WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: DEW DOG* ***AGREEMENT NO**: 30-103622*

AUCTION: June 11, 2024 starting at 10:00 a.m., **COUNTY:** Lewis
South Puget Sound Region Office, Enumclaw, WA.

SALE LOCATION: Sale located approximately 16 miles Southeast of Elbe, WA.

PRODUCTS SOLD AND SALE AREA: All timber, except trees bounded out by yellow leave tree area tags and pink flashers or trees marked with blue paint, snags, and down wood greater than 5 years from day of sale, bounded by the following: white Timber Sale Boundary tags and the 233 road in Unit #1; white Timber Boundary tags in Unit #2;

All timber bounded by orange Right of Way tags with orange flashers in Units #3 and #4, except title to the timber within the right of way boundary tags is not conveyed to the Purchaser unless the road is actually constructed;

All forest products above located on part(s) of Sections 9 and 10 all in Township 14 North, Range 6 East, W.M., containing 120 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BVC-SFIFM-018227) and FSC 100% raw materials under the Forest Stewardship Council® Standard (cert no: BV-FM/COC-080501).

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	17.5	8	2,973				25		1,613	1,072	253	10
Hemlock	13.1		1,881						541	955	359	27
Noble fir	16.3		53						37	11	5	
Redcedar	14.6		43							24	19	
Cottonwood	19		11						9		2	
Red alder	13		2								2	
Sale Total			4,963									

MINIMUM BID: $0.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $0.00 **SALE TYPE:** Lump Sum

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

BID DEPOSIT: $0.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvest activities are estimated as 90 percent cable and 10 percent ground based. Cable and ground based equipment, with cable-tethered equipment limited to sustained slopes of 75 percent or less, self-leveling equipment limited to sustained slopes of 65 percent or less, and all other ground based equipment limited to sustained slopes of 45 percent or less. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

Falling and yarding in all units will not be permitted on weekends or State recognized holidays, unless approved in writing by Contract Administrator.

ROADS: 73.91 stations of optional construction. 525.10 stations of required prehaul maintenance. 20.50 stations of abandonment, if constructed. Purchaser maintenance on the 23, 233, 233ext, 233-1, 233-1ext, and 233-3 roads. Designated maintenance on all other roads used.

Rock for this can be obtained from the State owned Donkey Pit at no cost to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. Rock source development is to be completed per Section 6 and as specified in the Rock Source Development Plan in the Road Plan.

Operation of road construction equipment, and rock haul will not be permitted from November 1 to May 15, unless authority to do so is granted, in writing from the Contract Administrator. If permission is granted to operate from November 1 to May 15, the Purchaser shall comply with a maintenance plan, when a maintenance plan is determined necessary by the Contract Administrator, to include further protection of State resources per Road Plan clause 1-26. The hauling of forest products will not be permitted from November 1 to May 15 unless authorized in writing by the Contract Administrator, nor on weekends or State recognized holidays, in all units. If permission is granted to operate from November 1 to May 15, preventative measures may be required to protect water, soil, roads and other forest assets.

ACREAGE DETERMINATION

CRUISE METHOD: Acreage in Units #1, #2, #3, and #4 was determined by traversing boundaries by GPS. GPS data files are available at DNR's website for timber sale packets. See cruise narrative for cruise method.

FEES: $84,371.00 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 sale area is typically inaccessible from mid-November to mid-May due to snow conditions. Contact Mike Fowler for current conditions at 360-819-3406.

Road construction on the 233ext will require removal of cribbing material from the road fill from stations 102+00 to 148+92.

Full bench road construction on the 233ext from 114+68 to 142+98 and on the 233-1ext. From 28+10 to 40+93.

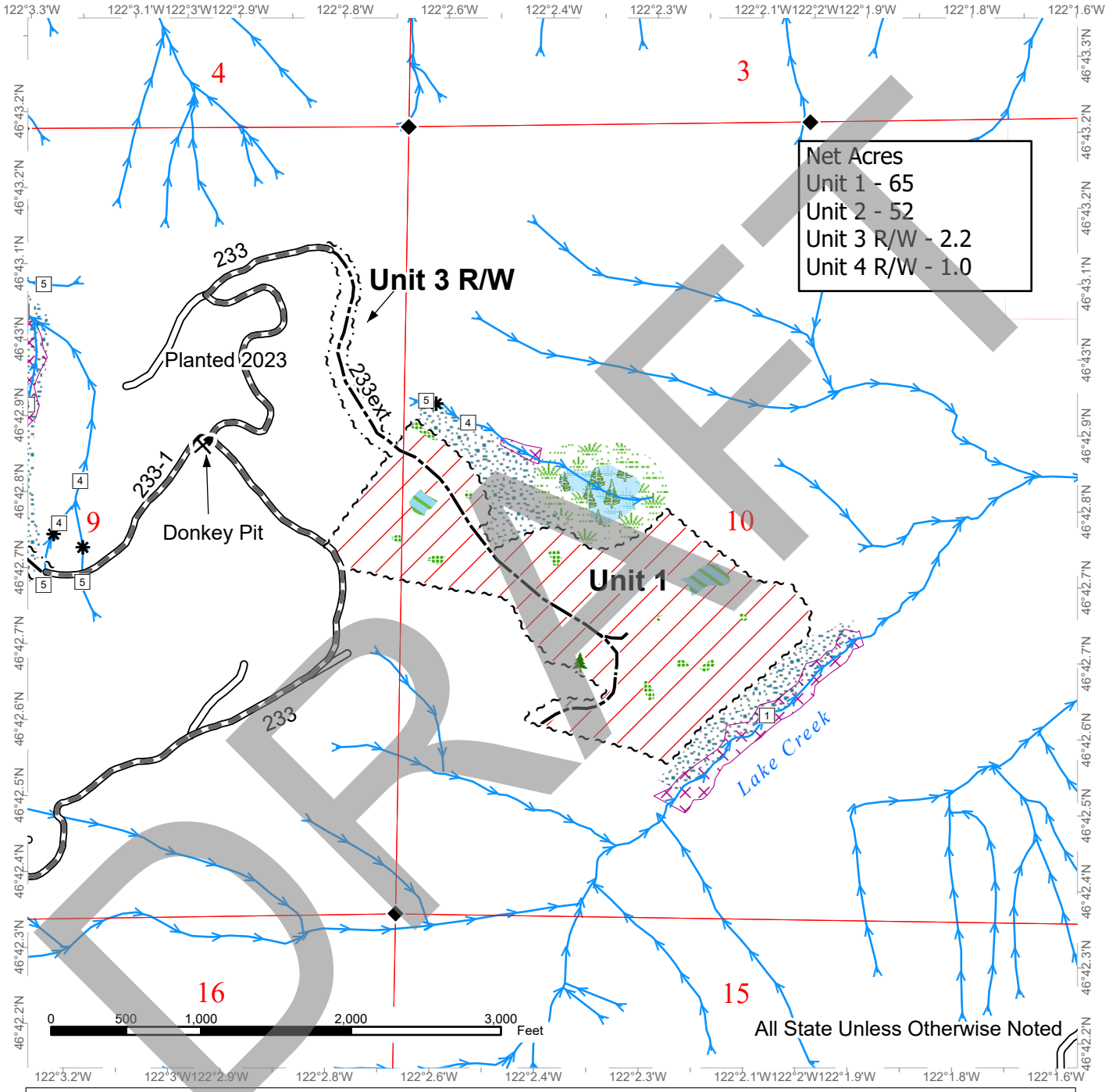
Note to cruisers and appraisers: Please refrain from leaving pink, orange or blue flagging from your cruises in or around the sale area to avoid confusion with DNR’s marking. Additionally, for the safety of the public, please remove from roads and trails all string from string boxes used during appraising 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 Gresham Redman at 360-870-4090.

TIMBER SALE MAP

SALE NAME: DEW DOG
AGREEMENT #: 30-103622
TOWNSHIP(S): T14R6E
TRUST(S): State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Lewis
ELEVATION RGE: 2680-3760



- Sale Area
- Non-Tradeable Leave Tree Area
- Leave Tree Area
- Riparian Mgt Zone
- Forested Wetland
- Wetland Mgt Zone
- Tailhold Restriction Area
- Sale Boundary Tags
- Right of Way Tags
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Streams
- Survey Monument
- Leave Tree Area <1/4-acre
- Rock Pit
- Stream Type
- Stream Type Break

N

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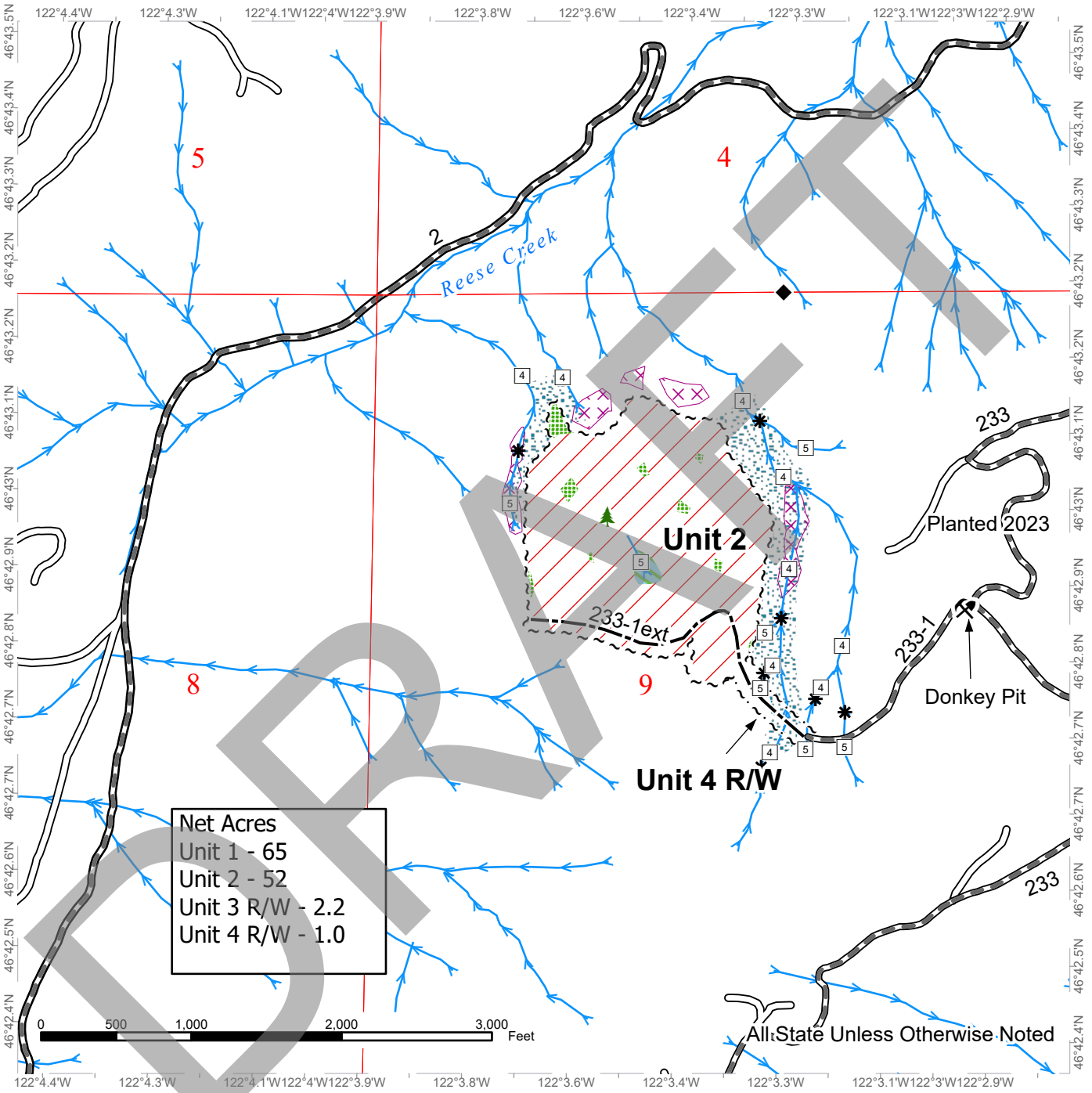

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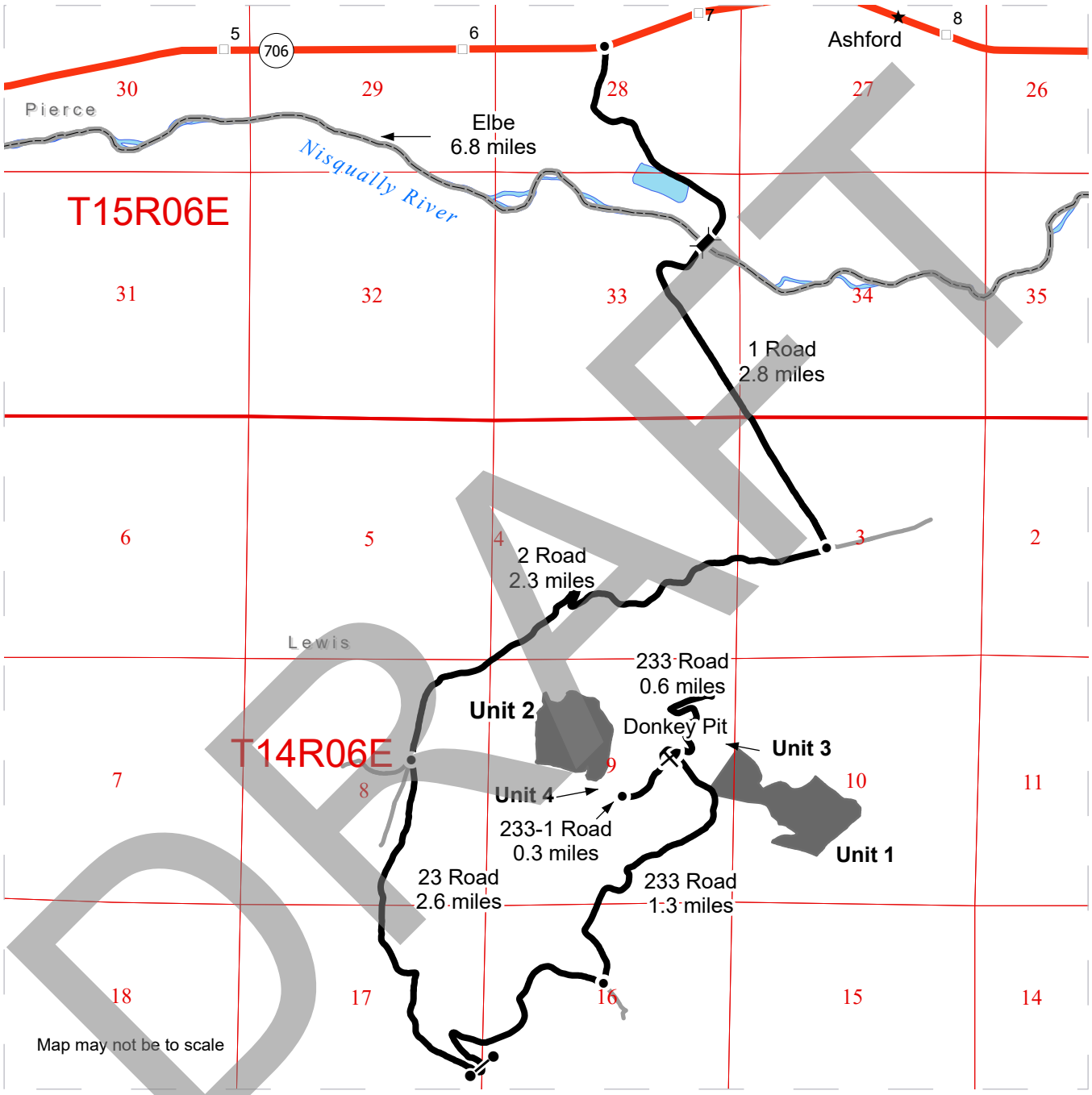
DRIVING MAP

SALE NAME: DEW DOG
AGREEMENT#: 30-103622
TOWNSHIP(S): T14R6E
TRUST(S): State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Lewis, Pierce
ELEVATION RGE: 2680-3760



Sale Area
Haul Route
Other Road
Bridge
Distance Indicator
Gate (CJ-18)
Rock Pit
Town
Milepost Markers
County Boundaries
Highway

DRIVING DIRECTIONS:

From Elbe, drive east on SR-706 for approximately 6.8 miles. Turn right on the 1 Road for 2.8 miles. Turn right onto the 2 Road and follow for 2.3 miles. Turn left onto the 23 Road and follow for approximately 1.6 miles to the 23 Road gate. Continue for 1.0 miles. Turn left onto the 233 Road and follow for 1.1 miles to reach Unit 1. Continue for 0.2 miles to reach Donkey Pit. Turn left past Donkey Pit onto the 233-1 Road for 0.3 miles to Unit 4. At the end of the 233-1 Road continue on foot for 620 feet to reach Unit 2. From Donkey Pit, continue on the 233 Road for 0.6 miles to reach Units 1 and 3.

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Timber Sale Cruise Report
Dew Dog

Sale Name: DEW DOG

Sale Type: LUMP SUM

Region: SO PUGET

District: RAINIER

Lead Cruiser: AMDouglas, ADColeman

Other Cruisers:n/a

Cruise Narrative:
Location:
Dew Dog is located in Tahoma State Forest, 3 miles south of State Route 706 and Ashford, WA. A small section of Unit 1 is adjacent to the 233 forest road. The rest of the unit can be accessed by walk-in through Unit 3 ROW and along an old grade. Access to Unit 2 requires a walk-in through Unit 4 ROW.

Cruise Design:
84 variable radius plots, spaced 250' apart, were used to tally 384 trees. 195 trees were measured. Diameters were recorded to the nearest whole inch. Bole heights were measured to a 5" top or estimated break point. Trees were segmented into lengths based on a preference for long logs and taking into account location of defect. Preferred length for conifers is 40'. Preferred length for hardwoods is 30'. Plots that landed in leave tree areas were dropped from the cruise.

Timber Quality:
Dew Dog contains a mix of Douglas-fir and western hemlock. Most trees display good form, with little taper and modest amounts of defect. Douglas-firs contain high quality segments. Old grades contain trace amounts of cottonwood, western redcedar, noble fir, and alder. For timber growing on steep slopes, more defect was assigned in top bole segments to account for increased breakage when trees are felled.

Logging and Stand Conditions:
Both units contain steep slopes. Projected harvesting method is 90% uphill-cable based. Understory contains very little brush, but there is heavy blowdown in places.

