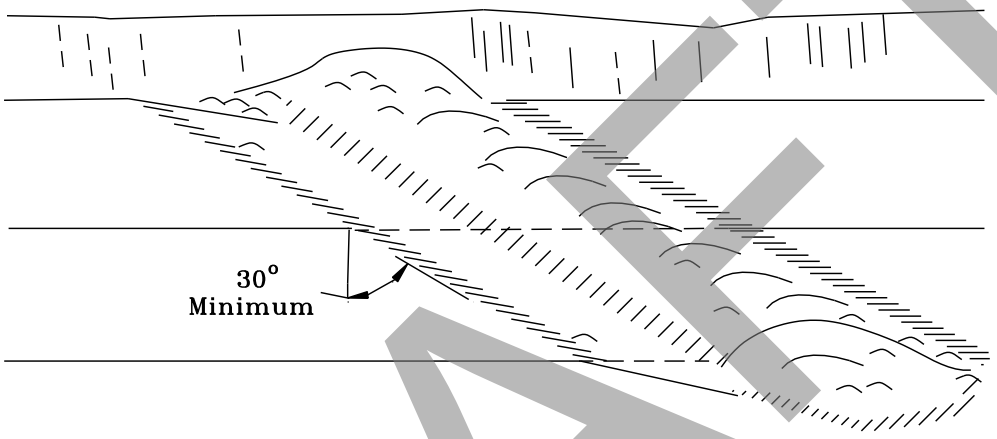


SCALE 1"=5'
0 5 10 Feet

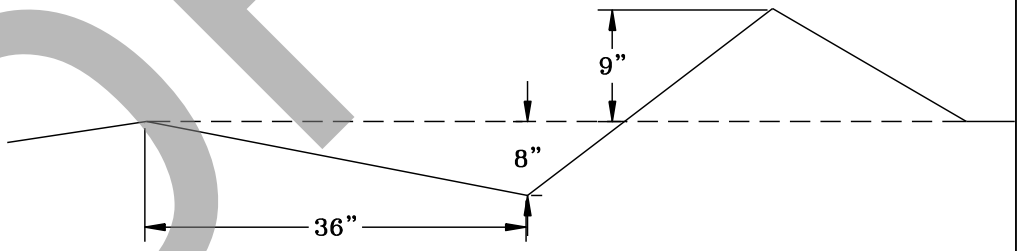
DESIGN BY: E. BAUER DRAWN BY: E. BAUER CHECKED BY: DATE: 26 February 2024	SEC. TWNSHIP RANGE: SEC 31 T27N R08E LAT & LONG: 47.780733 -121.836736 LANDOWNER: WA-DNR		1.0" VERIFY SCALE If bar does not measure 1.0", adjust scales accordingly	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES	T27R08E-1 MARCKWORTH 7500 CULVERT STREAM PROFILE	SHEET 3 OF 3

Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline



Date:
Scale : None
App#
Drawn by: M.A.D.

