WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

SALE NAME: *CARROT* ***AGREEMENT NO:*** *30-103584*

AUCTION: December 17, 2024 starting at 10:00 a.m., **COUNTY:** Thurston
South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 8 miles southwest of Littlerock, WA.

PRODUCTS SOLD AND SALE AREA: All timber, except trees 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 from the day of sale, bounded by the following: white Timber Sale Boundary tags, timber type change marked with pink flagging, and the D-8000 Road in Unit #1; white Timber Sale Boundary tags, timber type change marked with pink flagging, and the E-Line Road in Unit #2; white Timber Sale Boundary tags and timber type change marked with pink flagging in Unit #3;

All timber meeting minimum dimensions as described in clause H-141 bounded by orange right of way tags in Unit #4.

All forest products above located on part(s) of Sections 1, 2, 11 and 12 all in Township 16 North, Range 4 West, Sections 7 all in Township 16 North, Range 3 West, W.M., containing 73 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

	Avg	Ring	Total	MBF by Grade								
Species	DBH	Count	MBF	1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	26.2	8	3,241			55	186		2,635	252	84	29
Red alder	13.8		103						11	26	62	4
Hemlock	18.3		92						67	11	11	3
Redcedar	16.7		36							29	7	
Maple	15.6		7								7	
Sale Total			3,479									

MINIMUM BID: $1,525,000.00 **BID METHOD:** Sealed Bids

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

EXPIRATION DATE: May 31, 2027 **ALLOCATION:** Export Restricted

BID DEPOSIT: $152,500.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvesting activities are estimated to be 33 percent cable and 67 percent ground based harvest. Cable and cable-tethered equipment allowed on all slopes. Non-tethered self-leveling equipment limited to sustained slopes of 65 percent or less, all other ground based equipment limited to tracked equipment on sustained slopes of 45 percent or less, except rubber tired skidders on a pre-approved skid trail in Unit #2 only per clause H-

140. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

Falling and yarding will not be permitted on weekends or State recognized holidays in all units, unless authorized in writing by the Contract Administrator. In addition, yarding with rubber tired skidders will not be permitted in Unit #2 from November 1 to April 30, unless authorized in writing by the Contract Administrator.

ROADS: 36.02 stations of optional construction. 3.00 stations of optional reconstruction. 213.24 stations of required prehaul maintenance. 24.02 stations of abandonment, if constructed. 3.00 stations of abandonment, if reconstructed. Purchaser maintenance on the D-0351, D-8000, D-8004, D-8004-EXT, D-8600, D-8620, E-6030, E-6030-1, E-6030-EXT, and E-6750 roads. Designated maintenance on all other roads used.

Rock for this proposal may be obtained from the State owned Scott Paper Quarry, and from the existing stockpile at the Scott Paper Quarry per Road Plan clause 6-3, at no cost to the Purchaser or any commercial rock source at the Purchaser's expense.

The operation of road construction equipment 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.

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

ACREAGE DETERMINATION

CRUISE METHOD: Acreage was determined by traversing boundaries by GPS in all units. GPS data files are available at DNR's website for timber sale auction packets. See cruise narrative for cruise method.

FEES: $59,143.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: The Legacy Forest Defense Coalition and Thurston County appealed the Board’s approval of the "Carrot" timber sale to Thurston County Superior Court, Cause No. 24-2-00508-34. Please consult an attorney before bidding on this sale if you have questions about the risk of impacts to operability under the contract.

This sale contains high quality Douglas-fir and transmission quality poles in Units #1-#3, with the highest concentration of poles in Unit #1.

While Units #2 and #3 contain areas with steep slopes, road and landing locations are designed to facilitate efficient ground-based logging. See also clause H-140 l.

Within Units #1-#3 are remnant blue painted bands from prior operations. Trees with blue painted bands are take trees, unless located within tagged leave tree area clumps. All individual leave trees are marked with yellow Leave Tree Area tags with pink flagging.

Purchaser shall remove from daylighting Unit #4 all forest products as specified in clause H-141.

Within Units #1-#4, Purchaser shall cut all hardwood stems 6 feet tall and greater, leaving a stump no more than 12 inches in height.

Extreme hazard abatement is required within 200 feet of Cedar Creek Corrections Center storage structure located adjacent to Unit #4 ROW on the D-8600 Road, just past the D-8000 Road. Purchaser shall provide a slash disposal plan for hazard abatement, per contract clause S-020.

Facility equipment and materials belonging to Cedar Creek Camp are stored just within the edge of the ROW boundary at the intersection of the D-8600 and D-8000 in front of the aforementioned storage structures. Contract Administrator will ensure Camp removes these materials prior to operations beginning.

Purchaser is required to notify Department of Corrections prior to any road work beginning on the D-8000 and D-8600 roads due to the proximity to utilities. See the Road Plan for details.

Per clause H-140, Purchaser shall create a safety plan and coordinate with other active timber sales using the D-Line prior to any operations or closures affecting the D-Line.

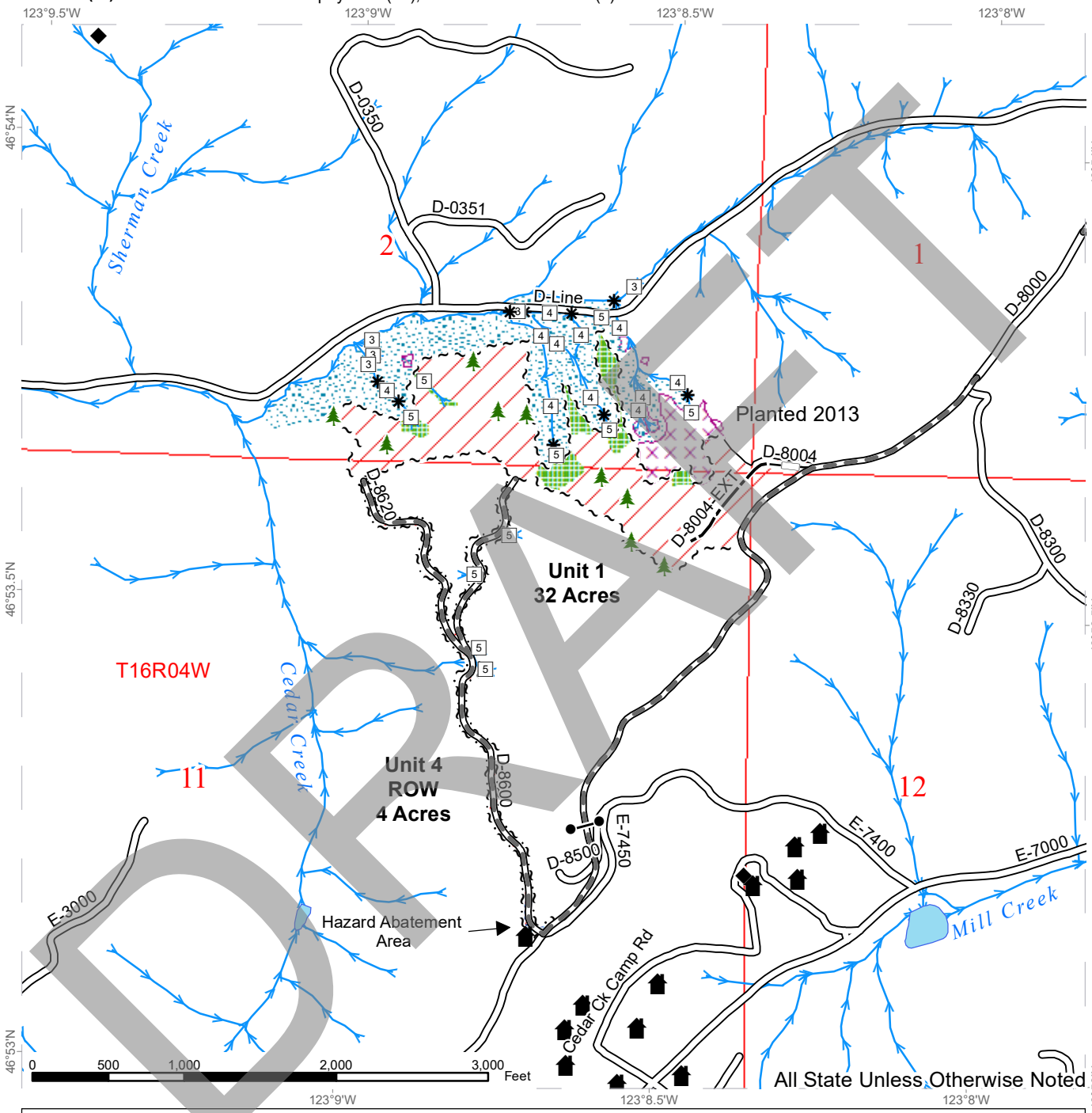
Note to cruisers and appraisers: Please refrain from leaving pink, orange or blue flagging from your cruises in or around the sale area to avoid confusion with DNR's marking. Additionally, for the safety of the public, please remove from roads and trails all string from string boxes used during appraising 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 Brady Dier at (360) 751-9188.

TIMBER SALE MAP

SALE NAME: CARROT
AGREEMENT #: 30-103584
TOWNSHIP(S): T16R4W, T16R3W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



- Variable Retention Harvest
- Leave Tree Area
- Riparian Mgt Zone
- Hazard Abatement Area
- Tailhold Restriction Area
- Streams
- Stream Type
- Stream Type Break
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Optional Reconstruction
- Sale Boundary Tags
- Right of Way Tags
- Timber Type Change
- Gate (H957)
- Leave Tree Area <1/4-acre
- Structure
- Survey Monument

N

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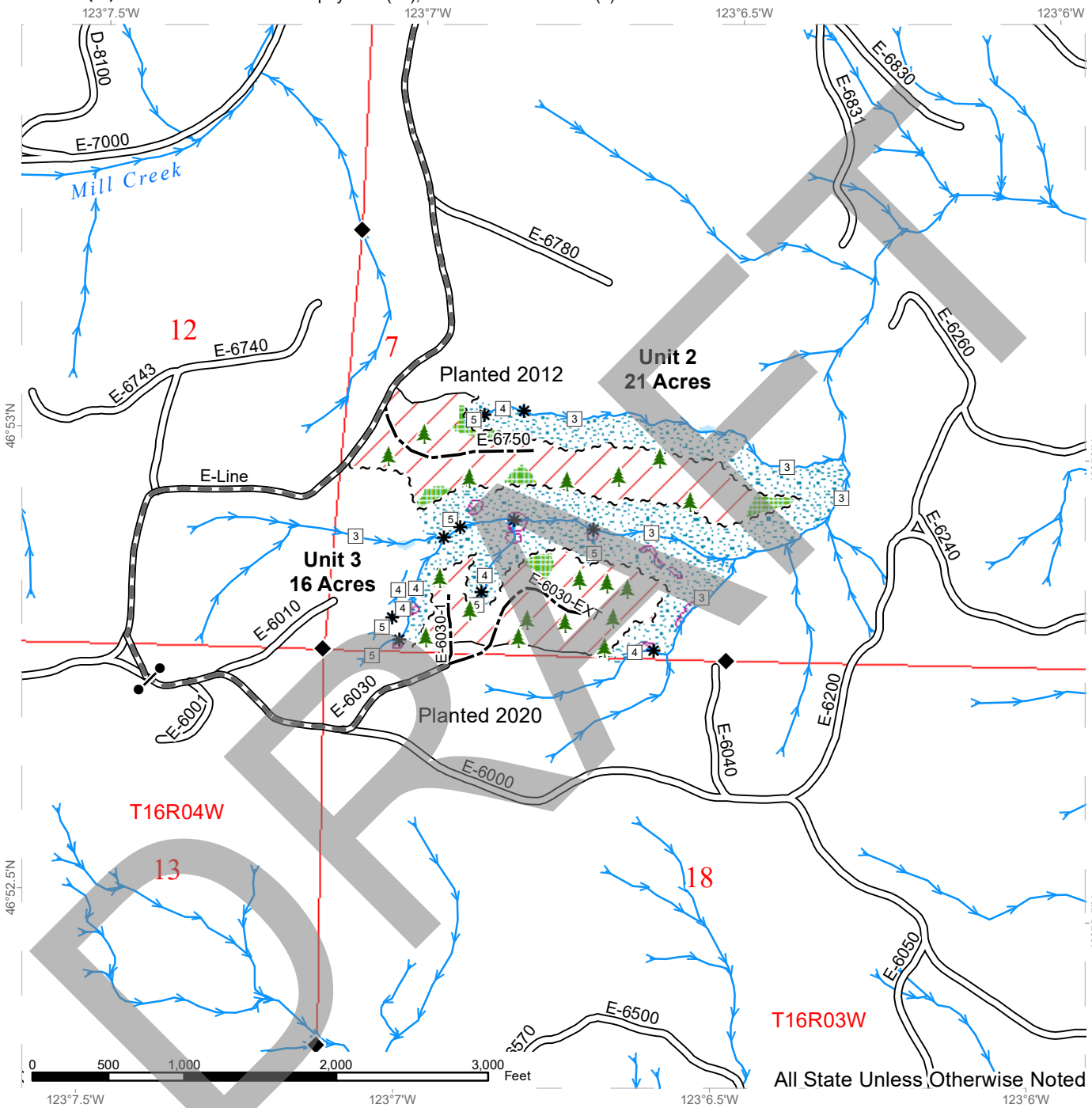


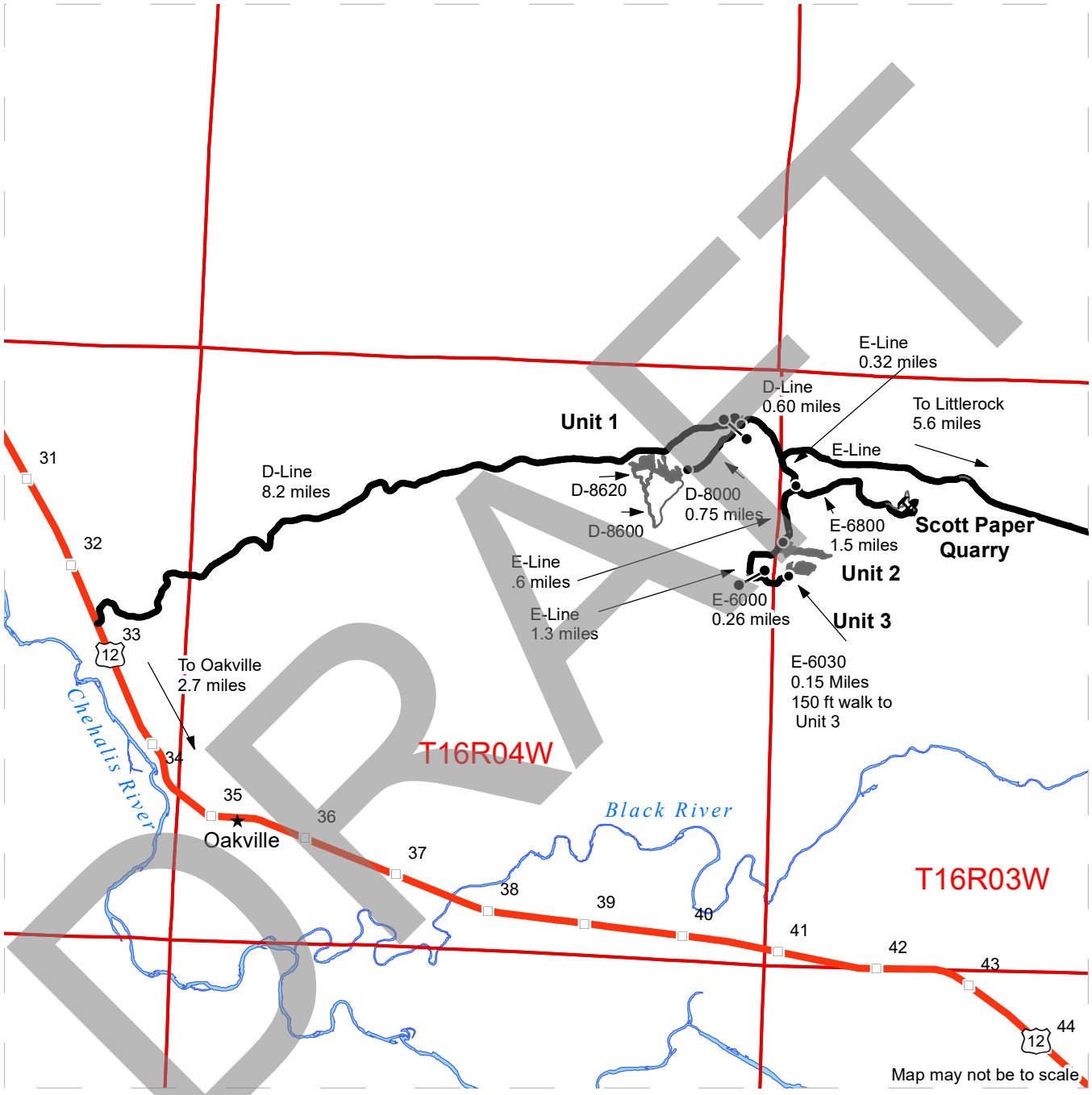
- Variable Retention Harvest
- Leave Tree Area
- Riparian Mgt Zone
- Forested Wetland
- Tailhold Restriction Area
- Streams
- Stream Type
- Stream Type Break
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Sale Boundary Tags
- Timber Type Change
- Gate (H957)
- Leave Tree Area <1/4-acre
- Survey Monument

N

DRIVING MAP

SALE NAME: CARROT
AGREEMENT#: 30-108534
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



- Timber Sale Unit
- Haul Route
- Other Road
- Milepost Markers
- Highway
- Distance Indicator
- Gate (H-957)
- Rock Pit

DRIVING DIRECTIONS:

From US-12: Turn east onto the D-Line for 8.2 miles.
To Unit 1 turn right onto the D-8000 for 0.75 miles.
To the Scott Paper Quarry from the junction of the D-Line and the D-8000
Continue on the D-Line for 0.60 miles, go south on the E-Line for 0.32 miles,
then turn left onto the E-6800 for 1.5 miles.
To Unit 2 from the junction of the E-line and the E-6800, continue on the E-Line for 0.6 miles.
To Unit 3 from the junction of the E-Line and the E-6800, continue on the E-Line for 1.3 miles,
turn left onto E-6000 for 0.26 miles, turn left onto the E-6030 for 0.15 miles.
Walk approximately 150 feet from the end of the E-6030 to Unit 3.

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Timber Sale Cruise Report
Carrot

Sale Name: CARROT

Sale Type: LUMP SUM

Region: SO PUGET

District: BLACK HILLS

Lead Cruiser: Mike Sly

Other Cruisers: Phil Kirner, Aaron Coleman

Cruise Narrative:
Location:
This sale is located in Capital Forest and consists of 3 variable retention harvest (VRH) units and one right of way (ROW) unit located off of the D-Line, D-8000, D-8600, E-Line, E-6000. Unit 1 and 4 (ROW) require a 957 key to access.

Cruise Design:
Variable plot sampling was used in all units. A 62.5, 40 BAF was used in unit 1. A 54.44, 40 BAF was used in units 2 and 3. A 40 BAF was used in unit 4.

Conifer logs were cruised in 2-foot multiples - maximizing 32-40 ft. lengths. Bole heights were measured to a 5" top or break point (40% of diameter at 16 feet). Trees were segmented into appropriate west side log lengths and defect was applied.

Some units contain trees with blue bands from a previous thinning; these trees were cruised through equally with the rest of the stand and will be harvested.

Cruise acres were based on net harvest acres. Leave trees were not sampled.

Timber Quality & Logging and Stand Conditions:
Units 1-3 contain older Doulas Fir dominated stands with pockets of RC, WH and RA throughout. Common defects observed were spike knots, forked tops, root rot pockets and broken up ground that will result in a high percentage of breakage. Unit 4 is a daylighting unit through plantation DF. High quality DF and transmission quality poles were present in units 1-3 with the highest concentration of poles throughout unit 1.

Logging percentages:
Cable: 33%
Shovel 67%

General remarks:

Dry season operation and steep slope machines in unit 1 should be able to facilitate logging operations and reduce overall tower ground. Leave areas and leave trees appear to facilitate the use of tethered equipment.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	26.2	8.5		3,241	55	186	2,634	252	84	29
RA	13.8			103			11	26	61	4
WH	18.3			92			67	11	11	3
RC	16.7			36				29	7	
MA	15.6			7					7	
ALL	22.1	8.5		3,479	55	186	2,713	318	171	36

Timber Sale Notice Weight (tons)

	Tons by Grade						
Sp	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	20,107	251	1,037	15,368	2,340	903	208
RA	985			108	207	648	23
WH	822			504	138	153	27
RC	373				283	90	
MA	152					152	
ALL	22,438	251	1,037	15,980	2,968	1,945	257

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 (%)
249.9	5.9	187.1	3.5	47,532	6.9

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
CARROT U1	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	32.2	37.2	40	23	2
CARROT U2	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	20.8	23.6	16	6	0
CARROT U3	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	15.8	17.2	16	9	0
CARROT U4 ROW	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	4.4	4.4	5	5	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
All		73.2	82.5	77	43	2

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	DEAD	UTILITY	Pulp	17.3	32	280	254	9.4	95.9	18.6
DF	LIVE	2 SAW	Domestic	18.1	33	26,064	25,226	3.2	11,061.5	1,846.5
DF	LIVE	2 SAW	HQ-A	24.3	32	3,358	3,354	0.1	1,225.3	245.5
DF	LIVE	2 SAW	HQ-B	20.1	33	5,457	5,422	0.6	2,311.2	396.9
DF	LIVE	2 SAW	Pole	18.3	32	1,984	1,984	0.0	770.2	145.3
DF	LIVE	3 PEELER	Domestic	30.0	32	756	756	0.0	251.2	55.4
DF	LIVE	3 SAW	Domestic	10.0	31	3,249	2,957	9.0	2,049.4	216.4
DF	LIVE	3 SAW	HQ-B	9.3	38	391	391	0.0	236.3	28.6
DF	LIVE	3 SAW	Pole	10.5	23	96	96	0.0	54.6	7.0
DF	LIVE	4 SAW	Domestic	6.5	26	1,216	1,149	5.5	902.9	84.1
DF	LIVE	CULL	Cull	10.5	21	426	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	23.2	33	2,544	2,544	0.0	1,036.6	186.2
DF	LIVE	UTILITY	Pulp	9.1	25	146	146	0.0	111.7	10.7
MA	LIVE	4 SAW	Domestic	5.5	34	117	91	22.3	152.1	6.7
RA	LIVE	2 SAW	Domestic	13.1	40	200	152	23.7	107.8	11.2
RA	LIVE	3 SAW	Domestic	10.6	35	368	361	2.1	206.6	26.4
RA	LIVE	4 SAW	Domestic	6.8	33	918	838	8.8	647.6	61.3
RA	LIVE	UTILITY	Pulp	5.0	20	54	54	0.0	22.5	3.9
RC	LIVE	3 SAW	Domestic	8.9	36	405	395	2.6	283.4	28.9
RC	LIVE	4 SAW	Domestic	5.1	30	102	100	1.9	89.6	7.3
WH	LIVE	2 SAW	Domestic	16.4	32	941	921	2.1	503.6	67.4
WH	LIVE	3 SAW	Domestic	8.7	35	161	144	10.2	137.9	10.6
WH	LIVE	4 SAW	Domestic	7.1	24	179	156	13.1	153.0	11.4
WH	LIVE	CULL	Cull	11.8	32	56	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.1	23	42	42	0.0	27.3	3.0

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Pulp	5.3	24	4	0.0	4.1	0.3
DF	5 - 7	LIVE	Cull	5.8	21	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Domestic	5.8	31	1,204	3.9	932.8	88.1
DF	8 - 11	LIVE	HQ-B	9.3	38	391	0.0	236.3	28.6

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	8 - 11	LIVE	Pulp	9.4	29	142	0.0	107.6	10.4
DF	8 - 11	LIVE	Domestic	9.9	29	2,675	10.4	1,890.2	195.8
DF	8 - 11	DEAD	Pulp	10.2	32	0	100.0	0.0	0.0
DF	8 - 11	LIVE	Cull	10.5	18	0	100.0	0.0	0.0
DF	8 - 11	LIVE	Pole	10.5	23	96	0.0	54.6	7.0
DF	12 - 15	LIVE	HQ-B	12.1	34	118	0.0	82.2	8.6
DF	12 - 15	LIVE	HQ-A	12.6	34	130	0.0	84.6	9.5
DF	12 - 15	LIVE	Domestic	13.7	32	4,780	4.6	2,466.2	349.9
DF	12 - 15	LIVE	Cull	14.4	28	0	100.0	0.0	0.0
DF	12 - 15	LIVE	Pole	14.9	32	464	0.0	217.4	34.0
DF	16 - 19	LIVE	HQ-A	17.9	33	416	1.0	186.2	30.5
DF	16 - 19	LIVE	Cull	18.0	27	0	100.0	0.0	0.0
DF	16 - 19	DEAD	Pulp	18.1	32	92	0.0	34.7	6.7
DF	16 - 19	LIVE	Domestic	18.1	35	7,228	3.1	3,165.9	529.1
DF	16 - 19	LIVE	HQ-B	18.3	34	2,751	0.0	1,236.3	201.4
DF	16 - 19	LIVE	Pole	19.4	32	588	0.0	224.5	43.1
DF	20+	LIVE	Pole	22.2	32	932	0.0	328.3	68.2
DF	20+	LIVE	HQ-B	23.3	32	2,553	1.3	992.6	186.9
DF	20+	DEAD	Pulp	23.5	32	162	0.0	61.2	11.9
DF	20+	LIVE	Domestic	24.4	34	14,200	2.6	5,809.9	1,039.5
DF	20+	LIVE	HQ-A	25.2	32	5,352	0.0	1,991.1	391.7
MA	5 - 7	LIVE	Domestic	5.5	34	91	22.3	152.1	6.7
RA	5 - 7	LIVE	Pulp	5.0	20	54	0.0	22.5	3.9
RA	5 - 7	LIVE	Domestic	5.8	33	442	14.1	352.5	32.4
RA	8 - 11	LIVE	Domestic	9.3	33	756	2.0	501.6	55.4
RA	12 - 15	LIVE	Domestic	13.1	40	152	23.7	107.8	11.2
RC	5 - 7	LIVE	Domestic	5.6	34	217	0.9	189.0	15.9
RC	8 - 11	LIVE	Domestic	10.1	32	178	3.5	126.2	13.0
RC	12 - 15	LIVE	Domestic	15.7	32	40	0.0	27.7	2.9
RC	20+	LIVE	Domestic	22.1	32	61	6.3	30.1	4.5
WH	5 - 7	LIVE	Pulp	5.1	23	42	0.0	27.3	3.0
WH	5 - 7	LIVE	Domestic	6.4	30	165	5.3	169.2	12.1
WH	8 - 11	LIVE	Domestic	9.5	23	135	18.5	121.6	9.9
WH	8 - 11	LIVE	Cull	11.8	32	0	100.0	0.0	0.0
WH	12 - 15	LIVE	Domestic	13.4	32	244	5.1	154.9	17.9
WH	16 - 19	LIVE	Domestic	18.1	32	495	1.3	267.2	36.2
WH	20+	LIVE	Domestic	23.7	32	182	0.0	81.6	13.3

Cruise Unit Report
CARROT U1

Unit Sale Notice Volume (MBF): CARROT U1

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	24.3	8.5		1,644	55	86	1,352	86	45	20
WH	18.6			89			67	11	11	
RC	16.7			35				29	6	
RA	14.7			16				2	14	
ALL	21.4	8.5		1,785	55	86	1,419	128	76	20

Unit Cruise Design: CARROT U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	32.2	37.2	40	23	2

Unit Cruise Summary: CARROT U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	81	142	3.6	1
WH	16	16	0.4	0
RC	10	10	0.3	0
RA	8	8	0.2	0
ALL	115	176	4.4	1

Unit Cruise Statistics: CARROT 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	221.9	65.3	10.3	230.2	37.9	4.2	51,066	75.6	11.2
WH	25.0	194.5	30.7	111.0	56.1	14.0	2,776	202.4	33.8
RC	15.6	217.2	34.3	69.7	26.3	8.3	1,089	218.8	35.3
RA	8.6	206.3	32.6	59.0	32.2	11.4	505	208.8	34.6
ALL	271.1	53.9	8.5	204.5	49.9	4.7	55,436	73.4	9.7

Unit Summary: CARROT U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	DEAD	CUT	1	ALL	32.0	99	126	366	360	1.8	0.3	1.6	0.3	11.6
DF	LIVE	CUT	80	ALL	24.2	73	94	51,662	50,707	1.8	69.0	220.3	44.8	1,632.8
RA	LIVE	CUT	8	ALL	14.7	43	61	525	505	3.8	7.3	8.6	2.2	16.3
RC	LIVE	CUT	10	ALL	16.7	51	66	1,114	1,089	2.3	10.3	15.6	3.8	35.1
WH	LIVE	CUT	16	ALL	18.6	54	68	3,039	2,776	8.6	13.2	25.0	5.8	89.4
ALL	LIVE	CUT	114	ALL	22.3	66	85	56,340	55,076	2.2	99.8	269.5	56.6	1,773.5
ALL	DEAD	CUT	1	ALL	32.0	99	126	366	360	1.8	0.3	1.6	0.3	11.6
ALL	ALL	ALL	115	ALL	22.3	66	85	56,707	55,436	2.2	100.1	271.1	56.9	1,785.0