General Remarks:
An old grade crosses through Unit 1. It provides the easiest and safest access into and through the unit.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	17.5	7.8		2,974	25	1,614	1,072	253	10
WH	13.1			1,881		541	955	359	27
NF	16.3			53		37	11	5	
RC	14.6			43			24	19	
BC	19.0			11		9		2	
RA	13.0			2				2	
ALL	15.0	7.7		4,963	25	2,201	2,061	639	37

Timber Sale Notice Weight (tons)

	Tons by Grade					
Sp	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	21,322	153	10,742	8,076	2,300	50
WH	16,160		4,143	8,506	3,341	171
RC	374			210	164	
NF	346		211	101	33	
BC	80		58		22	
RA	21				21	
ALL	38,301	153	15,154	16,893	5,880	221

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 (%)
258.6	4.0	159.8	2.2	41,323	4.6

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
DEW DOG U1	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	65.1	67.4	46	22	0
DEW DOG U2	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	51.8	53.9	35	18	0
DEW DOG U3	B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5 ft	2.2	2.2	3	3	0
DEW DOG U4	B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5 ft	1.0	1.0	1	1	0
All		120.1	124.5	85	44	0

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	13.0	40	79	71	9.9	57.5	8.5
BC	LIVE	4 SAW	Domestic	6.2	40	21	19	9.5	22.1	2.2
DF	LIVE	2 SAW	Domestic	14.8	40	5,188	5,072	2.2	4,092.4	609.1
DF	LIVE	2 SAW	HQ-A	14.0	40	922	917	0.5	759.3	110.2
DF	LIVE	2 SAW	HQ-B	14.6	39	7,523	7,450	1.0	5,890.7	894.7
DF	LIVE	3 SAW	Domestic	8.7	39	5,387	5,330	1.1	4,904.4	640.2
DF	LIVE	3 SAW	HQ-B	10.2	39	3,623	3,595	0.8	3,171.8	431.8

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	4 SAW	Domestic	5.8	30	2,209	2,109	4.5	2,300.1	253.3
DF	LIVE	CULL	Cull	5.9	7	121	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	16.3	40	205	205	0.0	152.8	24.7
DF	LIVE	UTILITY	Pulp	5.2	13	81	81	0.0	50.3	9.7
NF	LIVE	2 SAW	Domestic	17.0	40	323	311	3.8	211.2	37.3
NF	LIVE	3 SAW	Domestic	8.1	38	99	89	10.0	100.9	10.7
NF	LIVE	4 SAW	Domestic	5.1	40	42	40	4.7	33.4	4.8
NF	LIVE	CULL	Cull	9.1	1	0	0	100.0	0.0	0.0
RA	LIVE	4 SAW	Domestic	8.3	30	17	13	25.0	20.5	1.6
RA	LIVE	CULL	Cull	5.0	14	5	0	100.0	0.0	0.0
RC	LIVE	3 SAW	Domestic	10.5	34	229	200	12.8	210.0	24.0
RC	LIVE	4 SAW	Domestic	6.1	24	158	158	0.2	163.5	18.9
RC	LIVE	CULL	Cull	5.0	7	4	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	13.9	40	4,423	4,307	2.6	3,973.4	517.2
WH	LIVE	2 SAW	HQ-B	13.2	40	198	198	0.0	169.5	23.7
WH	LIVE	3 SAW	Domestic	8.4	40	8,004	7,948	0.7	8,506.0	954.5
WH	LIVE	4 SAW	Domestic	5.3	29	3,040	2,985	1.8	3,340.6	358.5
WH	LIVE	CULL	Cull	6.0	10	54	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.1	13	226	226	0.0	170.8	27.1

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	Domestic	6.2	40	19	9.5	22.1	2.2
BC	12 - 15	LIVE	Domestic	13.0	40	71	9.9	57.5	8.5
DF	5 - 7	LIVE	Pulp	5.2	13	81	0.0	50.3	9.7
DF	5 - 7	LIVE	Cull	5.3	7	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Domestic	6.0	32	3,424	3.0	3,604.1	411.2
DF	8 - 11	LIVE	Cull	9.6	7	0	100.0	0.0	0.0
DF	8 - 11	LIVE	Domestic	9.8	39	4,016	1.2	3,600.4	482.3
DF	8 - 11	LIVE	HQ-B	10.2	39	3,595	0.8	3,171.8	431.8
DF	12 - 15	LIVE	Domestic	13.7	40	2,938	1.6	2,531.6	352.8
DF	12 - 15	LIVE	HQ-B	13.8	39	4,878	0.7	4,038.1	585.9
DF	12 - 15	LIVE	HQ-A	14.0	40	917	0.5	759.3	110.2
DF	16 - 19	LIVE	HQ-A	16.3	40	205	0.0	152.8	24.7
DF	16 - 19	LIVE	Domestic	17.3	40	1,498	3.0	1,143.3	179.9
DF	16 - 19	LIVE	HQ-B	17.3	40	2,111	1.1	1,544.6	253.6
DF	20+	LIVE	HQ-B	21.1	40	460	3.8	308.0	55.3

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	20+	LIVE	Domestic	22.8	40	636	3.2	417.5	76.4
NF	5 - 7	LIVE	Domestic	6.5	40	103	7.8	100.3	12.4
NF	8 - 11	LIVE	Domestic	8.8	34	26	10.6	34.0	3.1
NF	8 - 11	LIVE	Cull	9.1	1	0	100.0	0.0	0.0
NF	12 - 15	LIVE	Domestic	13.4	40	44	2.5	36.3	5.3
NF	16 - 19	LIVE	Domestic	17.2	40	165	0.0	107.8	19.8
NF	20+	LIVE	Domestic	20.5	40	102	10.0	67.2	12.2
RA	5 - 7	LIVE	Cull	5.0	14	0	100.0	0.0	0.0
RA	8 - 11	LIVE	Domestic	8.3	30	13	25.0	20.5	1.6
RC	5 - 7	LIVE	Cull	5.0	7	0	100.0	0.0	0.0
RC	5 - 7	LIVE	Domestic	6.0	26	197	0.1	207.5	23.6
RC	8 - 11	LIVE	Domestic	11.1	33	68	16.5	71.8	8.1
RC	12 - 15	LIVE	Domestic	13.6	33	93	14.7	94.2	11.1
WH	5 - 7	LIVE	Pulp	5.2	14	226	0.0	170.8	27.1
WH	5 - 7	LIVE	Domestic	5.8	33	5,539	1.3	6,241.4	665.2
WH	5 - 7	LIVE	Cull	6.0	9	0	100.0	0.0	0.0
WH	8 - 11	LIVE	Domestic	9.5	40	5,394	0.7	5,605.1	647.9
WH	12 - 15	LIVE	HQ-B	13.2	40	198	0.0	169.5	23.7
WH	12 - 15	LIVE	Domestic	13.5	40	3,553	3.0	3,378.4	426.7
WH	16 - 19	LIVE	Domestic	16.8	40	754	0.7	595.0	90.5

Cruise Unit Report
DEW DOG U1

Unit Sale Notice Volume (MBF): DEW DOG U1

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	17.5	7.0		1,589	25	855	580	123	6
WH	13.6			1,108		353	582	155	18
NF	16.3			53		37	11	5	
RC	16.0			33			24	9	
BC	19.0			11		9		2	
ALL	15.3	7.0		2,794	25	1,254	1,197	295	24

Unit Cruise Design: DEW DOG U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	65.1	67.4	46	22	0

Unit Cruise Summary: DEW DOG U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	52	120	2.6	2
WH	48	93	2.0	0
NF	3	3	0.1	0
RC	5	5	0.1	0
BC	1	1	0.0	0
ALL	109	222	4.8	2

Unit Cruise Statistics: DEW DOG 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	142.0	58.0	8.5	171.9	25.2	3.5	24,409	63.2	9.2
WH	110.1	72.6	10.7	154.6	26.5	3.8	17,017	77.3	11.4
NF	3.6	382.8	56.4	228.4	27.6	15.9	811	383.8	58.6
RC	5.9	443.5	65.4	86.8	25.8	11.5	514	444.2	66.4
BC	1.2	678.2	100.0	139.7	0.0	0.0	165	678.2	100.0
ALL	262.7	38.9	5.7	163.3	28.5	2.7	42,915	48.3	6.4

Unit Summary: DEW DOG U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	CUT	1	ALL	19.0	87	103	183	165	9.8	0.6	1.2	0.3	10.8
DF	LIVE	CUT	52	ALL	17.5	83	114	25,153	24,409	3.0	85.0	142.0	33.9	1,589.0
NF	LIVE	CUT	3	ALL	16.3	92	133	856	811	5.3	2.5	3.6	0.9	52.8
RC	LIVE	CUT	5	ALL	16.0	57	75	576	514	10.8	4.2	5.9	1.5	33.4
WH	LIVE	CUT	48	ALL	13.6	68	93	17,312	17,017	1.7	109.1	110.1	29.8	1,107.8
ALL	LIVE	CUT	109	ALL	15.5	75	102	44,081	42,915	2.6	201.4	262.7	66.4	2,793.8
ALL	ALL	ALL	109	ALL	15.5	75	102	44,081	42,915	2.6	201.4	262.7	66.4	2,793.8

Cruise Unit Report
DEW DOG U2

Unit Sale Notice Volume (MBF): DEW DOG U2

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	17.7	8.7		1,323	731	467	120	4
WH	12.3			716	165	349	194	8
RC	10.0			4			4	
ALL	14.7	8.7		2,043	897	816	318	12

Unit Cruise Design: DEW DOG U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	51.8	53.9	35	18	0

Unit Cruise Summary: DEW DOG U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	52	90	2.6	3
WH	33	71	2.0	0
RC	1	1	0.0	0
ALL	86	162	4.6	3

Unit Cruise Statistics: DEW DOG 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	140.0	46.5	7.9	182.4	27.1	3.8	25,537	53.8	8.7
WH	110.4	69.2	11.7	125.2	30.8	5.4	13,824	75.7	12.9
RC	1.6	591.6	100.0	47.7	0.0	0.0	74	591.6	100.0
ALL	252.0	33.2	5.6	156.5	34.7	3.7	39,435	48.0	6.7

Unit Summary: DEW DOG U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	52	ALL	17.7	89	114	25,744	25,537	0.8	81.9	140.0	33.3	1,322.8
RC	LIVE	CUT	1	ALL	10.0	46	56	74	74	0.0	2.9	1.6	0.5	3.8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	33	ALL	12.3	63	78	14,055	13,824	1.6	133.8	110.4	31.5	716.1
ALL	LIVE	CUT	86	ALL	14.5	73	91	39,872	39,435	1.1	218.6	252.0	65.3	2,042.7
ALL	ALL	ALL	86	ALL	14.5	73	91	39,872	39,435	1.1	218.6	252.0	65.3	2,042.7

Cruise Unit Report
DEW DOG U3

Unit Sale Notice Volume (MBF): DEW DOG U3

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	13.9			52	21	21	9	0
WH	10.4			17	4	5	8	
RC	8.0			3			3	
RA	13.0			2			2	
ALL	12.0			73	25	27	21	0

Unit Cruise Design: DEW DOG U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5 ft	2.2	2.2	3	3	0

Unit Cruise Summary: DEW DOG U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	9	9	3.0	0
WH	4	4	1.3	0
RC	1	1	0.3	0
RA	1	1	0.3	0
ALL	15	15	5.0	0

Unit Cruise Statistics: DEW DOG 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	140.8	57.7	33.3	167.3	16.8	5.6	23,552	60.1	33.8
WH	62.6	173.2	100.0	122.7	28.0	14.0	7,678	175.5	101.0
RC	15.6	173.2	100.0	74.5	0.0	0.0	1,165	173.2	100.0
RA	15.6	173.2	100.0	45.6	0.0	0.0	713	173.2	100.0
ALL	234.7	52.9	30.6	141.1	33.3	8.6	33,109	62.5	31.7

Unit Summary: DEW DOG U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	9	ALL	13.9	68	106	23,902	23,552	1.5	133.6	140.8	37.8	51.8
RA	LIVE	CUT	1	ALL	13.0	46	59	1,205	713	40.8	17.0	15.6	4.3	1.6
RC	LIVE	CUT	1	ALL	8.0	26	49	1,165	1,165	0.0	44.8	15.6	5.5	2.6
WH	LIVE	CUT	4	ALL	10.4	49	80	7,776	7,678	1.3	106.1	62.6	19.4	16.9
ALL	LIVE	CUT	15	ALL	11.9	54	85	34,049	33,109	2.8	301.5	234.7	67.0	72.8
ALL	ALL	ALL	15	ALL	11.9	54	85	34,049	33,109	2.8	301.5	234.7	67.0	72.8

Cruise Unit Report
DEW DOG U4

Unit Sale Notice Volume (MBF): DEW DOG U4

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
WH	16.4			40	19	19	2	1
DF	23.0			10	7	3	0	
RC	11.0			3			3	
ALL	15.6			54	26	22	5	1

Unit Cruise Design: DEW DOG U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5 ft	1.0	1.0	1	1	0

Unit Cruise Summary: DEW DOG U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	5	5	5.0	0
DF	1	1	1.0	0
RC	1	1	1.0	0
ALL	7	7	7.0	0

Unit Cruise Statistics: DEW DOG U4

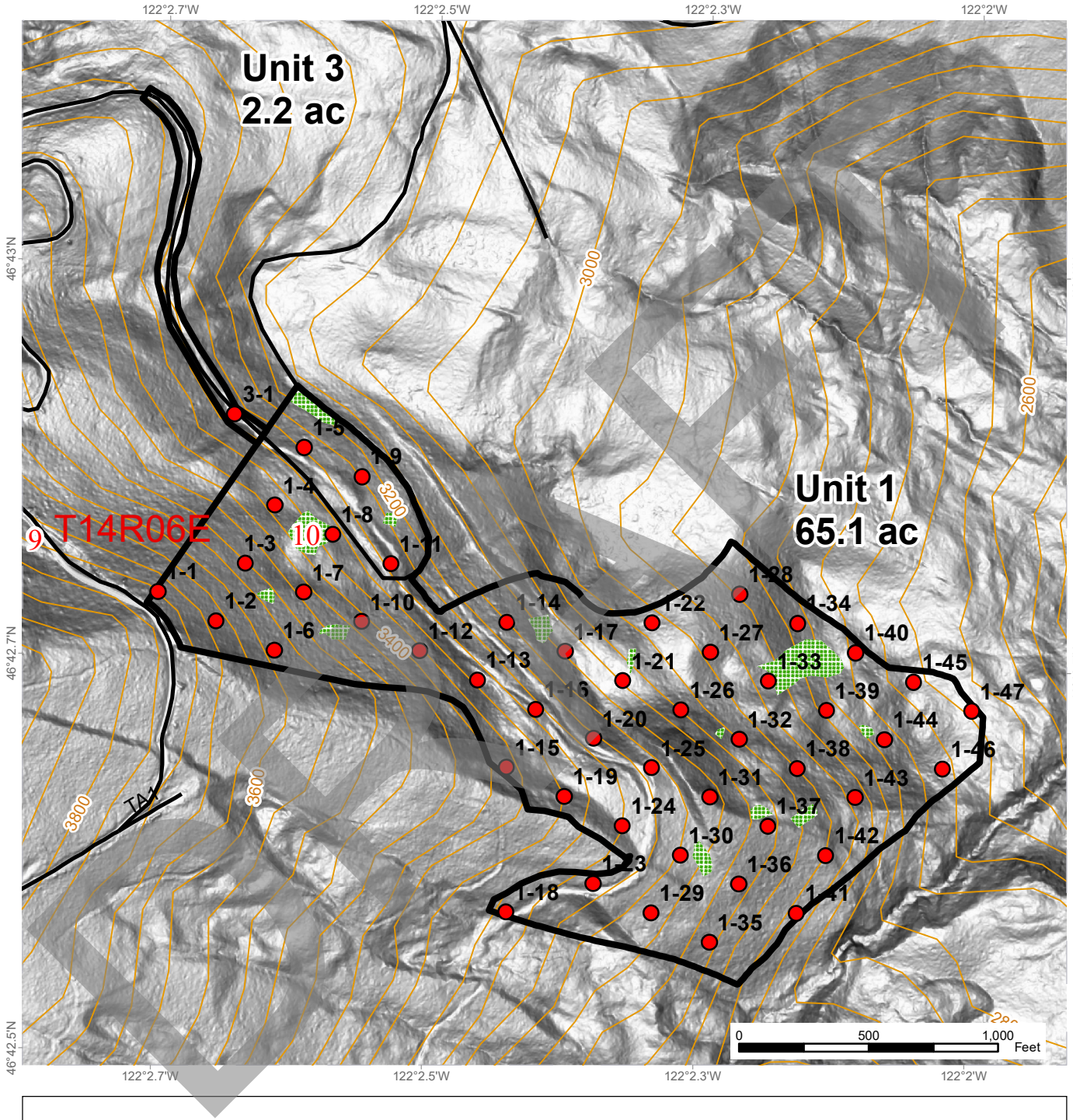
Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	272.2	0.0	0.0	148.3	31.2	13.9	40,380	31.2	13.9
DF	54.4	0.0	0.0	185.1	0.0	0.0	10,077	0.0	0.0
RC	54.4	0.0	0.0	56.1	0.0	0.0	3,052	0.0	0.0
ALL	381.1	0.0	0.0	140.4	39.0	14.7	53,508	39.0	14.7

Unit Summary: DEW DOG U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	23.0	97	124	10,077	10,077	0.0	18.9	54.4	11.4	10.1
RC	LIVE	CUT	1	ALL	11.0	48	59	3,052	3,052	0.0	82.5	54.4	16.4	3.1
WH	LIVE	CUT	5	ALL	16.4	80	100	42,759	40,380	5.6	185.6	272.2	67.2	40.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	7	ALL	15.6	72	90	55,888	53,508	4.3	287.0	381.1	95.0	53.5
ALL	ALL	ALL	7	ALL	15.6	72	90	55,888	53,508	4.3	287.0	381.1	95.0	53.5

CRUISE MAP



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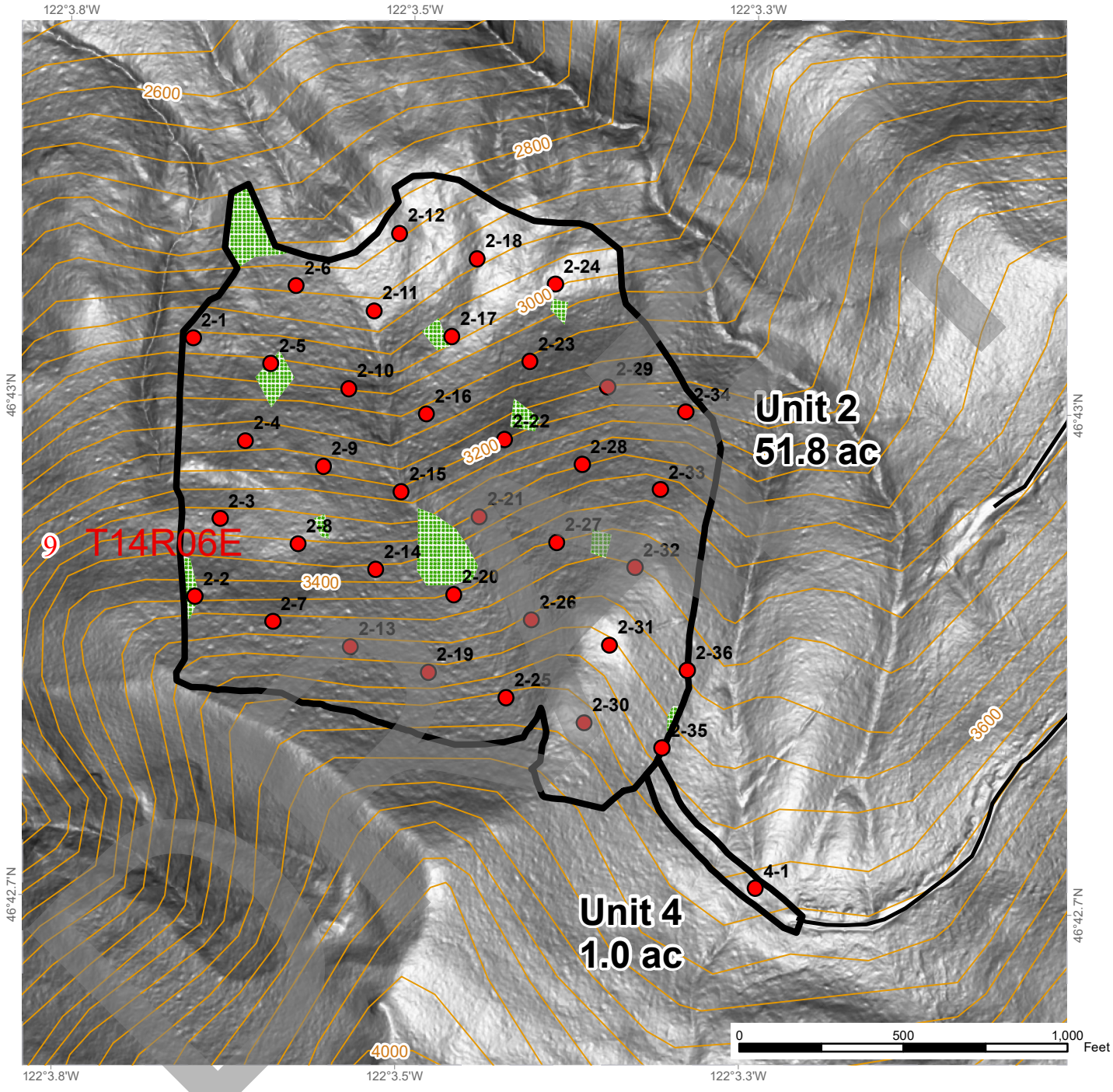

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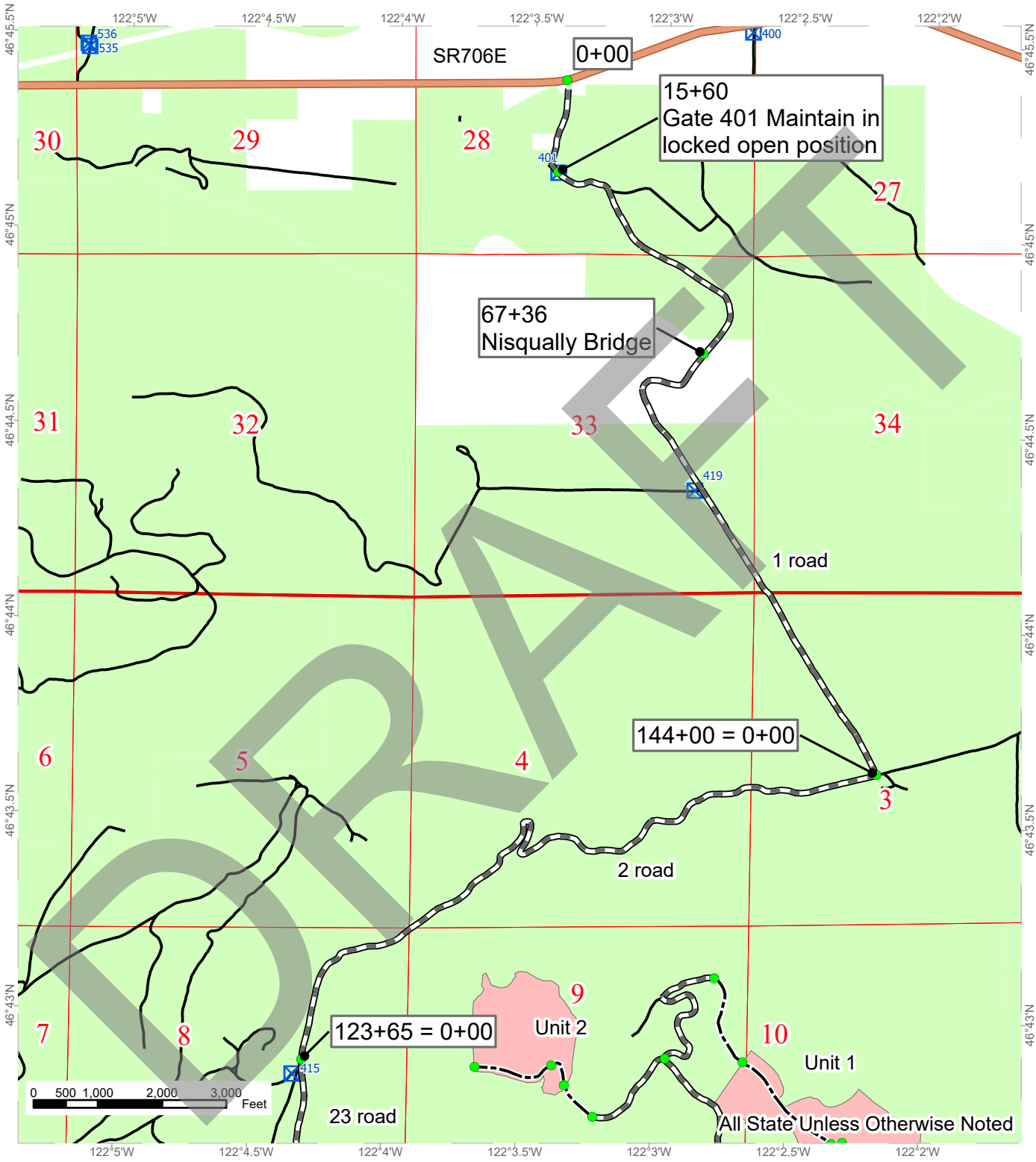
Dew Dog Timber Sale Road Work Map
pg 1 of 6