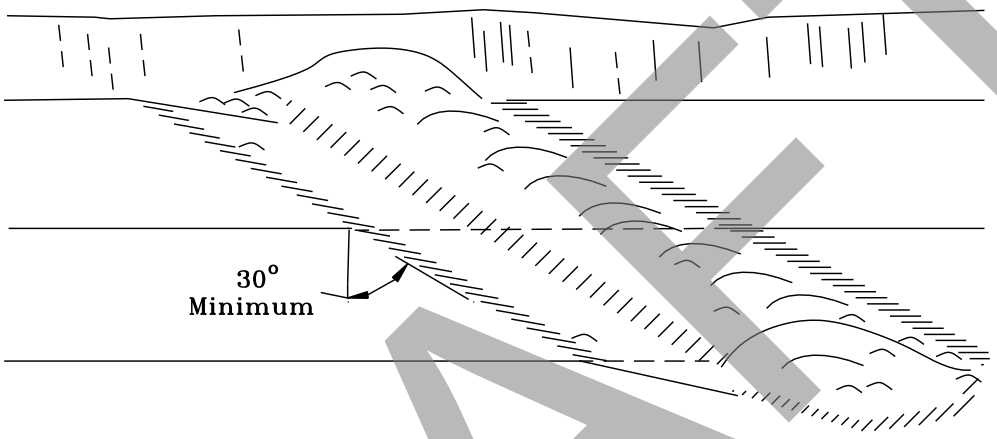
Water Bar Detail

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

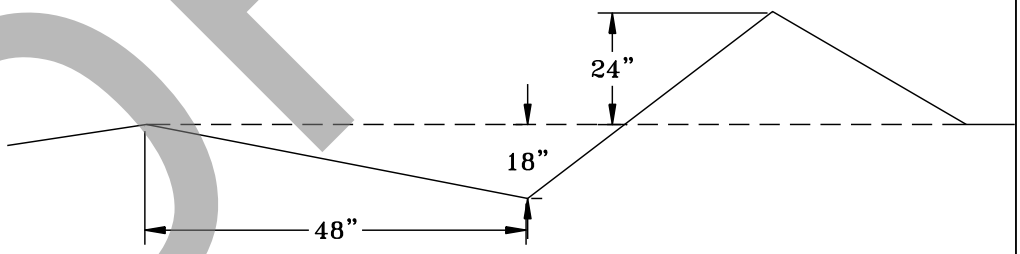
SPS REGION1

Non-Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

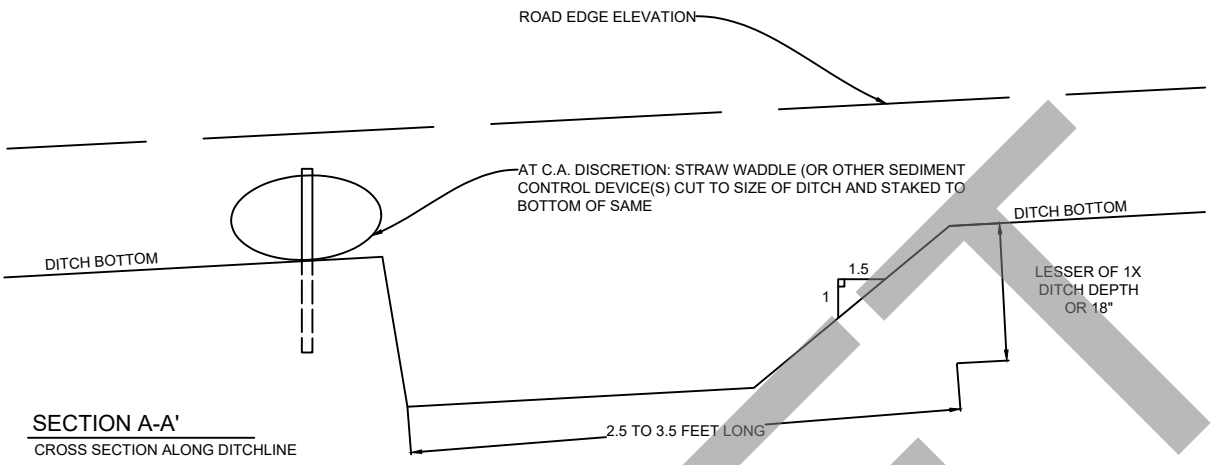


Date:
Scale : None
App#
Drawn by: M.A.D.