Cruise Unit Report
CARROT U2

Unit Sale Notice Volume (MBF): CARROT U2

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	28.7			1,040	58	863	105	13	1
MA	15.6			7				7	
RA	15.0			6			5	1	
RC	18.0			1				1	
ALL	25.4			1,054	58	863	109	22	1

Unit Cruise Design: CARROT U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	20.8	23.6	16	6	0

Unit Cruise Summary: CARROT U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	21	72	4.5	0
MA	2	6	0.4	0
RA	1	1	0.1	0
RC	1	1	0.1	0
ALL	25	80	5.0	0

Unit Cruise Statistics: CARROT 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	245.0	43.7	10.9	204.2	20.5	4.5	50,013	48.3	11.8
MA	15.0	290.1	72.5	21.4	81.5	57.6	321	301.3	92.6
RA	2.5	400.0	100.0	108.4	0.0	0.0	271	400.0	100.0
RC	2.5	400.0	100.0	22.6	0.0	0.0	57	400.0	100.0
ALL	265.0	39.7	9.9	191.2	38.2	7.6	50,661	55.0	12.5

Unit Summary: CARROT U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	21	ALL	28.7	109	139	52,593	50,013	4.9	54.5	245.0	45.7	1,040.3
MA	LIVE	CUT	2	ALL	15.6	36	42	412	321	22.3	11.3	15.0	3.8	6.7
RA	LIVE	CUT	1	ALL	15.0	65	80	285	271	5.0	2.0	2.5	0.6	5.6
RC	LIVE	CUT	1	ALL	18.0	42	51	61	57	7.0	1.4	2.5	0.6	1.2
ALL	LIVE	CUT	25	ALL	26.5	94	120	53,351	50,661	5.0	69.2	265.0	50.8	1,053.7
ALL	ALL	ALL	25	ALL	26.5	94	120	53,351	50,661	5.0	69.2	265.0	50.8	1,053.7

Cruise Unit Report
CARROT U3

Unit Sale Notice Volume (MBF): CARROT U3

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	28.6			502	41	416	32	4	9
RA	13.5			81		11	20	46	4
WH	9.0			3					3
ALL	19.0			585	41	427	52	50	16

Unit Cruise Design: CARROT U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	15.8	17.2	16	9	0

Unit Cruise Summary: CARROT U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	22	46	2.9	0
RA	12	19	1.2	0
WH	1	1	0.1	0
ALL	35	66	4.1	0

Unit Cruise Statistics: CARROT 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	156.5	95.8	23.9	202.8	31.7	6.8	31,738	100.9	24.9
RA	47.5	174.5	43.6	107.8	23.1	6.7	5,122	176.1	44.1
WH	3.4	400.0	100.0	56.6	0.0	0.0	193	400.0	100.0
ALL	207.4	65.2	16.3	178.6	40.3	6.8	37,052	76.7	17.7

Unit Summary: CARROT U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	22	ALL	28.6	107	137	34,063	31,738	6.8	35.1	156.5	29.3	501.5
RA	LIVE	CUT	12	ALL	13.5	68	83	5,690	5,122	10.0	47.8	47.5	12.9	80.9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	1	ALL	9.0	32	37	193	193	0.0	7.7	3.4	1.1	3.0
ALL	LIVE	CUT	35	ALL	20.5	80	100	39,945	37,052	7.2	90.6	207.4	43.3	585.4
ALL	ALL	ALL	35	ALL	20.5	80	100	39,945	37,052	7.2	90.6	207.4	43.3	585.4

Cruise Unit Report
CARROT U4 ROW

Unit Sale Notice Volume (MBF): CARROT U4 ROW

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	13.5			55	3	29	23
ALL	13.5			55	3	29	23

Unit Cruise Design: CARROT U4 ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	4.4	4.4	5	5	0

Unit Cruise Summary: CARROT U4 ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	21	22	4.4	0
ALL	21	22	4.4	0

Unit Cruise Statistics: CARROT U4 ROW

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	176.0	34.5	15.4	71.2	35.3	7.7	12,537	49.4	17.2
ALL	176.0	34.5	15.4	71.2	35.3	7.7	12,537	49.4	17.2

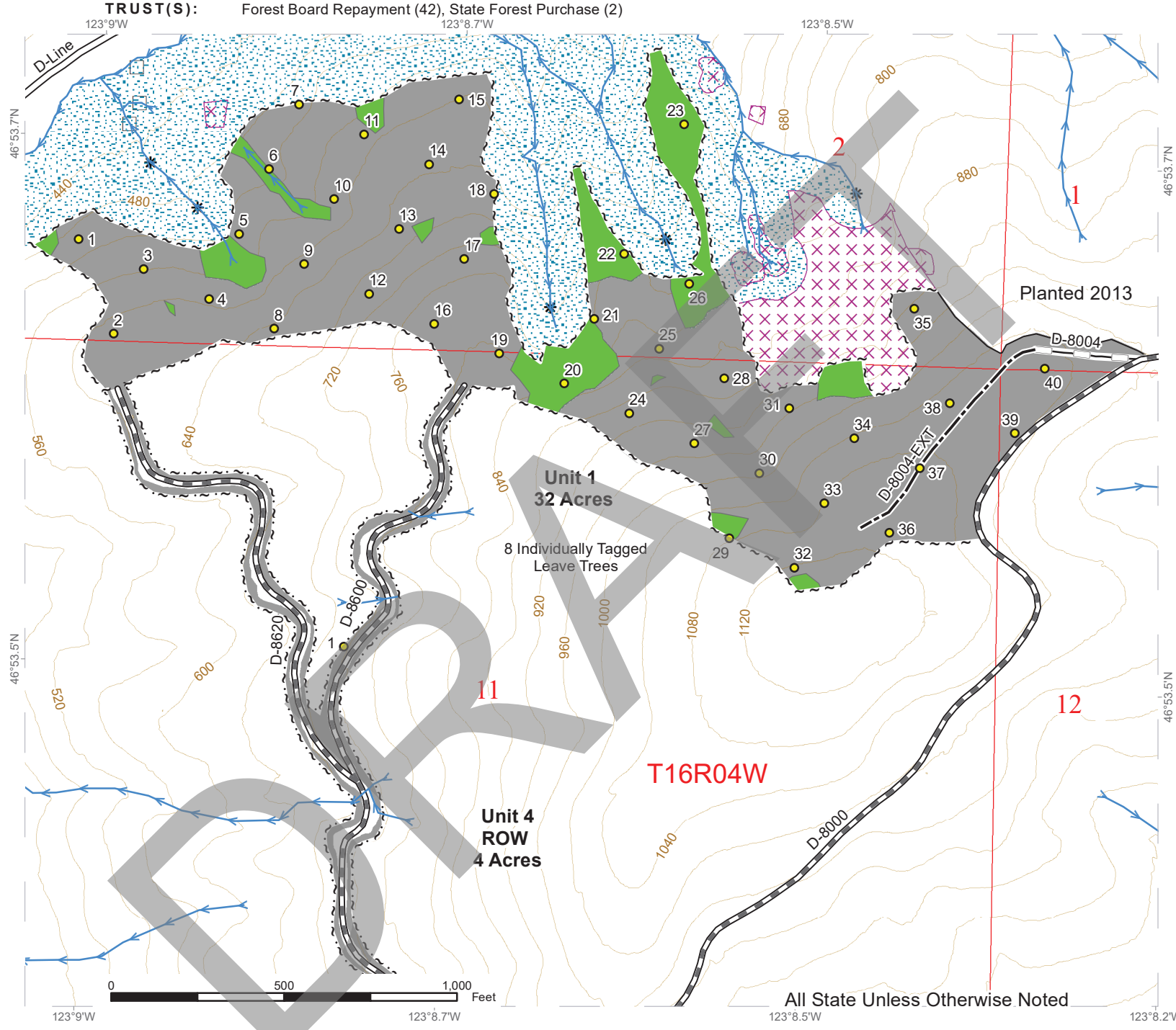
Unit Summary: CARROT U4 ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	21	ALL	13.5	47	60	13,058	12,537	4.0	177.1	176.0	47.9	55.2
ALL	LIVE	CUT	21	ALL	13.5	47	60	13,058	12,537	4.0	177.1	176.0	47.9	55.2
ALL	ALL	ALL	21	ALL	13.5	47	60	13,058	12,537	4.0	177.1	176.0	47.9	55.2

CRUISE MAP

SALE NAME: CARROT
AGREEMENT#: 30-103584
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



Sale Area
Leave Tree Area
Riparian Mgt Zone
Tailhold Restriction Area
Contours 40 ft
Streams
Stream Type
Stream Break
Timber Type Change
Sale Boundary Tags
Right of Way Tags
Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Optional Reconstruction

N

Prepared By: kpsn490
Accessed: 10/01/2024 14:27

Modification Date: acol490 6/8/2023

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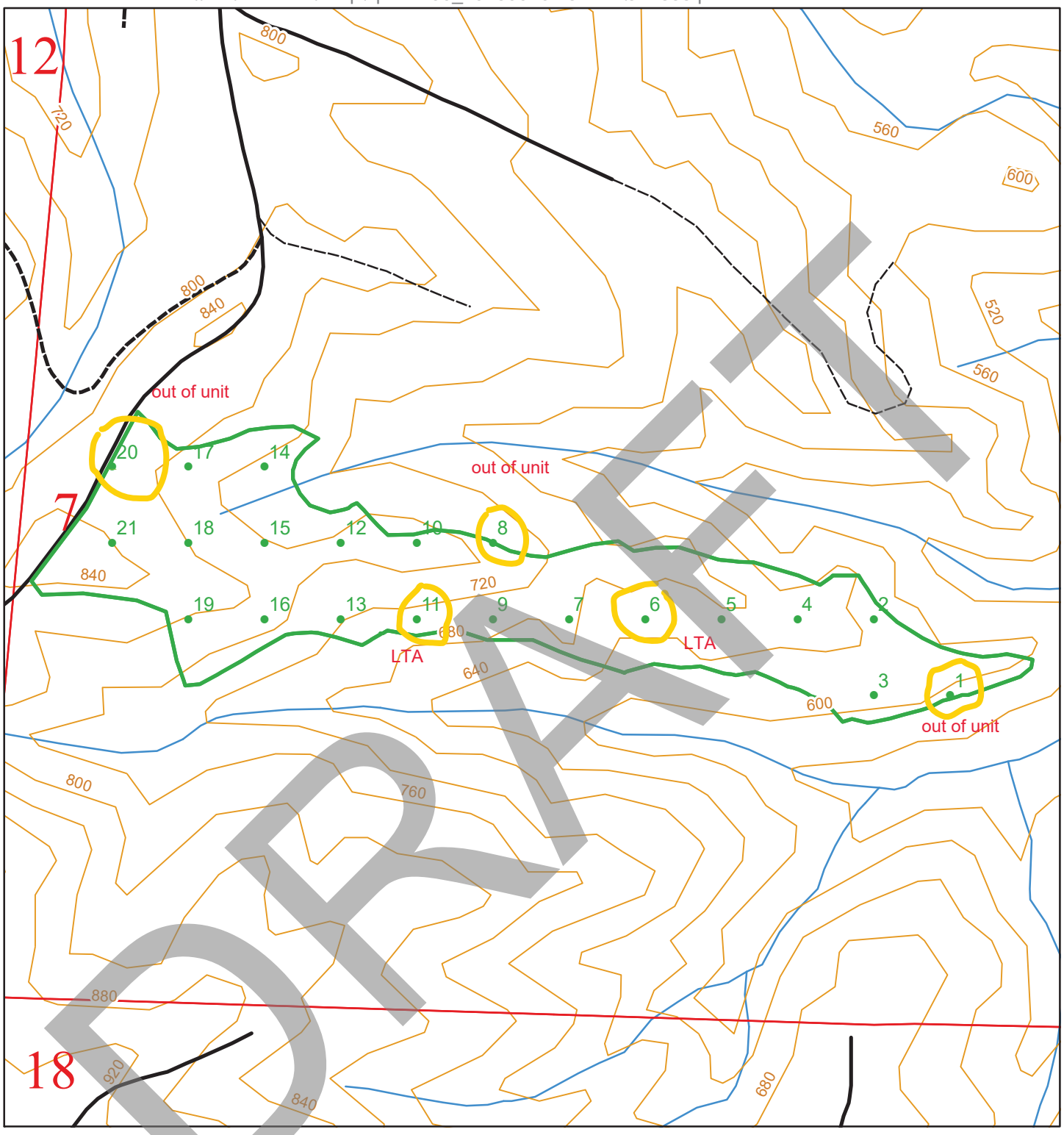

FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	CARROT U2	Township:	T16R03W
FMA_ID:	317858	DNR Region:	SO PUGET
Acres:	24	Total Sample Points:	21
County:	THURSTON	Spacing Between Points:	225
		Point Rotation Degrees:	0

N

0 145 290 580 870 1,160 Feet

Scale 1:5,000

Legend
- Sample Points
- FMA polys
- Public Land Survey Sections
- Contours 40-foot

Accessed: 10/01/2024 14:27

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Jun 26, 2023 03:53 PM

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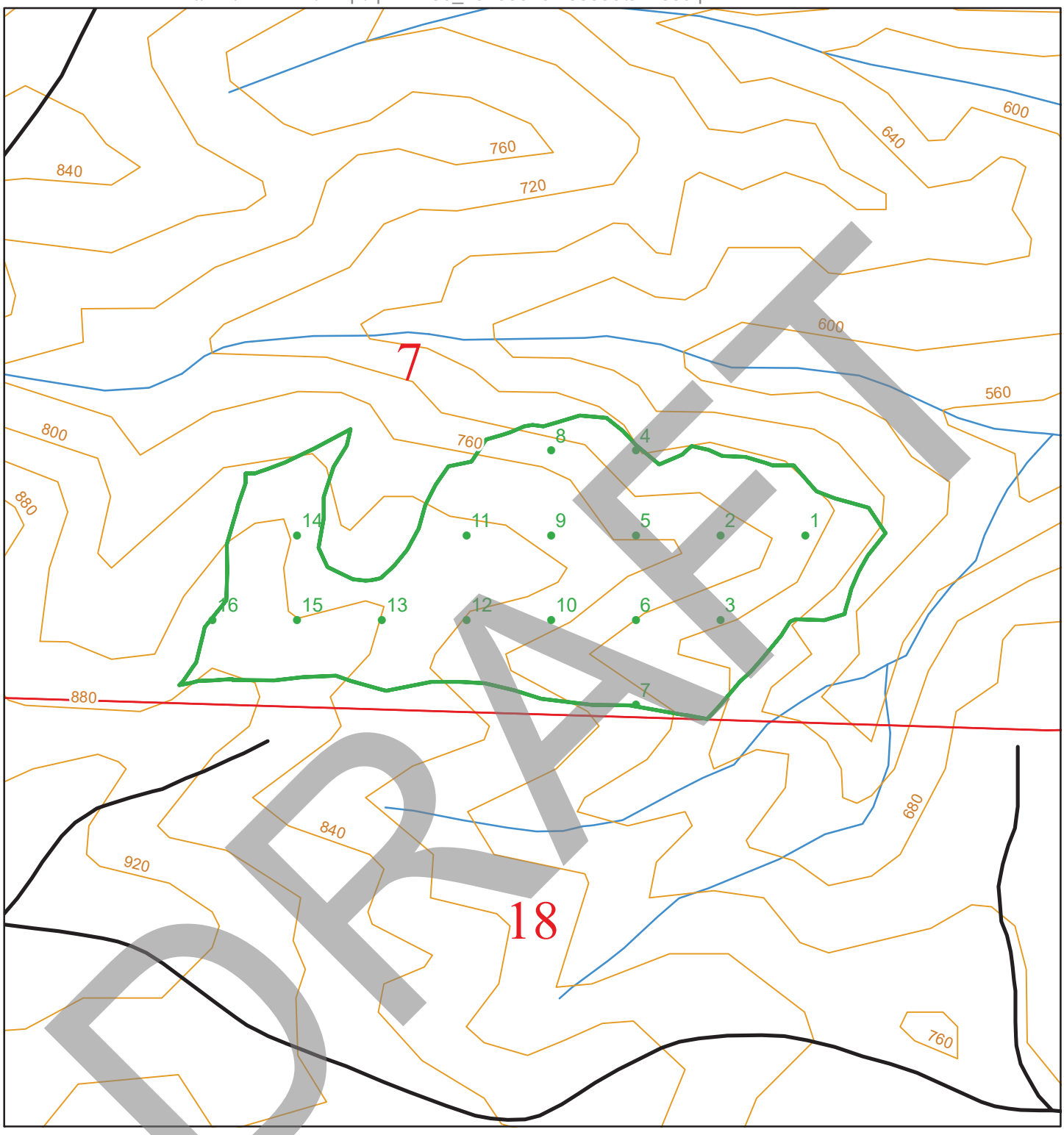


FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	CARROT U3	Township:	T16R03W
FMA_ID:	317859	DNR Region:	SO PUGET
Acres:	17	Total Sample Points:	16
County:	THURSTON	Spacing Between Points:	200
		Point Rotation Degrees:	0

N

0 115 230 460 690 920 Feet

Scale 1:4,000

Legend

- Sample Points
- FMA polys
- Public Land Survey Sections
- Contours 40-foot

Accessed: 10/01/2024 14:27

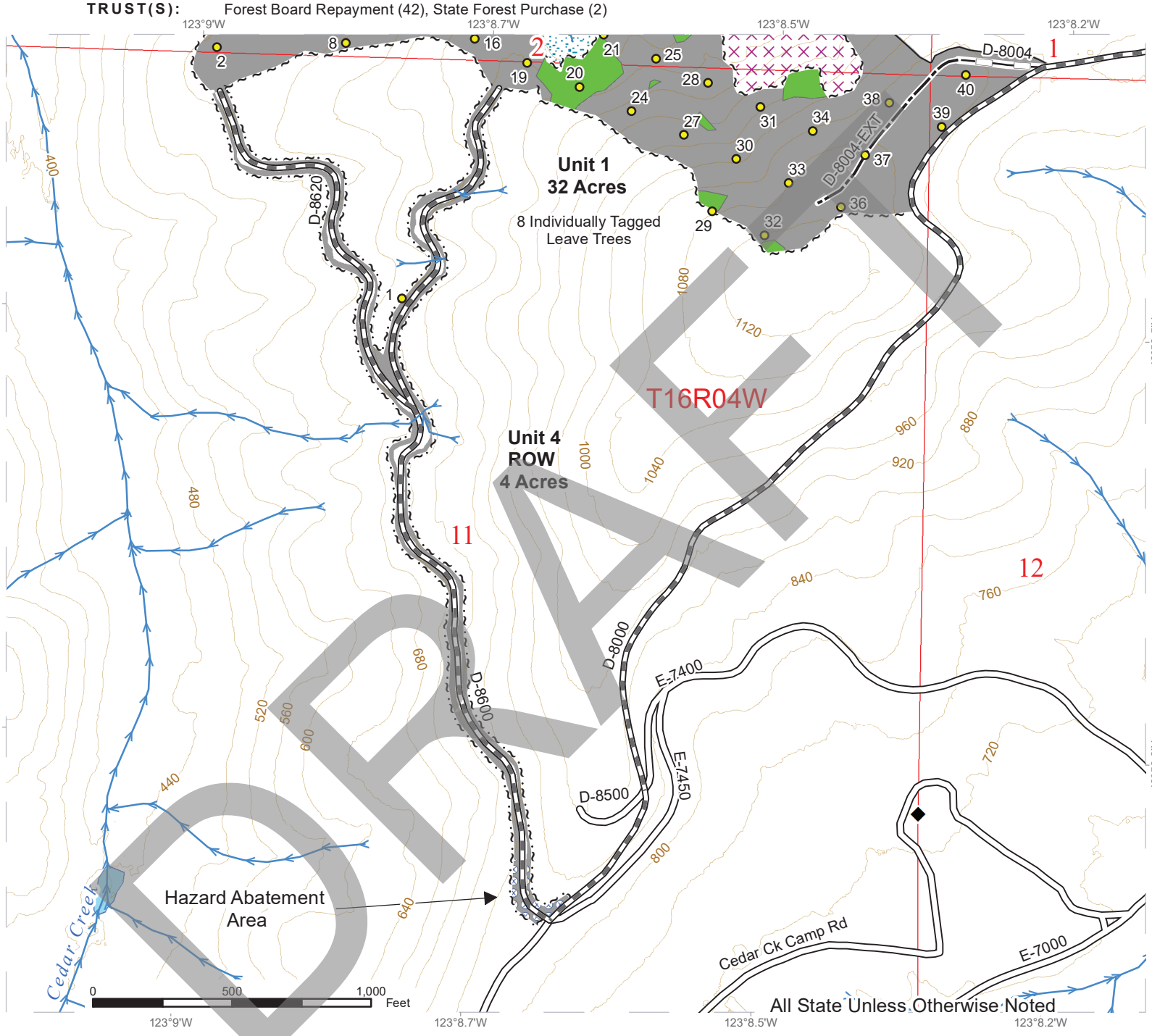
Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Jun 26, 2023 04:00 PM

CRUISE MAP

SALE NAME: CARROT
AGREEMENT#: 30-103584
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



Sale Area
Leave Tree Area
Riparian Mgt Zone
Hazard Abatement Area
Tailhold Restriction Area
Contours 40 ft
Streams
Timber Type Change
Sale Boundary Tags
Right of Way Tags
Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Optional Reconstruction
Survey Monument

N

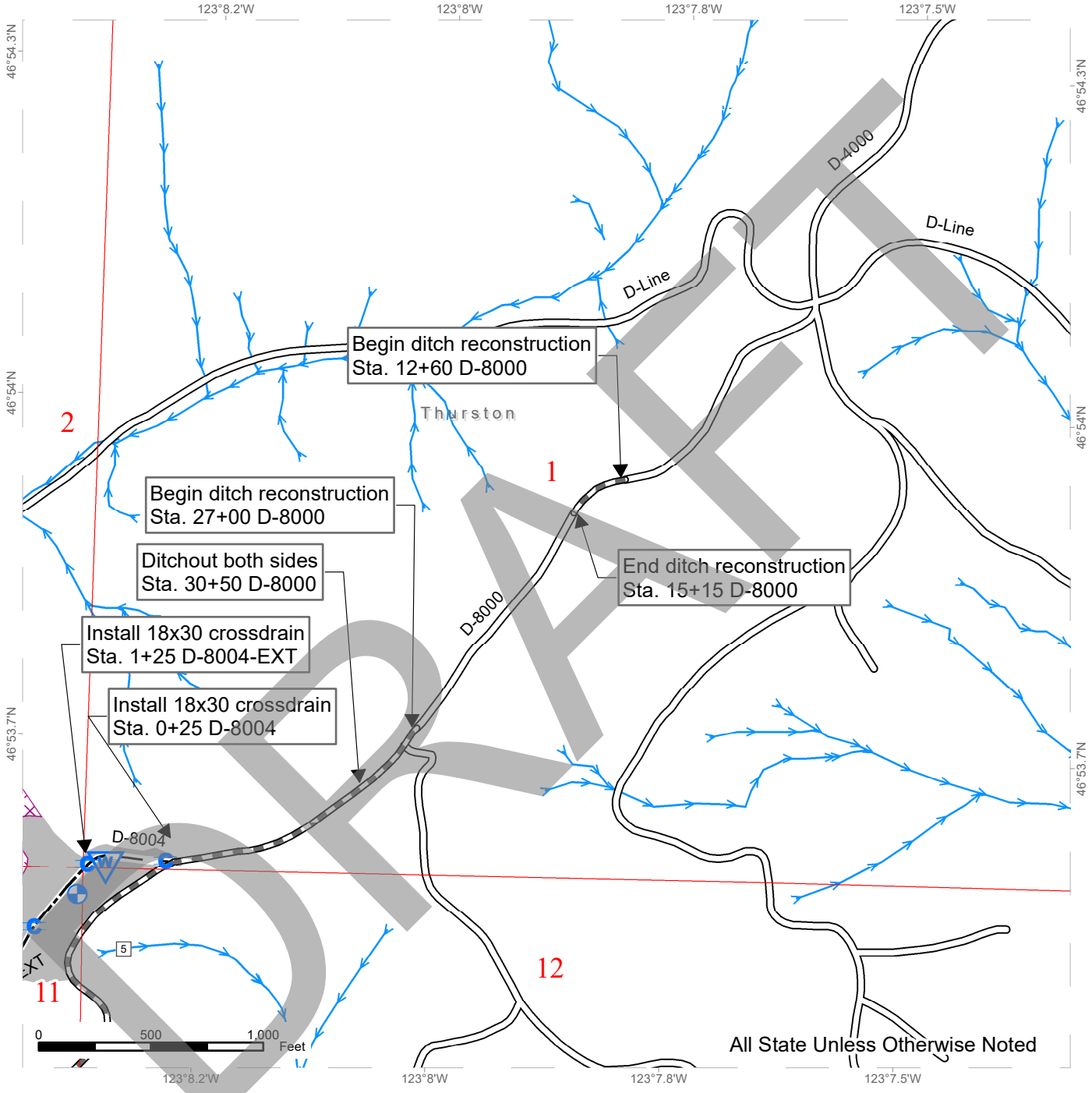
Prepared By: kpsn490
Accessed: 10/01/2024 14:27

Modification Date: acol490 6/8/2023

ROAD PLAN MAP 1 OF 4

SALE NAME: CARROT
AGREEMENT#: 30-103584
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200

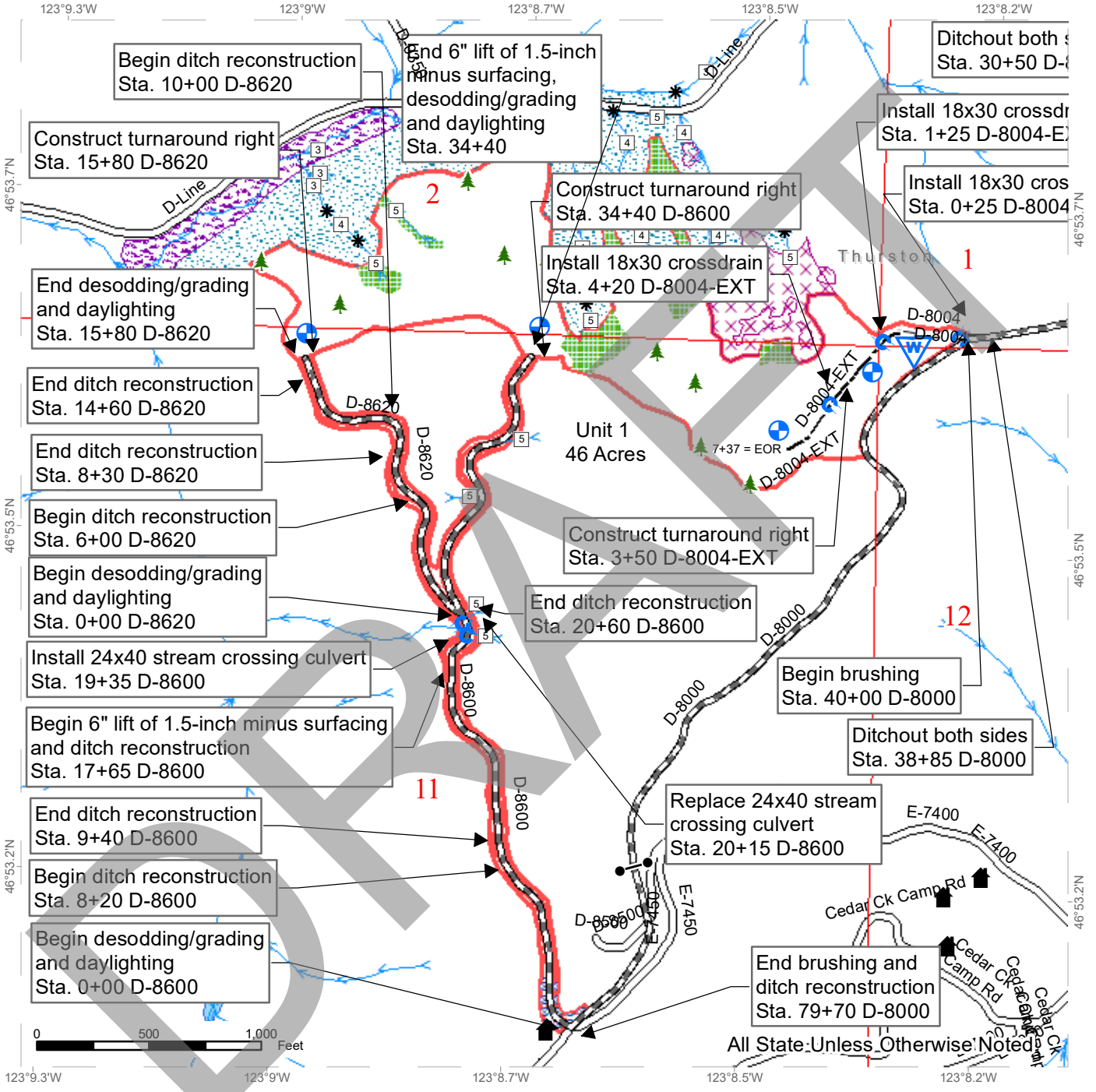


Variable Retention Harvest
Potentially Unstable Slopes
Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Optional Reconstruction
Streams
Culvert Install
Landing - Proposed
Waste Area
N