Legend

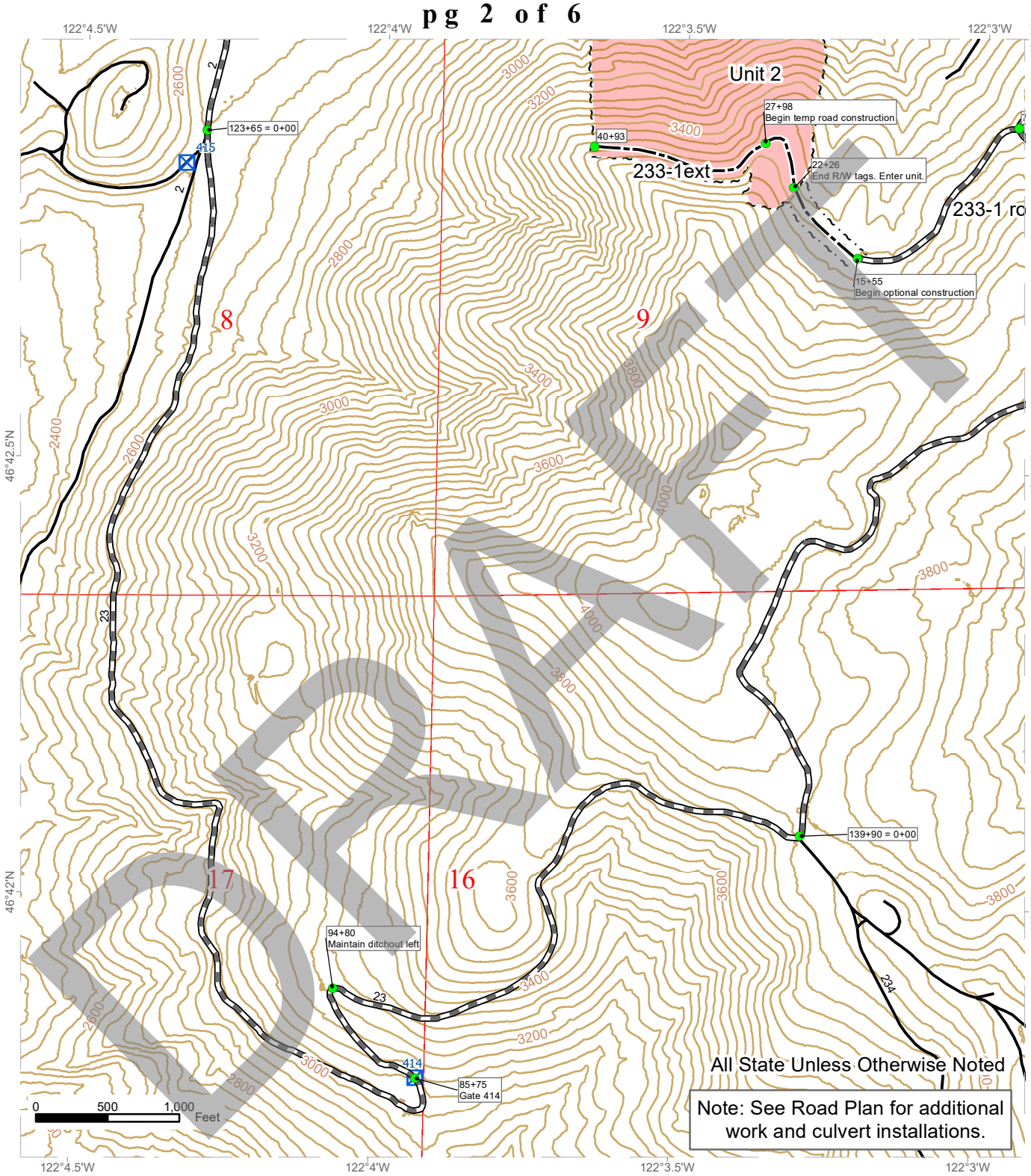
- Road Stationing
- Pre-haul Maintenance
- optional_construction
- Gates
- State Highway
- Dew Dog TBS
- Active/driveable Rd
- Utility Right-of-Way
- Other Feature 1
- Other Feature 2
- Public Land Survey Townships
- Public Land Survey Sections
- DNR Managed Lands

Prepared By: hadm490
05/15/2024

Accessed: 05/15/2024 14:26

Modification Date: hadm490 2/28/2024
30-103622

Dew Dog Timber Sale Road Work Map
pg 2 of 6

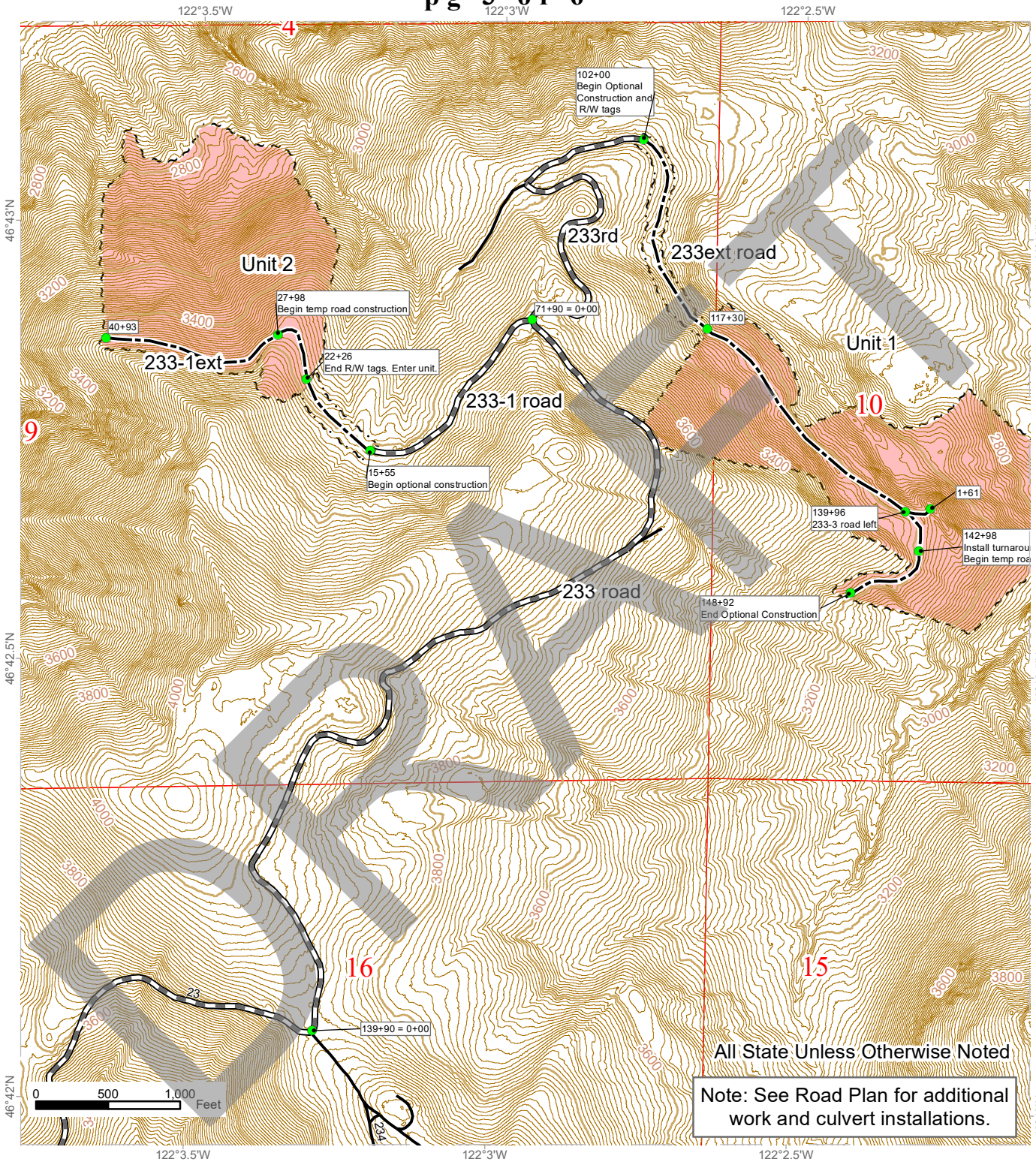


Legend

- Road Stationing
- Pre-haul Maintenance
- Optional Construction
- Gates
- Active/driveable Rd
- Sale Boundary Tags
- Right of Way Tags
- Dew Dog TBS
- Public Land Survey Townships
- Public Land Survey Sections
- Contours 200 ft
- Contours 40 ft

N

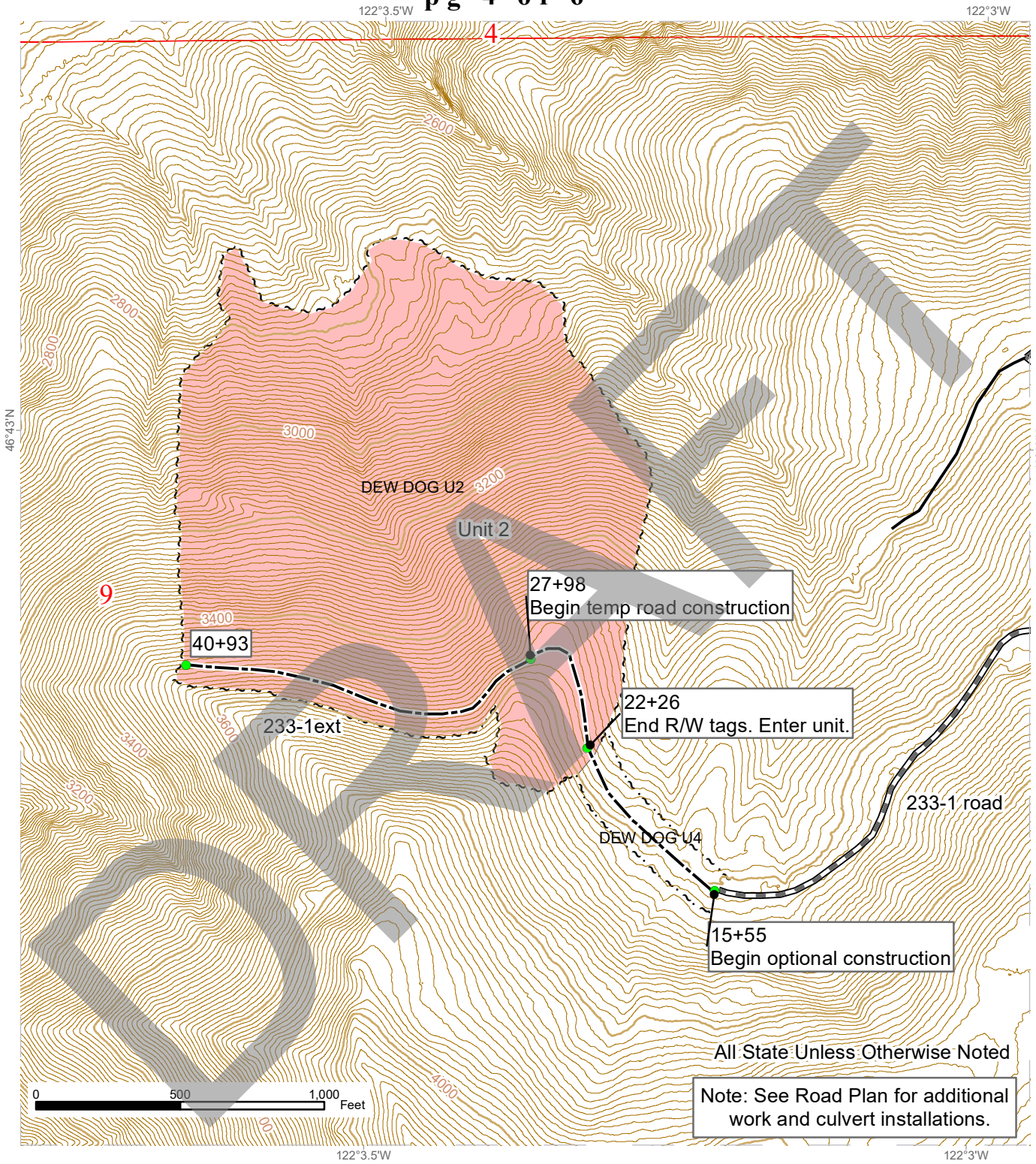
Dew Dog Timber Sale Road Work Map
pg 3 of 6



Legend

- Road Stationing
- Pre-haul Maintenance
- Optional Construction
- Active/driveable Rd
- Sale Boundary Tags
- Right of Way Tags
- Dew Dog TBS
- Public Land Survey Townships
- Public Land Survey Sections
- Contours 200 ft
- Contours 10 ft

Dew Dog Timber Sale Road Work Map
pg 4 of 6

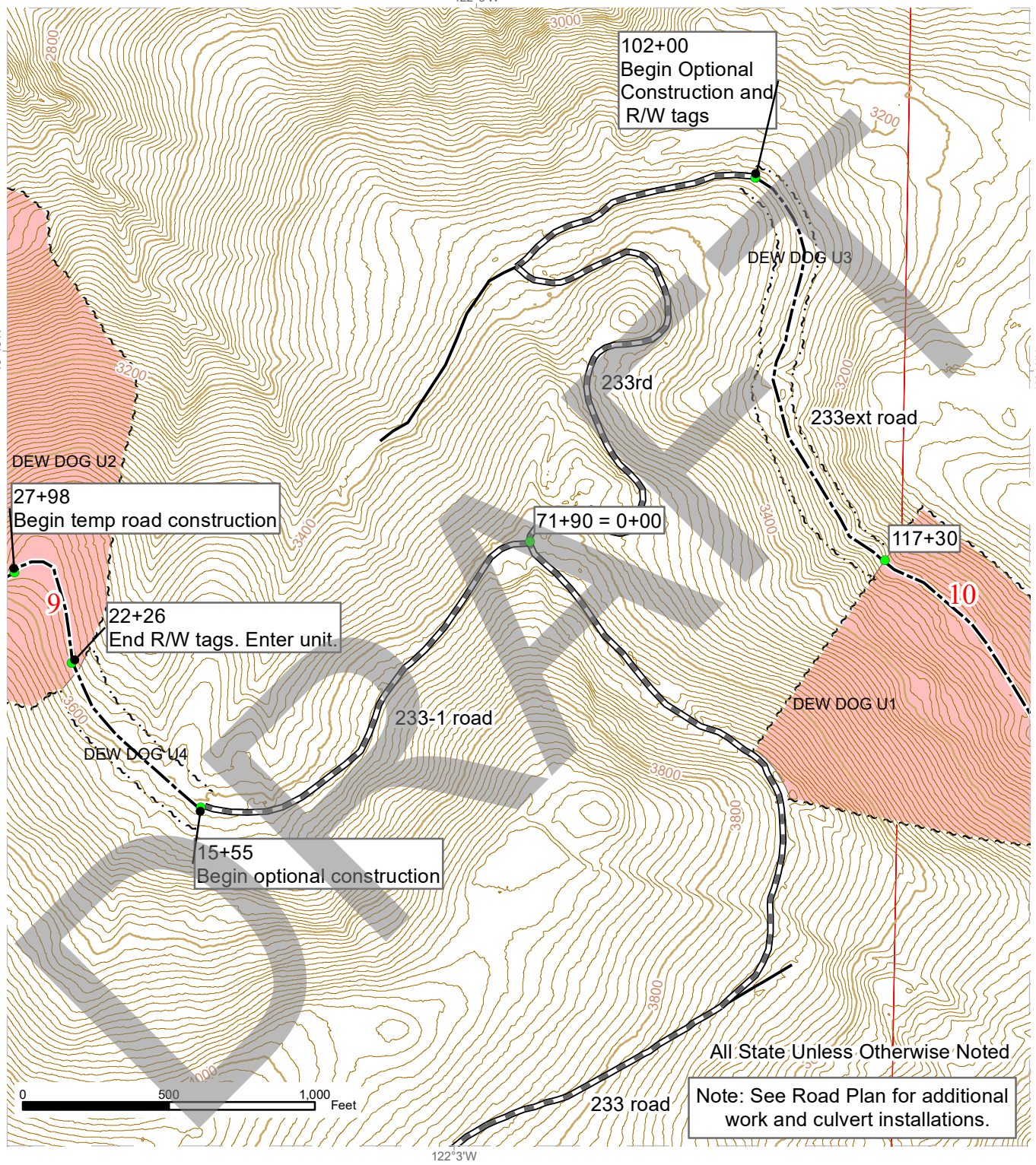


Legend

- Road Stationing
- Pre-haul Maintenance
- Optional Construction
- Active/driveable Rd
- Sale Boundary Tags
- Right of Way Tags
- Dew Dog TBS
- Public Land Survey Townships
- Public Land Survey Sections
- Contours 200 ft
- Contours 10 ft

N

Dew Dog Timber Sale Road Work Map
pg 5 of 6

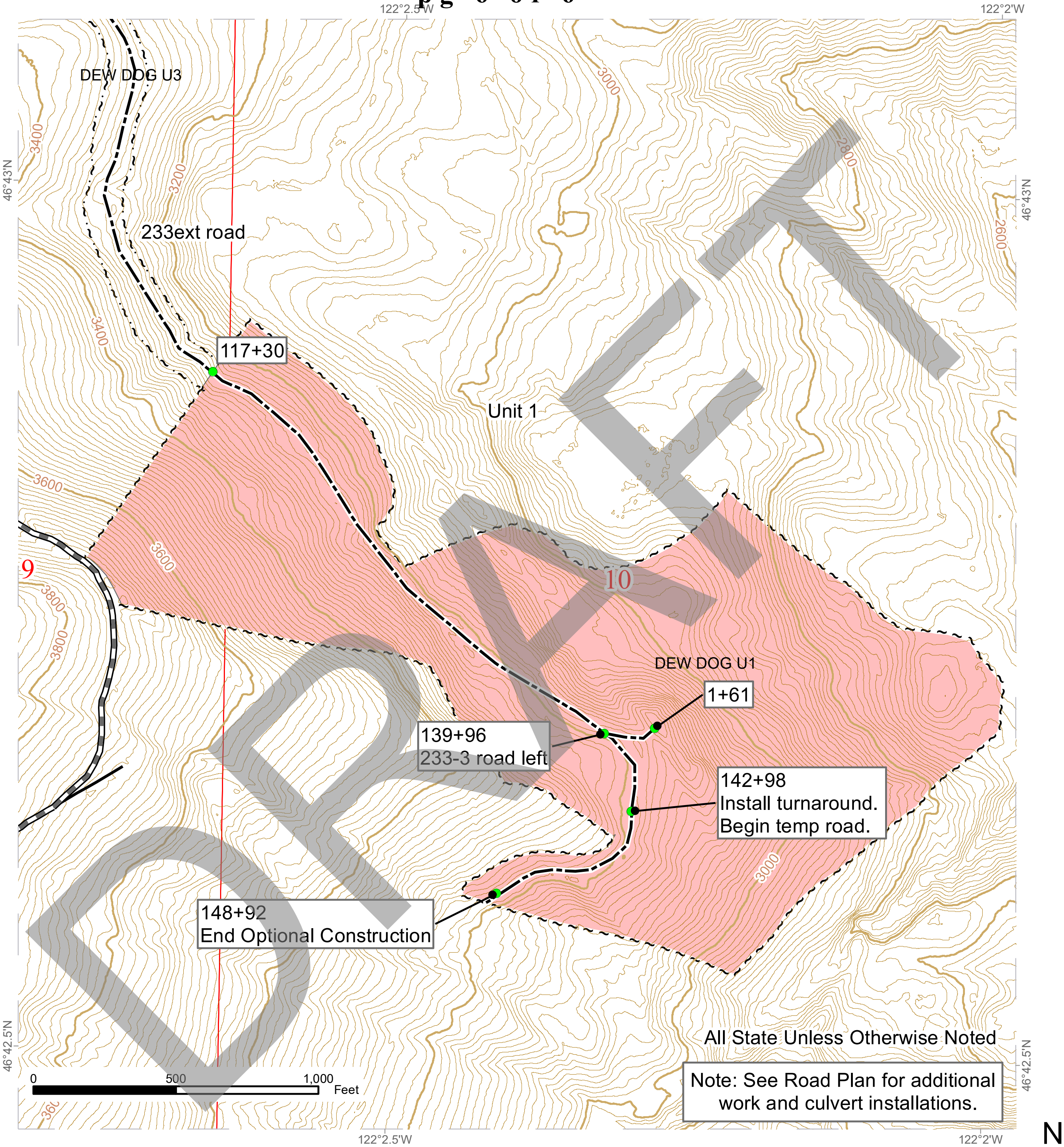


Legend

- Road Stationing
- Pre-haul Maintenance
- Optional Construction
- Active/driveable Rd
- Sale Boundary Tags
- Right of Way Tags
- Dew Dog TBS
- Public Land Survey Townships
- Public Land Survey Sections
- Contours 200 ft
- Contours 10 ft

N

Dew Dog Timber Sale Road Work Map
pg 6 of 6



Legend

Road Stationing	Active/driveable Rd
Pre-haul Maintenance	Sale Boundary Tags
Optional Construction	Right of Way Tags
Dew Dog TBS	
Public Land Survey Townships	Public Land Survey Sections
Contours 200 ft	Contours 10 ft

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

DEW DOG TIMBER SALE ROAD PLAN
LEWIS COUNTY
RAINIER DISTRICT

AGREEMENT NO.: 30-103622 STAFF ENGINEER: M. BELL

DATE: 8-1-23

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
1	0+00 to 144+00	Pre-haul maintenance
2	0+00 to 123+65	Pre-haul maintenance
23	0+00 to 139+90	Pre-haul maintenance
233	0+00 to 102+00	Pre-haul maintenance
233-1	0+00 to 15+55	Pre-haul maintenance
233ext	142+98 to 148+92	Abandonment, if built
233-1ext	27+98 to 40+93	Abandonment, if built
233-3	0+00 to 1+61	Abandonment, if built

0-3 OPTIONAL ROADS

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

Road	Stations	Type
233ext	102+00 to 148+92	Construction
233-1ext	15+55 to 40+93	Construction
233-3	0+00 to 1+61	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to:

- Clearing.
- Grubbing.
- Right of way debris disposal.
- Excavation and/or embankment to subgrade.
- Removal of cribbing.
- Road widening.
- Landing construction.
- Acquisition and installation of drainage structures.
- Manufacture and application of rock.
- Road abandonment.