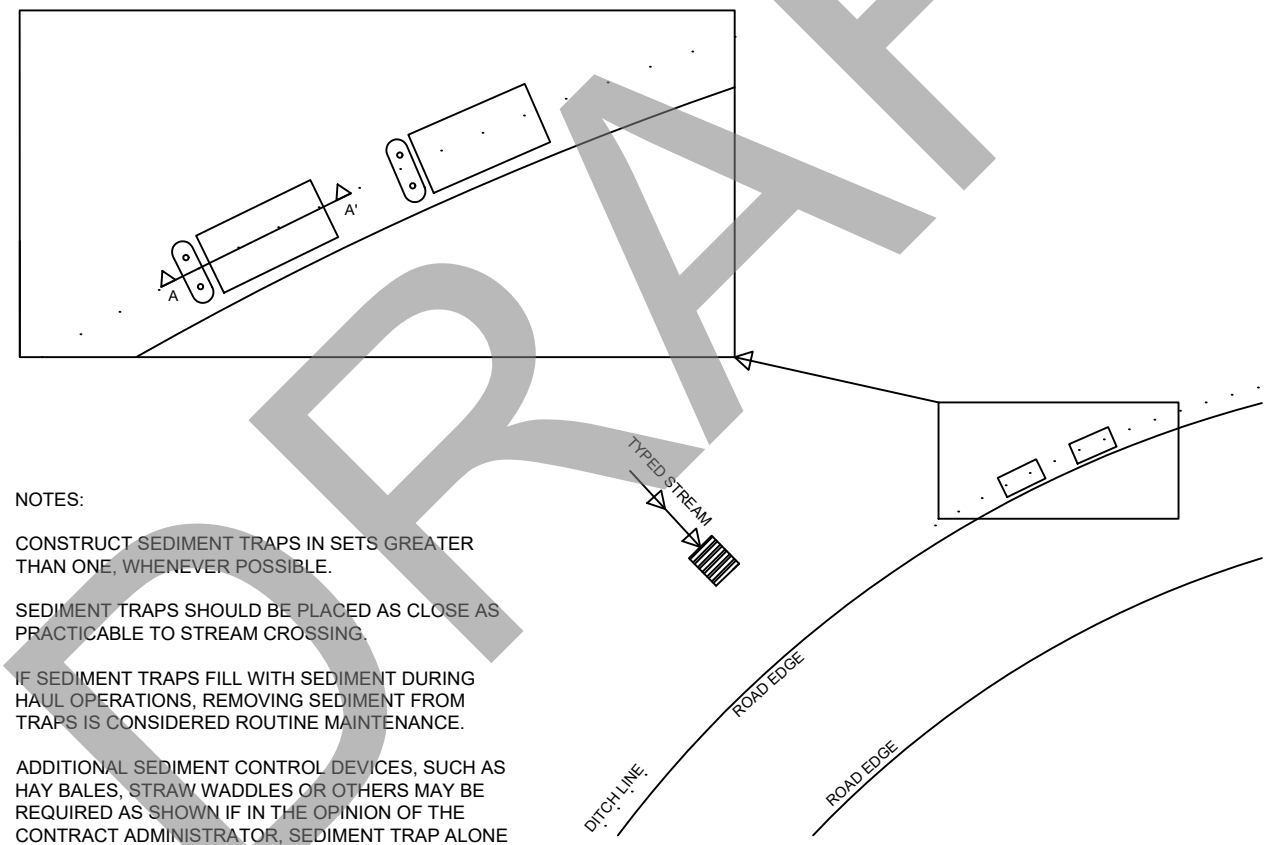
Water Bar Detail

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

SEDIMENT TRAP DETAIL



SECTION A-A'
CROSS SECTION ALONG DITCHLINE



NOTES:

CONSTRUCT SEDIMENT TRAPS IN SETS GREATER THAN ONE, WHENEVER POSSIBLE.

SEDIMENT TRAPS SHOULD BE PLACED AS CLOSE AS PRACTICABLE TO STREAM CROSSING.

IF SEDIMENT TRAPS FILL WITH SEDIMENT DURING HAUL OPERATIONS, REMOVING SEDIMENT FROM TRAPS IS CONSIDERED ROUTINE MAINTENANCE.