ROAD PLAN MAP 2 OF 4

SALE NAME: CARROT
AGREEMENT#: 30-108534
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

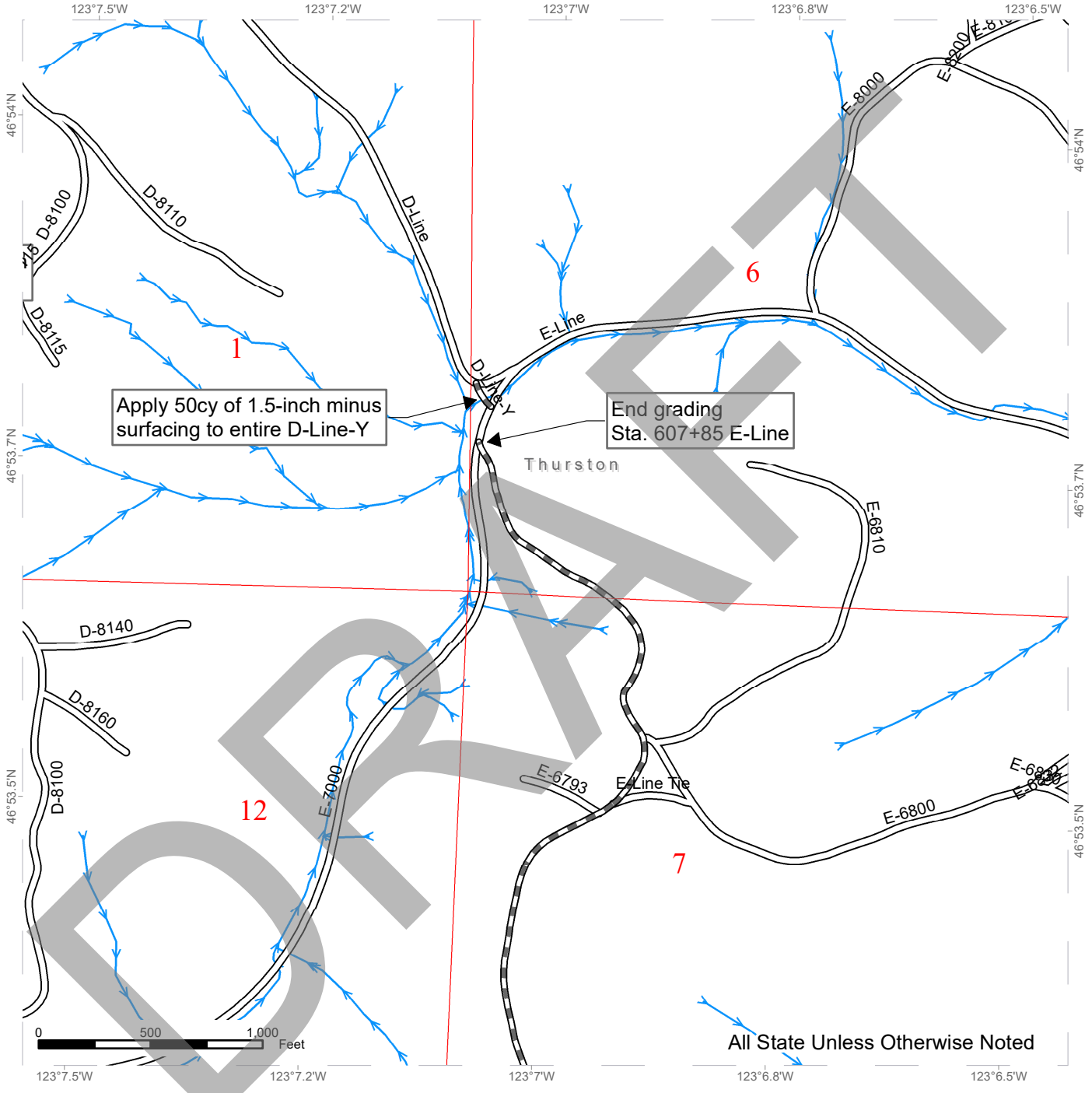
REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



ROAD PLAN MAP 3 OF 4

SALE NAME: CARROT
AGREEMENT#: 30-103584
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



DRAFT

Existing Roads

Required Pre-Haul Maintenance

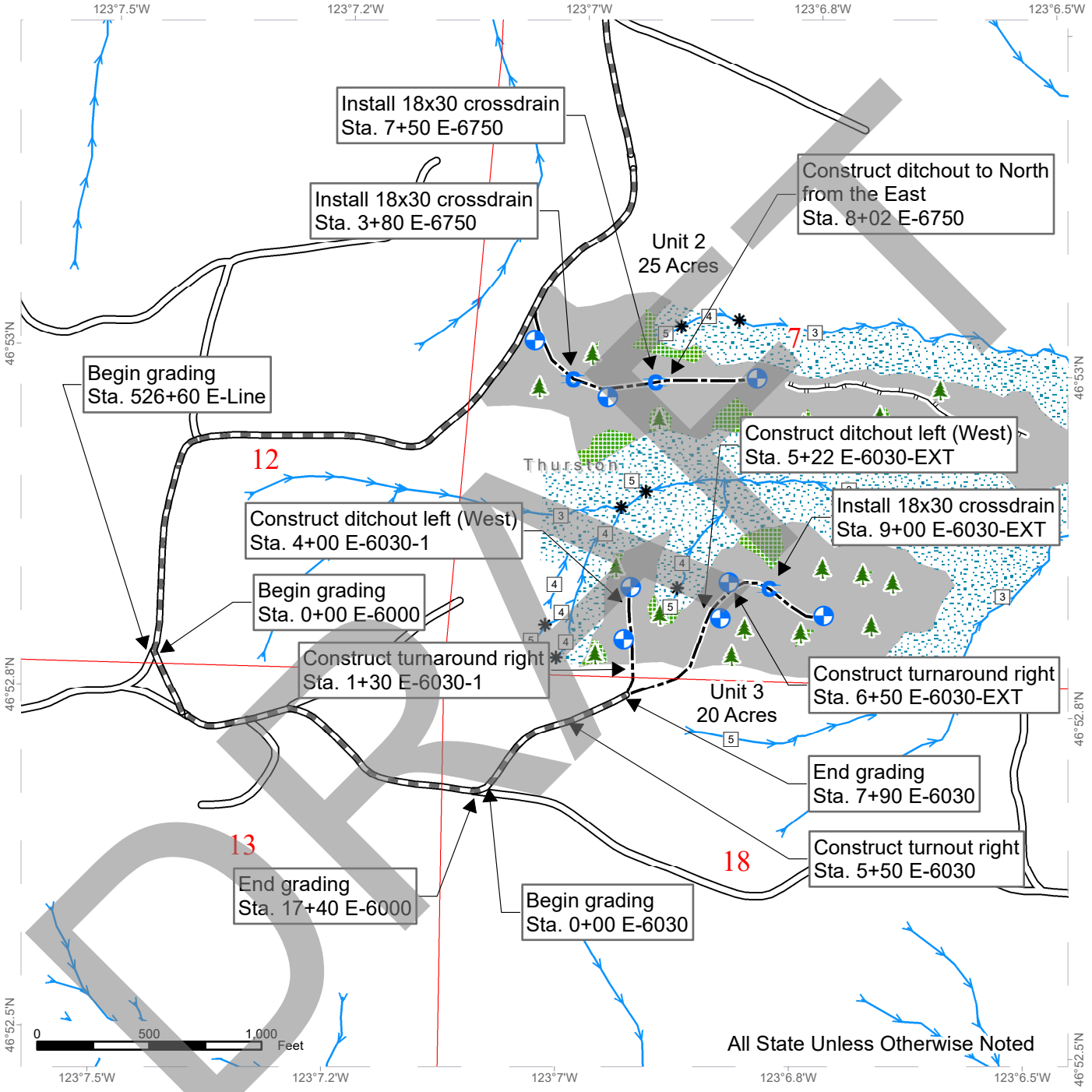
Streams

N

ROAD PLAN MAP 4 OF 4

SALE NAME: CARROT
AGREEMENT#: 30-103584
TOWNSHIP(S): T16R3W, T16R4W
TRUST(S): Forest Board Repayment (42), State Forest Purchase (2)

REGION: South Puget Sound Region
COUNTY(S): Thurston
ELEVATION RGE: 440-1200



Variable Retention Harvest
Leave Tree Area
Riparian Mgt Zone
Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Designated Skid Trail
Streams
Culvert Install
Landing - Proposed
Leave Tree Area <1/4-acre

N

Prepared By: kpsp490
09/26/2023

Modification Date: gger490 5/17/2023
30-103584

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

CARROT TIMBER SALE ROAD PLAN
THURSTON COUNTY
LITTLEROCK UNIT
BLACK HILLS DISTRICT
SOUTH PUGET SOUND REGION

AGREEMENT NO.: 30-103584 STAFF ENGINEER: G. GERRITSEN

DATE: 06/09/2023

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
D-Line-Y	0+00 to 1+24	Pre-Haul Maintenance
D-8000	12+60 to 15+15, 27+00 to 79+70	Pre-Haul Maintenance
D-8004	0+00 to 3+00	Abandonment, if Reconstructed
D-8004-EXT	0+00 to 7+37	Abandonment, if Constructed
D-8600	0+00 to 34+40	Pre-Haul Maintenance
D-8620	0+00 to 15+80	Pre-Haul Maintenance
E-Line	526+60 to 607+85	Pre-Haul Maintenance
E-6000	0+00 to 17+40	Pre-Haul Maintenance
E-6030	0+00 to 7+90	Pre-Haul Maintenance
E-6030-1	0+00 to 4+75	Abandonment, if Constructed
E-6030-EXT	0+00 to 11+90	Abandonment, if Constructed

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
D-8004	0+00 to 3+00	Reconstruction
D-8004-EXT	0+00 to 7+37	Construction
E-6030-1	0+00 to 4+75	Construction
E-6030-EXT	0+00 to 11+90	Construction
E-6750	0+00 to 12+00	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to:

- Clearing;
- Grubbing;
- Right-of-way debris disposal;
- Excavation and/or embankment to subgrade;
- Acquisition and installation of drainage structures;
- Acquisition, manufacture, and application of rock.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to:

- Clearing;
- Grubbing;
- Right-of-way debris disposal;
- Re-establishment of existing subgrade;
- Acquisition and installation of drainage structures;
- Acquisition, manufacture, and application of rock.

0-6 PRE-HAUL MAINTENANCE

Pre-haul maintenance includes, but is not limited to:

- Acquisition and installation of drainage structures;
- Acquisition, manufacture, and application of rock;
- Grading road surfaces;
- Ditching and/or ditch reconstruction;
- Turnout and turnaround reconstruction;
- Brushing;

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. 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 the submitted plan.

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

1. Addenda.
2. Designs or Plans. On designs and plans, figured dimensions shall take precedence over scaled dimensions.
3. Road Plan Clauses.
4. Typical Section Sheet.
5. Standard Lists.
6. Standard Details.
7. Road 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 5 calendar days before the closure of any road.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-15 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 at eye-height along centerline, with orange-flagged stakes marking centerline. Triple orange ribbon signals the end of construction.
- Reconstruction: Existing road prism.
- Pre-Haul: Orange-flagged stakes

1-16 CONSTRUCTION STAKES SET BY STATE

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

Road	Stations	Type
D-8004	0+00	RP Start of Reconstruction
D-8004	3+00	RP End of Reconstruction
D-8004-EXT	0+00	RP Start of Construction
D-8004-EXT	0+00 to 7+37	Centerline Alignment Staking
D-8004_EXT	7+37	RD End of Construction
D-8600	19+35	RP Culvert Install on Type 5 Stream
D-8600	20+15	RP Culvert Replacement on Type 5 Stream
E-6030-1	0+00	RP start of construction
E-6030-1	0+00 to 4+75	Centerline Alignment Staking
E-6030-1	4+75	End of Construction
E-6030-EXT	0+00 to 11+90	Centerline Alignment Staking
E-6750	0+00	RP Start of Construction
E-6750	0+00 to 12+00	Centerline Alignment Staking
E-6750	12+00	RP End of Construction

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

On the following road(s), Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before work begins.

Road	Stations
D-8600	19+35 and 20+15

1-23 ROAD WORK PHASE APPROVAL

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

- Subgrade construction including compaction prior to rock application
- Grading of existing roads prior to rock application
- Haul approval

1-25 ACTIVITY TIMING RESTRICTION

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

Activity	Closure Period
Operation of road construction equipment	November 1 through April 30

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION 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 including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these roads, a joint operating plan must be developed. All parties shall follow this plan.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage may occur.

- Wheel track rutting exceeds 2 inches on the E-Line or D-Line.
- Wheel track rutting exceeds 4 inches on all other roads.

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

1-32 BRIDGE OR ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated by the Region Engineer or their designee for any damage caused by transporting equipment.

1-33 SNOW PLOWING RESTRICTION

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

1-34 CEDAR CREEK BRIDGE (D-LINE) HAUL RESTRICTION

All loads crossing the Cedar Creek Bridge, located at 82+41 of the D-Line in the Capital Forest, must meet legal load requirements. Any permit loads shall be approved by the Region Engineer or their designee.

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. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. 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
D-8000	73+00 to 82+00	Water Lines	**John Johnson DOC Shop Manager (360)-359-4141**
D-8600	0+00 to 2+00	Water Lines	

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface to the specifications shown on the TYPICAL SECTION SHEET before application of rock, or if not applying rock, before timber haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower. All grading work shall be immediately followed by compaction as specified in the COMPACTION LIST.

Road	Stations
D-8600	0+00 to 34+40
D-8620	0+00 to 15+80
E-Line	526+60 to 607+85
E-6000	0+00 to 17+40
E-6030	0+00 to 7+90

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 6 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
D-8000	40+00 to 79+70

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 and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

On the following road(s), Purchaser shall deck all right-of-way timber. Decks must be parallel to the road centerline and placed within the cleared right-of-way. Decks must be free of dirt, limbs, and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

Road	Stations
D-8600	0+00 to 34+40
D-8620	0+00 to 15+80

3-8 PROHIBITED DECKING AREAS

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

- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- Against standing trees.

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.

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 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 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside of the 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 more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

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 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

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

Material Type	Excavation Slope Ratio	Excavation Slope Percent
Common Earth (on side slopes up to 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, unless construction staked or designed:

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

Purchaser shall construct turnouts as designated on the TURNOUT AND TURNAROUND LIST. Locations may be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the TURNOUT AND TURNAROUND LIST.

4-22 TURNAROUNDS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

On the following road(s), Purchaser shall construct and/or reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET.

Road	Stations
D-8000	12+60 to 15+15, 27+00 to 79+70

4-27 DITCH WORK – MATERIAL USE PROHIBITED

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be disposed of as specified in Clause 4-36 DISPOSAL OF WASTE MATERIAL.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified on the CULVERT AND DRAINAGE LIST. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in the listed designated areas. Additional waste areas may also be identified or approved by the Contract Administrator.

Road	Waste Area Location	Volume (c.y.)
D-8004-EXT	0+00	600
E-6800	86+20	1,000

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- Within a wetland management zone.
- 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.

4-48 NATIVE MATERIAL

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 6 inches in any dimension.

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for embankment and waste area segments too narrow to accommodate equipment. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before the application of rock, or if not applying rock, before timber haul.

4-63 EXISTING SURFACE COMPACTION

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

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Purchaser shall remove berms from road shoulders. The construction of ditchouts is required where ponding could result from the effects of sidecast debris.

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 be new material and meet the specifications in Clauses 10-15 through 10-24.

5-7 USED CULVERT MATERIAL

On the following road(s), Purchaser may install used culverts. All other roads must have new culverts installed. Culverts must meet the specifications in Clauses 10-15 through 10-24.

Road	Stations
D-8004	0+00 to 3+00
D-8004-EXT	0+00 to 7+37
E-6030-EXT	0+00 to 11+90

5-10 CULVERT MARKER INSTALLATION

On the following road(s), Purchaser shall provide and install culvert markers at the inlet in accordance with the CULVERT MARKER DETAIL.

Road	Stations
E-6750	3+80, 7+50

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT AND DRAINAGE LIST and materials listed in Clause 5-13 CONTINGENCY CULVERTS that are not installed will become the property of the state. Purchaser shall stockpile materials at Mima Mounds Pit (SW¼ NW¼ Section 10 T16R03W).

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" x 30' culvert 18" culvert band

5-15 CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

All culverts must be installed with a depth of cover of not less than 6 inches of compacted subgrade over the top of the culvert at the shallowest point.

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts 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 AND DRAINAGE LIST. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet.

5-25 CATCH BASINS

Purchaser shall construct catch basins 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 CROSS DRAIN CULVERTS

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

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 100 feet.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(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
Scott Paper Quarry	SE ¼ NW ¼ Sec. 8 T16R03W	1 ½-Inch Minus, 4-Inch In-Place, 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. Other stockpiles may not be used.

Source	Location	Rock Type	Quantity (c.y.)
Scott Paper Quarry	SE ¼ NW ¼ Sec. 8 T16R03W	1 ½-Inch Minus	465

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.

Possible Sources	Location
Black Lake Resources	10201 Littlerock Rd SW Olympia, WA 98512
Northwest Rock Inc.	6801 State Route 12 Oakville, WA 98568

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 LOW BANK QUARRY 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 LOW BANK QUARRY 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
Scott Paper Quarry	1 ½-Inch Minus, 4-Inch In-Place, Quarry Spalls

6-12 ROCK SOURCE SPECIFICATIONS

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

- Quarry 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

- Quarry walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of quarry benches must be a minimum of 20ft.
- The surface of quarry floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- All vegetation including stumps shall be cleared a minimum of 35 feet beyond the top of all working faces. Surface shall be scalped of all overburden within 20 feet of working face at all times. Overburden faces shall be sloped no steeper than 1:1.
- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 500 cubic yards. Oversize material is defined as rock fragments larger than two feet in any direction.
- 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 quarry faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Purchaser shall notify the Contract Administrator a minimum of 5 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days before any drilling (Form #M-126PAC).
- 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 and trails before blasting operations.

6-20 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.
- At the request of the Contract Administrator, Purchaser shall produce a sieve analysis for manufactured rock. Purchaser may use a commercial testing lab to produce sieve analysis.
- The crushing operation must be concluded within 30 working days from the time it begins.

6-21 IN-PLACE PROCESSING

Purchaser may use in-place processing, such as a grid roller or other method, if suitable crushing can be demonstrated to meet the surfacing size-specified in Clause 6-38 4-INCH IN-PLACE ROCK. Purchaser shall remove any existing organic debris before the start of in-place crushing operations.

6-22 FRACTURE REQUIREMENT FOR ROCK

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

6-23 ROCK GRADATION TYPES

Purchaser shall 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. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-25 FINES

% Passing U.S. #40 sieve	100%
% Passing U.S. #200 sieve	0%

The portion of aggregate retained on the No. 200 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

6-29 1 ½-INCH MINUS CRUSHED ROCK

% Passing 1 ½" square sieve	100%
% Passing 1" square sieve	50 - 85%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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.

6-37 4-INCH JAW RUN ROCK

% Passing 4" square sieve	95%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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.

6-38 4-INCH IN-PLACE ROCK

4-inch in-place rock must have a minimum of 90 percent of the top 4 inches of the running surface pass a 4-inch square opening.

In-place rock may not contain more than 5 percent by weight of organic debris and trash. No more than 50 percent of rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension.

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.

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, unless otherwise stated in Clause 6-75 OPTIONAL ROCK EXCEPTION.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade construction and compaction on all new construction, and road grading on all existing roads before rock application.

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way.

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, Purchaser may place less rock than shown on the ROCK LIST.

Road	Stations	Options
D-8004-EXT	0+00 to 7+37	4-Inch In-Place
E-6030-1	0+00 to 4+75	4-Inch In-Place
E-6030-EXT	0+00 to 11+90	4-Inch In-Place
Landings	All	4-Inch In-Place

SECTION 7 – STRUCTURES

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures(s) must be removed from state land. 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, engineered drawings and CULVERT AND DRAINAGE SPECIFICATION DETAIL.

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.

7-70 GATE CLOSURE

On the following road(s), Purchaser shall keep gates closed and locked except during daytime hauling activities. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed and locked at termination of use.

Road	Station
D-8000	2+45 and 71+25
E-6000	3+35
E-6800	25+50

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a layer of straw to all exposed soils within 100 feet of a stream or wetland. Soils may not sit exposed during any rain event.

8-15 REVEGETATION

Purchaser shall spread grass seed on all exposed soils resulting from road work activities within 50 feet of a stream or wetland. Purchaser shall revegetate during the first available opportunity after road construction is completed.

Qty	Type
50lbs/acre	Pasture Mix

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the Pasture Mix grass seed and straw.

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the BARRICADE DETAIL.

Road	Stations
D-8004	0+00
E-6030-1	0+00
E-6030-EXT	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.

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-21 ROAD ABANDONMENT

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

Road	Stations
D-8004	0+00 to 3+00
D-8004-EXT	0+00 to 7+37
E-6030-1	0+00 to 4+75
E-6030-EXT	0+00 to 11+90

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 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached BARRICADE DETAIL.
- Remove culverts.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.

SECTION 10 MATERIALS

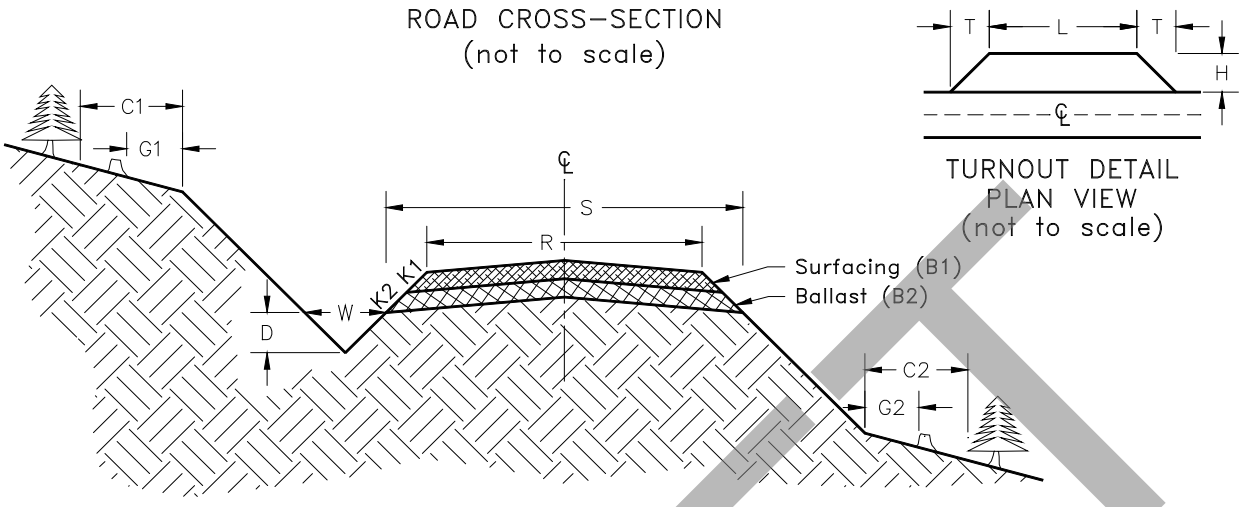
10-17 CORRUGATED PLASTIC CULVERT

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

10-22 PLASTIC BAND

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

TYPICAL SECTION SHEET



Road Number	From	To	Tolerance	Subgrade	Road	Ditch		Crown	Grubbing		Clearing	
	Station	Station	Class	Width	Width	Width	Depth	in. @ CL	Limits		Limits	
				S	R	W	D		G1	G2	C1	C2
D-Line	0+00	423+90	A	25	22	3	1	4	-	-	-	-
D-Line-Y	0+00	1+24	C	15	12	3	1	4	-	-	-	-
D-8000	0+00	79+70	C	15	12	3	1	4	5	5	10	10
D-8004	0+00	3+00	C	15	12	3	1	4	0	0	0	0
D-8004-EXT	0+00	7+37	C	15	12	3	1	4	0	0	0	0
D-8600	0+00	34+40	C	15	12	3	1	4	-	-	ROW Tags	ROW Tags
D-8620	0+00	15+80	C	15	12	3	1	4	-	-	ROW Tags	ROW Tags
E-Line	526+60	718+90	A	25	22	3	1	4	-	-	-	-
E-Line Tie	0+00	3+65	C	15	12	3	1	4	-	-	-	-
E-6000	0+00	17+40	C	15	12	3	1	4	-	-	-	-
E-6030	0+00	7+90	C	15	12	3	1	4	-	-	-	-
E-6030-1	0+00	4+75	C	15	12	3	1	4	0	0	0	0
E-6030-EXT	0+00	11+90	C	15	12	3	1	4	0	0	0	0
E-6750	0+00	12+00	C	15	12	3	1	4	5	5	10	10
E-6800	0+00	81+15	C	15	12	3	1	4	-	-	-	-
E-6800-1	25+55	31+00	C	15	12	3	1	4	-	-	-	-

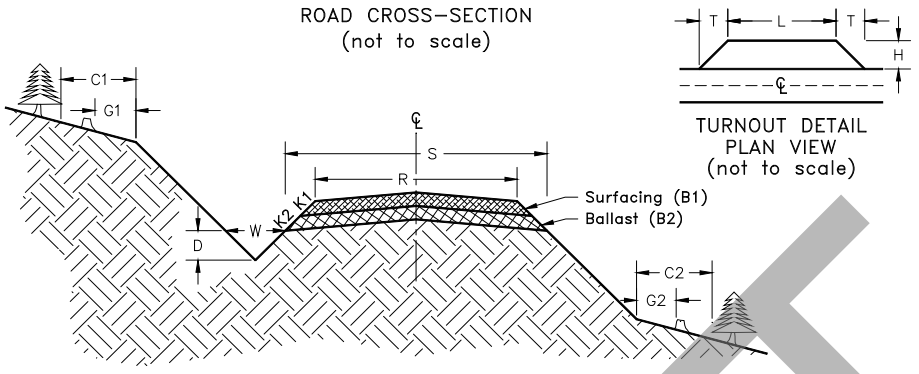
TURNOUT & TURNAROUND LIST

Road Number	Station	Turnaround Length (ft)	Turnaround Width (ft)	Turnout Length (ft)	Turnout Width (ft)	Turnout Transition Length (ft)	Notes
D-8004-EXT	3+50	30	30				Turnaround Left (East)
D-8600	34+40	30	30				Turnaround Right (East)
D-8620	15+80	30	30				Turnaround Right (East)
E-6030	5+50			75	10	25	Turnout Right (South)
E-6030-1	1+30	30	30				Turnaround Right (East)
E-6030-EXT	6+50	30	30				Turnaround Right (South)
E-6750	10+00	30	30				Turnaround Left (North)

COMPACTION LIST

Activity	Section Layer	Maximum Depth Per Lift (in)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number Of Passes	Maximum Operating Speed (mph)
All Construction	Subgrade	12”	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
All Construction	Rock	6”	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
All Reconstruction	Subgrade	12”	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
All Reconstruction	Rock	6”	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
Prehaul Maintenance (before rock application)	Existing Surface	N/A	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
Prehaul Maintenance (after rock application)	Surfacing	6”	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
Prehaul Maintenance (after grading, if grading is not followed by rock application)	Graded Surface	N/A	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5
Waste Areas	Embankment	12”	Smooth Drum Vibratory Roller	12,000	3 on low freq. vibe	3.5

ROCK LIST



Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source
			K2	B2	4-Inch In-Place			
*D-8004-EXT	0+00	7+37	1 ½:1	12”	53	7.37	391	Scott Paper Quarry Stockpile, Scott Paper Quarry or Commercial Source
*E-6030-1	0+00	4+75	1 ½:1	18”	79	4.75	375	
*E-6030-EXT	0+00	11+90	1 ½:1	12”	53	11.90	631	
E-6730	0+00	12+00	1 ½:1	12”	53	12	636	
Turnouts and Turnarounds				12”	37	7	259	
*Landing Rock				12”	75	12	900	
					1½ - Inch Minus			
D-Line-Y	0+00	1+24	1 ½:1	6”	25	1.24	31	Scott Paper Quarry Stockpile, Scott Paper Quarry or Commercial Source
D-8600	17+65	34+40	1 ½:1	6”	25	16.75	419	
Culvert Backfill					5	3	15	
					Quarry Spalls			
Culvert Headwalls and Dissipaters					2	8	16	Scott Paper Quarry or Commercial Source

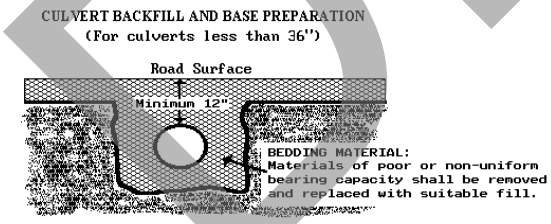
*Optional Rock: Purchaser is allowed the above rock depths from State-owned rock sources, but application of rock is not required. If Purchaser elects to haul on optional rock roads in dry weather, the depth listed above is recommended but not required. Reference Clause 6-75. NOTE: Yardages are estimated on a compacted (in-place) basis. Compliance of required rock will be based on compacted depth measurement. Apply appropriate factors to determine loose volumes for estimating purposes.