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
1	0+00 to 144+00	• Brushing right-of-way. • Bridge maintenance.
2	0+00 to 123+65	• Brushing right-of-way.
23	0+00 to 139+90	• Brushing right-of-way. • Grading, shaping, and compaction of road surface. • Culvert cleaning and headwall reconstruction. • Ditch cleaning and reconstruction.
233	0+00 to 102+00	• Brushing right-of-way. • Grading, shaping, and compaction of road surface. • Culvert cleaning and headwall reconstruction. • Ditch cleaning and reconstruction.
233-1	0+00 to 15+55	• Brushing right-of-way. • Grading, shaping, and compaction of road surface. • Culvert cleaning and headwall reconstruction. • Ditch cleaning and reconstruction.

0-7 POST-HAUL MAINTENANCE

This project includes, but is not limited to post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE.

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

Purchaser 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.

1-8 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.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

- Centerline is marked with orange pin flags and orange flagging for new construction.

1-16 CONSTRUCTION STAKES SET BY STATE

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

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete pre-haul road work before the start of timber haul, unless authorized in writing by the Contract Administrator.

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation.
- Subgrade compaction.
- Rock compaction.

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

No operation of road construction equipment or rock haul will be allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator.

The specified activities are not permitted during the listed closure periods unless authorized in writing by the Contract Administrator.

Activity	Closure Period
Operation of road construction equipment or rock haul	November 1 to May 15

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a seasonal 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 maintenance 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:

- Wheel track rutting exceeds 6 inches on new construction rocked roads.
- Wheel track rutting exceeds 3 inches on crushed rock roads.
- 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 or rutting may occur.

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

1-32 BRIDGE SURFACE RESTRICTION

Metal tracked equipment shall not be used on bridge surfaces at any time. If equipment must be run on bridge surfaces, then rubber tired equipment or other methods, as approved in writing by Contract Administrator, shall be used.

Any dirt, rock, or other material tracked or spilled on the bridge surface shall be removed immediately. Any damage to the surface(s) shall be repaired at the Purchaser's expense as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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

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 before rocking and/or timber haul.

Road	Stations
23	0+00 to 139+90
233	0+00 to 102+00
233-1	0+00 to 15+55

2-6 CLEANING CULVERTS

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

Road	Stations
23	0+00 to 139+90
233	0+00 to 102+00
233-1	0+00 to 15+55

2-7 CLEANING AND RECONSTRUCTING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before grading, rock application and/or timber haul and must be done in accordance with the TYPICAL SECTION SHEET. Pulling ditch material across the road or mixing in with the road surface is not allowed. Excavated material must be scattered outside the clearing limits.

Road	Stations
23	0+00 to 139+90

2-8 MAINTAINING EROSION CONTROL STRUCTURES

On the following road(s), Contractor shall clean and maintain all erosion control devices including but not limited to rock berms.

Road	Stations	Comments
23	94+80	Maintain ditchout left

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 4 inches in diameter, including limbs, as shown on the BRUSHING LIST. 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
1	0+00 to 144+00
2	0+00 to 123+65
23	0+00 to 139+90
233	0+00 to 102+00
233-1	0+00 to 15+55

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-8 PROHIBITED DECKING AREAS

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

- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing trees unless approved by the Contract Administrator.

SUBSECTION GRUBBING

3-10 GRUBBING

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract Clause G-010 PRODUCTS SOLD AND SALE AREA or G-011 RIGHT TO REMOVE FOREST PRODUCTS AND CONTRACT AREA, that is larger than one cubic foot in volume within the clearing 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 subgrade compaction, application of rock and/or timber haul.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 20 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 55%.
- 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.
- In location that would impede drainage.

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 the clearing limits.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

Purchaser shall use a track mounted hydraulic excavator for construction work involving pioneering, clearing and grubbing, unless authorized in writing by the Contract Administrator.

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 prior to embankment.

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.

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.

4-12 FULL BENCH CONSTRUCTION

On the following road(s), and where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width. Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

Road	Full Bench Location	Comments
233 ext.	114+68 to 142+98	
233-1ext	28+10 to 40+93	

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

Purchaser shall construct turnouts intervisible with a maximum distance of 1,000 feet between turnouts unless otherwise shown on drawings. Locations may be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

Purchaser shall construct turnarounds as designated on the TURNAROUND LIST. Turnarounds shall be minimum 30 feet long and 30 feet wide. Location changes are subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

The Purchaser shall construct and/or reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Excavated slopes shall be consistent with Clause 4-5 CUT SLOPE RATIO. Ditches shall be constructed concurrently with construction of the subgrade.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified and as needed. 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.

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris.

4-37 WASTE AREA LOCATION

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

Road	Waste Area Location
233ext	Slopes less than 55% adjacent to the road
233ext	142+00
233-1ext	27+98

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

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

- On side slopes steeper than 55%.
- 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.

4-49 BORROW SOURCE

Purchaser shall obtain borrow material from the listed borrow source(s). Development of the borrow source must be in accordance with Pit Plan.

Source(s)
End of 233-3 road in knife ridge

4-50 BORROW APPLICATION

Purchaser shall apply borrow in accordance with quantities shown below. Borrow must be spread, shaped, and compacted full width concurrent with stream installation operation.

Road	Stations	Cubic Yards	Type
233-3	0+50 to 1+61	700	Native

SUBSECTION SHAPING

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.

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction and 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 subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before rock application and/or 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

SUBSECTION CULVERTS

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT AND DRAINAGE LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new and meet the specifications in Clauses 10-15 through 10-23.

5-7 USED CULVERT MATERIAL

On the following road(s), Purchaser may install used culverts. All other roads must have new culverts installed.

Road	Stations
233ext	142+98 to 148+92
233-1ext	27+98 to 40+93
233-3	0+00 to 1+61

5-10 CONTINGENCY CULVERTS

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

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

5-11 UNUSED MATERIALS STATE PROPERTY

On required roads or as listed in Clause 5-10, any materials listed on the CULVERT AND DRAINAGE LIST that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association’s "Installation Manual for Corrugated Steel

Drainage Structures" 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

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover recommended specified in the Engineer's design.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts, except for temporary culverts. 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. Placement must with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

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. Rock used for headwalls must be QUARRY SPALLS or LIGHT LOOSE RIP RAP. 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. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. QUARRY SPALLS and LIGHT LOOSE RIP RAP shall meet the specifications in CLAUSE 6-43 QUARRY SPALLS and CLAUSE 6-50 LIGHT LOOSE RIP RAP.

SUBSECTION SURFACE DRAINAGE

5-33 NATIVE SURFACE ROADS

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

SECTION 6 – ROCK AND SURFACING

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
Donkey	NE ¼ Section 9 Township 14 North Range 06 East (south of 233 Road and 233-1 Road junction)	3 Inch Minus Crushed Quarry Spalls Light Loose Rip Rap

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written ROCK SOURCE DEVELOPMENT PLAN prepared by the state included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

Source
Donkey Pit

6-12 ROCK SOURCE SPECIFICATIONS

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

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 25 feet.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient except as approved by the Contract Administrator.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

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.
- If a smooth roll crusher is used, the maximum size of material fed into it shall be equal to the largest size of the material coming out of it plus 8.5 percent of the roll radius.
- The crushing operation per pit must be concluded within 45 working days from the time it begins in that pit.
- Purchaser is required to produce sieve analysis for crushing operations every 1000 yards for each rock gradation type.

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 when placed in hauling vehicles or during manufacture and placement into a stockpile. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

6-33 3-INCH MINUS CRUSHED ROCK

% Passing 3” square sieve	100%
% Passing 1½” square sieve	55 - 75%
% Passing U.S. #4 sieve	15 - 45%

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

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

6-41 PIT RUN ROCK

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

6-43 QUARRY SPALLS

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

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

6-50 LIGHT LOOSE RIP RAP

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

Quantity	Approximate Size Range
20% to 90%	18”- 28”
15% to 80%	8”- 18”
10% to 20%	3”- 8”

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.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade including: ditches, headwalls, catch basins, culverts, energy dissipaters, ditch-outs, subgrade shaping and compacting before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. The Contract Administrator will direct locations for rock that is to be applied as spot patching. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

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

6-75 OPTIONAL ROCK EXCEPTION

On the following road(s), Purchaser may place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

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

Road	Stations
233ext	142+98 to 148+92
233-1ext	27+98 to 40+93
233-3	0+00 to 1+61

SECTION 7 – STRUCTURES

7-30 BRIDGE MAINTENANCE

Purchaser shall conduct bridge maintenance as listed.

Road	Station	Requirements
1	64+60 to 70+60	Clean deck prior to haul. Maintain clean bridge deck during haul. Clean bridge deck after haul is complete.

7-71 GATE CLOSURE DURING HAUL

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

Road	Station	Gate No.
23	85+75	414

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

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

Road	Stations
233ext	142+98
233-1ext	27+98
233-3	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.

9-5 POST-HAUL MAINTENANCE

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

Road	Stations	Additional Requirements
1	67+36	Clean Nisqually bridge deck

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
233ext	142+98 to 148+92
233-1ext	27+98 to 40+93
233-3	0+00 to 1+61

9-22 ABANDONMENT

- Remove road shoulder berms.
- 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.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove culverts.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.

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. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe joint.

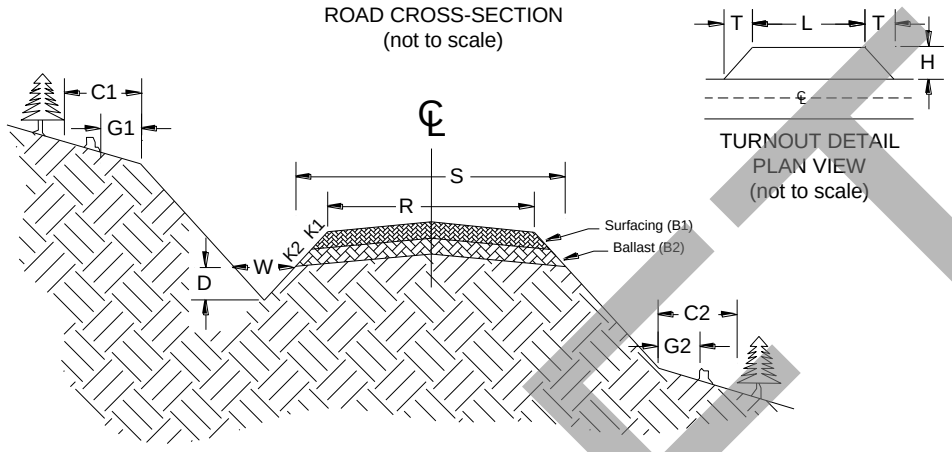
SECTION 11 SPECIAL NOTES

11-1 REMOVAL OF CRIBBING

On the following roads, Purchaser shall remove cribbing material from the road fill. Cribbing material shall be disposed of per road plan Section 3 CLEARING, GRUBBING, AND DISPOSAL. Native Material in accordance with Clause 4-48 NATIVE MATERIAL shall be used as fill as needed.

Road	Stations
233ext	102+00 to 148+92

TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch** Width (feet)	Ditch** Depth (feet)	Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits* (feet)	
				S	R	W	D		G1	G2	C1	C2
1	0+00	144+00	A	-	14	2	1	4	-	-	5	5
2	0+00	123+65	A	-	14	2	1	4	-	-	5	5
23	0+00	139+90	A	-	12	2	1	4	-	-	5	5
233	0+00	102+00	A	-	12	2	1	4	-	-	5	5
233ext	102+00	117+21	C	15	12	2	1	4	2	2	tags	tags
233ext	117+21	148+92	C	15	12	2	1	4	2	2	5	5
233-1	0+00	15+55	C	15	12	2	1	4	2	2	5	5
233-1ext	15+55	22+26	C	15	12	2	1	4	2	2	tags	tags
233-1 ext	22+26	40+93	C	15	12	2	1	4	2	2	5	5
233-3	0+00	1+61	C	15	12	2	1	4	0	0	0	0

*Tags are Right of Way Tags

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Subtotal	Rock Source
			K2	B2	3 Inch Minus Crushed			
233ext	102+00	142+98	1.5:1	12"	50	41	2050	Donkey Pit
233ext*	142+98	148+92	1.5:1	12"	50	5.94	297	
233-1ext	15+55	27+98	1.5:1	12"	50	12.43	622	
233-1ext*	27+98	40+93	1.5:1	12"	50	12.95	648	
233-3*	0+00	1+61	1.5:1	12"	50	1.61	81	
Turnouts			1.5:1	12"	36 cyd/ per turnout	4 turnouts	144	
Turnarounds			1.5:1	12"	36 cyd/ per turnout	2 turnouts	72	
Quarry spalls or light loose rip rap for culvert Installations. See Culvert List for locations							20	
Pit Run Rock for Landings*							360	

*Optional Rock

BALLAST TOTAL: 1386 Optonal Cubic Yards
2908 Required Cubic Yards

NOTE: Yardages are estimated on a compacted (In-Place) basis. **Apply appropriate factors to determine loose amounts for estimating purposes.** If Purchaser elects to haul in wet weather additional rock may be obtained from a commercial source at the Purchaser's expense and with prior written approval from the Contract Administrator.

TURNOUT LIST

Road Number	Begin Station	End Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
233ext	104+69	105+69	10’	50’	25’	Construct Turnout Left
233ext	112+82	113+82	10’	50’	25’	Construct Turnout Left
233ext	123+21	124+31	10’	50’	25’	Construct Turnout Left
233ext	132+47	133+47	10’	50’	25’	Construct Turnout Left

TURNAROUND LIST

Road Number	Station	Width (ft)	Length (ft)	Comments
233 ext	142+39	30	30	
233-1	27+98			

COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
All new construction and reconstruction			Culvert Installations	12	Smooth Drum Vibratory Roller	14,000	4 low freq. with Vibe on	3
			Embankment	12				
			Fill & select borrow	12				
			Subgrade					
			Rock	12				
			Waste Area	12				
All pre-haul and post haul			After grading existing road surface and prior to rocking					
			Culvert Installations	12				
			Rock	6				

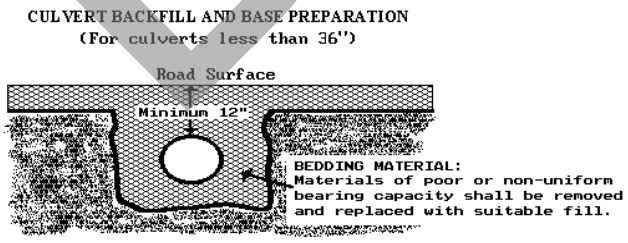
CULVERT AND DRAINAGE LIST

Road Number	Location	Culvert Dia. (in)	Culvert Type	Length (ft) Culvert	Length (ft) Downspt	Length (ft) Flume	Riprap (C.Y.) Inlet	Riprap (C.Y.) Outlet	Riprap (C.Y.) Type	Backfill Material*	Placement Method*	Const. Staked*	Remarks
233ext	111+71	18	PD	30			0.5	0.5	QS	NT			
	112+44	24	PD	40			0.5	0.5	QS	NT			
	118+51	18	PD	30			0.5	0.5	QS	NT			
	124+21	18	PD	40			0.5	0.5	QS	NT			
	128+55	18	PD	30			0.5	0.5	QS	NT			
	139+00	18	PD	30			0.5	0.5	QS	NT			
	143+48	18	TEMP	30			0.5	0.5	QS	NT			
	145+74	18	TEMP	30			0.5	0.5	QS	NT			
233-1 ext	17+94	24	PD	30			0.5	0.5	QS	NT			Np Stream
	19+00	18	PD	30			0.5	0.5	QS	NT			
	19+34	36	PD	43			0.5	0.5	QS	NT			Np Stream
	20+35	18	PD	30			0.5	0.5	QS	NT			
	20+91	24	PD	33			0.5	0.5	QS	NT			Np Stream
	22+17	18	PD	30			0.5	0.5	QS	NT			
	27+98	18	TEMP	30			0.5	0.5	QS	NT			
	40+17	18	TEMP	30			0.5	0.5	QS	NT			
		18	TEMP	30			0.5	0.5	QS	NT			
Contigency culverts		18	TEMP	30			0.5	0.5	QS	NT			
		18	TEMP	30			0.5	0.5	QS	NT			
		18	TEMP	30			0.5	0.5	QS	NT			

* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

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

TEMP = Temporary Culvert

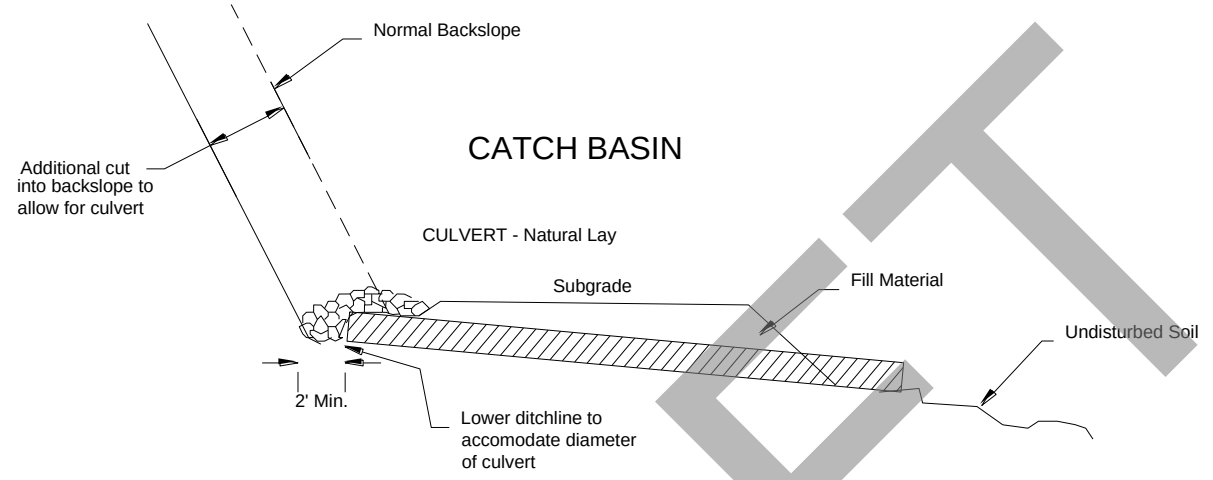


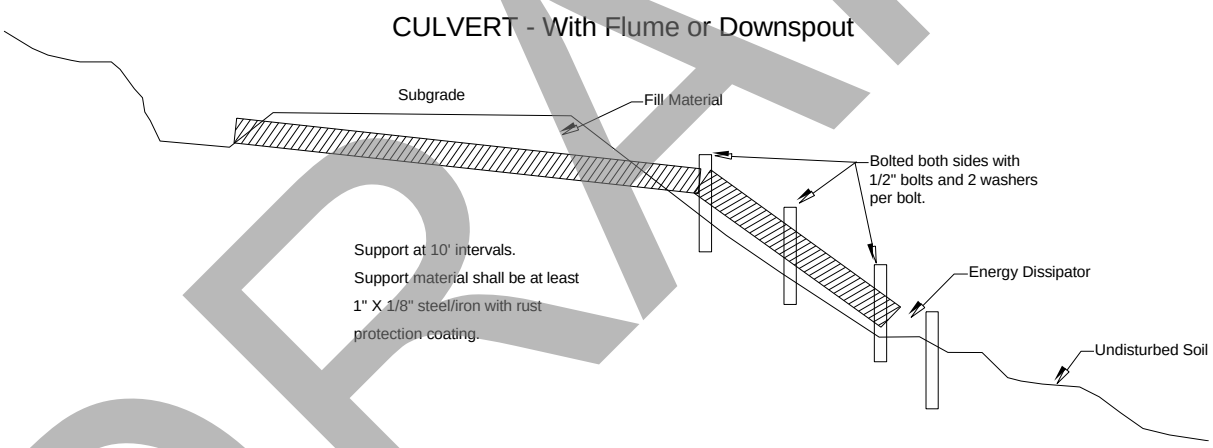
Key:

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 3)

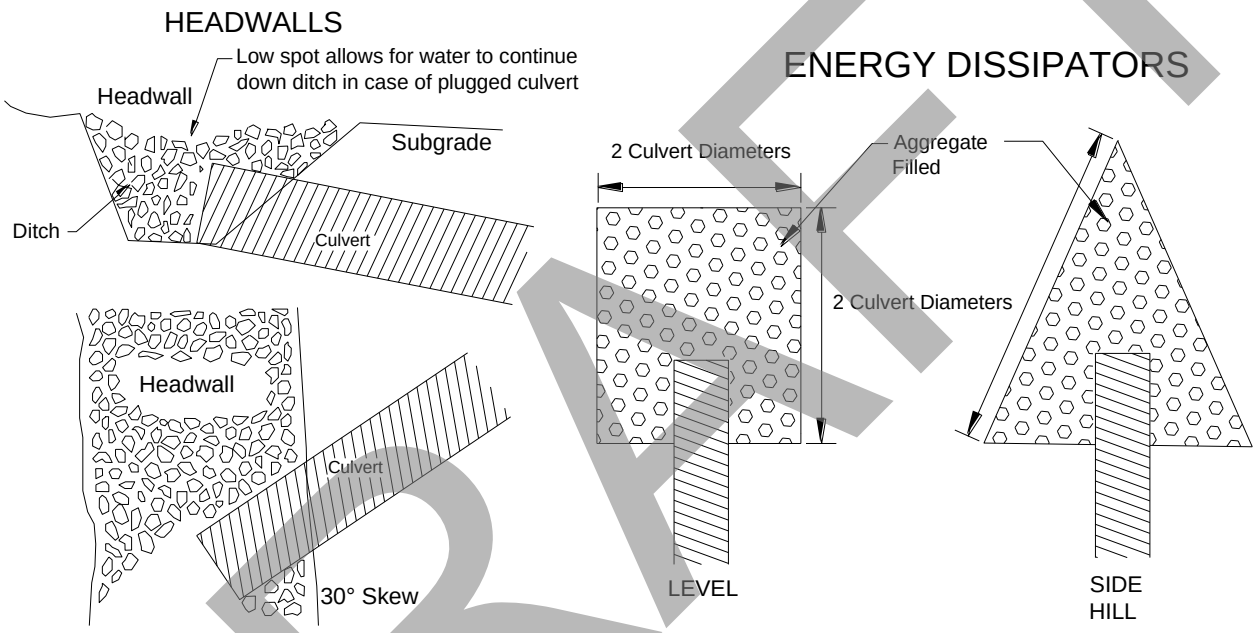




CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 3)

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



Headwalls to be constructed of material that will resist erosion.