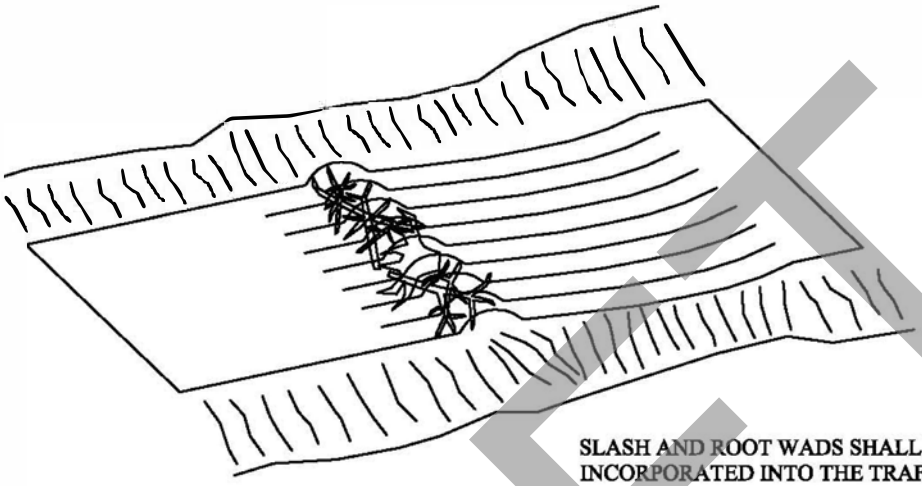
ADDITIONAL SEDIMENT CONTROL DEVICES, SUCH AS HAY BALES, STRAW WADDLES OR OTHERS MAY BE REQUIRED AS SHOWN IF IN THE OPINION OF THE CONTRACT ADMINISTRATOR, SEDIMENT TRAP ALONE DOES NOT APPEAR TO BE EFFECTIVE.

SEDIMENT TRAP DETAIL

Date: 07/24/2018
Scale : NTS
App#
Drawn by: WPH
Sheet 1 of 1

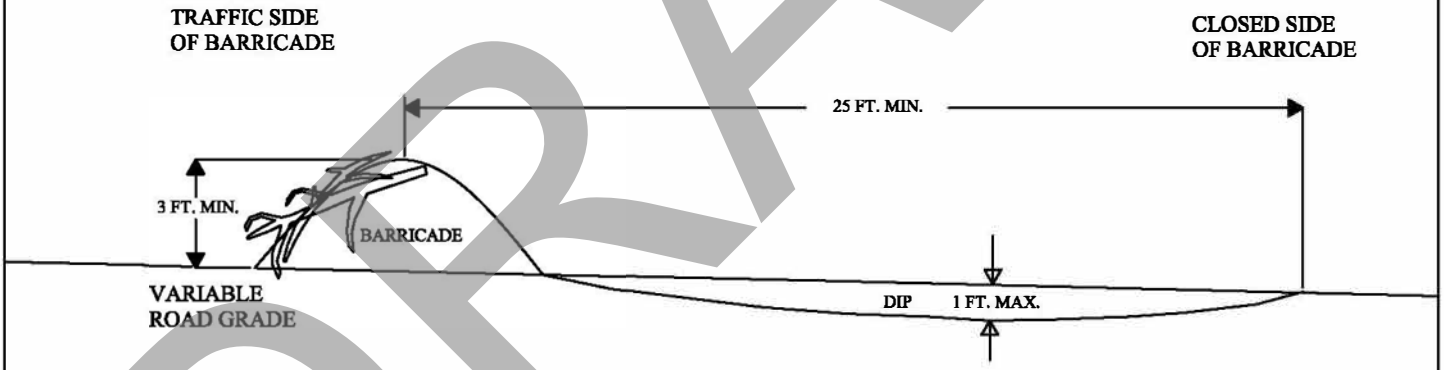
WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