4-Inch In-Place Total: 3,192 Cubic Yards
1½-Inch Minus Total: 465 Cubic Yards
Quarry Spalls Total: 16 Cubic Yards
Total Rock: 3,673 Cubic Yards

CULVERT AND DRAINAGE LIST

Road		Culvert		Length (ft)			Riprap (C.Y.)			Bedding	
Number	Location	Dia.	Type	Culvert	Downspout	Flume	Inlet	Outlet	Type	Material	Remarks
D-8004	0+25	18	TEMP	30			0.5	1	QS	CR	New Install
D-8004-EXT	1+25	18	TEMP	30			0.5	1	QS	NT	New Install
	4+20	18	TEMP	30			0.5	1	QS	NT	New Install
D-8600	19+35	24	PD	40			1	4	QS	CR	New Install Type 5 Stream Crossing
	20+15	24	PD	40			1	4	QS	CR	Replace Existing Type 5 Stream Crossing
E-6030-1	4+00										Construct Ditchout Left (West)
E-6030-EXT	5+22										Construct Ditchout Left (West)
	9+00	18	TEMP	30			0.5	1	QS	NT	New Install
E-6750	3+80	18	PD	30			0.5	1	QS	NT	New Install
	7+50	18	PD	30			0.5	1	QS	NT	New Install
	8+02										Construct Ditchout Left (North)
Contingency Culverts	18	PD	30				0.5	1	QS	NT	At CA Discretion

PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648
AS10 = Aluminized Steel AASHTO No. M274, 10 Gauge
TEMP = Temporary Culvert

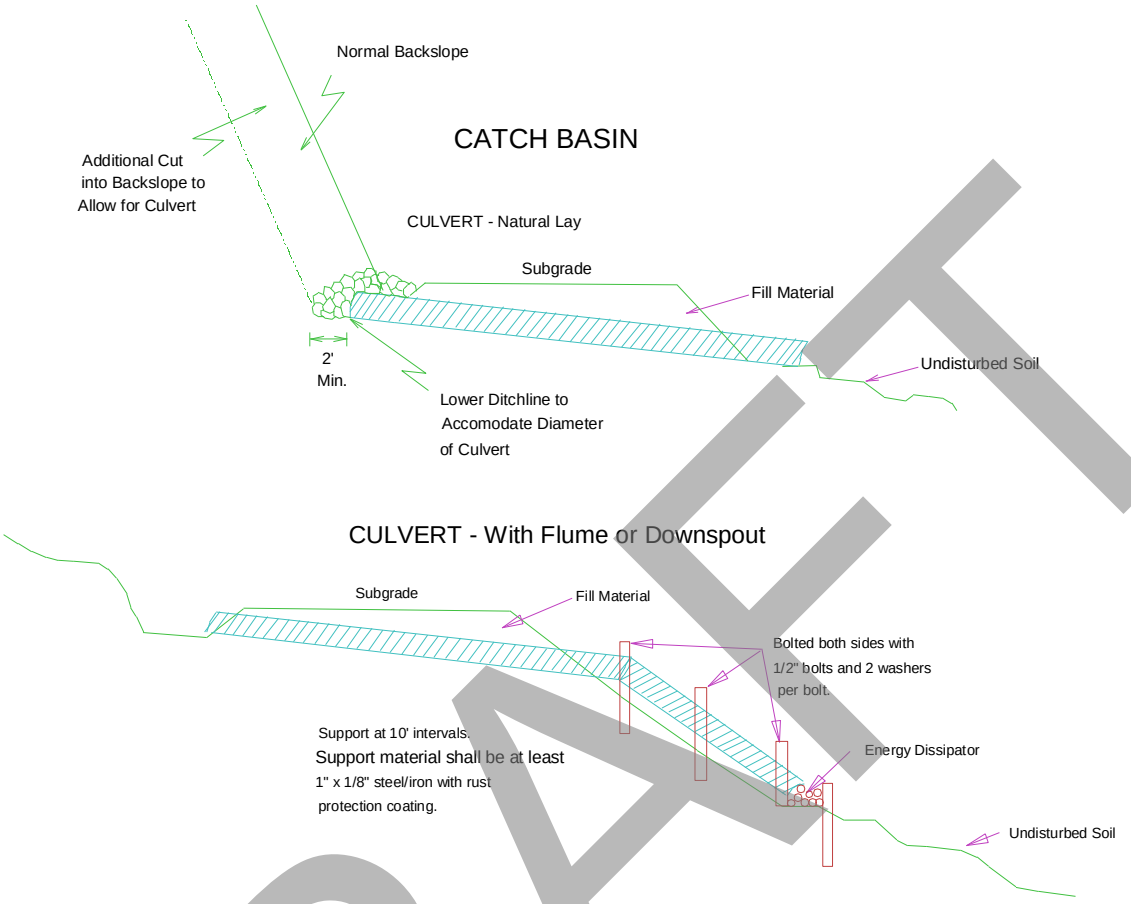


Key:

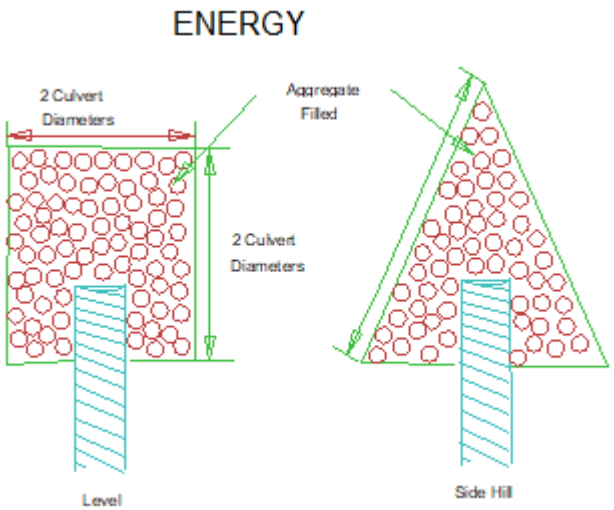
CR - 1½-Inch minus crushed rock
QS - Quarry Spalls
SR - Shot Rock
NT - Native (bank run)
SL - Select Fill
HL - Heavy Loose Riprap
LL - Light Loose Riprap
Flume - Half round pipe
Downspout - Full round pipe

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 1 of 2)



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.



CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 2)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

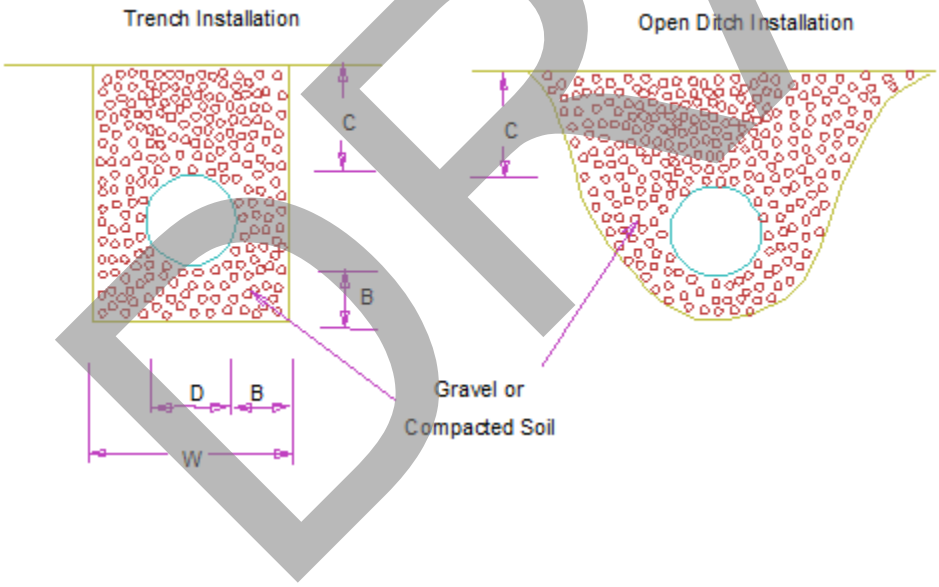
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

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.

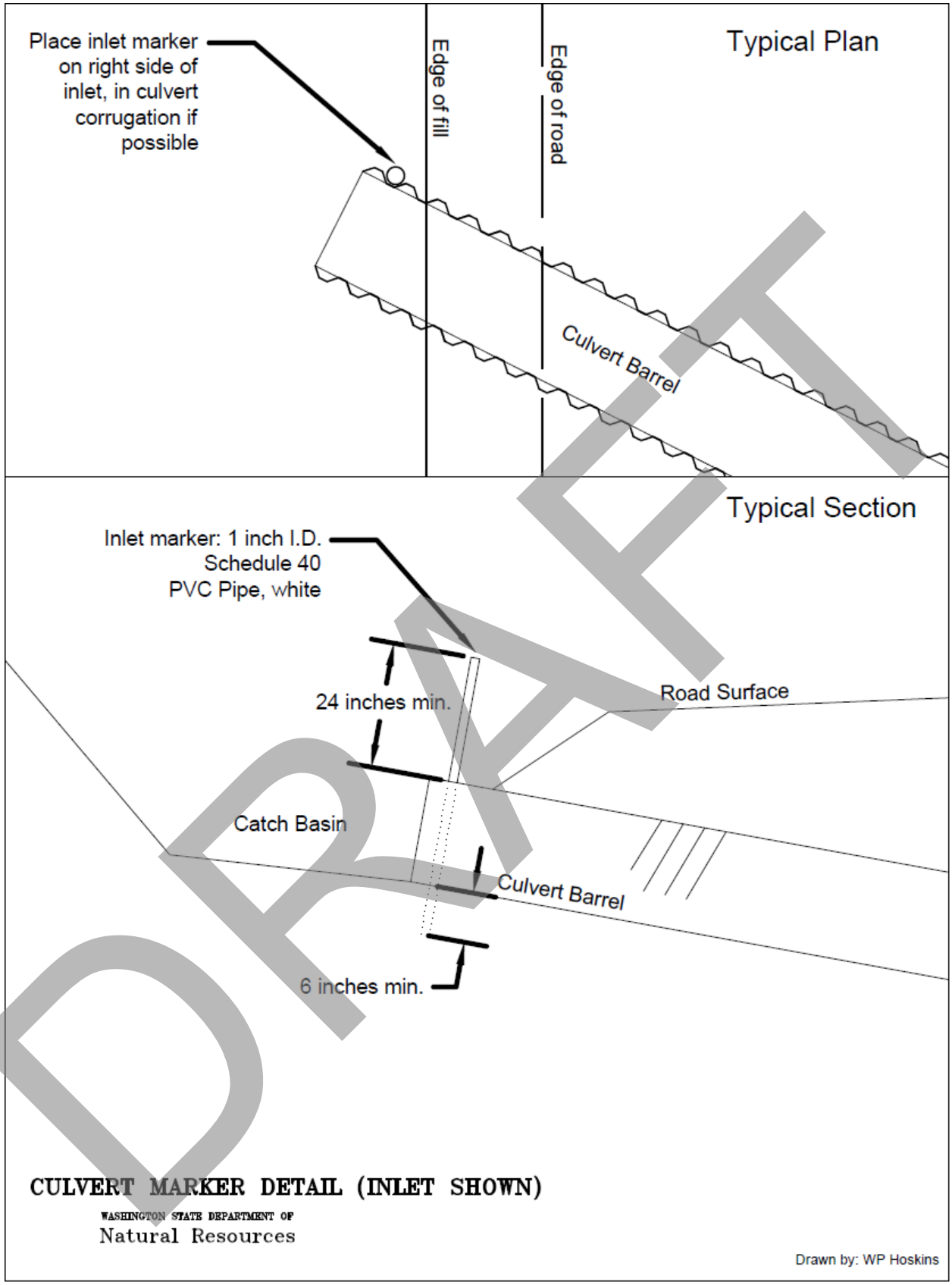
5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used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



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"
36"	6"	12"	54"


Typical Plan
Place inlet marker on right side of inlet, in culvert corrugation if possible
Edge of fill
Edge of road
Culvert Barrel
Typical Section
Inlet marker: 1 inch I.D. Schedule 40 PVC Pipe, white
24 inches min.
Road Surface
Catch Basin
Culvert Barrel
6 inches min.
CULVERT MARKER DETAIL (INLET SHOWN)
WASHINGTON STATE DEPARTMENT OF
Natural Resources
Drawn by: WP Hoskins

(Sheet 1 of 2)

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides up to 100 cubic yards in volume from ditches and the roadway. Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade shape and compact the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET. Inslope or outslope as directed, 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.

(Sheet 2 of 2)

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Preventative Maintenance

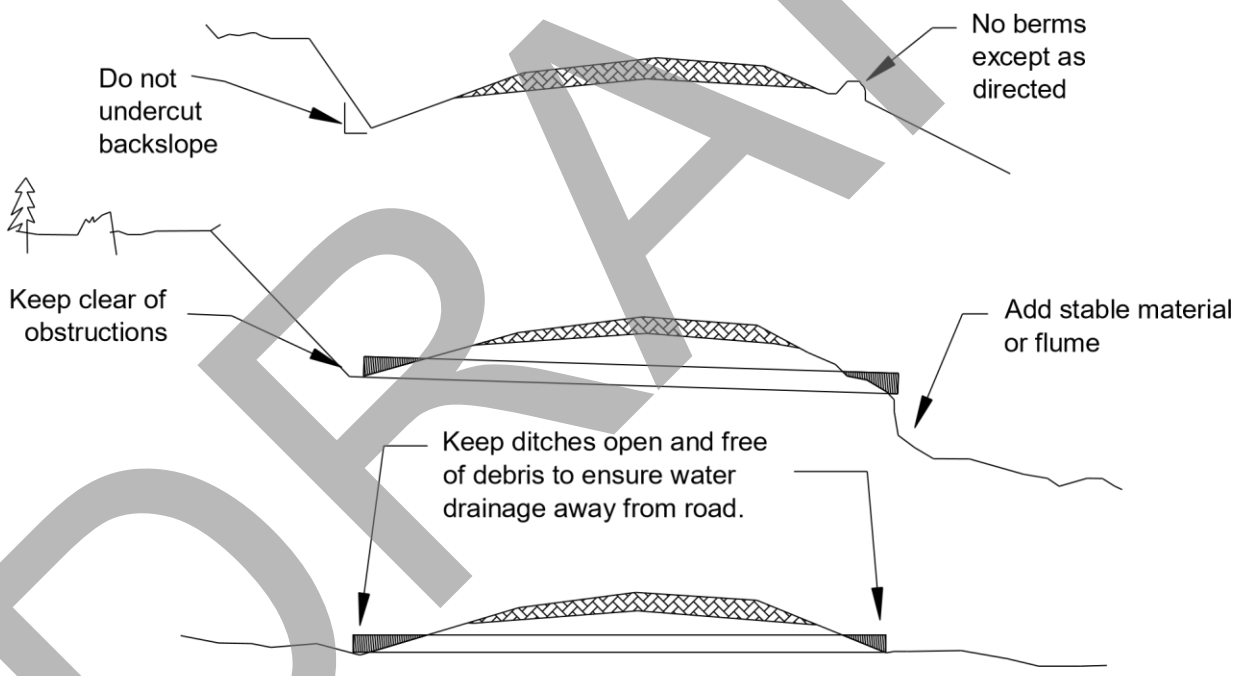
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

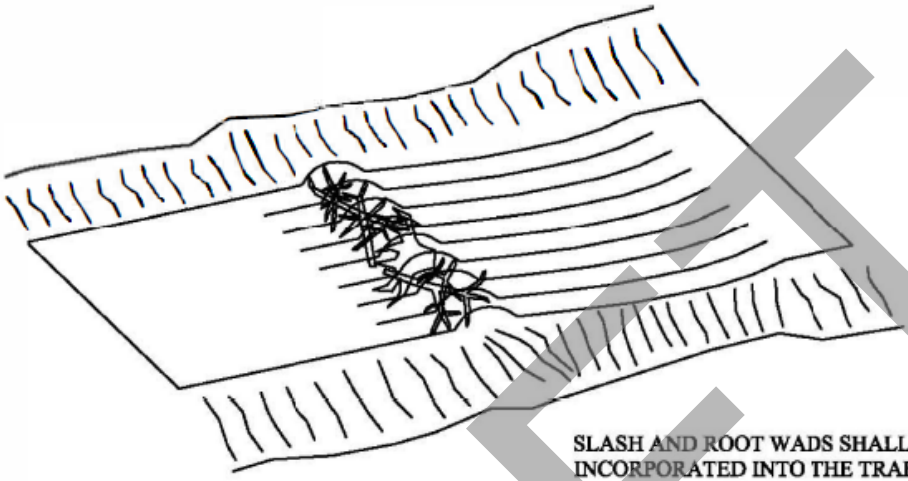
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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

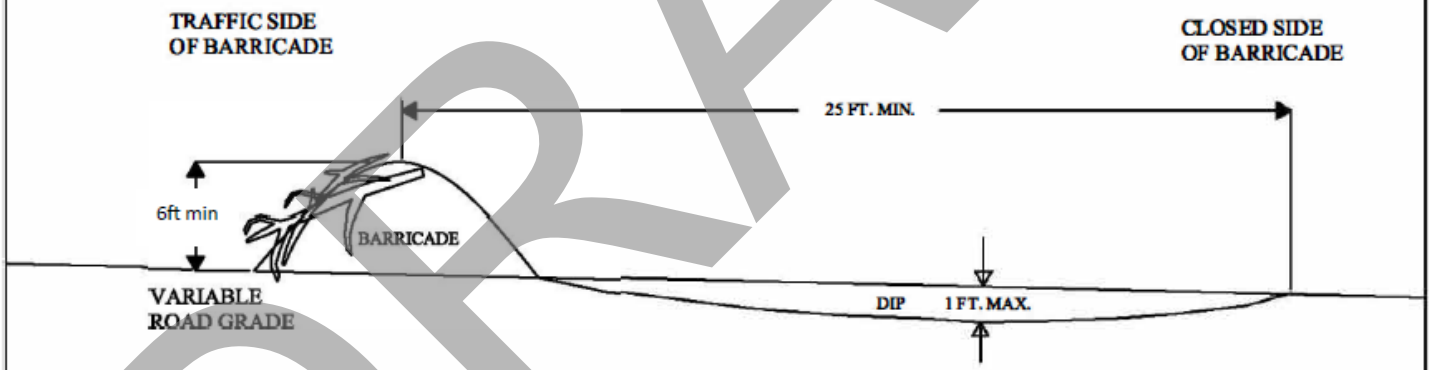


BARRICADE DETAIL



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

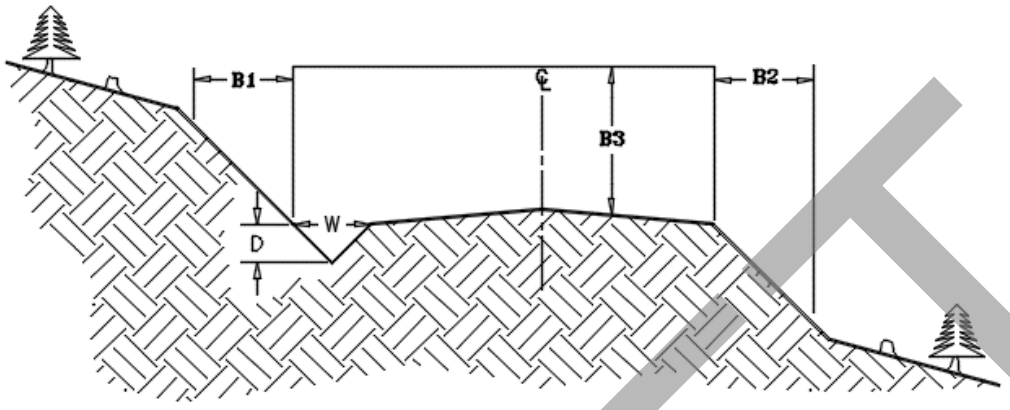
PROFILE VIEW

Barricade Detail

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

BRUSHING DETAIL

(not to scale)



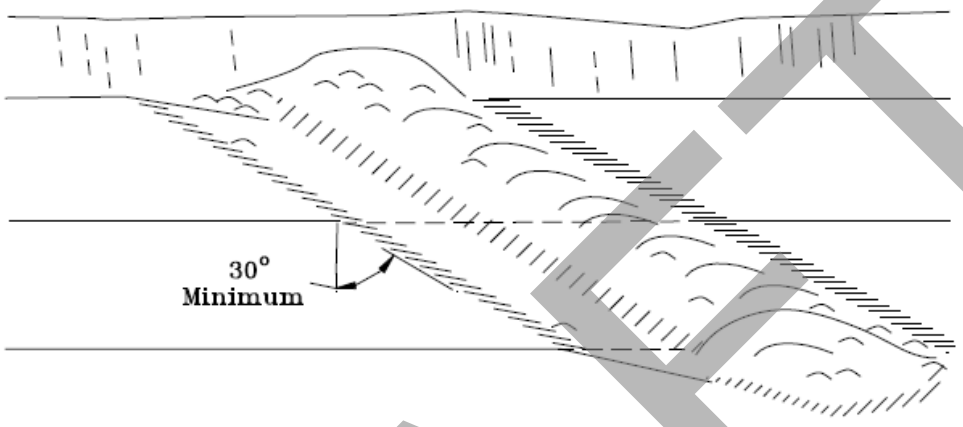
BRUSHING LIST

Road Number	Stations	Road Width (feet)	Ditch		Brushing Limits (feet)			Remarks
			Width (feet)	Depth (feet)				In addition to brushing…
			W	D	B1	B2	B3	
D-8000	40+00 to 79+70	Variable	3	1	6	6	14	Remove brush an extra 16 feet on the inside of curves to provide extra visibility on switchbacks and curves

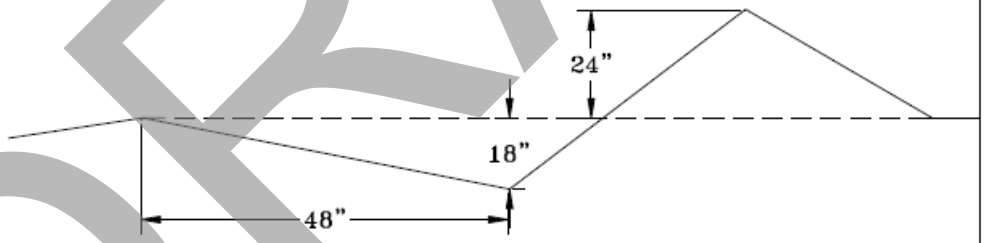
B1 extends horizontally the specified distance in feet from the back of the ditch. B2 extends horizontally the specified distance in feet from the outside edge of the running surface. Brush is defined as all non-merchantable vegetative material found within the specified limits, up to 6 inches in diameter. Brush must be cut to a height of 3 inches above the ground. Brush that is cut shall be removed to a specified vegetative waste area or the downhill side of the road and placed such that it will not block ditches, ditch-outs, or drainage structures. Signs, culverts, culvert location markers, or any other identification features damaged by brushing shall be replaced at the Purchasers expense.

Non-Drivable Water Bar Detail

Cross Ditch



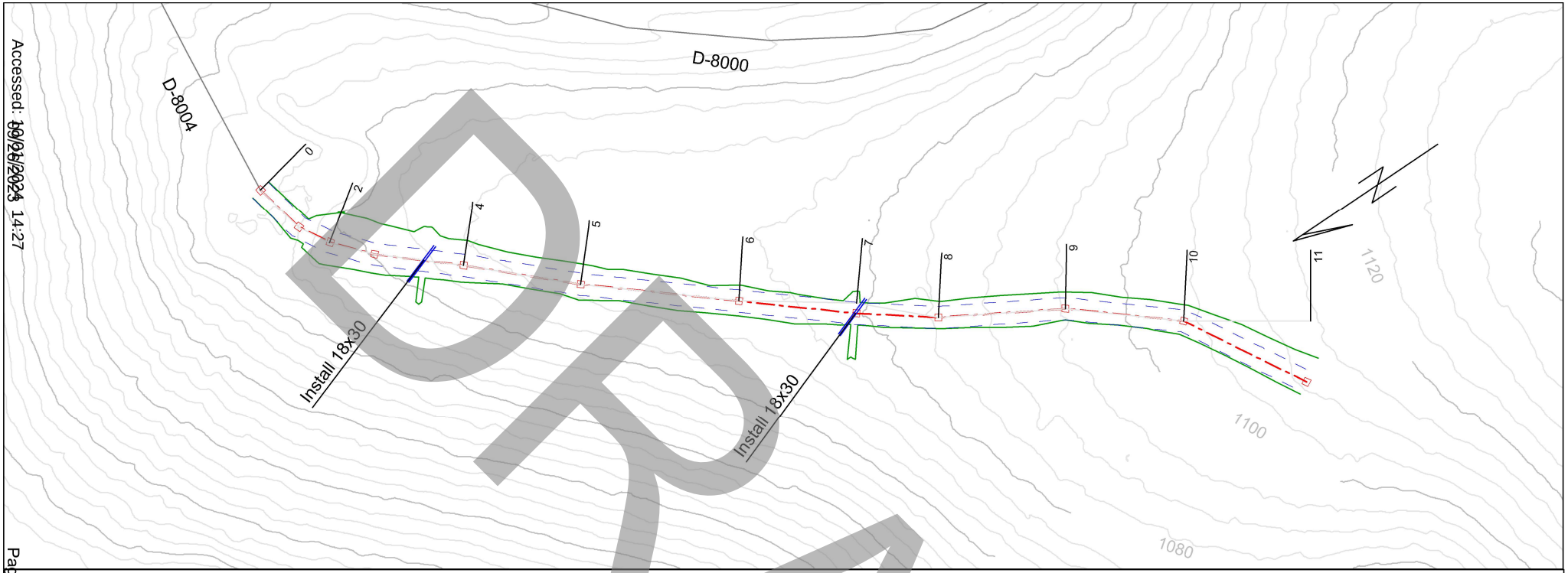
Cross Section at Centerline

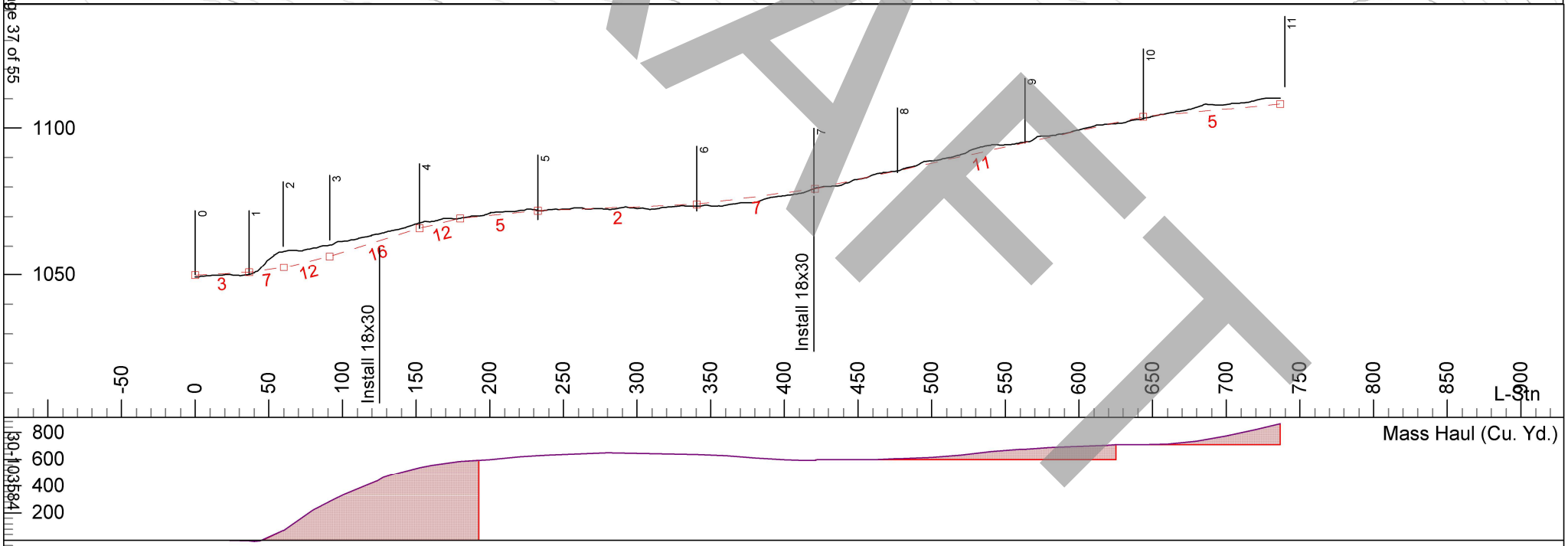


Date:
Scale : None
App#
Drawn by: M.A.D.