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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

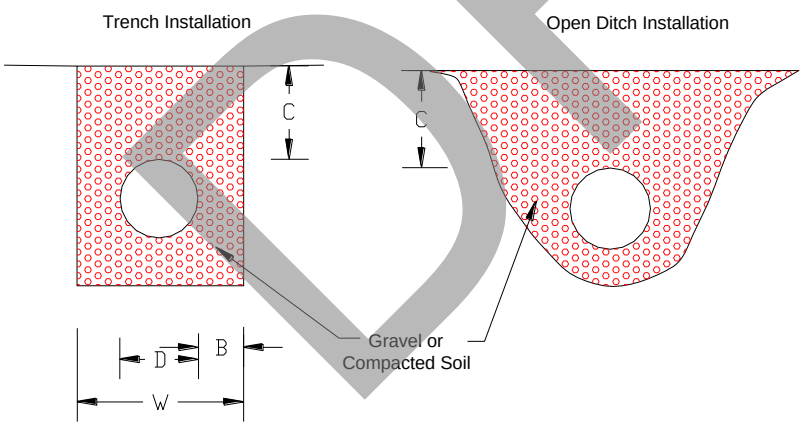
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

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

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

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

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



MINIMUM DIMENSIONS
Trench or Open Ditch Installation

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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 1of 2

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

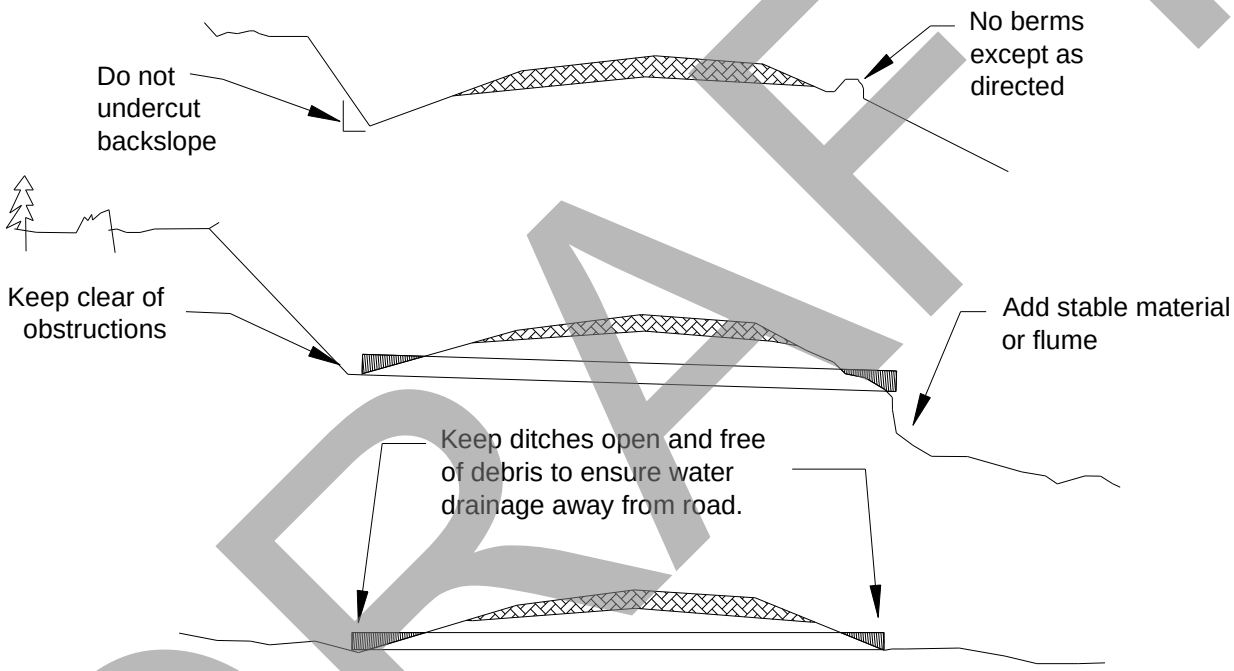
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

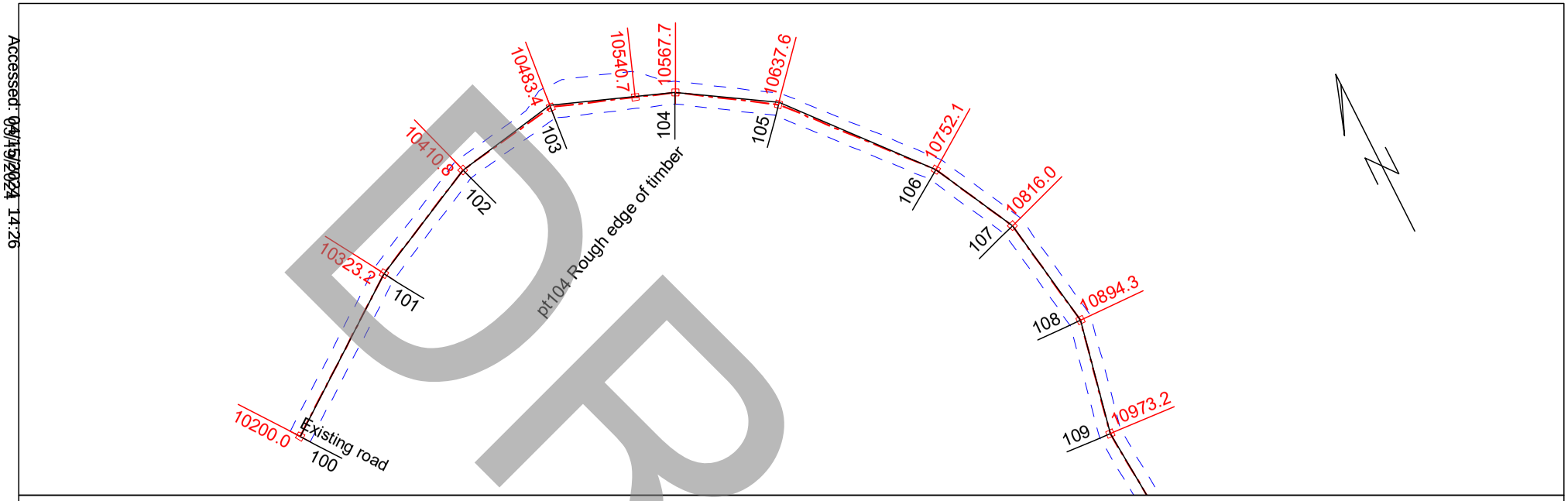
Termination of Use or End of Season

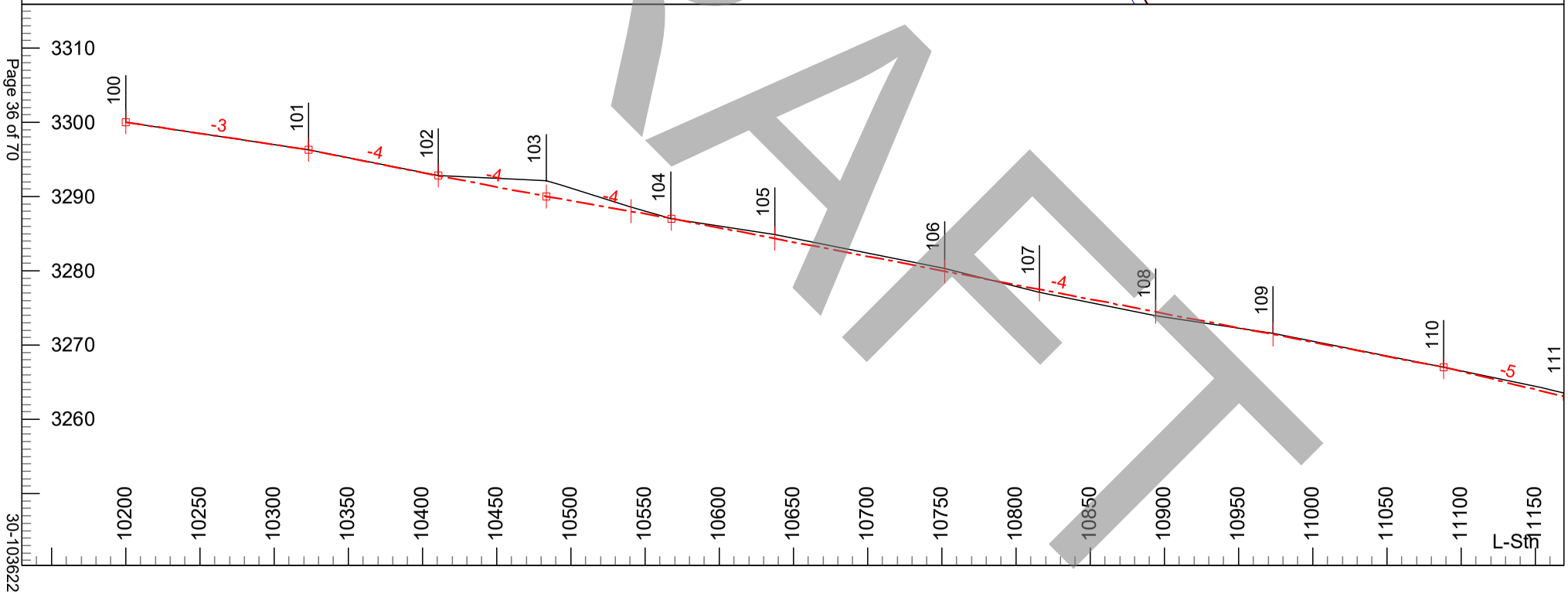
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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







30-103622

Dew Dog Timber Sale
233ext Road August 1, 2023
Contract #: 30-103622

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200

Profile Vert Scale 1:240
Profile Horz Scale 1:1200

Engineer: M. Bell
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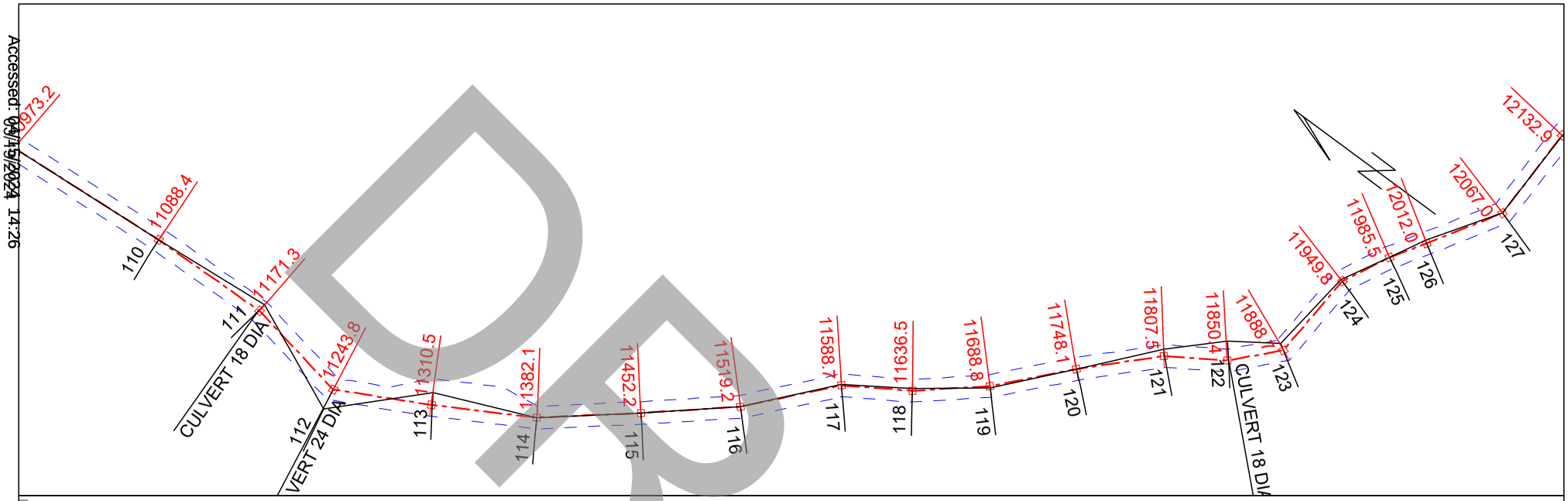

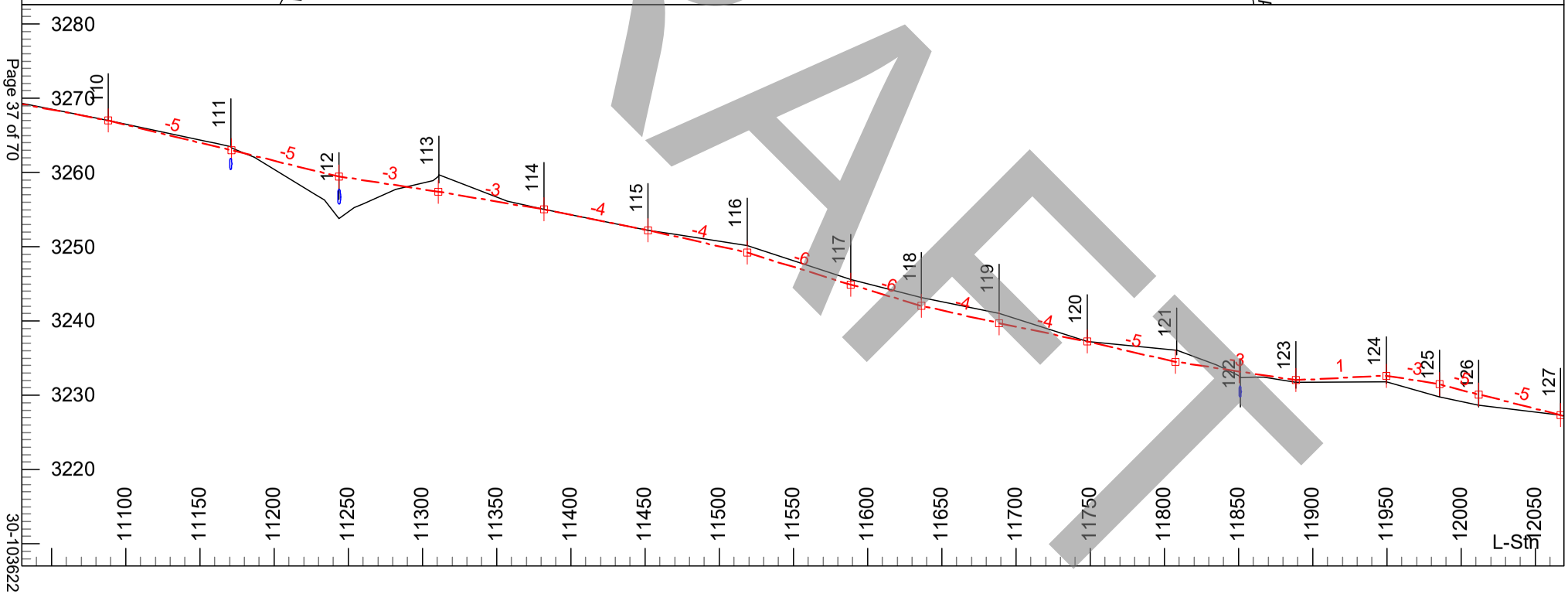

Dew Dog Timber Sale
233ext Road August 1, 2023
Contract #: 30-103622

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200

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Engineer: M. Bell
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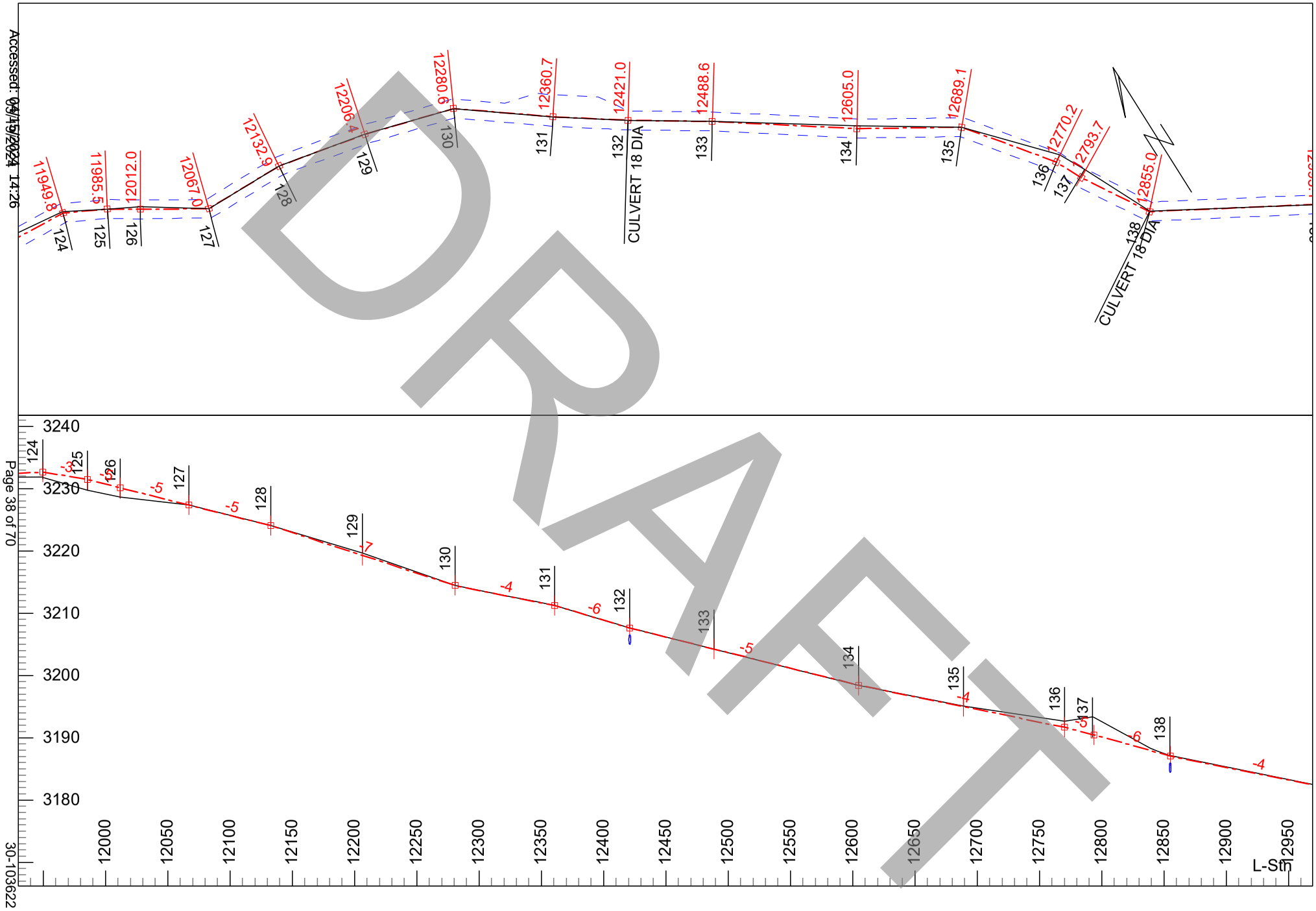