BARRICADE DETAIL



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

PLAN VIEW



BOTTOM OF DIP SHALL BE OUTSLOPED SO AS TO DRAIN FREELY

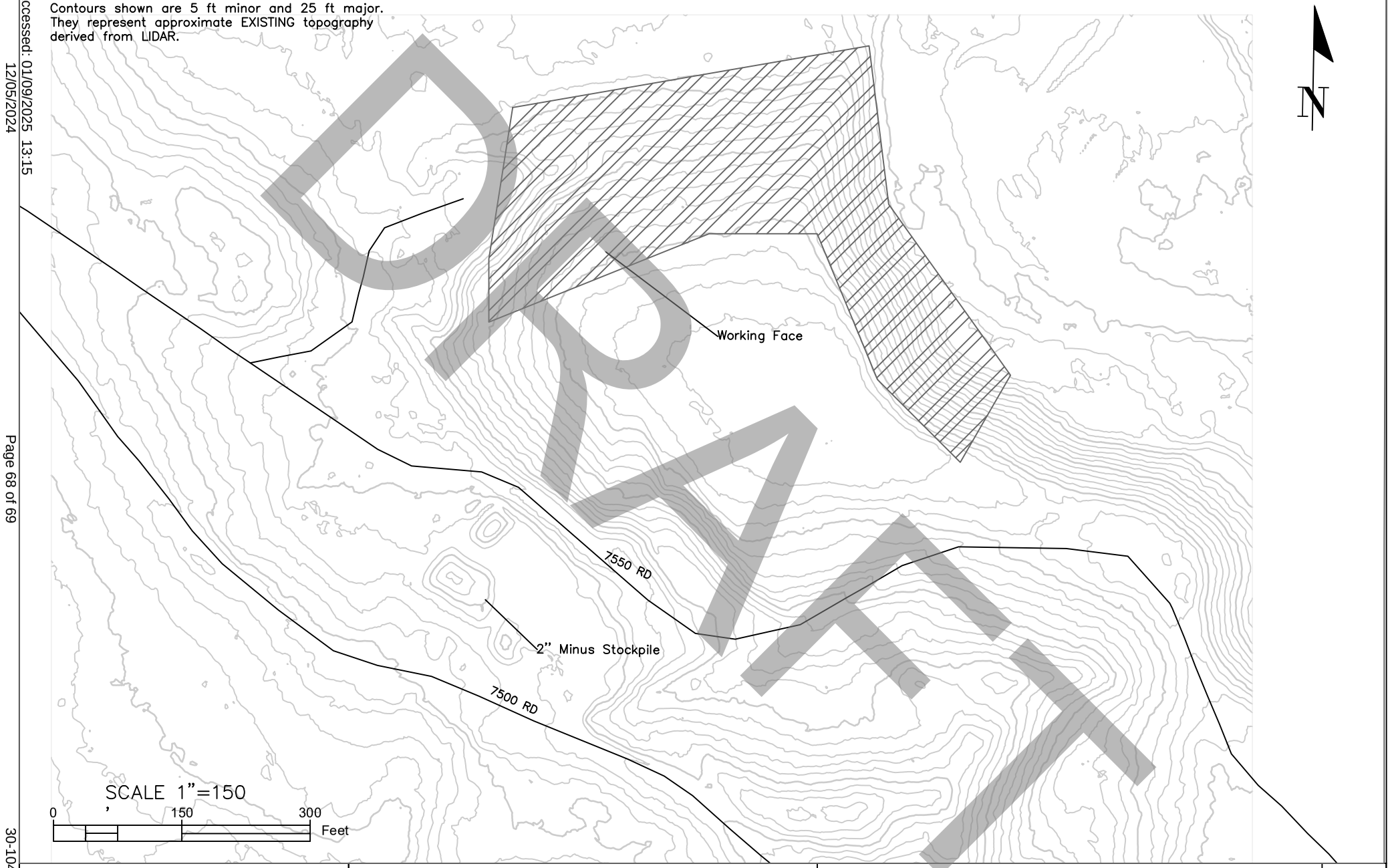
PROFILE VIEW

Barricade Detail

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

GENERAL NOTES:

Contours shown are 5 ft minor and 25 ft major.
They represent approximate EXISTING topography
derived from LIDAR.