Water Bar Detail

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES





Accessed: 10/26/2023 14:27

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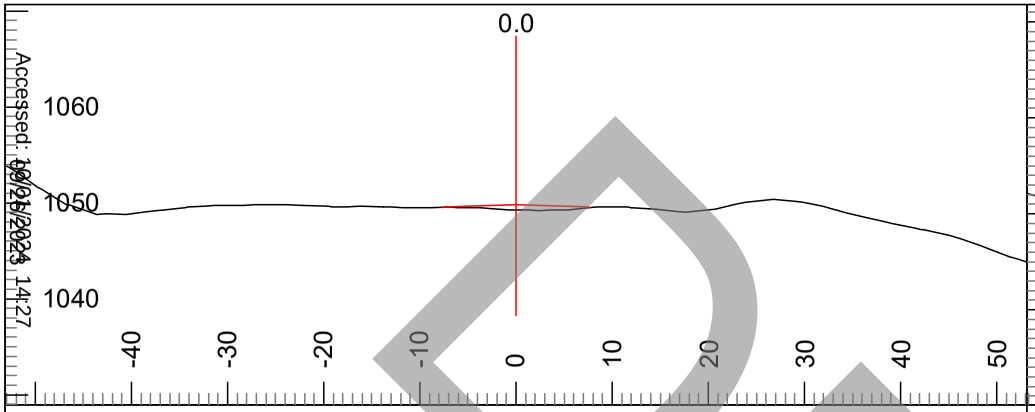
30-103584

Carrot Timber Sale D-8004-EXT Contract#: 30-103584	Washington State Department of Natural Resources South Puget Sound Region		Plan Scale 1:1200 Profile Vert Scale 1:600 Profile Horz Scale 1:1200	Engineer: G. Gerritsen 6/01/23 Page 1 of 4



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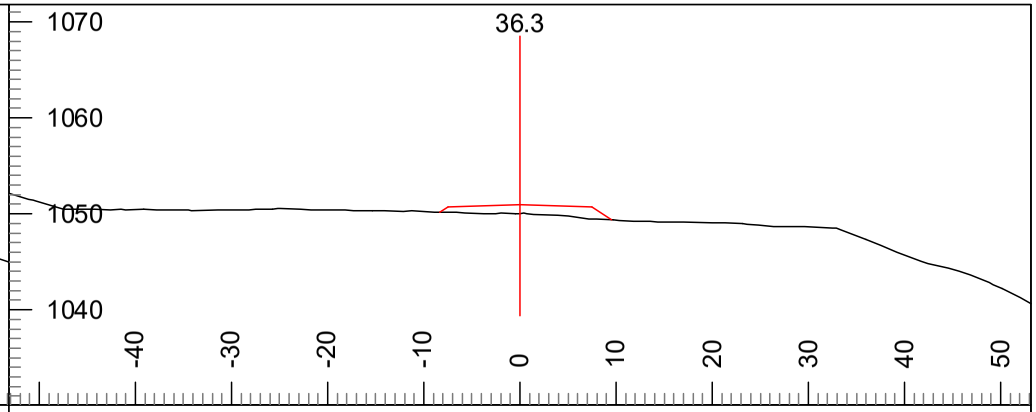

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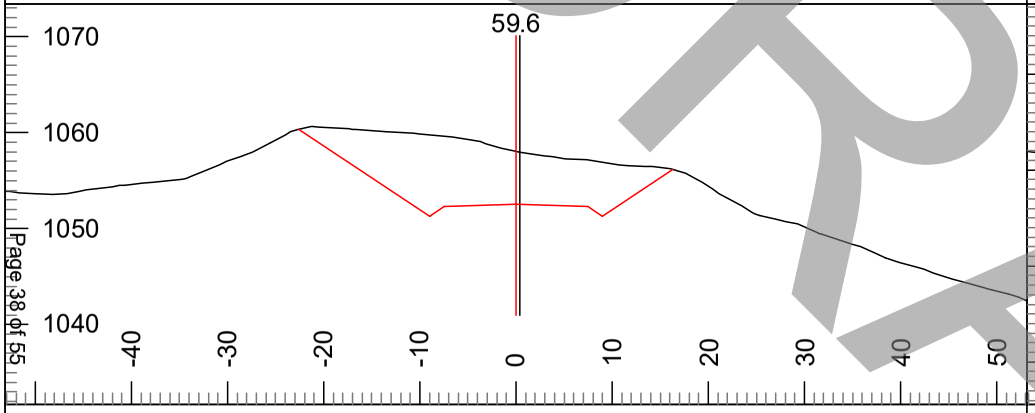

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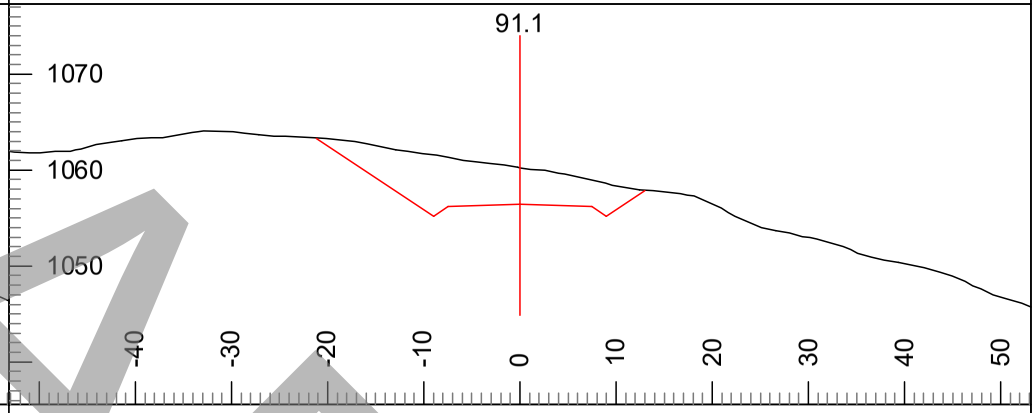

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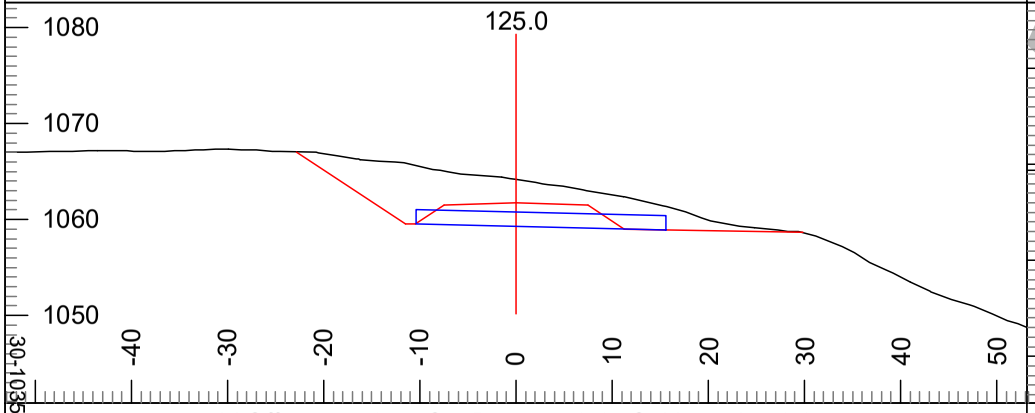

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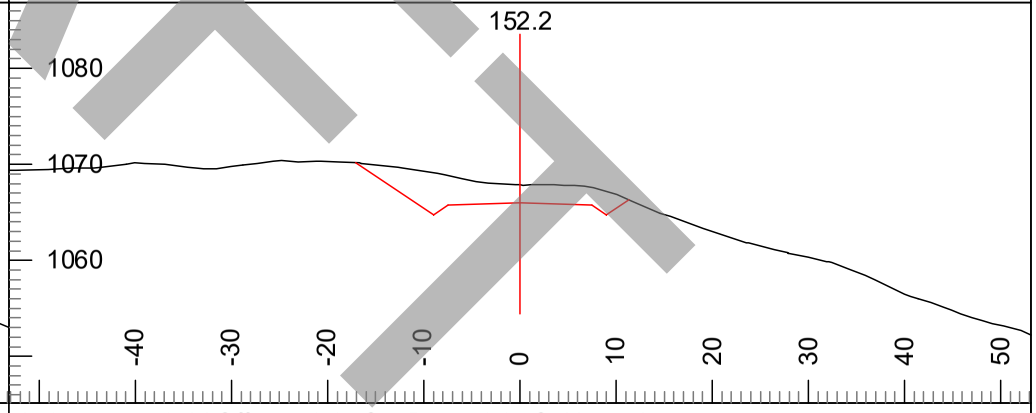

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L-Stn : 152.2 H. Offset: 0.0 Cul DIA:

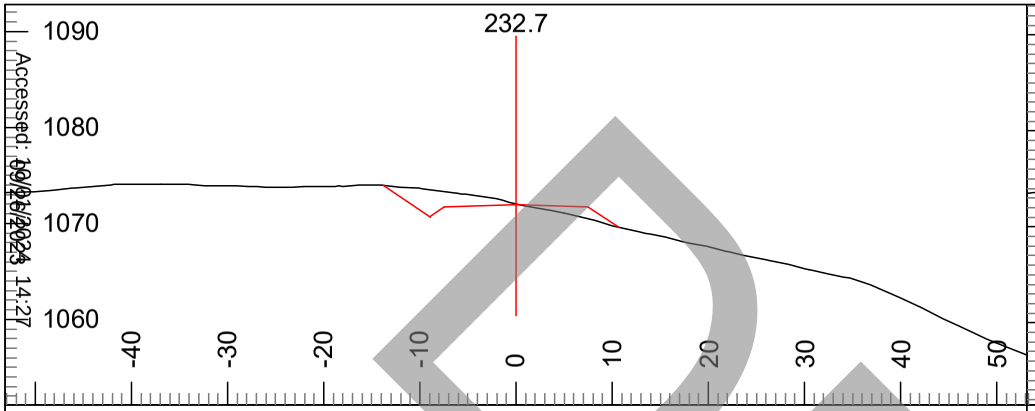
Carrot Timber Sale
D-8004-EXT
Contract#: 30-103584

Washington State Department of Natural Resources
South Puget Sound Region

Section Scale 1:240

Engineer: G. Gerritsen

6/01/23



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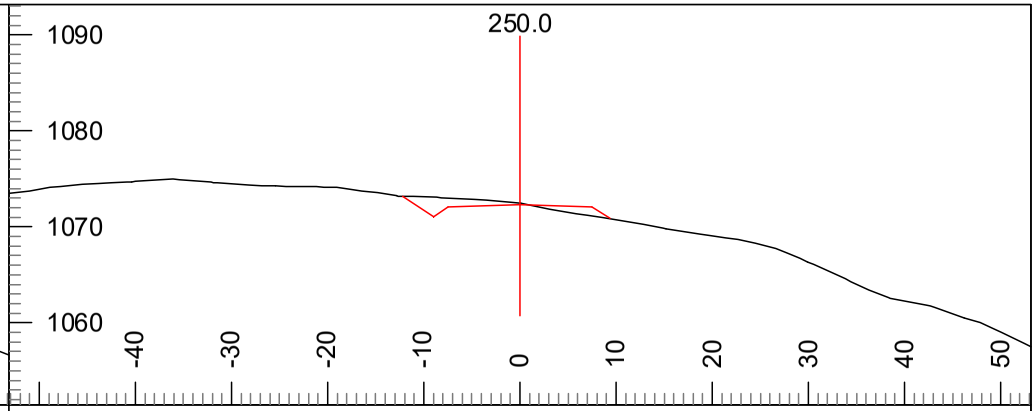

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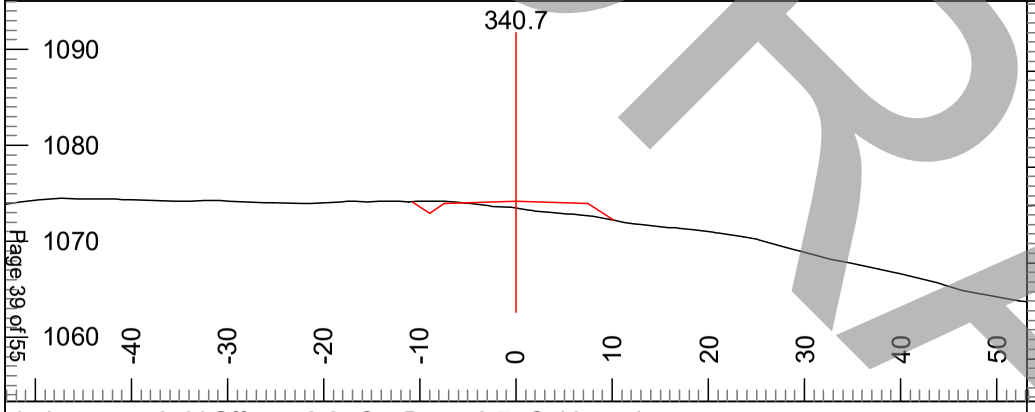

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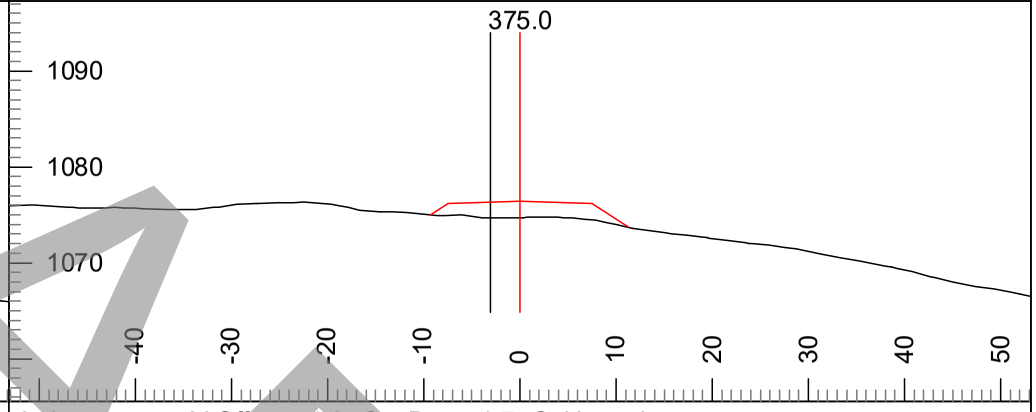

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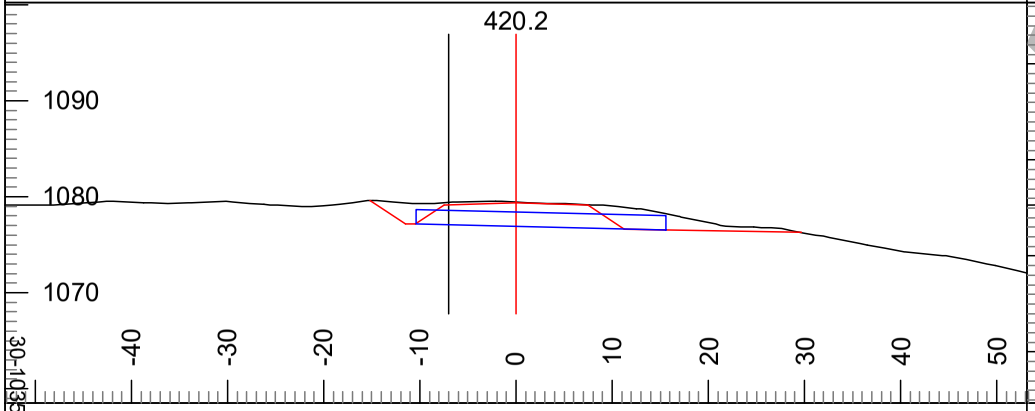

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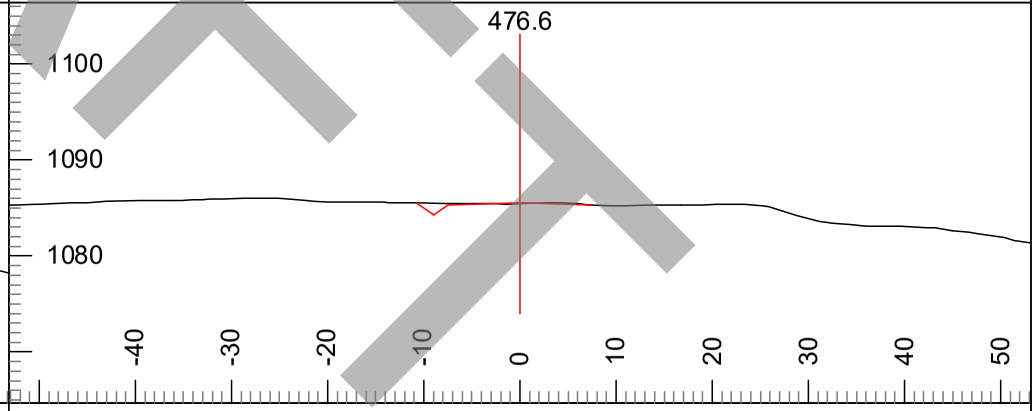
L-Stn : 420.2 H. Offset: 7.0 Cul DIA: 18in



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L-Stn : 476.6 H. Offset: 0.0 Cul DIA:

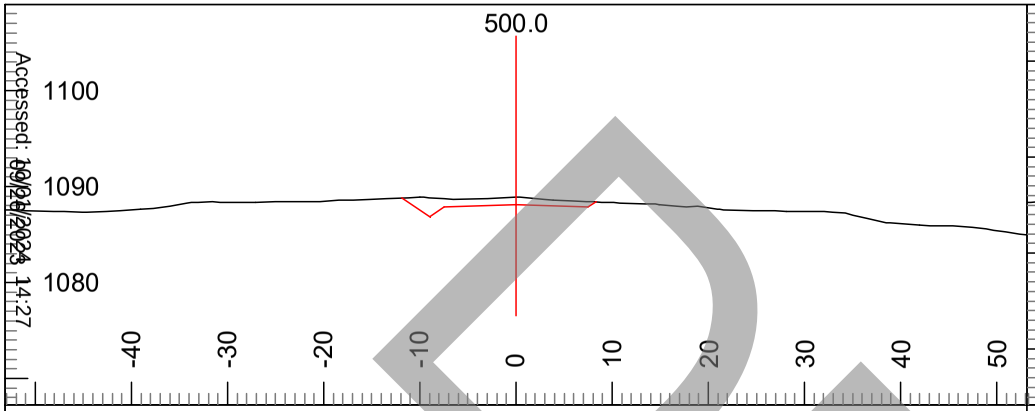
Carrot Timber Sale
D-8004-EXT
Contract#: 30-103584

Washington State Department of Natural Resources
South Puget Sound Region

Section Scale 1:240

Engineer: G. Gerritsen

6/01/23



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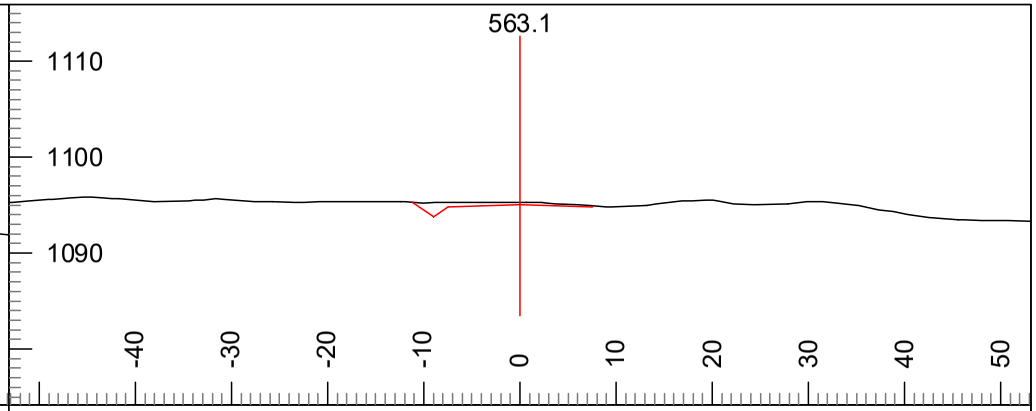

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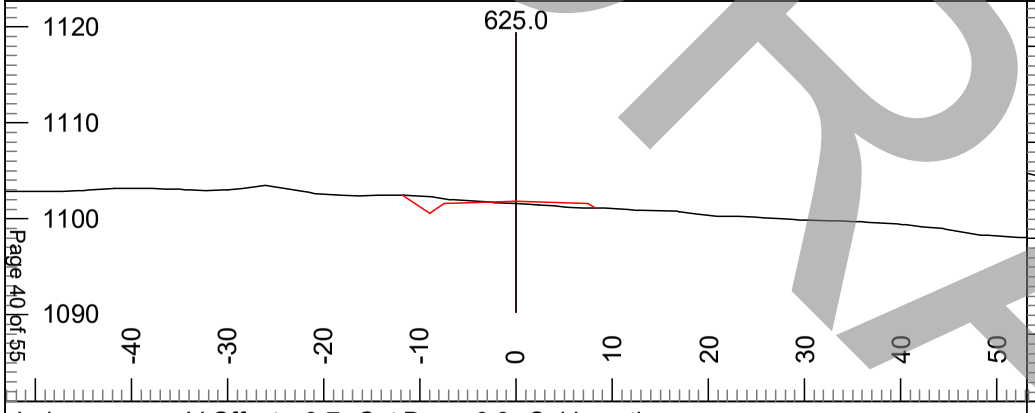
L-Stn : 563.1 H. Offset: 0.0 Cul DIA:



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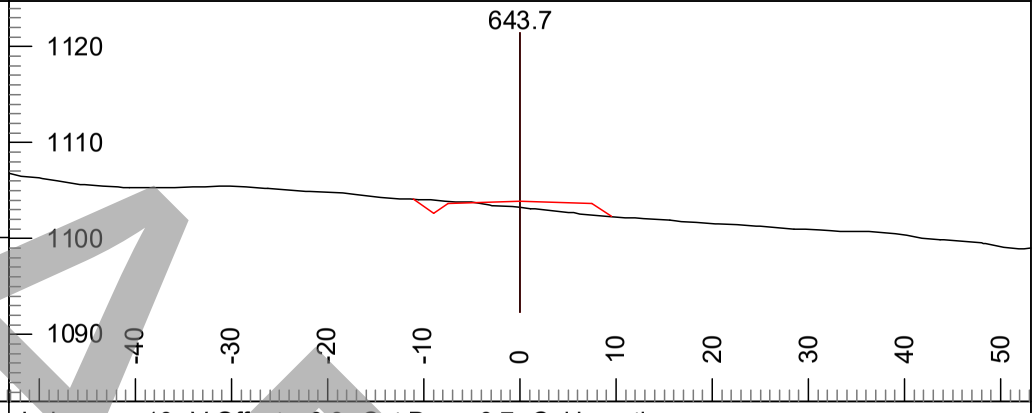
L-Stn : 625.0 H. Offset: 0.0 Cul DIA:



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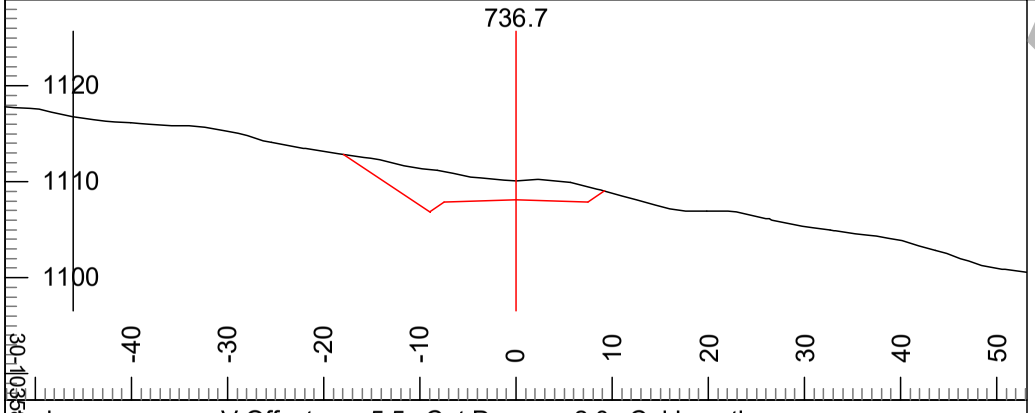
L-Stn : 643.7 H. Offset: 0.0 Cul DIA:



Index: V.Offset: -5.5 Cut Dp: 2.0 Cul Length:
L-Stn : 736.7 H. Offset: 41.3 Cul DIA:

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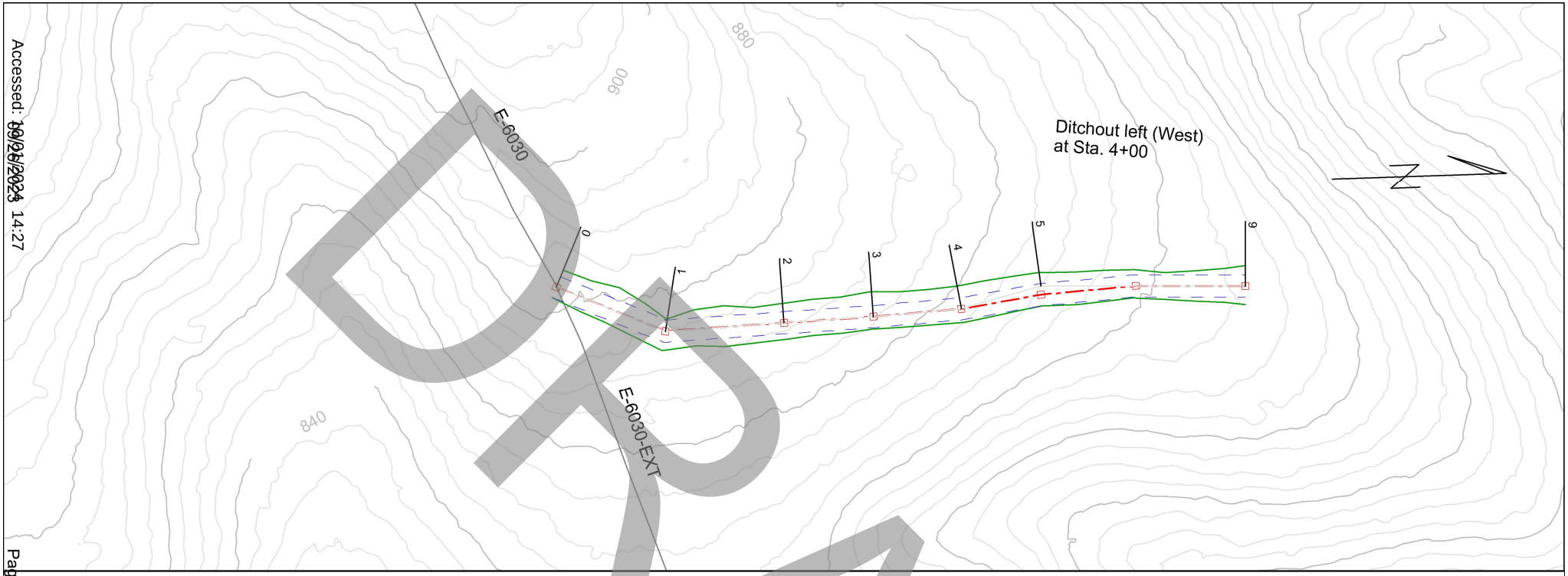
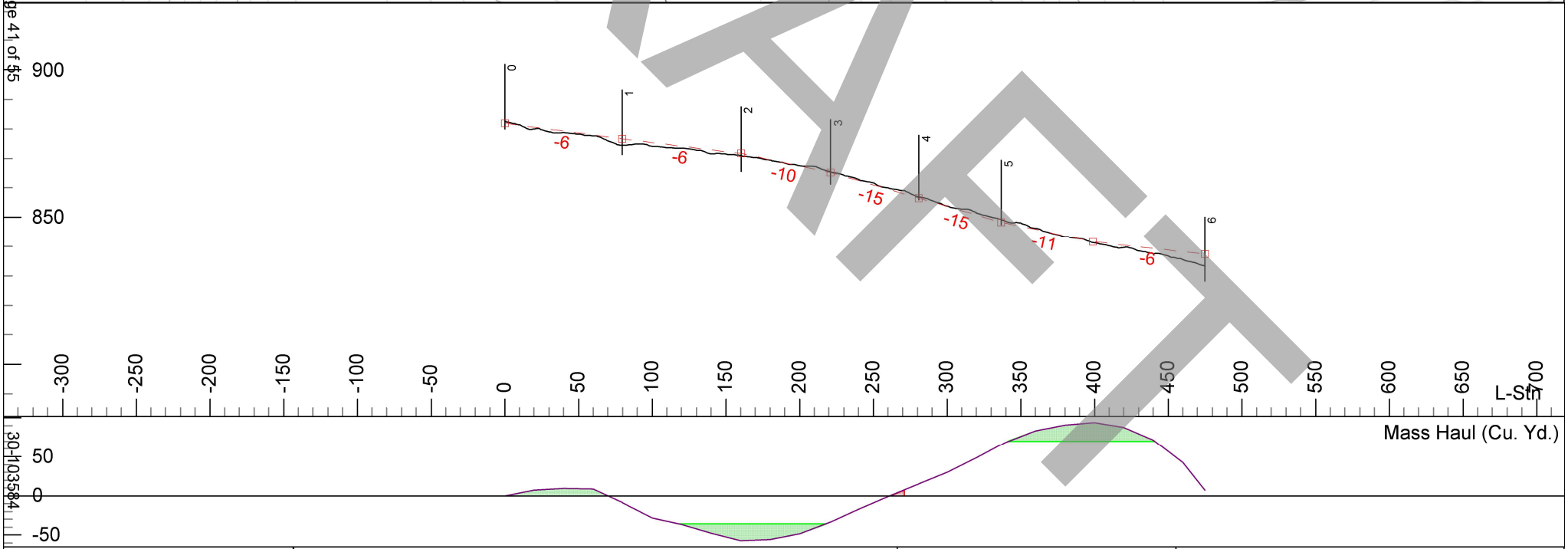
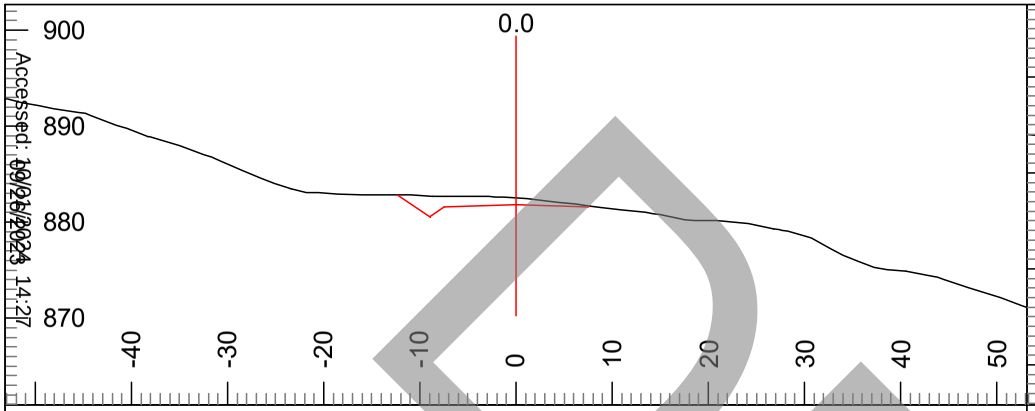
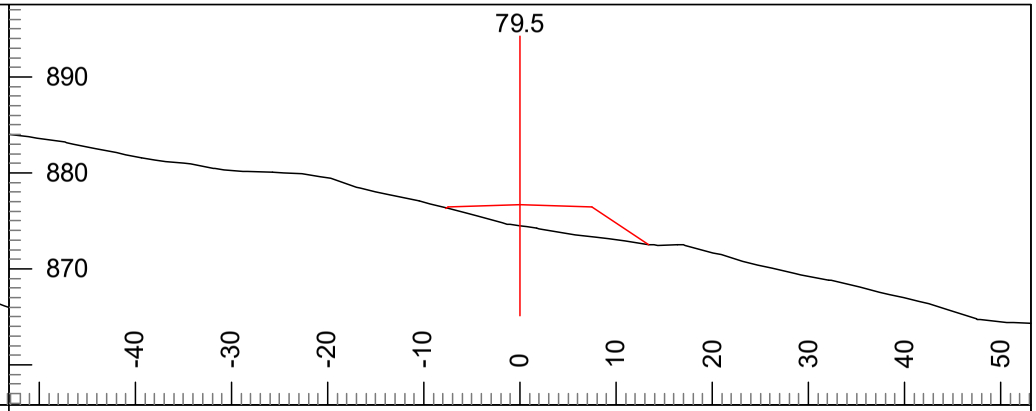