Dew Dog Timber Sale
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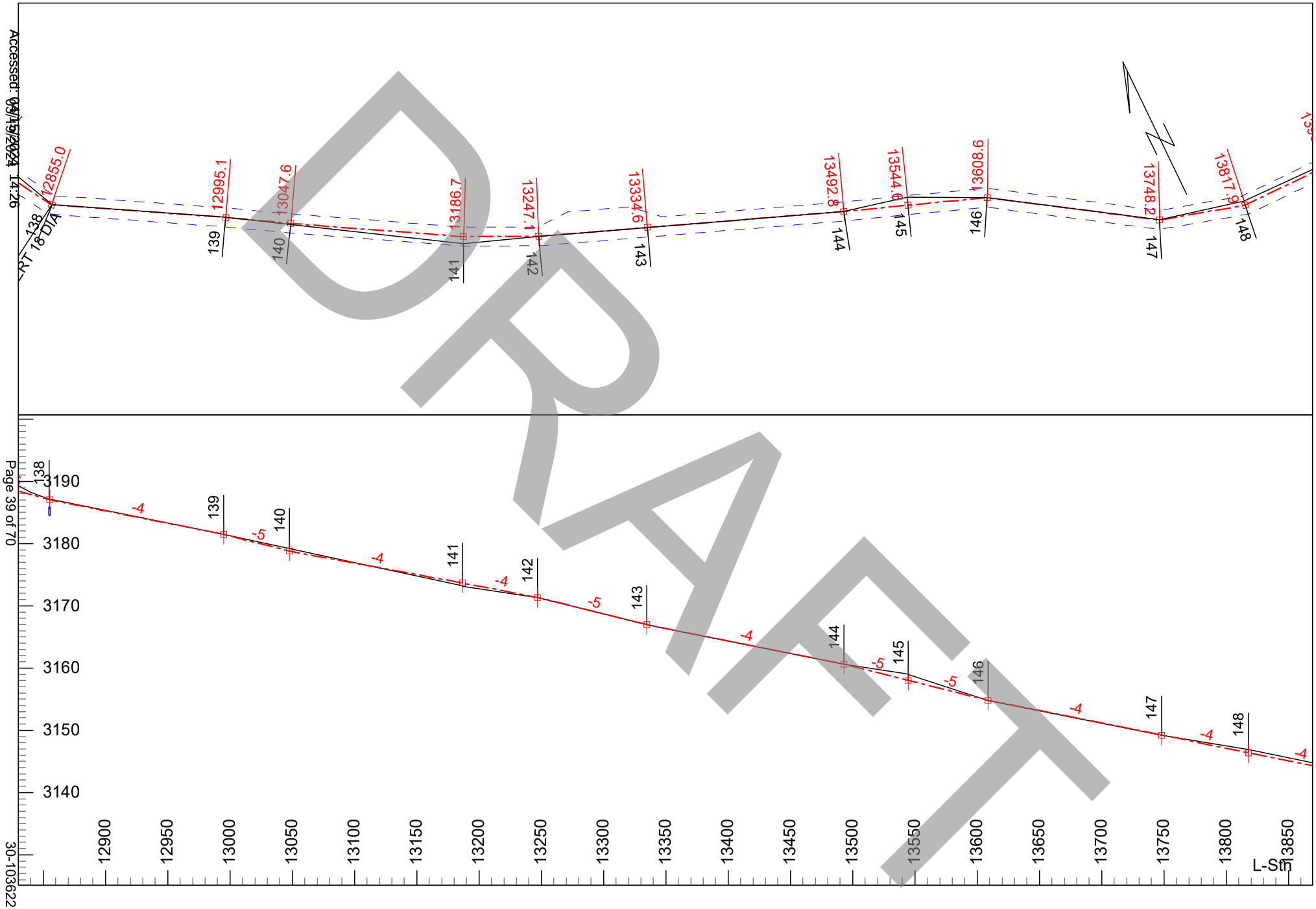

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Dew Dog Timber Sale
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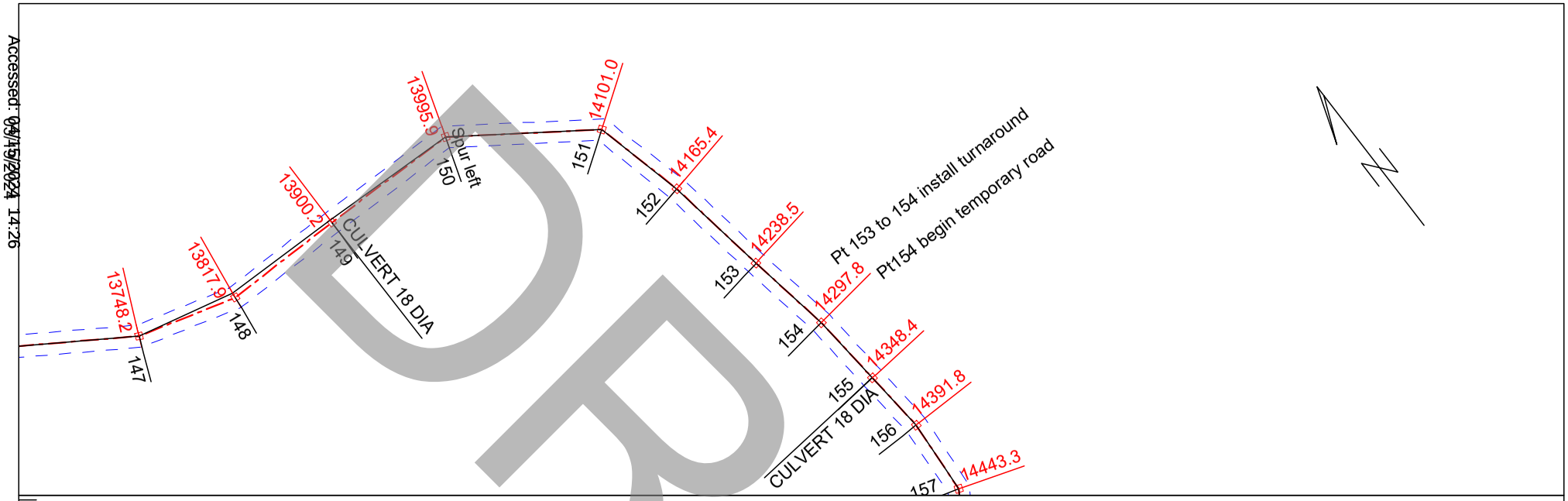

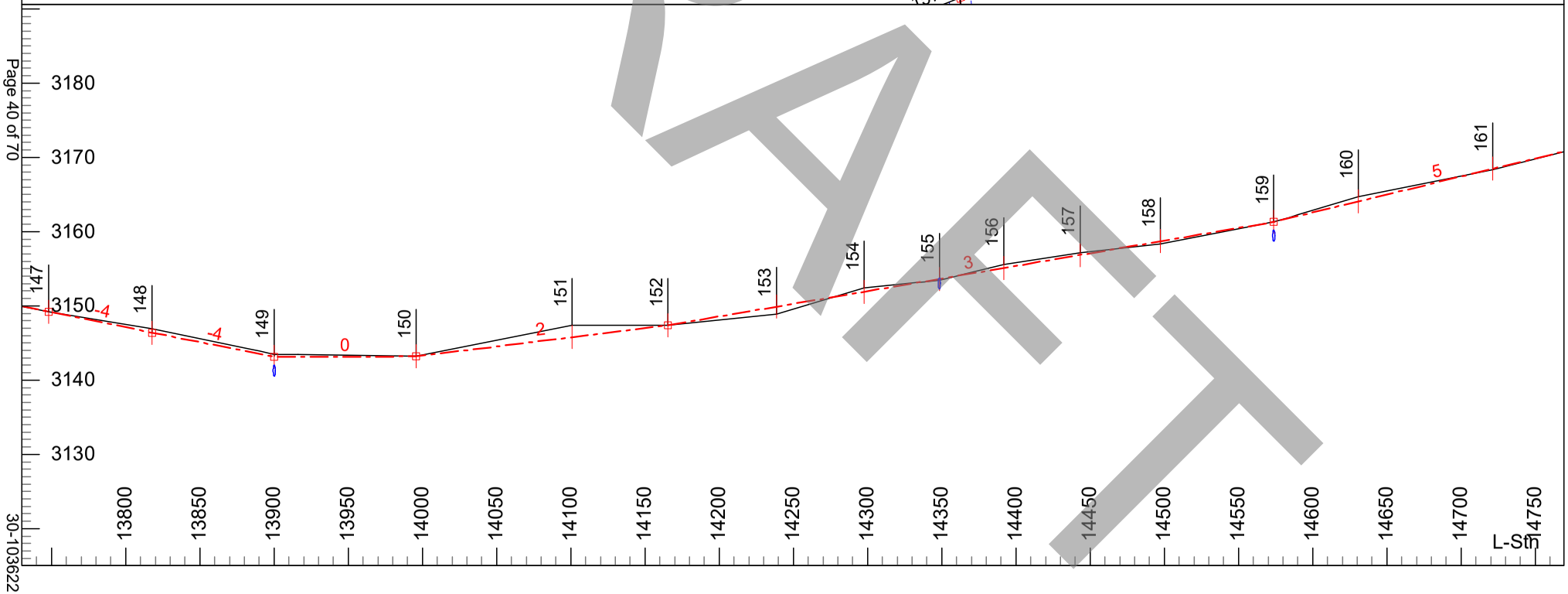

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Dew Dog Timber Sale
233ext Road August 1, 2023
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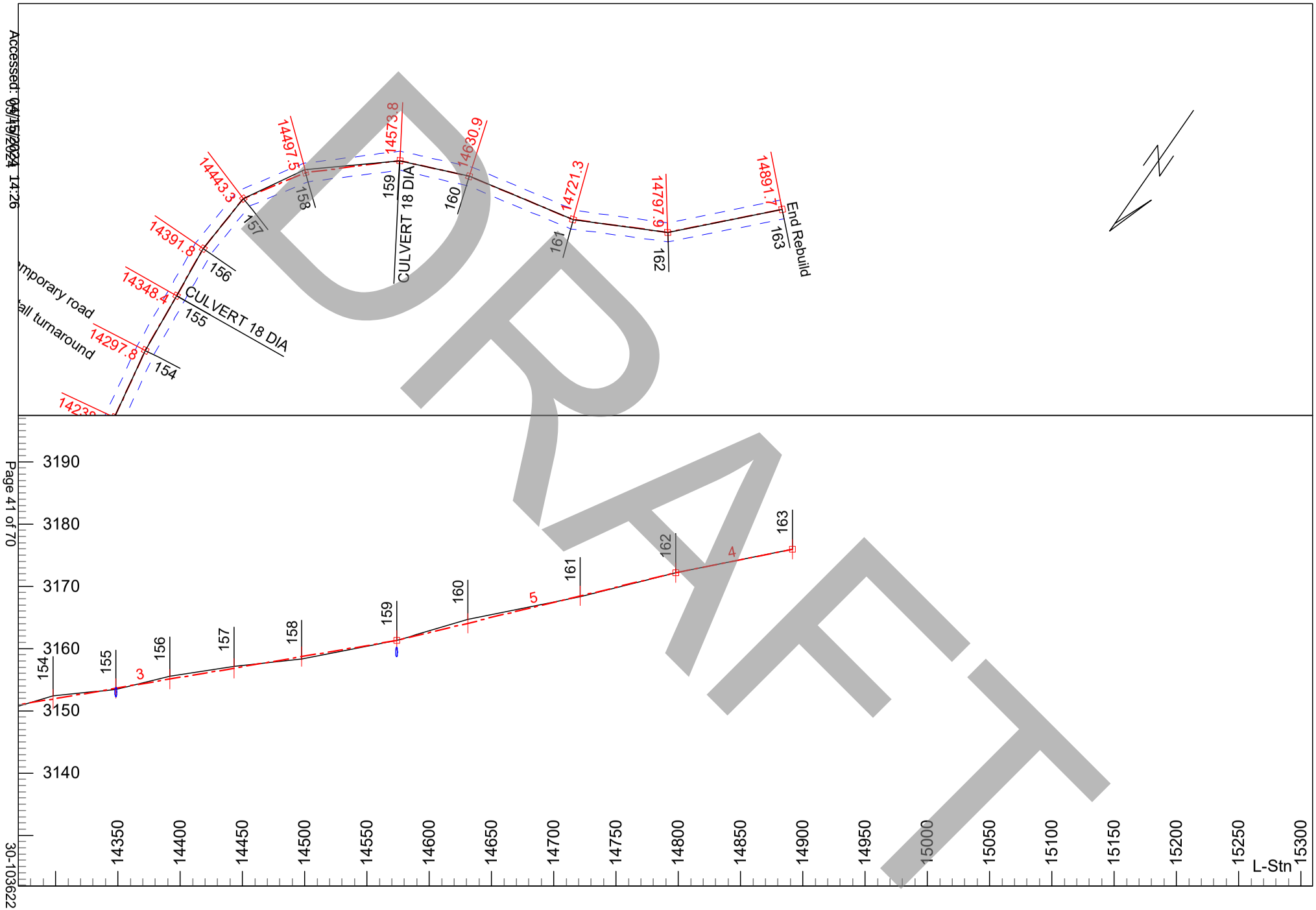

Dew Dog Timber Sale
233ext Road August 1, 2023
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Washington State Department of Natural Resources
South Puget Sound Region

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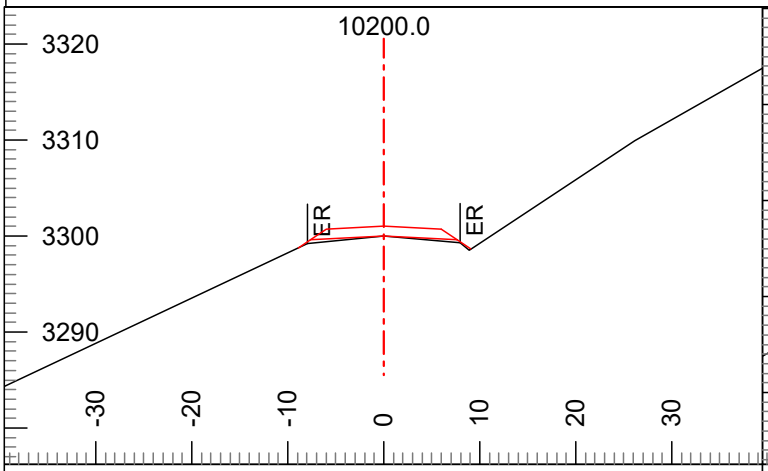

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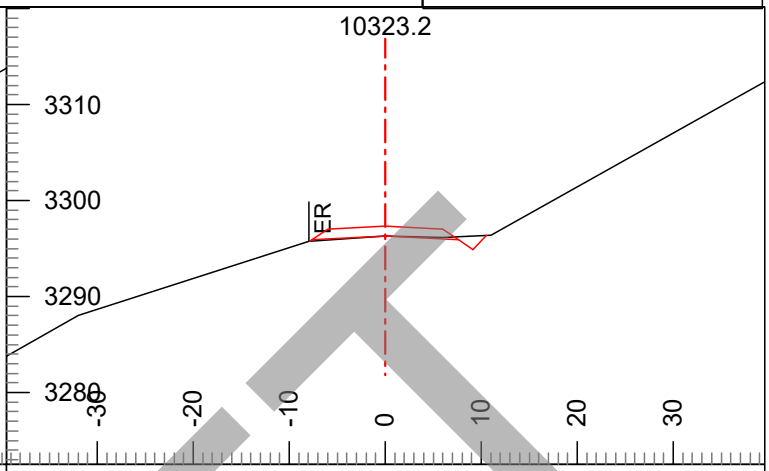

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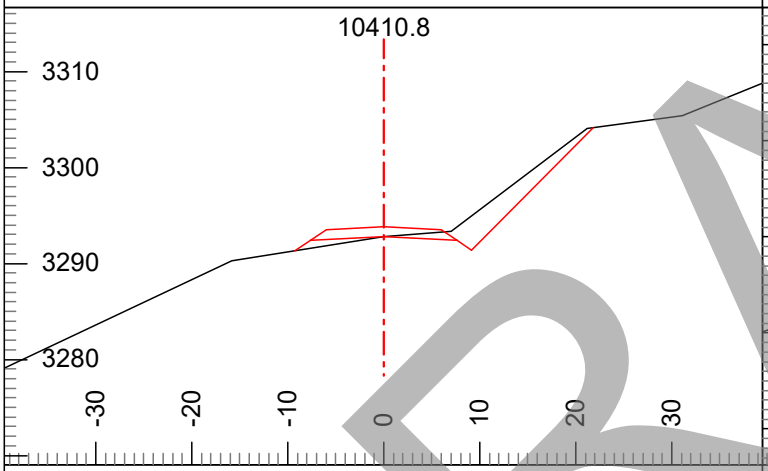

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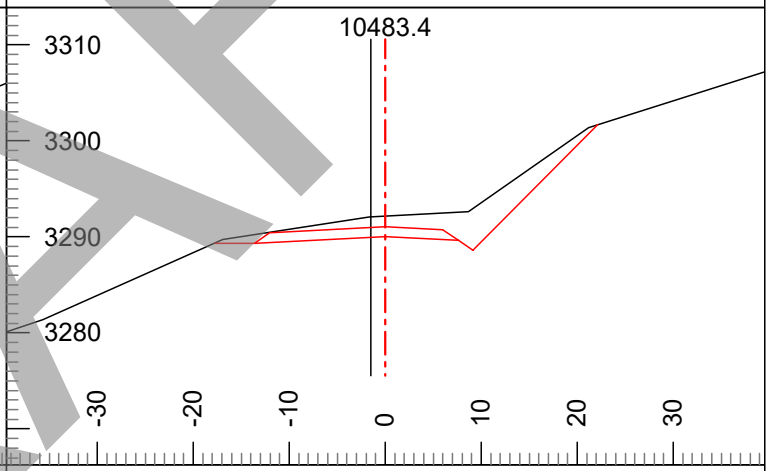

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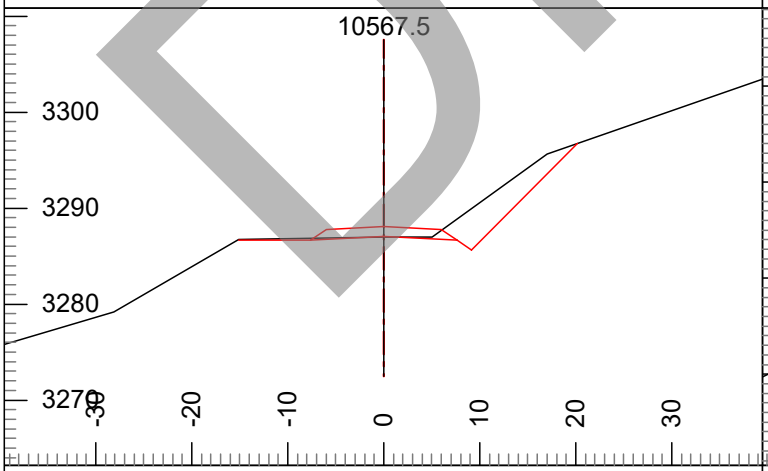

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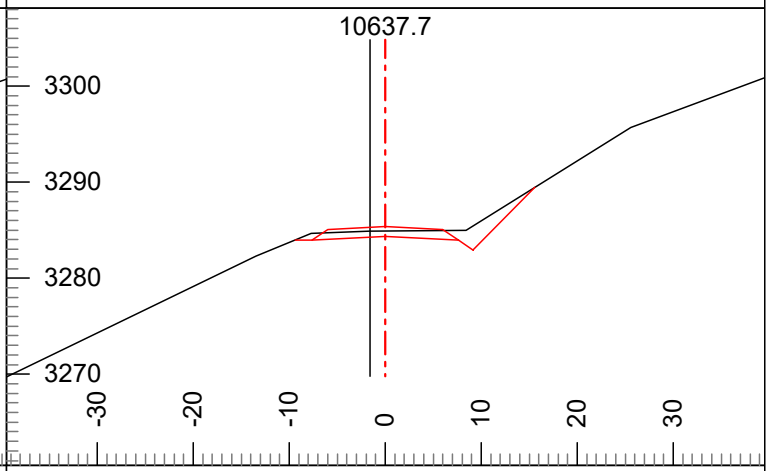

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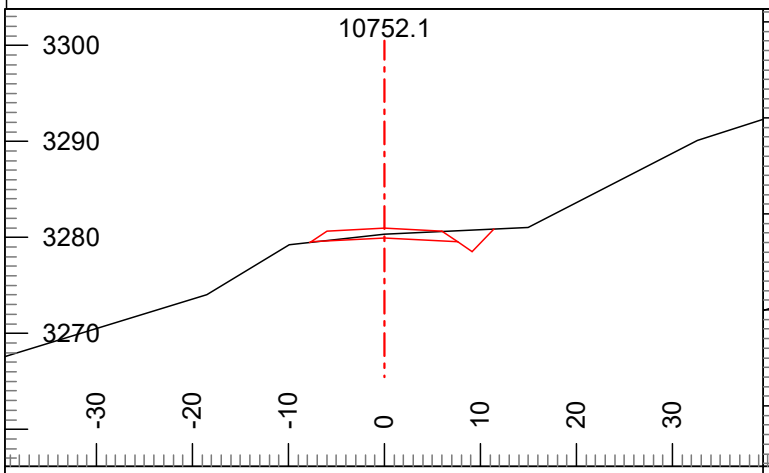