DESIGN BY:	E. BAUER
DRAWN BY:	E. BAUER
CHECKED BY:	
DATE:	January 15 ,2024

7500 PIT PLAN
BLUFFIN T.S.

WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

SHEET 1
OF 1

30-104863

PIT DEVELOPMENT PLAN

Legal Description: SW ¼ SW ¼ of Sec 32 T27NR08E W. M.
Rock Pit Name: 7500 Pit

1. Development shall begin at working face,as marked on the map. Development shall proceed upslope to the north.

2. All vegetation including stumps shall be cleared a minimum of 20 feet beyond the top of all working faces.

3. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden and piled in the designated waste area.

4. Overburden shall be pushed or end hauled to the designated disposal site and compacted. Minimal acceptable compaction is achieved by placing material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts. A minimum stripping width of 10 feet must be maintained from all pit faces.

5. Pit faces and walls shall not exceed 30 feet in height and shall be sloped no steeper than 1 1/2H: 1V.

6. No rock developement will be allowed in pit floor.

7. The pit floor shall have smooth continuity of slope, providing drainage. No ponding will be allowed.

8. At the end of operations, faces shall be scaled and cleared of loose and overhanging material, including overburden pushed over the face.

9. Oversize material remaining in the pit at the conclusion of operations shall not exceed 5 percent of the total volume mined during the operation. Oversize material is defined as rock or rock fragments larger than two feet in any direction. Oversize shall be piled in designated waste area.

10. The access road from the pit floor to the 7550 road must be left to F.A.R.M. specifications.

11. Quantity and Quality of ballast pit is not guaranteed by the State.

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 01-09)

Road Development Cost Estimate

(For internal DNR use only. Costs are estimates only & are not guaranteed by the State or part of the Road Plan.)

REGION: SPS UNIT: Snoquilmie

SALE/PROJECT NAME: Bluffin TS CONTRACT NUMBER: 30-104863

LEGAL DESCRIPTION: T27R07E Sec 35/T26R07E Sec 2

ROAD NUMBER:		5210-5ext, 7010-1ext, 7590ext, 12250		5210-5, 7000, 7010, 7010-1, 7050, 7050-1, 7050-2, 7050-3, 7050-4, 7050-5, 7050-8 7500, 7590, 7590-1, 12000, Cedar Ponds Road
ROAD STANDARD:		Construction	Reconstruction	Pre-haul maintenance
NUMBER OF STATIONS:		48.28	0.00	577.73
SIDESLOPE:		30%	0%	0%
CLEARING AND GRUBBING:		$7,674	$0	
EXCAVATION AND FILL:		$9,879	$0	
MISC. MAINTENANCE:				$17,929
ROCK TOTALS (Cu. Yds.):				
Pit Run	3047	$28,020		
2 Inch	2580			$25,066
Landings	300	$2,315		
QS	48	$275		$1,135
CULVERTS AND FLUMES:		$7,390	$0	$7,975
STRUCTURES:		$0	$0	$2,518
GENERAL EXPENSES:		$5,000	$0	$4,916
MOBILIZATION:		$3,565	$0	$3,565
TOTAL COSTS:		$64,116	$0	$63,104
COST PER STATION:		$1,328	$0	$109

ROAD DEACTIVATION AND ABANDONMENT COSTS: $16,827

NOTE[1]: This appraisal has no allowance for profit and risk.

TOTAL (All Roads) = $144,048

SALE VOLUME MBF = 5,499

TOTAL COST PER MBF = $26.20

Date: 01/09/24