Carrot Timber Sale E-6030-1 Contract#: 30-103584	Washington State Department of Natural Resources South Puget Sound Region		Plan Scale 1:1200 Profile Vert Scale 1:600 Profile Horz Scale 1:1200	Engineer: G. Gerritsen 6/01/23 Page 1 of 3



Index: 0 V.Offset: 1.8 Cut Dp: 0.7 Cul Length:
L-Stn : 0.0 H. Offset: 0.0 Cul DIA:



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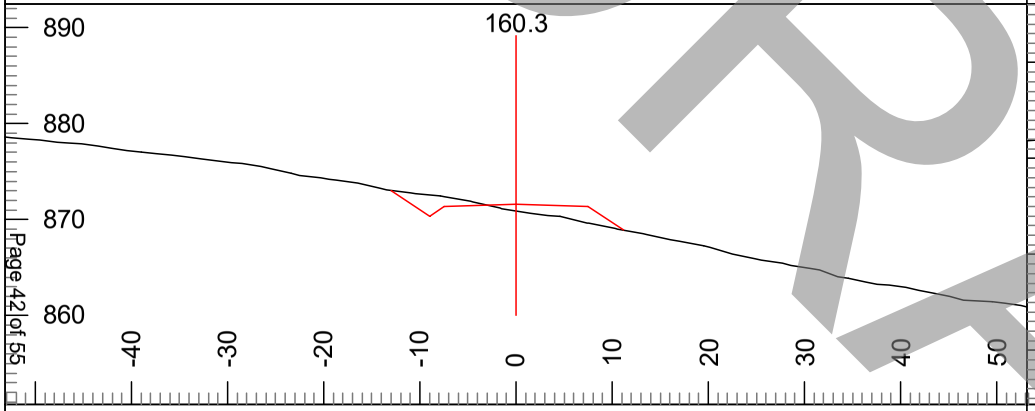
L-Stn : 79.5 H. Offset: 0.0 Cul DIA:



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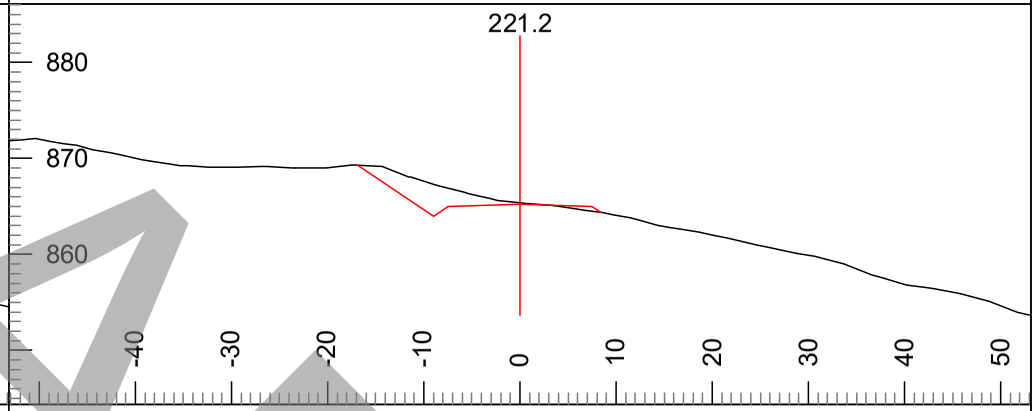
L-Stn : 160.3 H. Offset: 0.0 Cul DIA:



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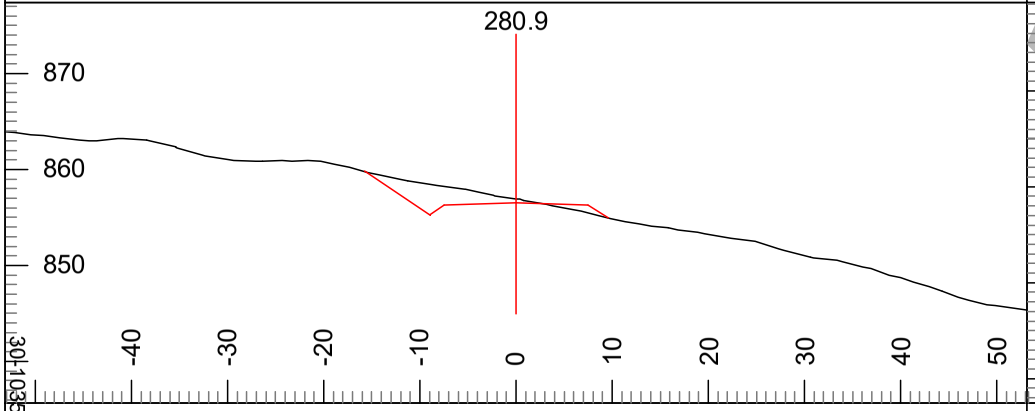
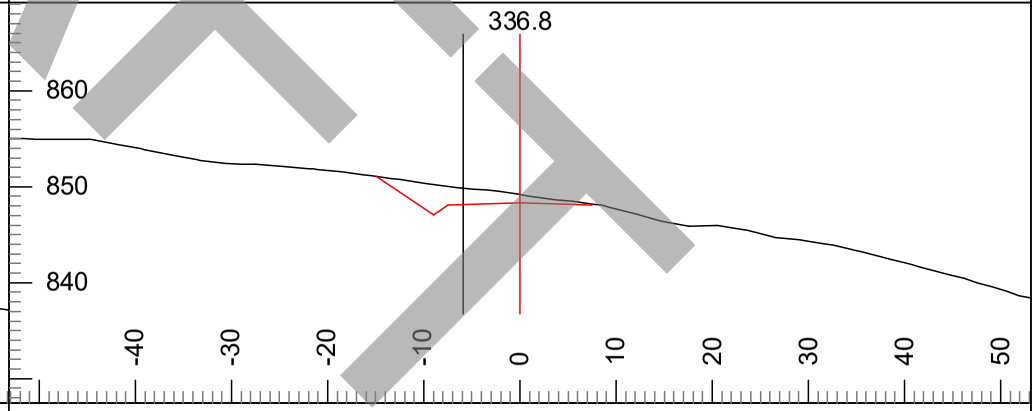
L-Stn : 221.2 H. Offset: 0.0 Cul DIA:



Index: 4 V.Offset: 0.6 Cut Dp: 0.4 Cul Length:
L-Stn : 280.9 H. Offset: 0.0 Cul DIA:



Index: 5 V.Offset: 0.8 Cut Dp: 0.9 Cul Length:
L-Stn : 336.8 H. Offset: 5.9 Cul DIA:

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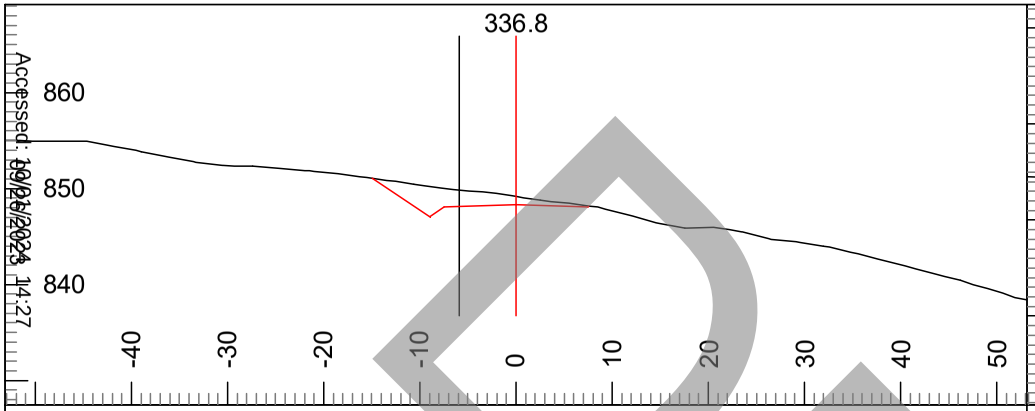
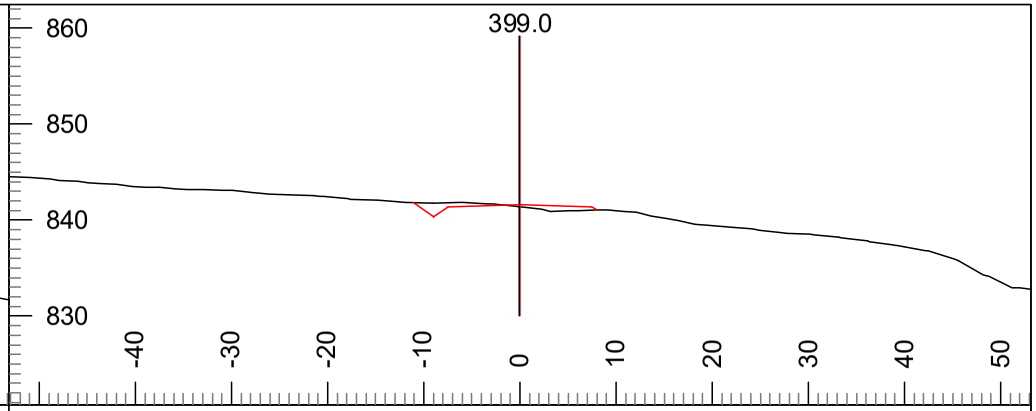


Index: V.Offset: 0.9 Cut Dp: 0.9 Cul Length:
L-Stn : 336.8 H. Offset: 5.9 Cul DIA:



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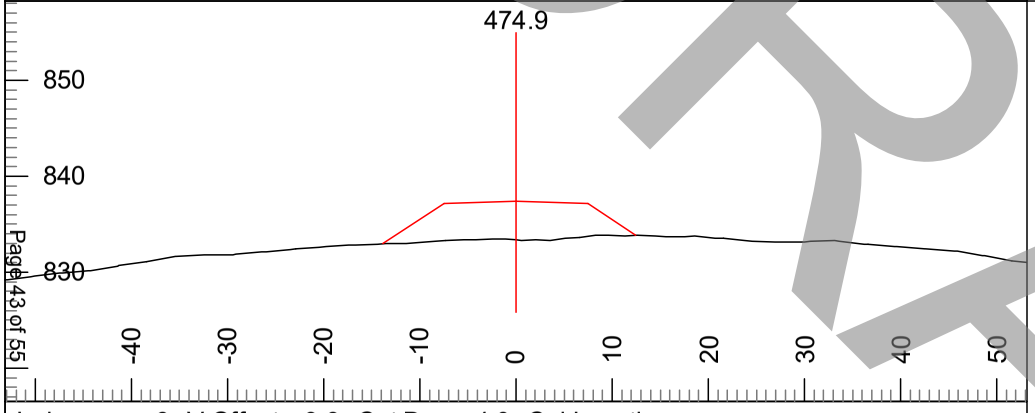
L-Stn : 399.0 H. Offset: 0.1 Cul DIA:



Index: 6 V.Offset: 9.3 Cut Dp: -4.0 Cul Length:
L-Stn : 474.9 H. Offset: 0.0 Cul DIA:

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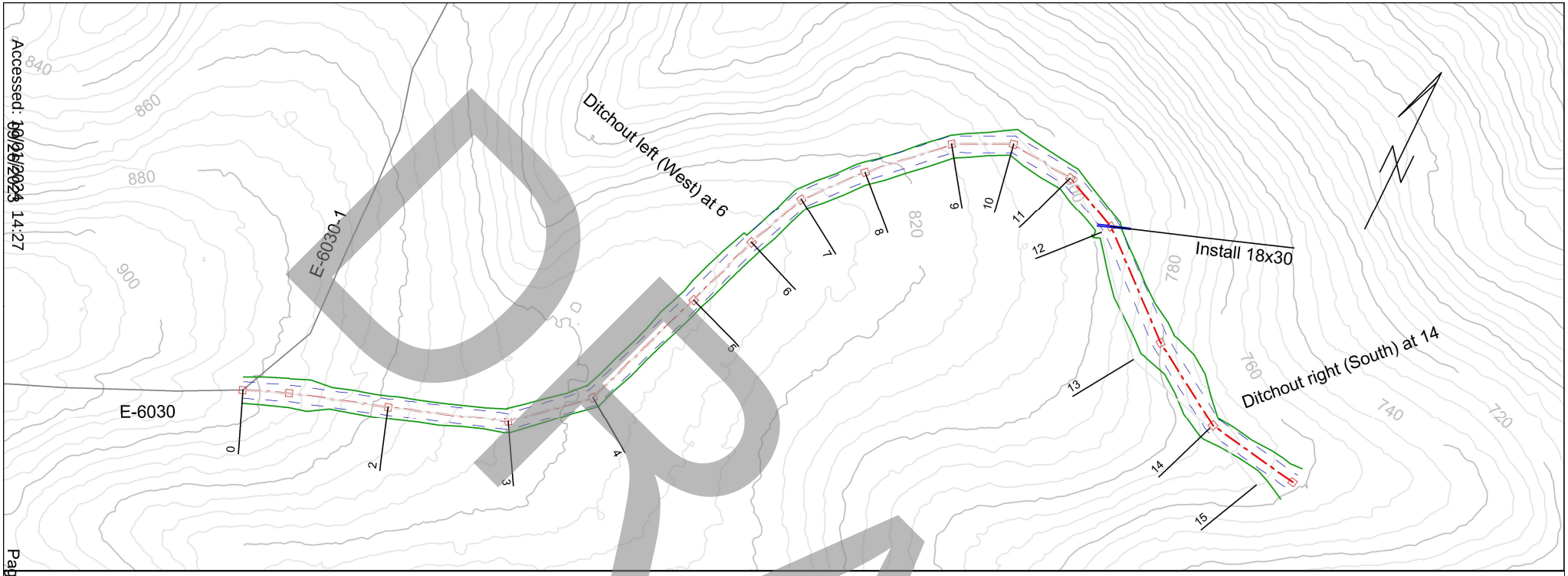
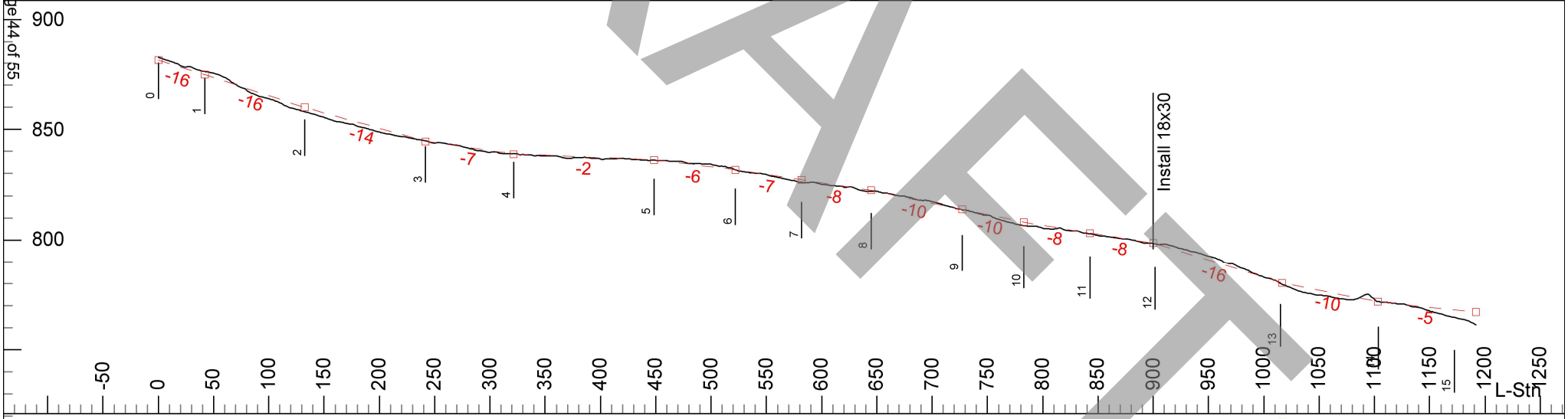
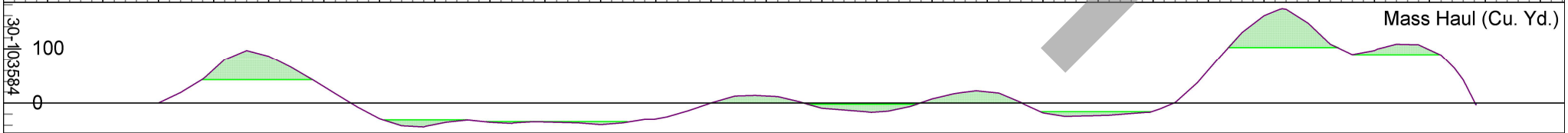
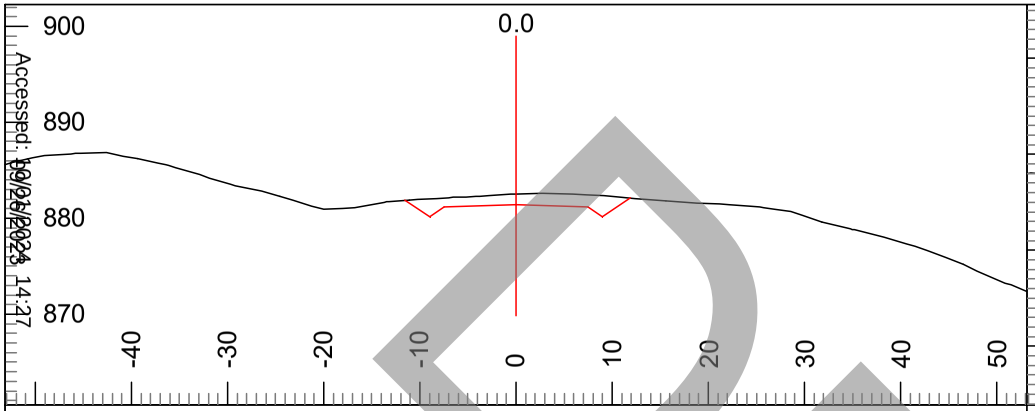


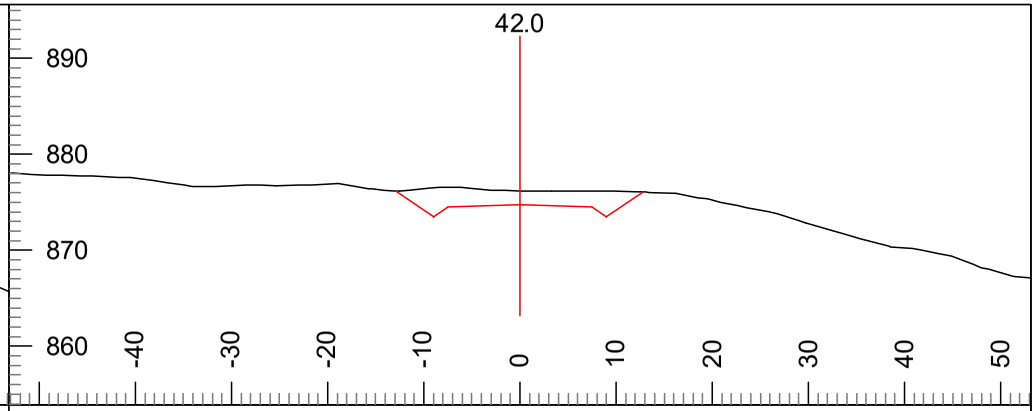




Carrot Timber Sale E-6030-EXT Contract#: 30-103584	Washington State Department of Natural Resources South Puget Sound Region		Plan Scale 1:1600 Profile Vert Scale 1:800 Profile Horz Scale 1:1600	Engineer: G. Gerritsen 6/01/23 Page 1 of 5



Index: 0 V.Offset: 1.4 Cut Dp: 1.1 Cul Length:
L-Stn : 0.0 H. Offset: 0.0 Cul DIA:



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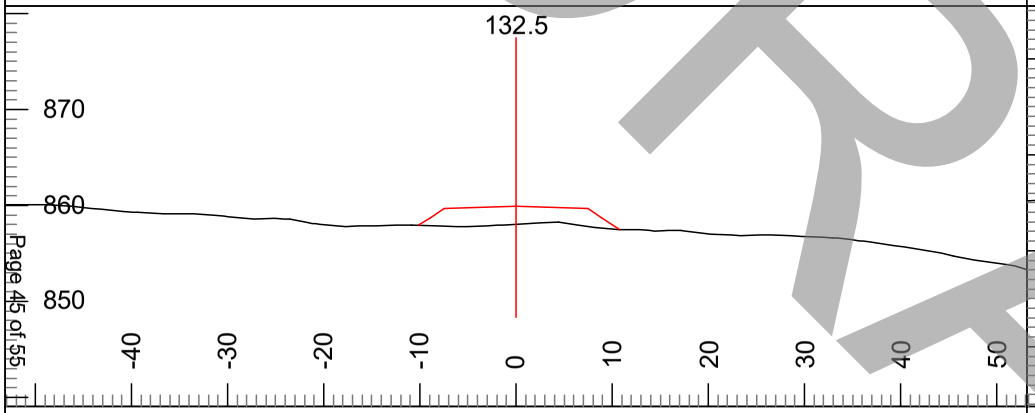
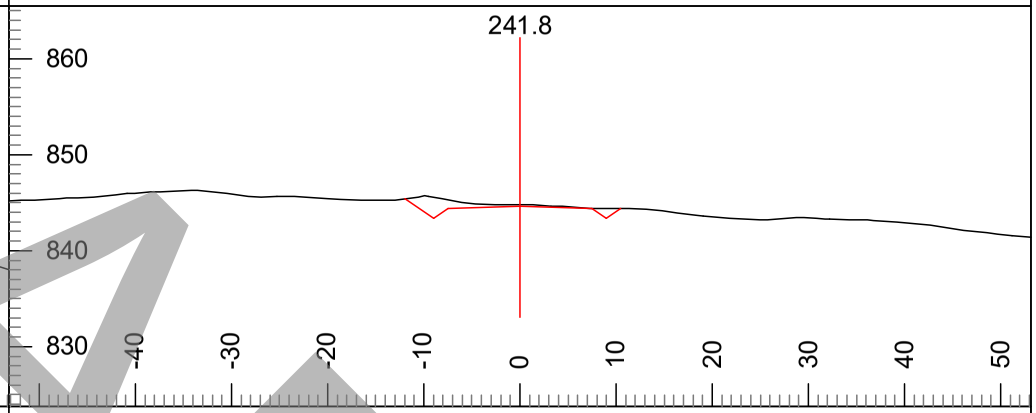
L-Stn : 42.0 H. Offset: 0.0 Cul DIA:



Index: 2 V.Offset: 5.6 Cut Dp: -1.9 Cul Length:
L-Stn : 132.5 H. Offset: 0.0 Cul DIA:



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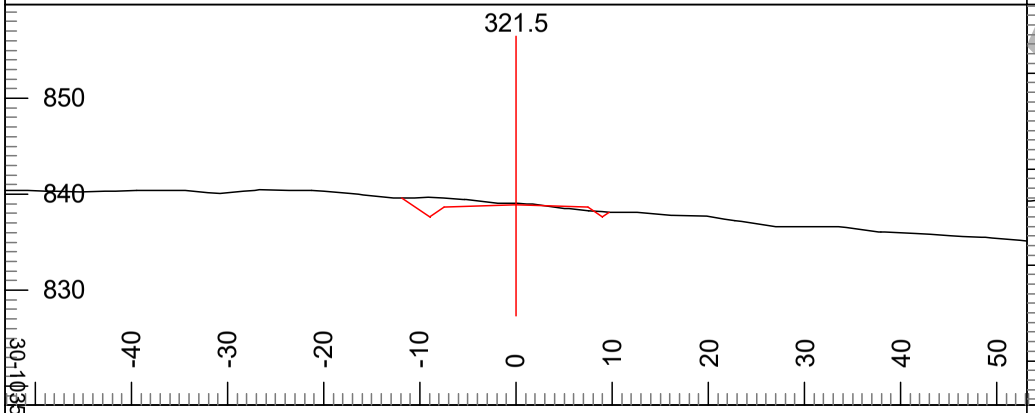
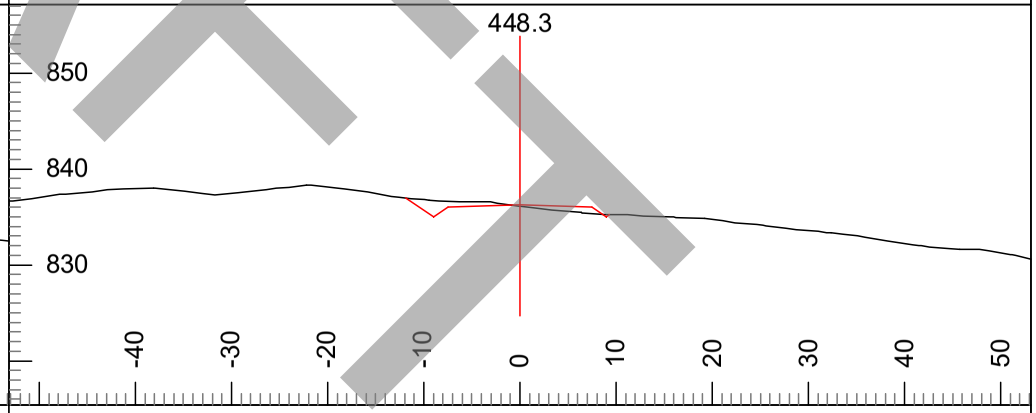
L-Stn : 241.8 H. Offset: 0.0 Cul DIA:



Index: 4 V.Offset: 3.8 Cut Dp: 0.2 Cul Length:
L-Stn : 321.5 H. Offset: 0.0 Cul DIA:



Index: 5 V.Offset: 8.8 Cut Dp: -0.2 Cul Length:
L-Stn : 448.3 H. Offset: 0.0 Cul DIA:

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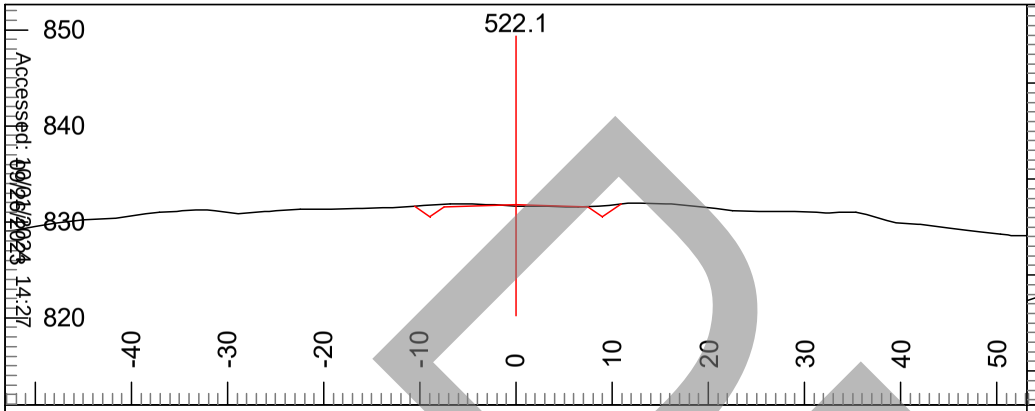
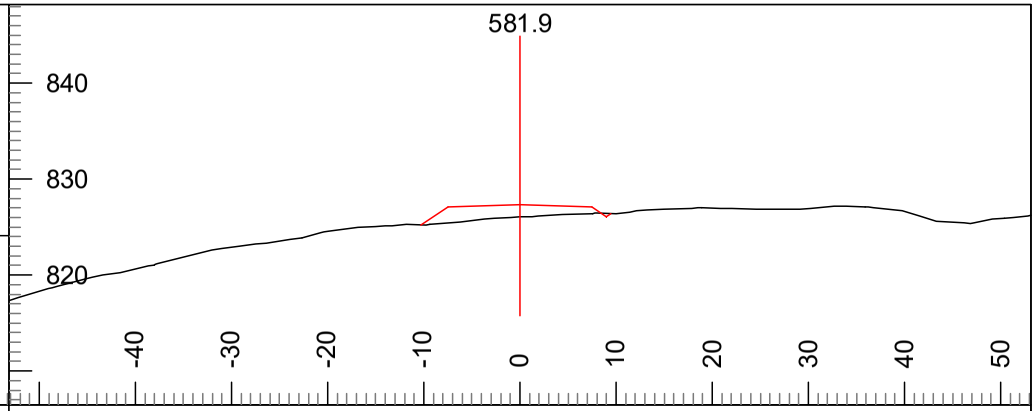
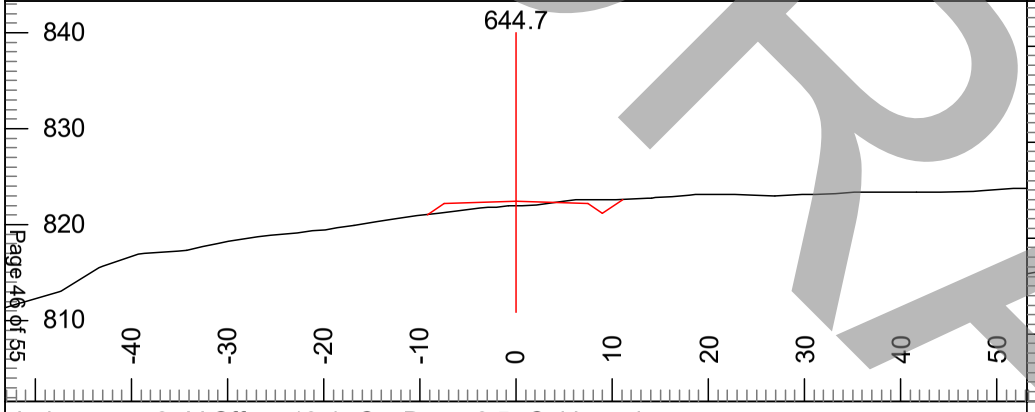


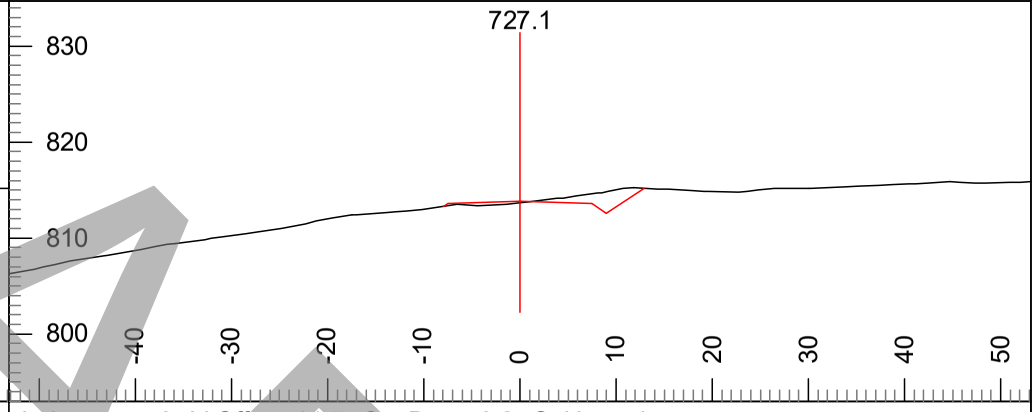
Index: 6 V.Offset: 8.8 Cut Dp: -0.1 Cul Length:
L-Stn : 522.1 H. Offset: 0.0 Cul DIA:



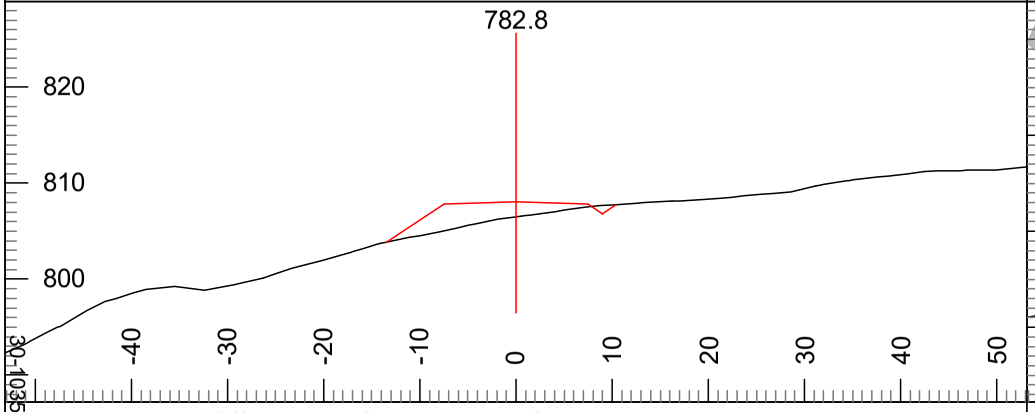
Index: 7 V.Offset: 10.3 Cut Dp: -1.3 Cul Length:
L-Stn : 581.9 H. Offset: 0.0 Cul DIA:



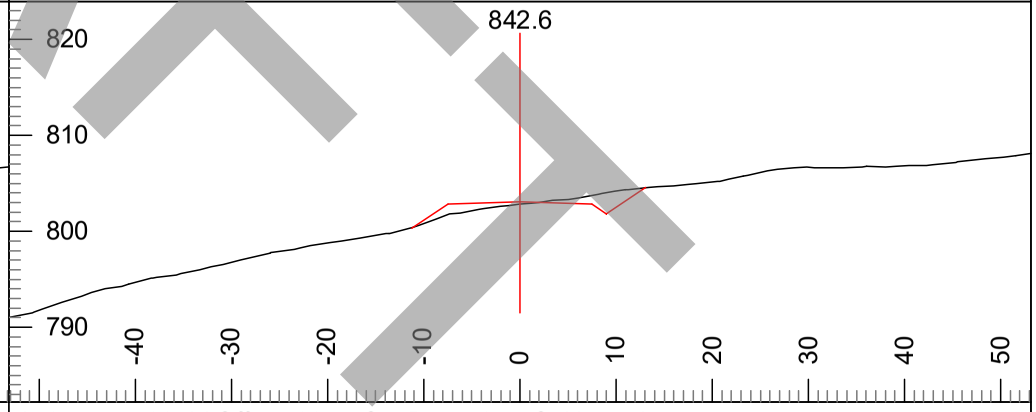
Index: 8 V.Offset: 10.4 Cut Dp: -0.5 Cul Length:
L-Stn : 644.7 H. Offset: 0.0 Cul DIA:



Index: 9 V.Offset: 11.7 Cut Dp: -0.2 Cul Length:
L-Stn : 727.1 H. Offset: 0.0 Cul DIA:



Index: 10 V.Offset: 10.9 Cut Dp: -1.6 Cul Length:
L-Stn : 782.8 H. Offset: 0.0 Cul DIA:



Index: 11 V.Offset: 10.7 Cut Dp: -0.3 Cul Length:
L-Stn : 842.6 H. Offset: 0.0 Cul DIA:

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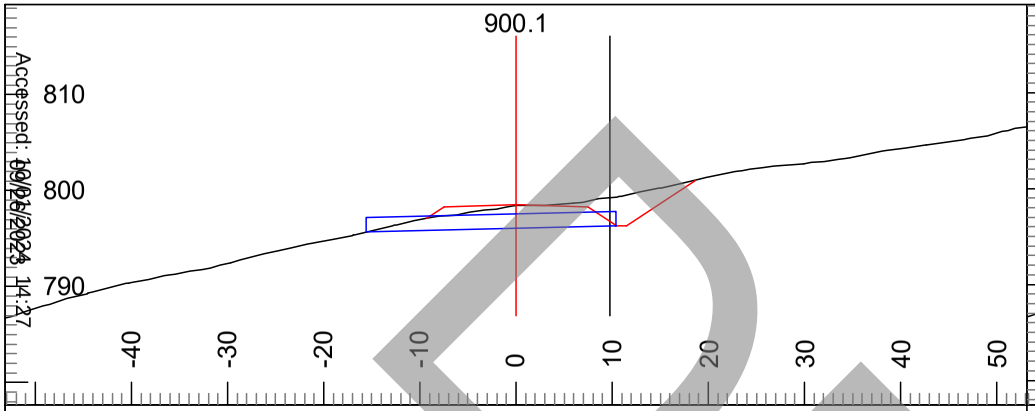
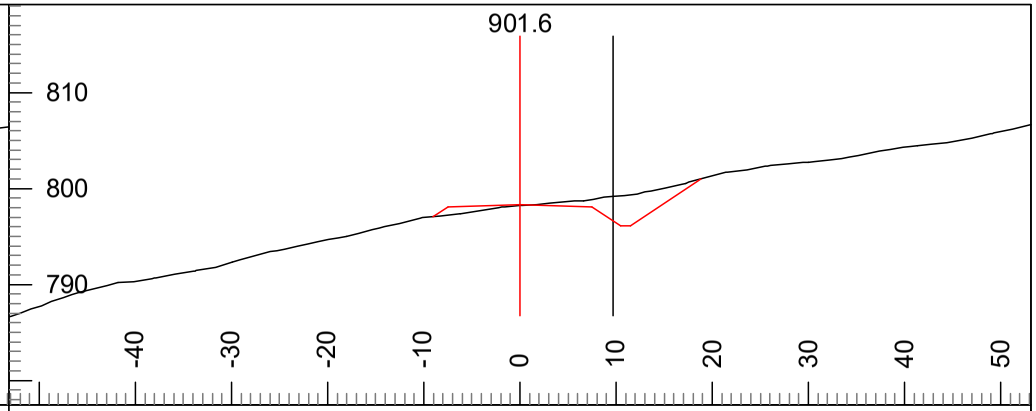
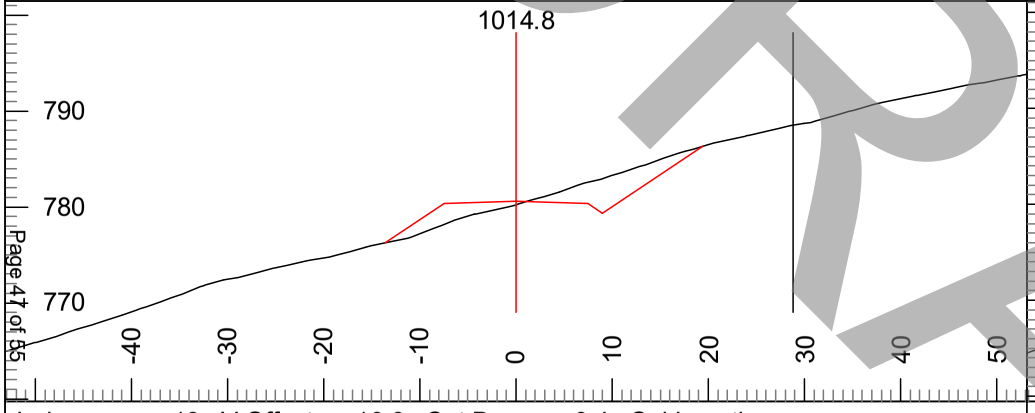


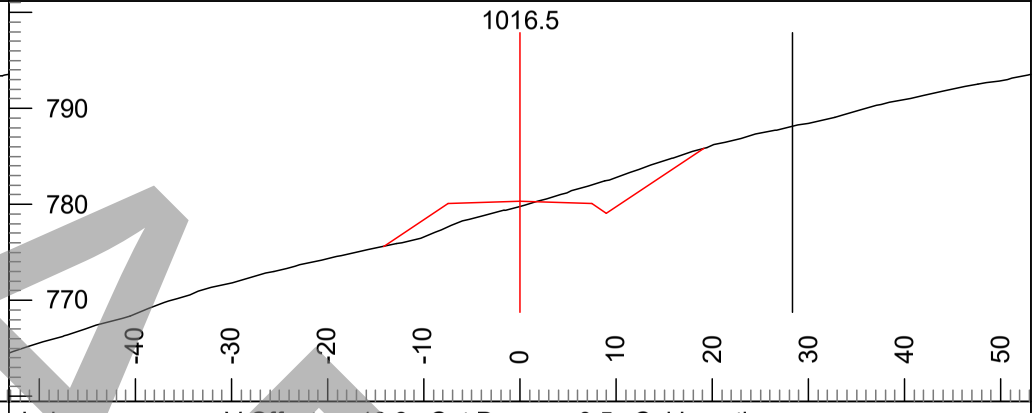
Index: V.Offset: 11.3 Cut Dp: -0.1 Cul Length: 30.0
L-Stn : 900.1 H. Offset: -9.7 Cul DIA: 18in



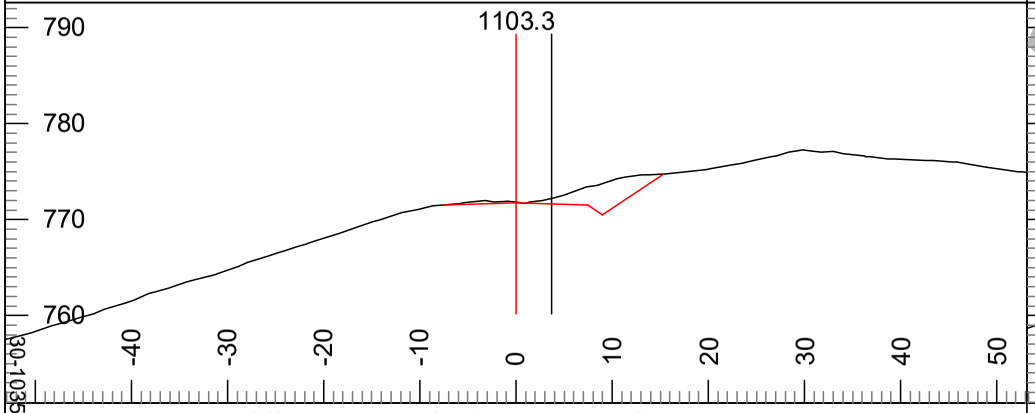
Index: 12 V.Offset: 11.1 Cut Dp: -0.1 Cul Length:
L-Stn : 901.6 H. Offset: -9.6 Cul DIA:



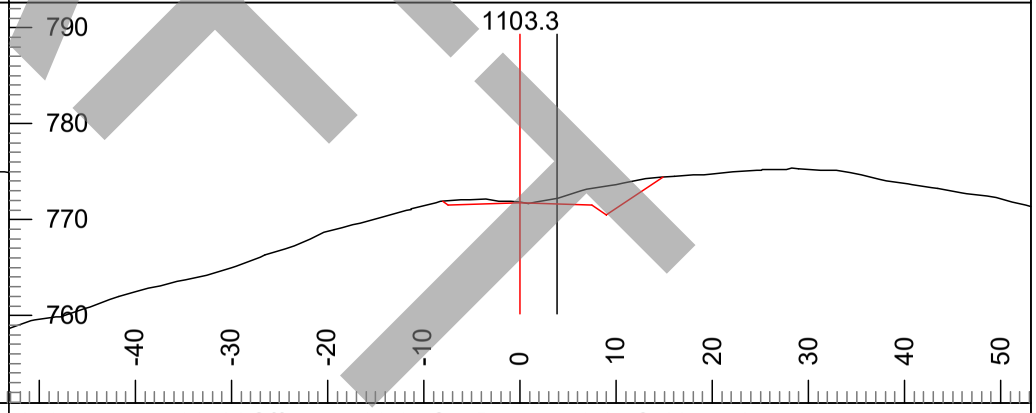
Index: 13 V.Offset: 10.0 Cut Dp: -0.4 Cul Length:
L-Stn : 1014.8 H. Offset: -29.0 Cul DIA:



Index: V.Offset: 10.8 Cut Dp: -0.5 Cul Length:
L-Stn : 1016.5 H. Offset: -27.3 Cul DIA:



Index: V.Offset: 11.4 Cut Dp: 0.1 Cul Length:
L-Stn : 1103.3 H. Offset: -3.7 Cul DIA:



Index: 14 V.Offset: 11.4 Cut Dp: 0.1 Cul Length:
L-Stn : 1103.3 H. Offset: -3.7 Cul DIA:

Carrot Timber Sale
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Contract#: 30-103584

Washington State Department of Natural Resources
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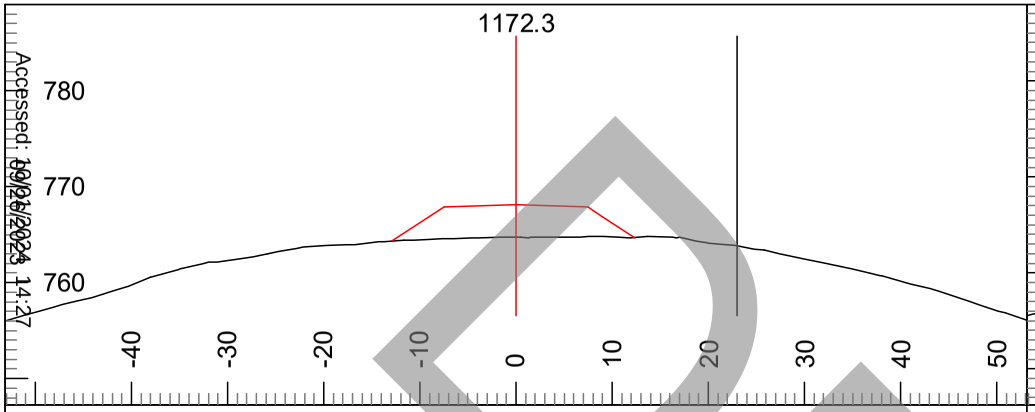

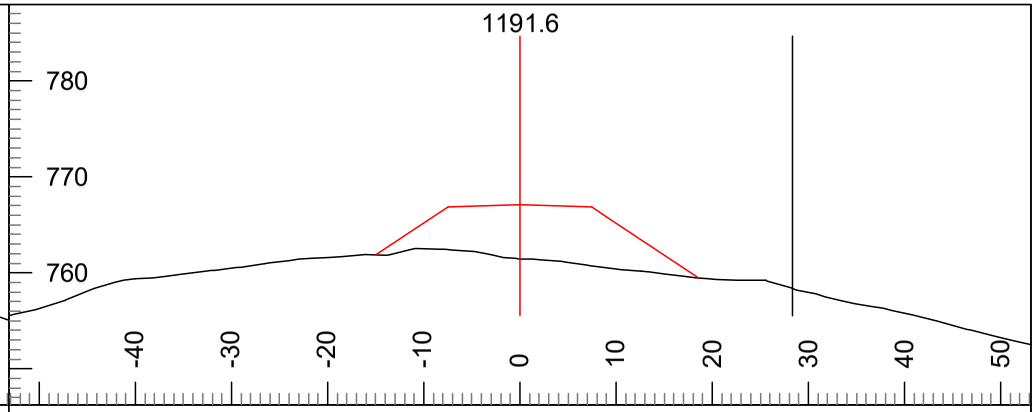

Index:	15	V.Offset:	18.4	Cut Dp:	-3.4	Cul Length:			
L-Stn :	1172.3	H. Offset:	-22.2	Cul DIA:					

Index:		V.Offset:	17.4	Cut Dp:	-5.6	Cul Length:			
L-Stn :	1191.6	H. Offset:	-33.1	Cul DIA:					

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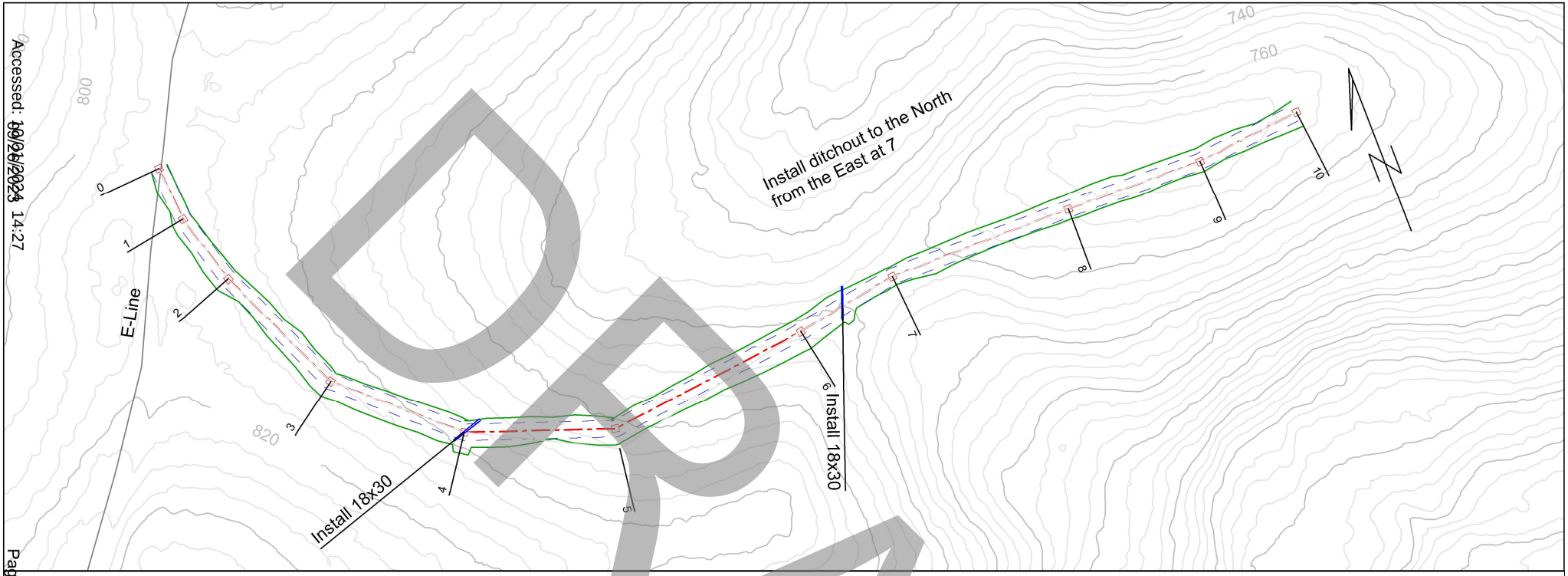
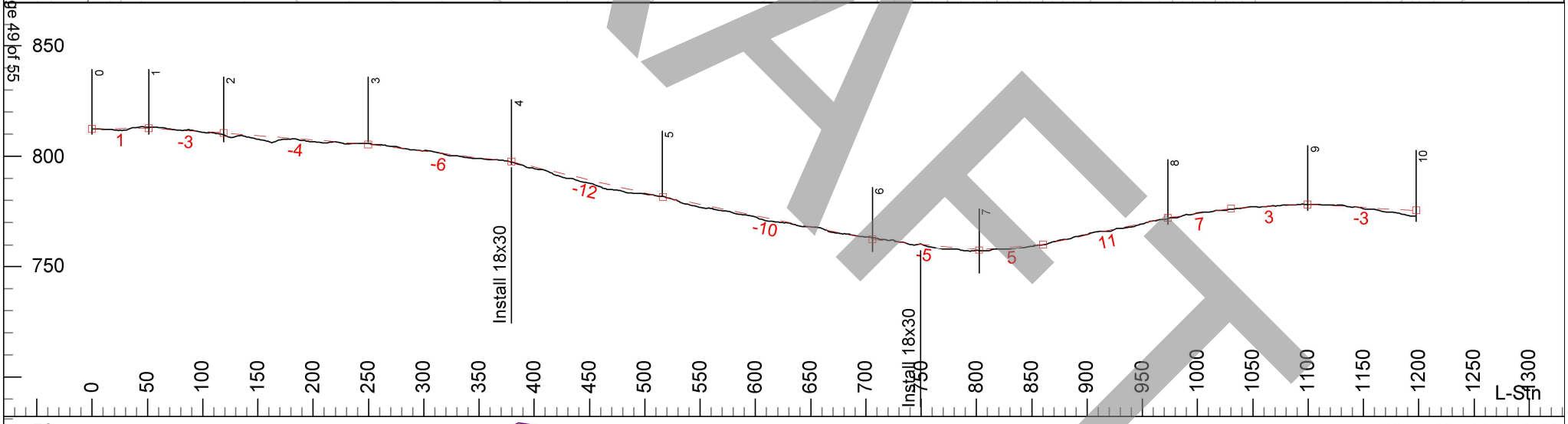
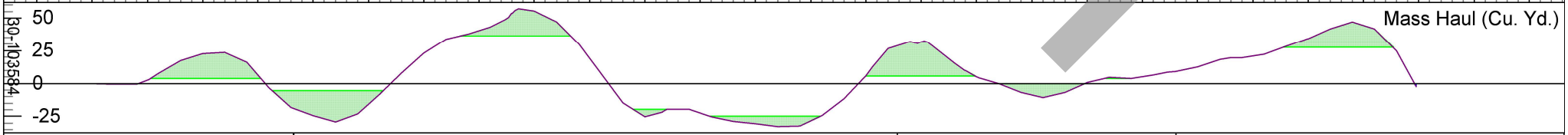
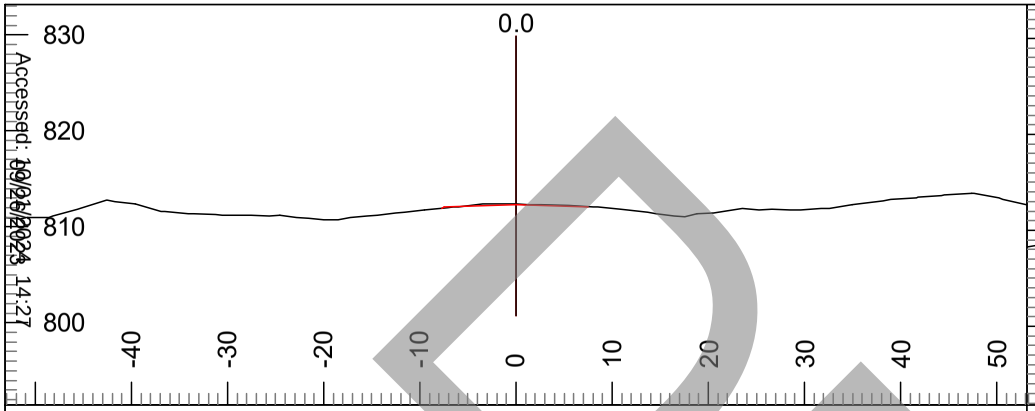


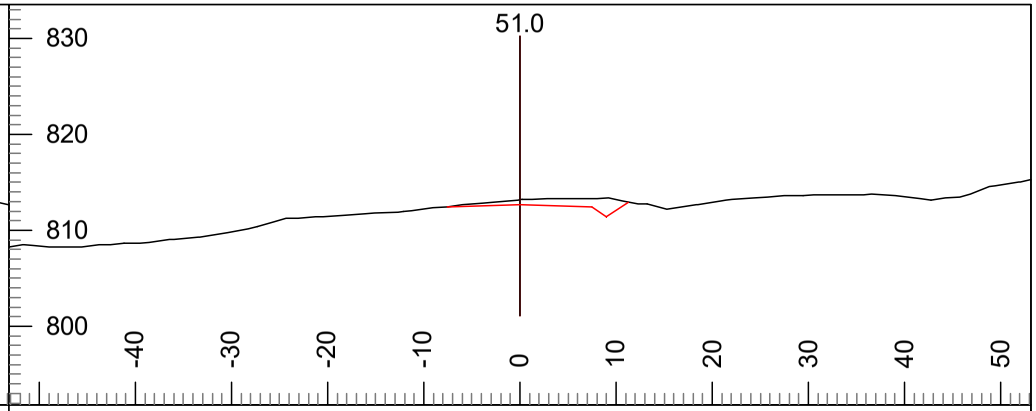




Carrot Timber Sale E-6750 Contract#: 30-103584	Washington State Department of Natural Resources South Puget Sound Region		Plan Scale 1:1600 Profile Vert Scale 1:800 Profile Horz Scale 1:1600	Engineer: G. Gerritsen 6/01/23 Page 1 of 4



Index: 0 V.Offset: 2.3 Cut Dp: 0.1 Cul Length:
L-Stn : 0.0 H. Offset: 0.0 Cul DIA:



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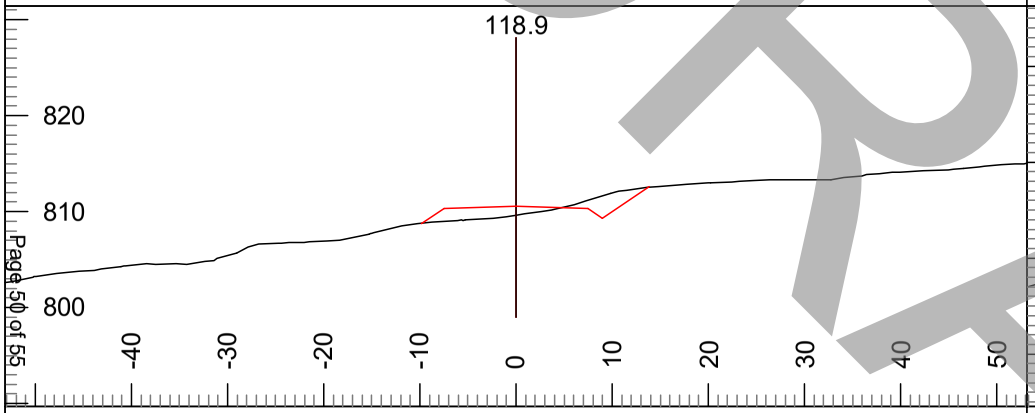
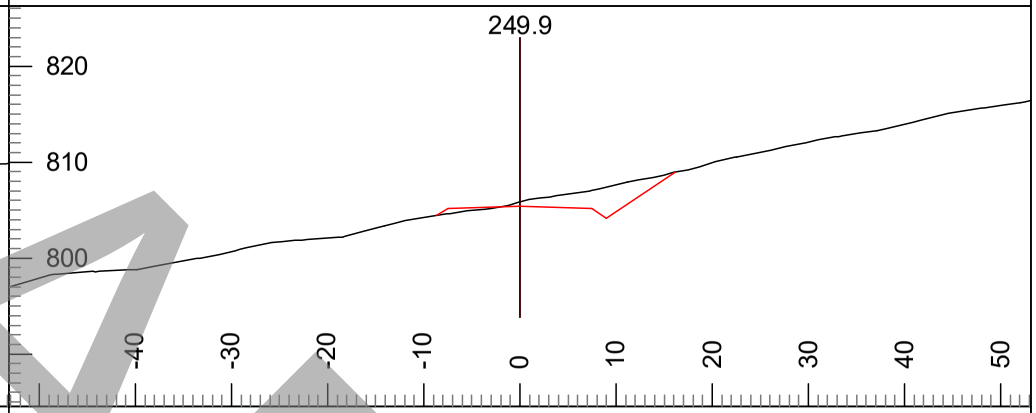
L-Stn : 51.0 H. Offset: 0.0 Cul DIA:



Index: 2 V.Offset: 4.0 Cut Dp: -0.9 Cul Length:
L-Stn : 118.9 H. Offset: 0.0 Cul DIA:



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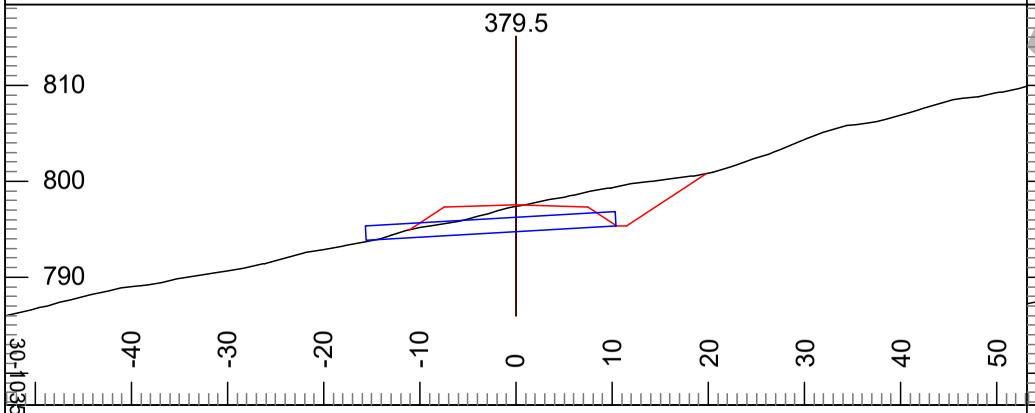
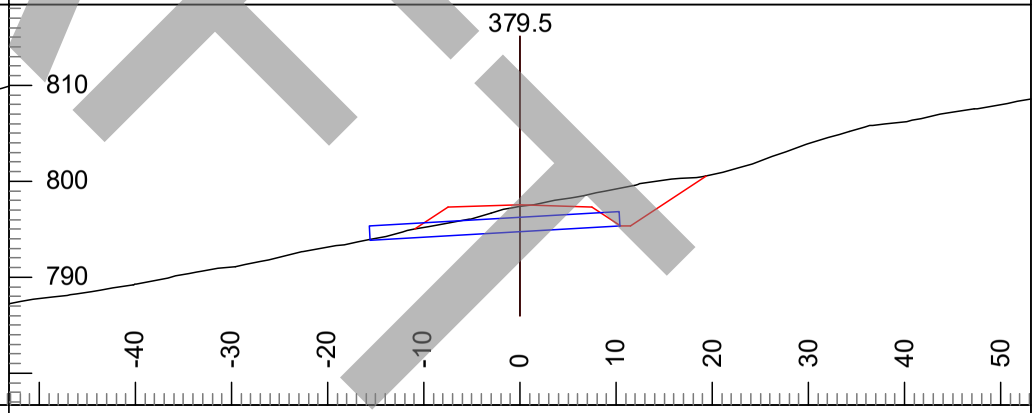


Index: V.Offset: 1.3 Cut Dp: -0.2 Cul Length: 30.0
L-Stn : 379.5 H. Offset: 0.0 Cul DIA: 18in



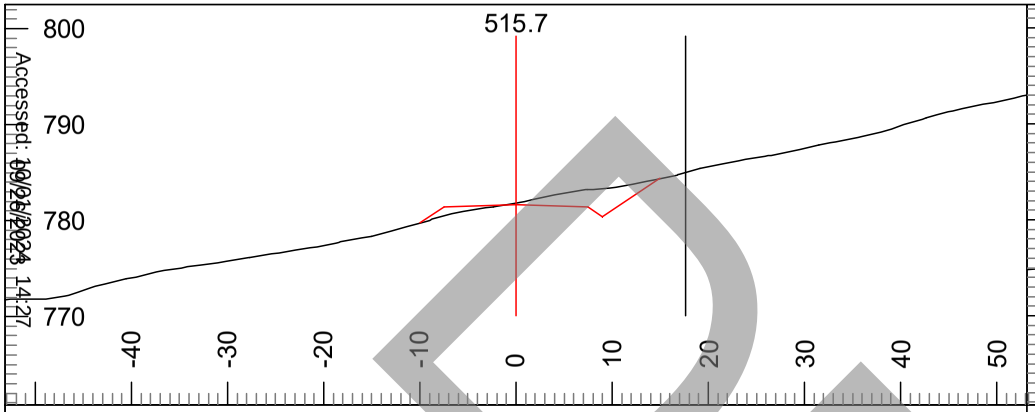
Index: 4 V.Offset: 1.3 Cut Dp: -0.2 Cul Length: 30.0
L-Stn : 379.5 H. Offset: 0.0 Cul DIA: 18in

Carrot Timber Sale
E-6750
Contract#: 30-103584

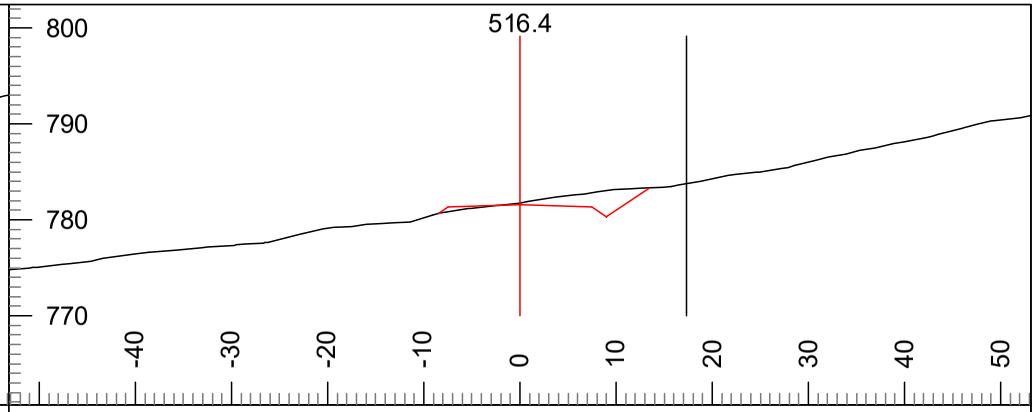
Washington State Department of Natural Resources
South Puget Sound Region

Section Scale 1:240

Engineer: G. Gerritsen
6/01/23



Index: 5 V.Offset: -0.4 Cut Dp: 0.2 Cul Length:
L-Stn : 515.7 H. Offset: -18.6 Cul DIA:



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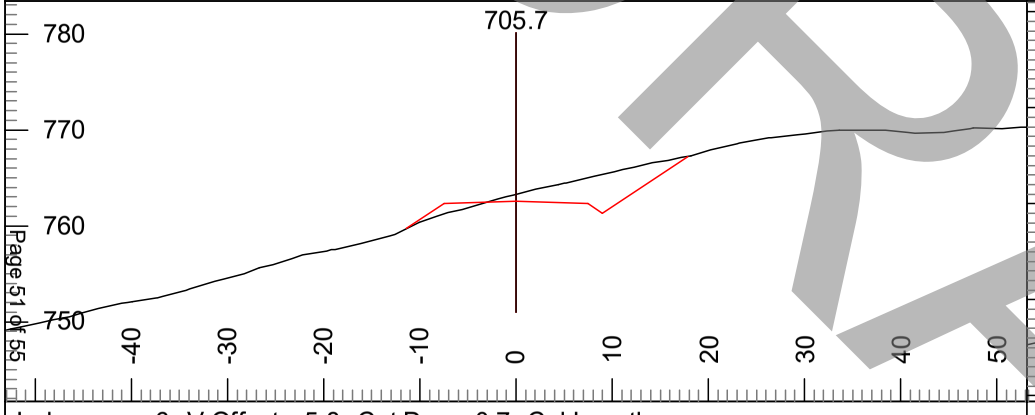
L-Stn : 516.4 H. Offset: -17.2 Cul DIA:



Index: 6 V.Offset: 5.8 Cut Dp: 0.7 Cul Length:
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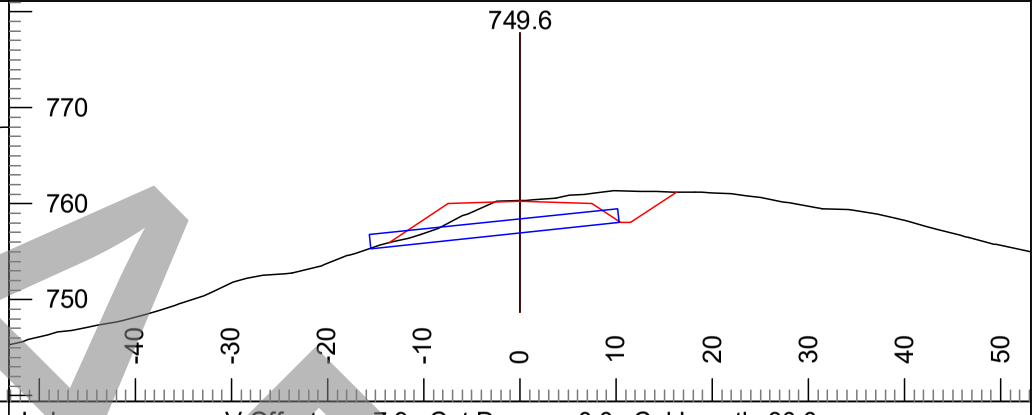

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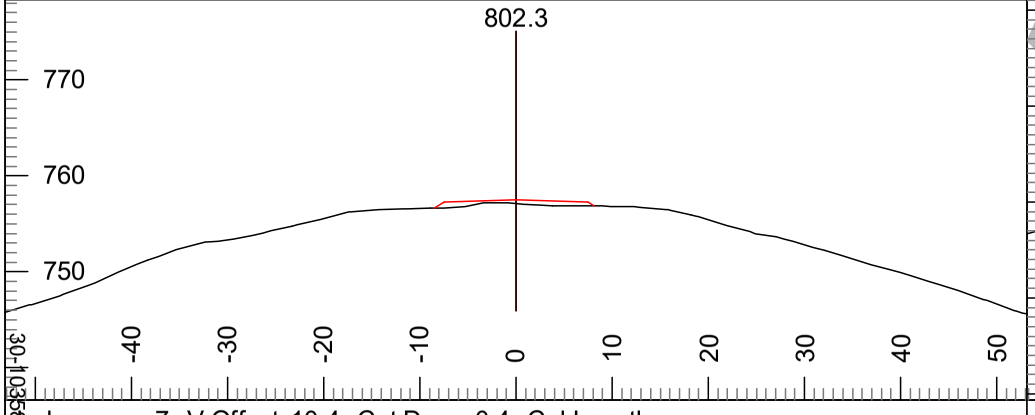
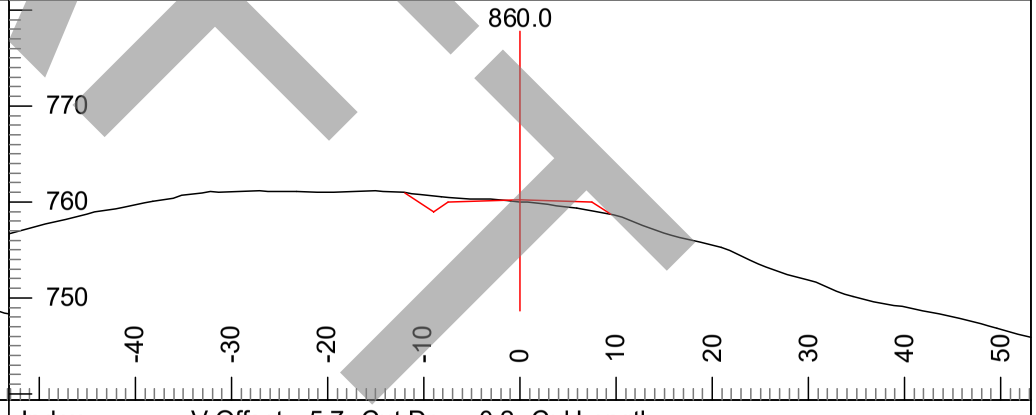


Index: 7 V.Offset: 10.4 Cut Dp: -0.4 Cul Length:
L-Stn : 802.3 H. Offset: 0.0 Cul DIA:



Index: V.Offset: 5.7 Cut Dp: -0.2 Cul Length:
L-Stn : 860.0 H. Offset: 0.0 Cul DIA:

Carrot Timber Sale E-6750 Contract#: 30-103584	Washington State Department of Natural Resources South Puget Sound Region		Section Scale 1:240	Engineer: G. Gerritsen 6/01/23
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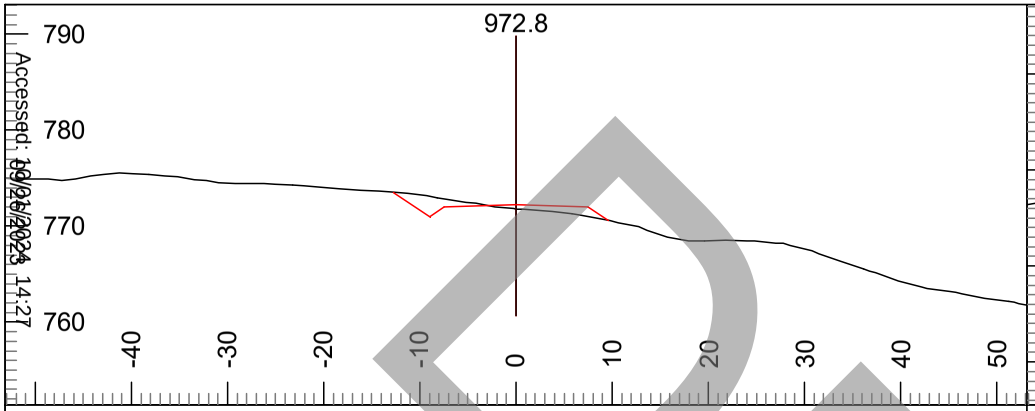

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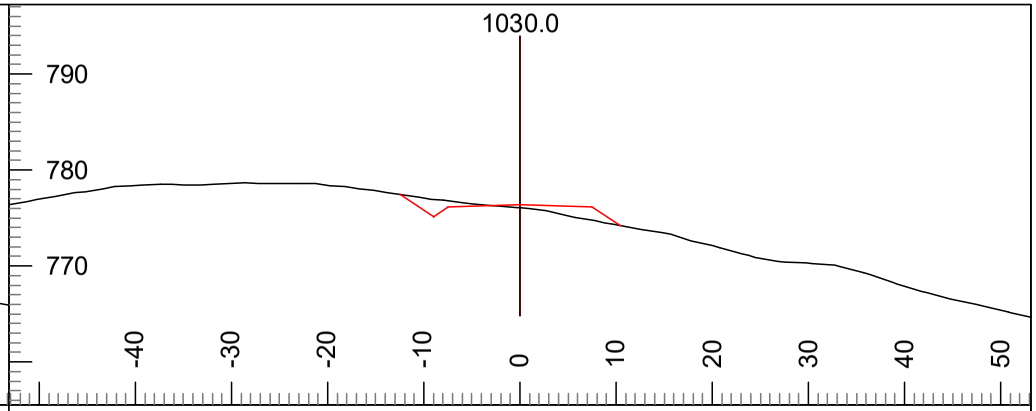

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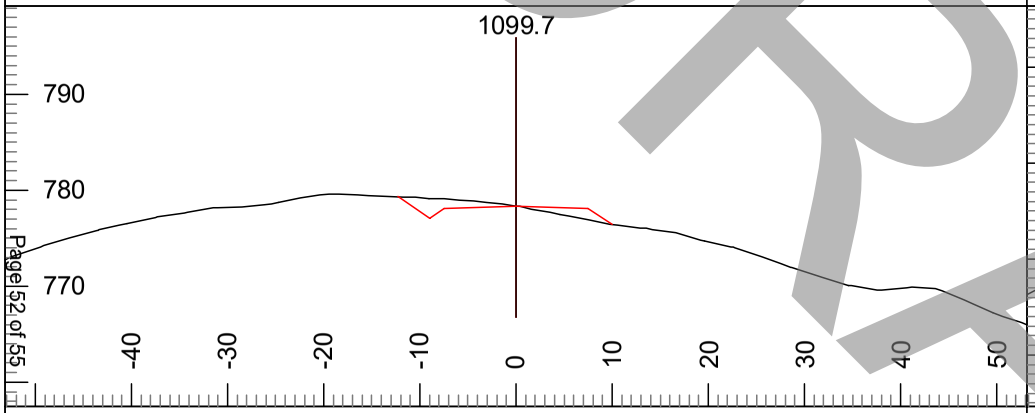

Index: 9 V.Offset: 2.8 Cut Dp: 0.0 Cul Length:
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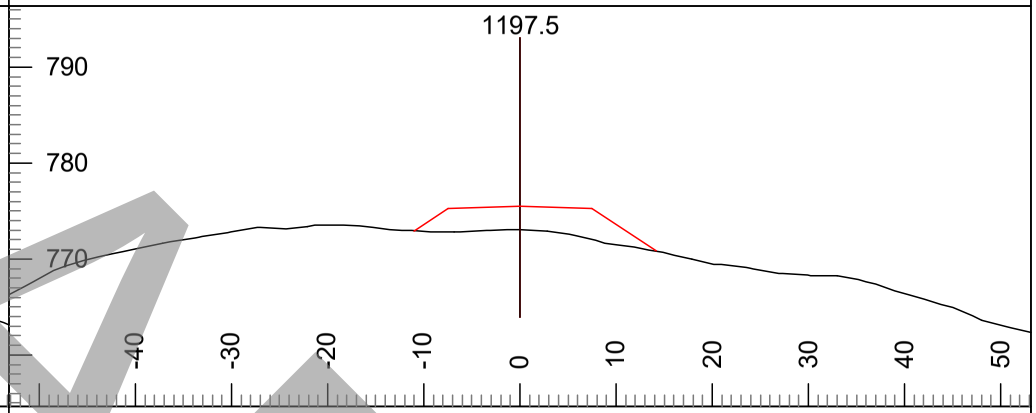


Index: 10 V.Offset: 4.8 Cut Dp: -2.4 Cul Length:
L-Stn : 1197.5 H. Offset: 0.0 Cul DIA:

30-103584

Carrot Timber Sale E-6750 Contract#: 30-103584	Washington State Department of Natural Resources South Puget Sound Region		Section Scale 1:240	Engineer: G. Gerritsen 6/01/23 Page 4 of 4

SCOTT PAPER QUARRY DEVELOPMENT PLAN

SE ¼ NW ¼ Section 8, Township 16 North, Range 03 West, W.M.

General:

1. Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 calendar days prior to any drilling.
2. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before blasting operations. Access roads and recreational trails in the area shall be blocked prior to blasting operations.
3. Oversize material left in quarry at the conclusion of operation shall be placed in "Area D" and shall not exceed 500 cubic yards. Any excess oversize material generated shall be reduced in size to a 4-inch jaw run rock (clause 6-37). Oversize material is defined as rock fragments larger than 2 feet in any dimension.
4. All vegetation including stumps shall be cleared a minimum of 35 feet beyond the top of all working faces. Surface shall be scalped of all overburden within 20 feet of working face at all times. Overburden cut slopes shall be sloped no steeper than 1:1.
5. Endhaul overburden to waste area at station 86+60 on the E-8600 road. Additional locations may be used if approved in writing by the Contract Administrator. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the vegetative waste area as shown on the Scott Paper Quarry Development Plan.
6. Maximum face height shall be 30 feet.
7. The minimum width of benches shall be 20ft.
8. Quarry walls shall be maintained in a condition to minimize the possibility of the walls sliding or failing.
9. Quarry floor shall have continuity of slope and be left in a smooth and neat condition, providing positive drainage. No ponding will be allowed.
10. All operations shall be carried out in compliance with all regulations of:
    a. Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
    b. "Safety Standards for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.
11. At the end of operation, benches shall have safety berms constructed or access blocked to highway vehicles. Berms shall be at least mid-axle height of the largest self-propelled mobile equipment which usually travels adjacent to benches. Upon completion of operations in the quarry, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life.
12. Upon completion of operations, the site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition. Reclamation will not be required following use.
13. At the completion of rock source operations, Purchaser shall request written approval from the Contract Administrator for final rock source condition and compliance with the terms of this plan.
14. Quantity and quality of quarry material is not guaranteed by the State.
15. See "Scott Paper Quarry Planview, pg. 3 of 3" drawing for additional information.

SCOTT PAPER QUARRY DEVELOPMENT PLAN

SE ¼ NW ¼ Section 8, Township 16 North, Range 03 West, W.M.

Specific Rock Source Work Requirements:

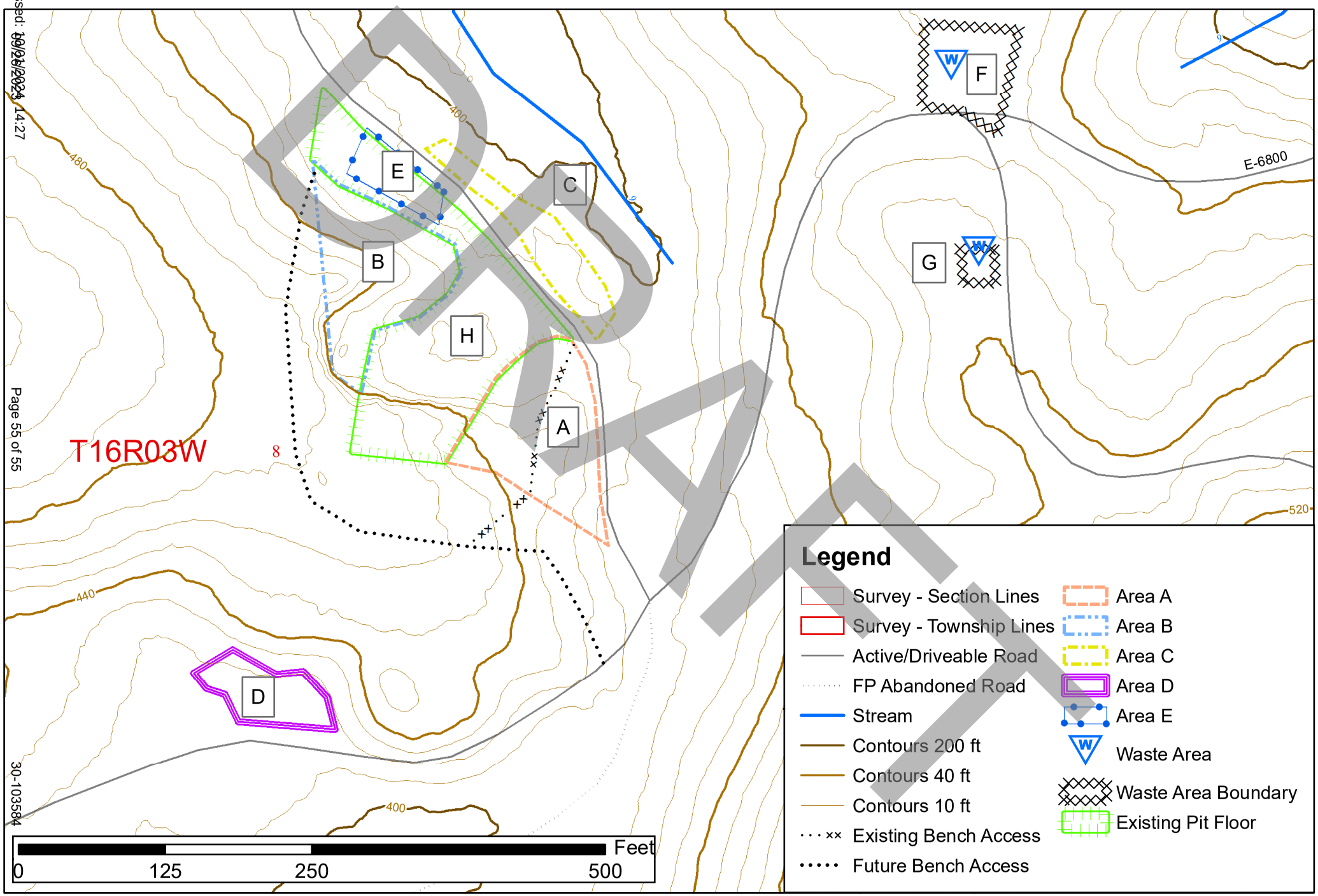
Points are shown on the Scott Paper Quarry Plan View, pg. 3 of 3.

Point	Requirements
A	Secondary work area to be developed, after area B is exhausted
B	Work area to be developed, after areas C and D are exhausted.
C	Oversize rock stockpile, to be crushed until the elevation of the stockpile is equal to the elevation of the adjacent road.
D	Secondary rock stockpile, to be crushed after area C is exhausted.
E	Existing 1.5-inch minus stockpile
F	Designated overburden storage area.
G	Designated vegetative waste storage area (30ft x 30ft).
H	Existing pit floor.

*Updated 6/01/2022 by G. Gerritsen

Scott Paper Quarry Development Plan Pg. 3 of 3

SE 1/4 NW 1/4 Section 8, Township 16 North, Range 03 West, W.M.



Drawn By: G. Gerritsen 10/17/22

Note: Pit face contours are out of date, reference Existing Pit Floor boundary for current topography.

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

FORM 9-87(Rev. 05-03)

SUMMARY - ROAD DEVELOPMENT COSTS
(FOR INTERNAL DNR USE ONLY)
UNIT: Littlerock

SALE/PROJECT NAME: **Carrot** CONTRACT NUMBER: **30-103584**

LEGAL DESCRIPTION: T16R03W/R04W

ROAD NUMBER:	D-8004-EXT, E-6030-1, E-6030-EXT, E-6750	D-8004	D-Line-Y, D-8000, D-8600, D-8620, E-Line, E-6000, E-6030
TYPE:	CONSTRUCTION	RECONSTRUCTION	PRE-HAUL MAINT
NUMBER OF STATIONS:	36.02	3.00	213.24
AVG. SIDESLOPE:	16	35	
CLEARING AND GRUBBING:	$4,150	$255	
EXCAVATION AND FILL:	$9,129	$702	
MISC. MAINTENANCE:			$25,380
ROCK TOTALS (Cu. Yds.):			
Ballast: 3191	$67,968	$0	$0
Surface: 465	$0	$114	$10,463
Quarry Spalls: 30	$416	$37	$394
CULVERTS AND FLUMES:	$4,044	$809	$2,811
STRUCTURES:	$0	$0	$0
GENERAL EXPENSES:	$6,857	$230	$3,514
MOBILIZATION:	$4,543	$4,543	$4,543
TOTAL COSTS:	$97,107	$6,690	$47,106
COST PER STATION:	$2,696	$2,230	$221

ROAD DEACTIVATION AND ABANDONMENT COSTS: $6,929

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

TOTAL (All Roads) =	$157,832
SALE VOLUME MBF =	3,479
TOTAL COST PER MBF =	$45.37

Plans to be furnished by:

Compiled by: G. Gerritsen Date: 06/09/23

Sheet 1 of 5