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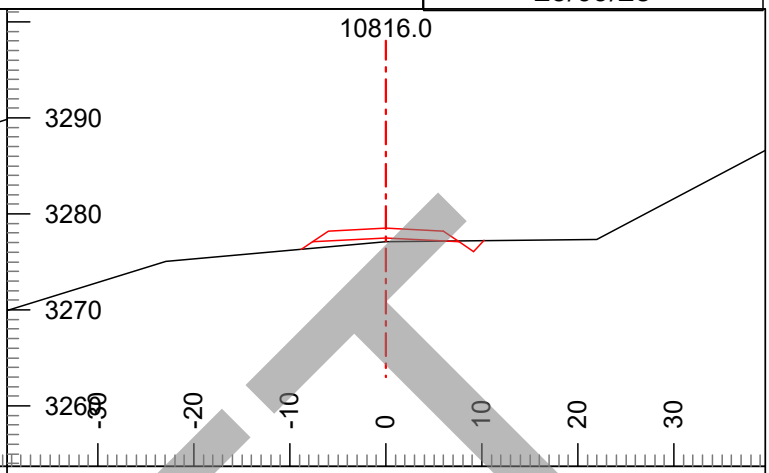

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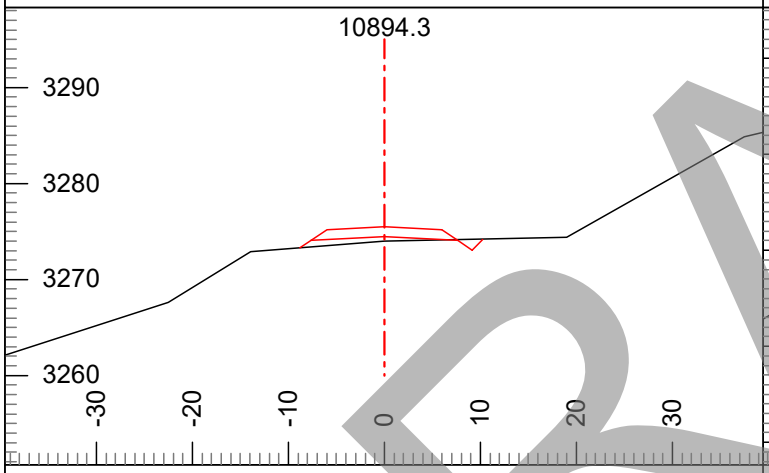

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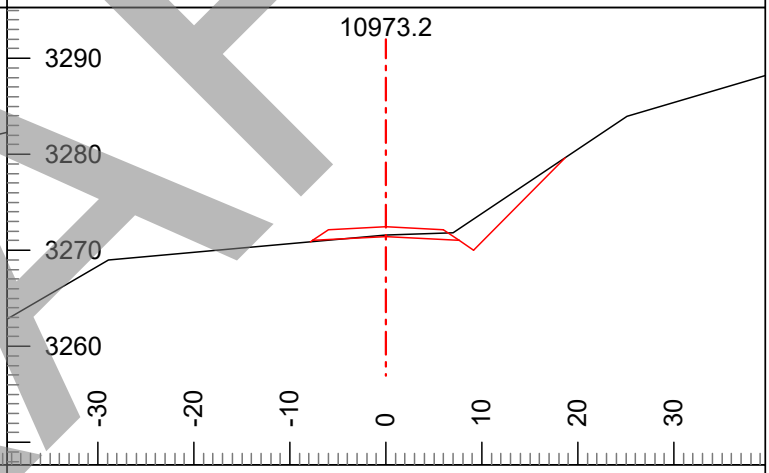

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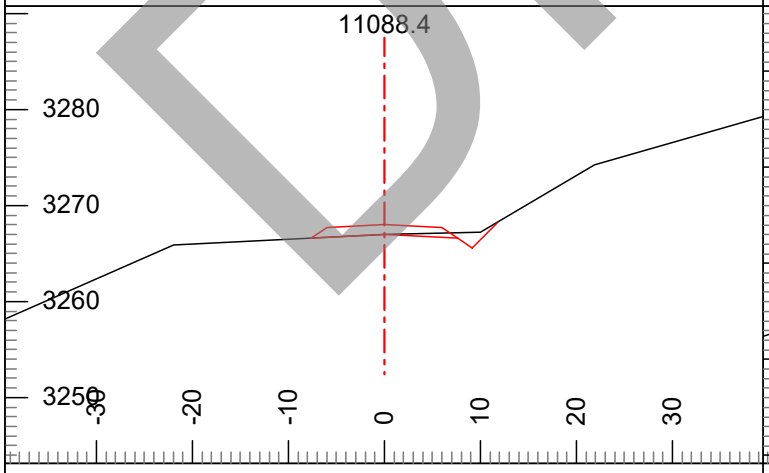

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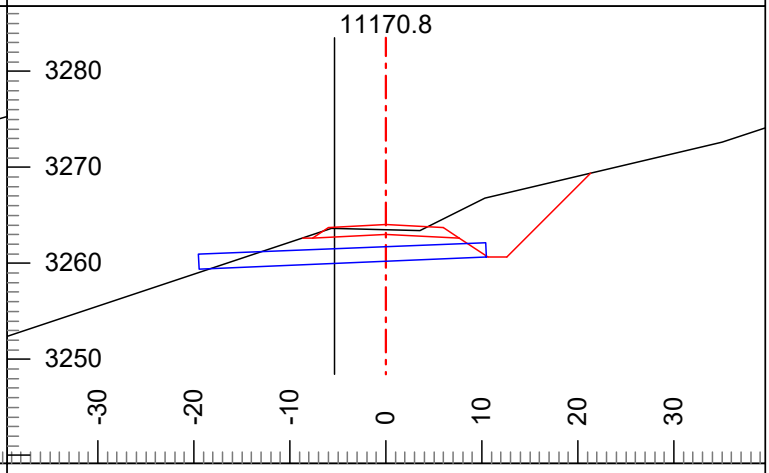

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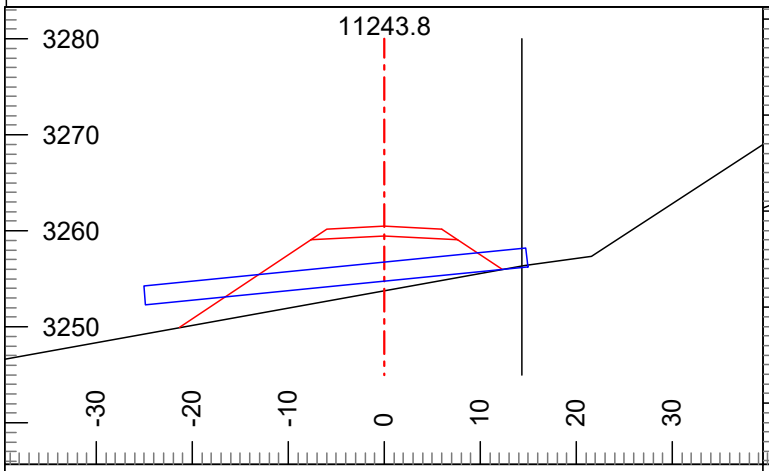

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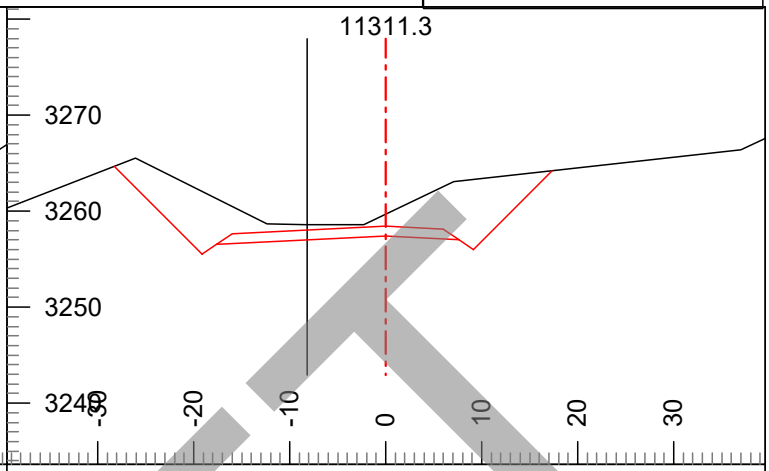

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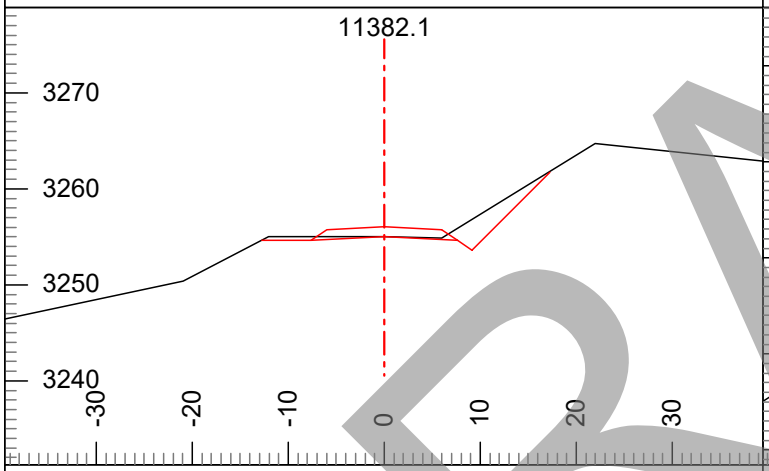

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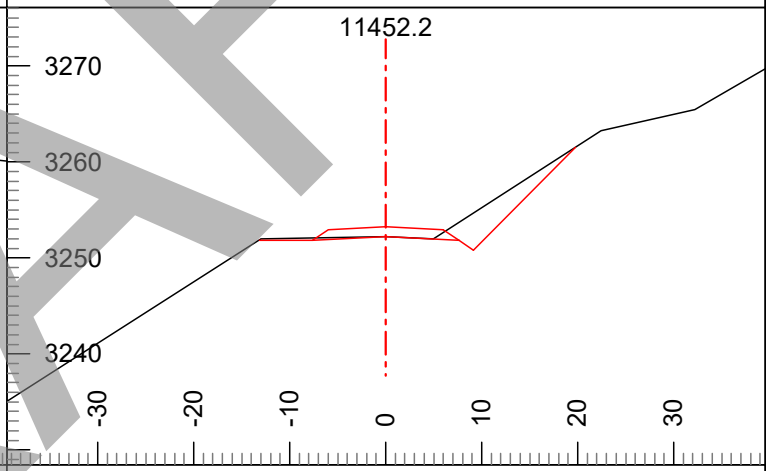

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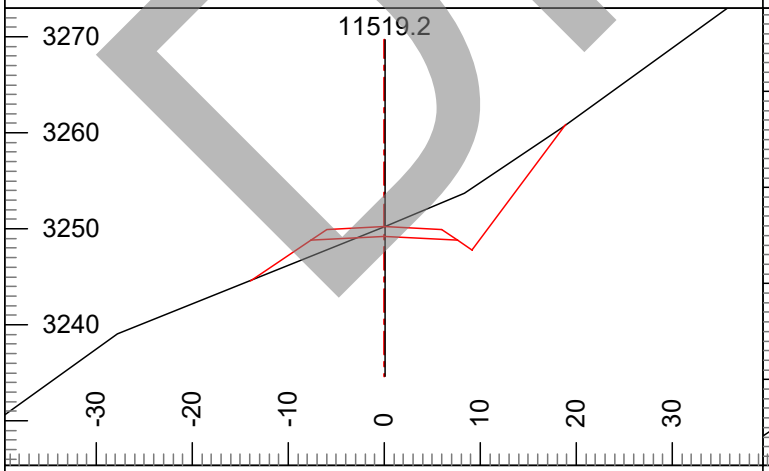

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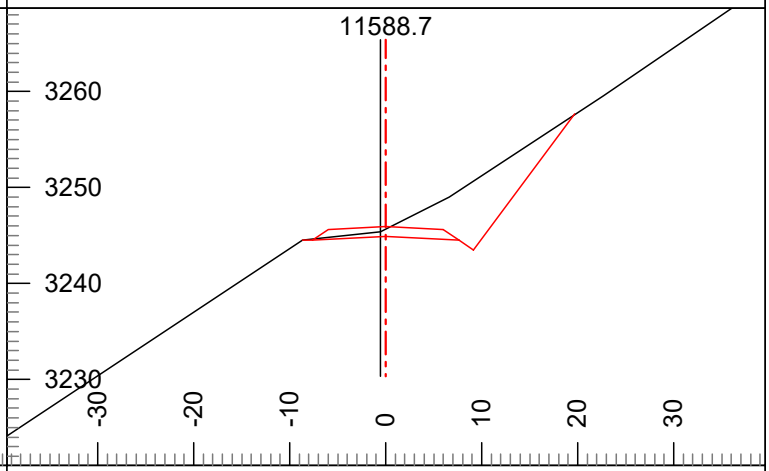

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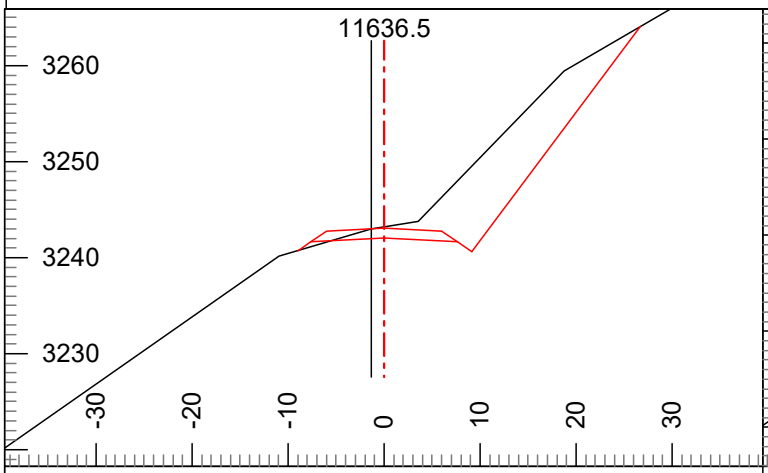

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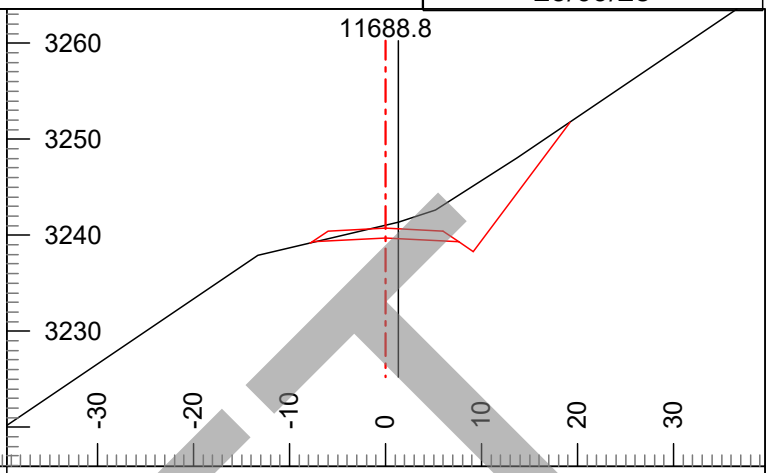

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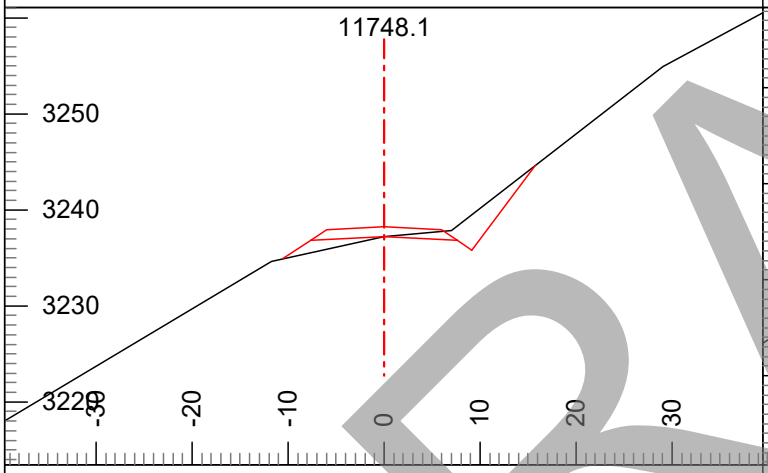

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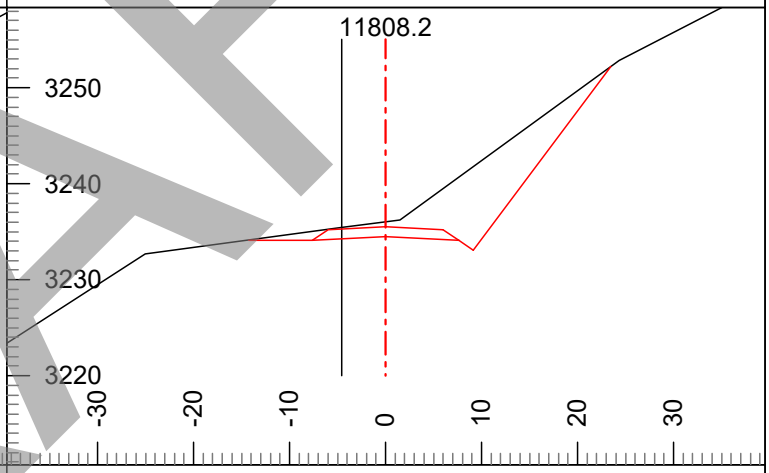
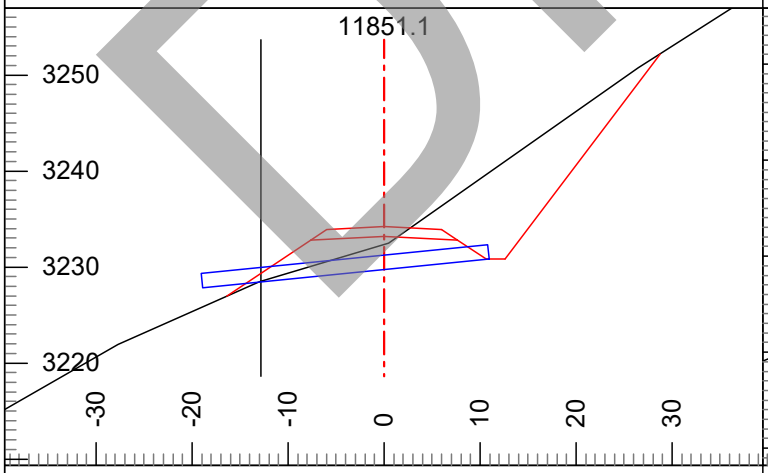
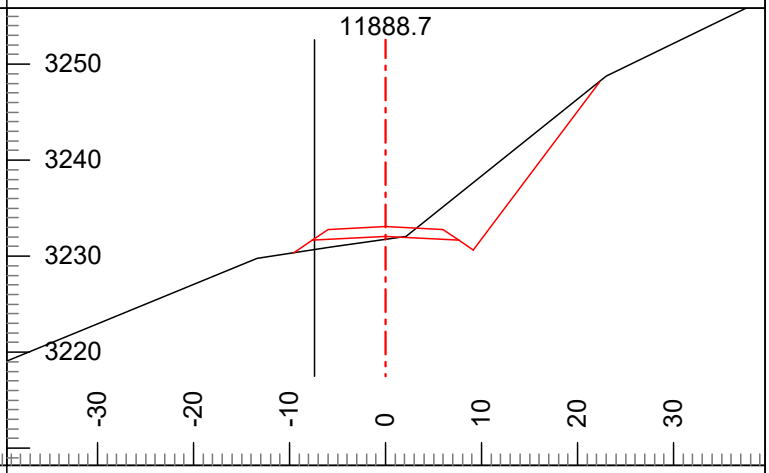


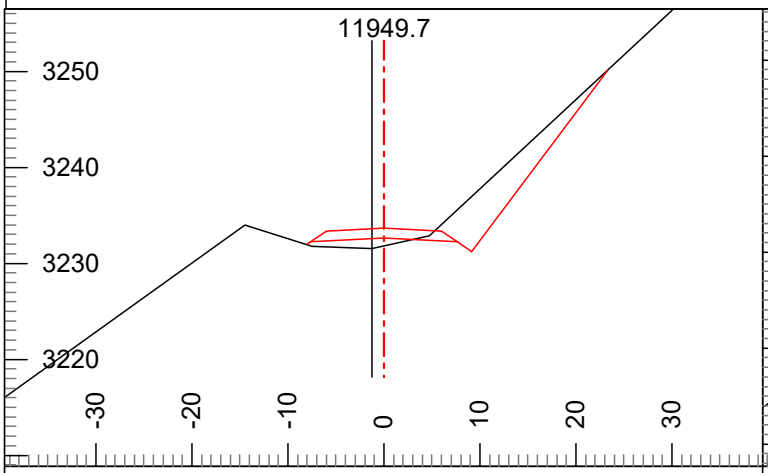
L-Stn :	11808.2	H. Offset:	4.5	Rd. Wd. L:	7.6
Index:	121	Cut Dp:	1.6	Rd. Wd. R:	7.6
Grd.Nxt.:	-3	CL Elev:	3234.5	Cul DIA:	
Grd.Lst:	-3	Rd. Wd.:	15.2		



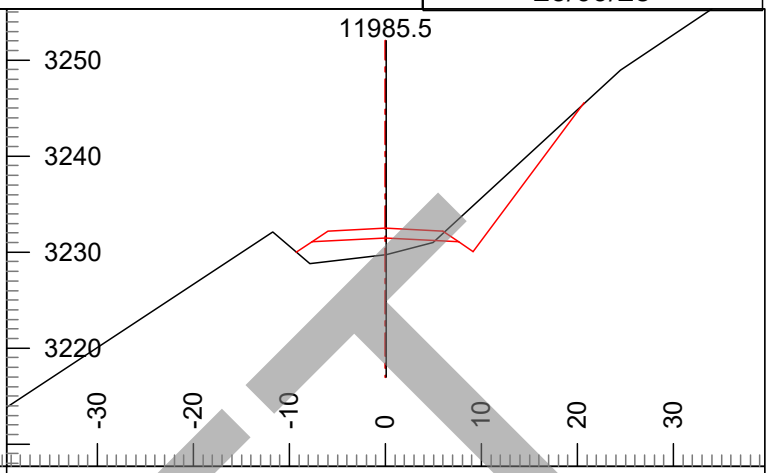
L-Stn :	11851.1	H. Offset:	12.9	Rd. Wd. L:	7.6
Index:	122	Cut Dp:	-0.8	Rd. Wd. R:	7.6
Grd.Nxt.:	-3	CL Elev:	3233.2	Cul DIA:	18in
Grd.Lst:	-3	Rd. Wd.:	15.2		



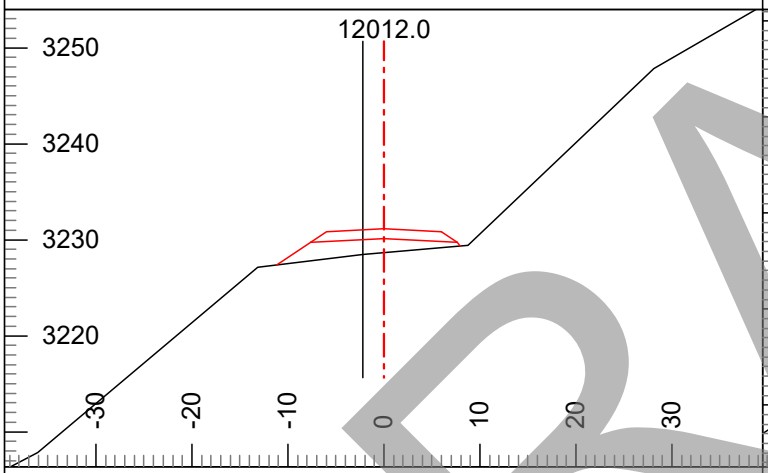
L-Stn :	11888.7	H. Offset:	5.0	Rd. Wd. L:	7.6
Index:	123	Cut Dp:	-0.3	Rd. Wd. R:	7.6
Grd.Nxt.:	1	CL Elev:	3232.1	Cul DIA:	
Grd.Lst:	1	Rd. Wd.:	15.2		



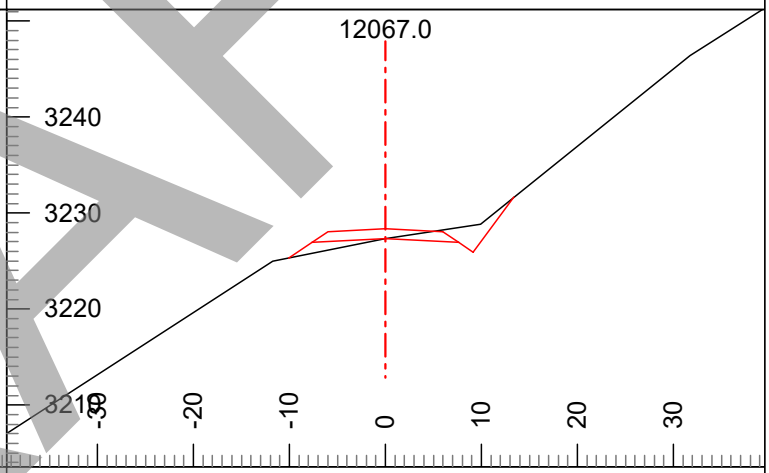
L-Stn :	11949.7	H. Offset:	1.2	Rd. Wd. L:	7.6
Index:	124	Cut Dp:	-0.8	Rd. Wd. R:	7.6
Grd.Nxt.:	1	CL Elev:	3232.6	Cul DIA:	
Grd.Lst:	1	Rd. Wd.:	15.2		



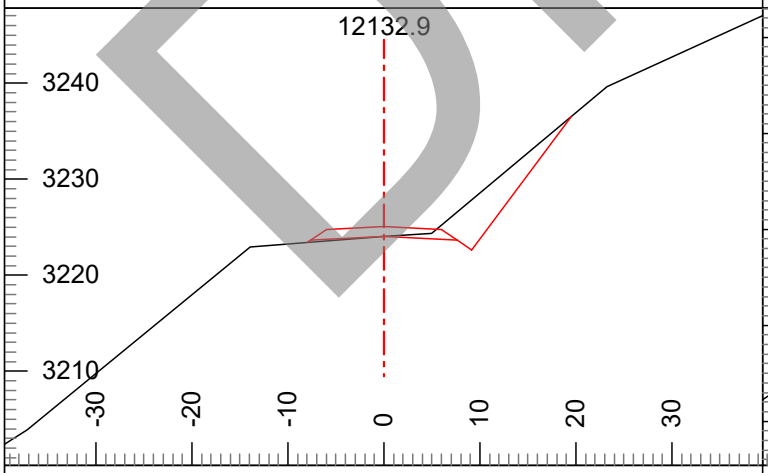
L-Stn :	11985.5	H. Offset:	-0.1	Rd. Wd. L:	7.6
Index:	125	Cut Dp:	-1.7	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3231.5	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



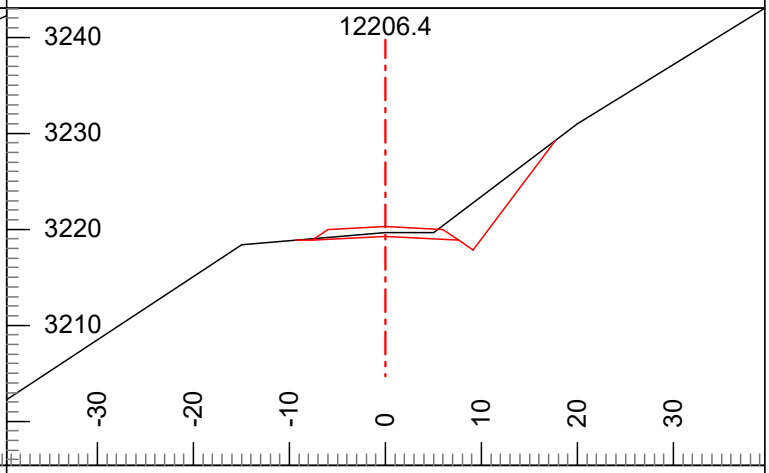
L-Stn :	12012.0	H. Offset:	2.2	Rd. Wd. L:	7.6
Index:	126	Cut Dp:	-1.5	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3230.1	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



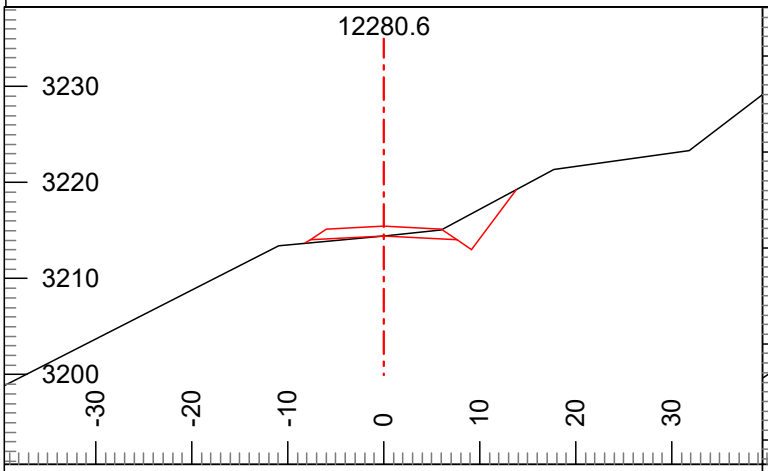
L-Stn :	12067.0	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	127	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3227.3	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



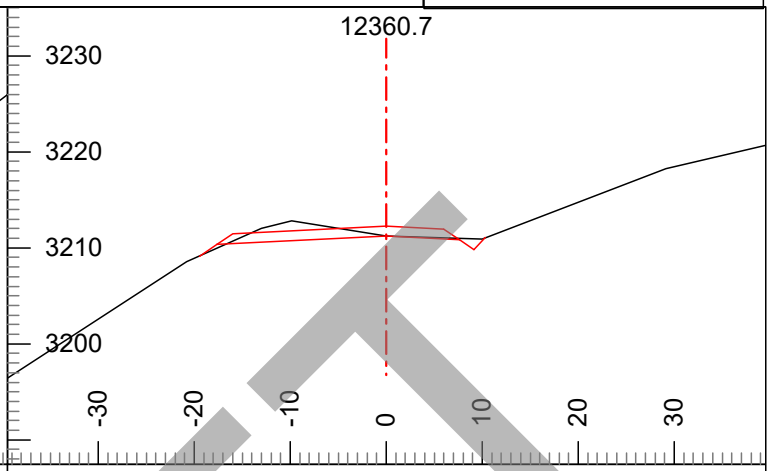
L-Stn :	12132.9	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	128	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-7	CL Elev:	3224.0	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



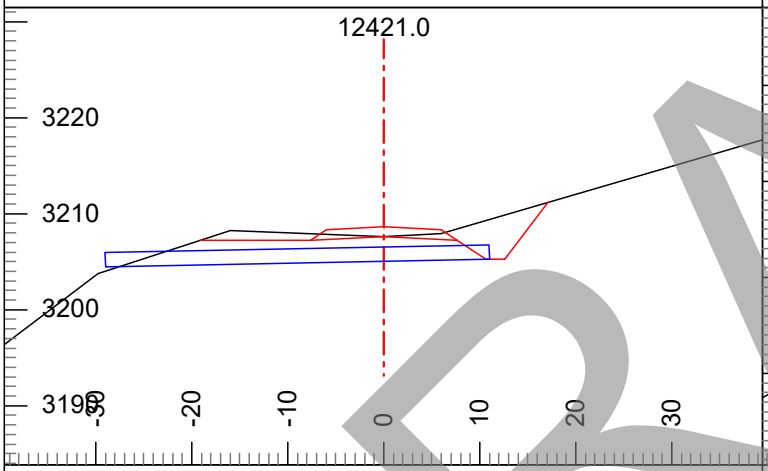
L-Stn :	12206.4	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	129	Cut Dp:	0.4	Rd. Wd. R:	7.6
Grd.Nxt.:	-7	CL Elev:	3219.3	Cul DIA:	
Grd.Lst:	-7	Rd. Wd.:	15.2		



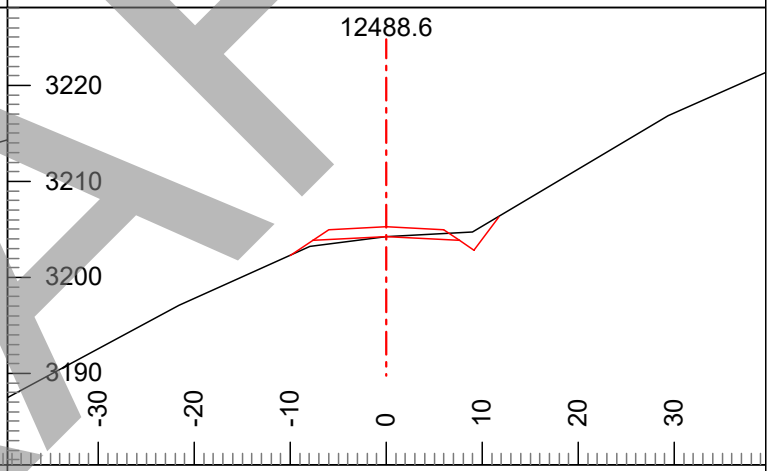
L-Stn :	12280.6	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	130	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3214.4	Cul DIA:	
Grd.Lst:	-7	Rd. Wd.:	15.2		



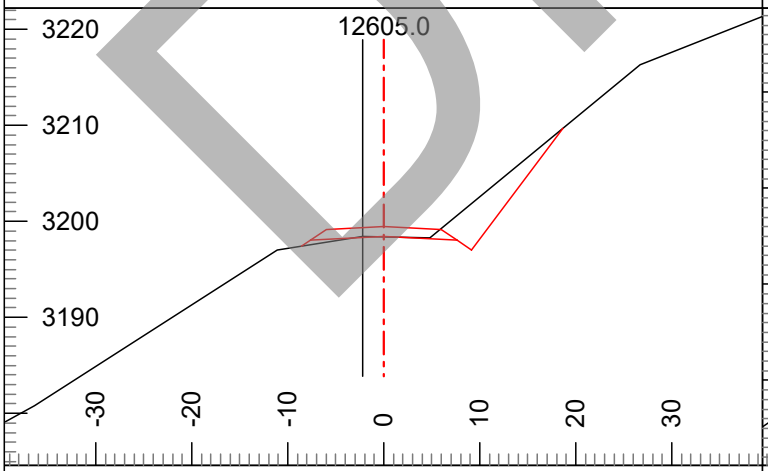
L-Stn :	12360.7	H. Offset:	0.0	Rd. Wd. L:	17.6
Index:	131	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-6	CL Elev:	3211.2	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	25.2		



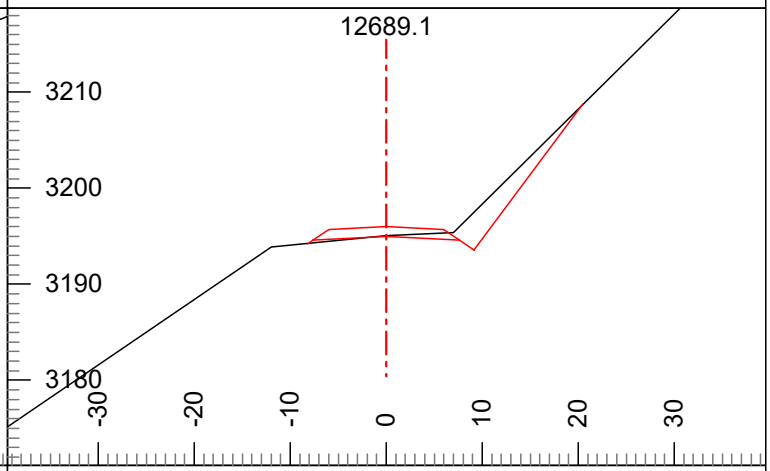
L-Stn :	12421.0	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	132	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3207.6	Cul DIA:	18in
Grd.Lst:	-6	Rd. Wd.:	15.2		



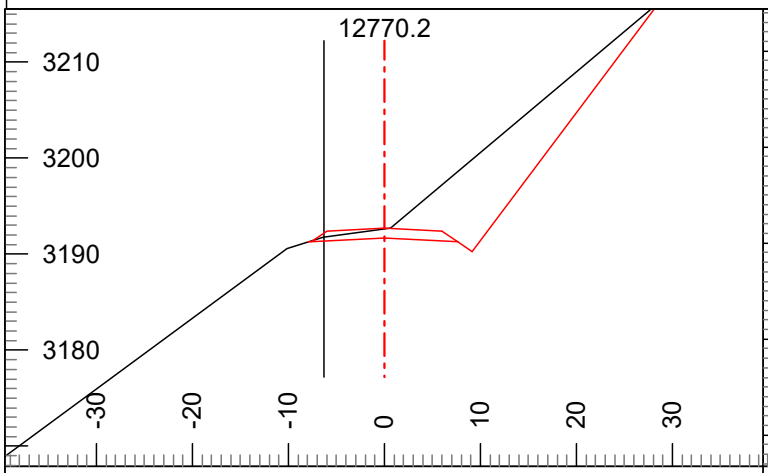
L-Stn :	12488.6	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	133	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3204.2	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



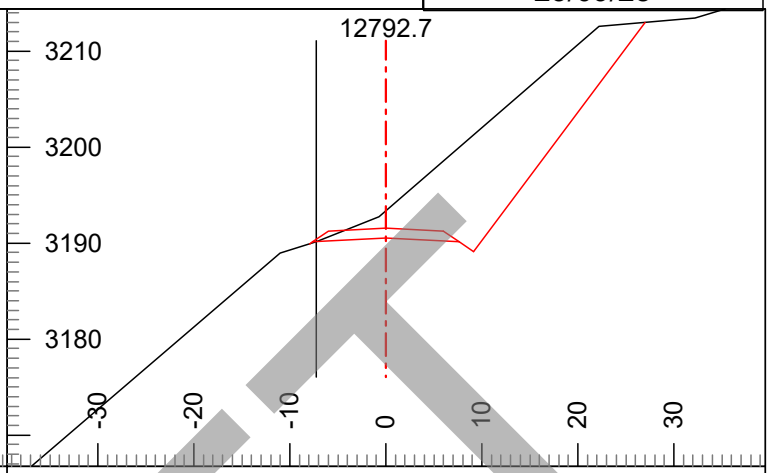
L-Stn :	12605.0	H. Offset:	2.2	Rd. Wd. L:	7.6
Index:	134	Cut Dp:	-0.1	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3198.4	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



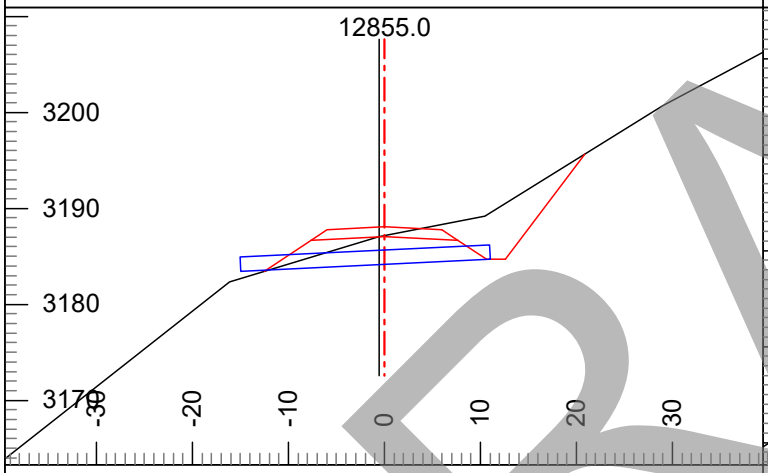
L-Stn :	12689.1	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	135	Cut Dp:	0.1	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3195.0	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



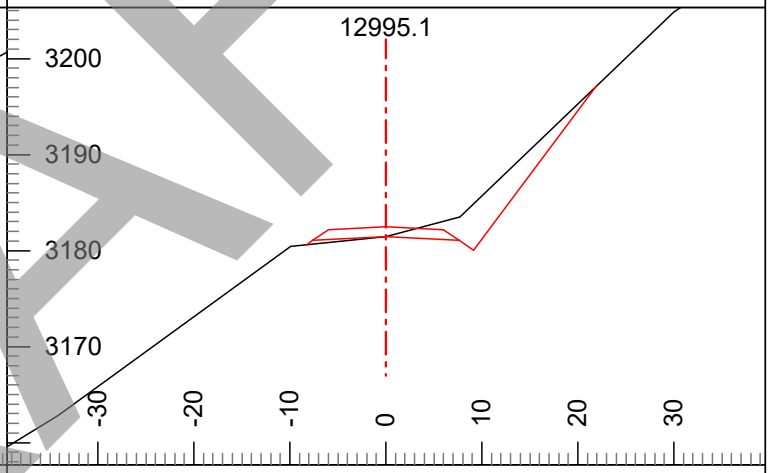
L-Stn :	12770.2	H. Offset:	6.3	Rd. Wd. L:	7.6
Index:	136	Cut Dp:	0.9	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3191.7	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



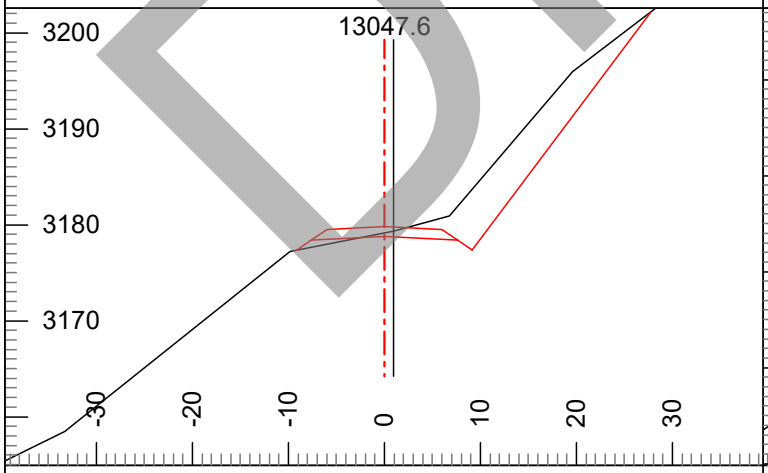
L-Stn :	12792.7	H. Offset:	7.2	Rd. Wd. L:	7.6
Index:	137	Cut Dp:	2.9	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3190.5	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



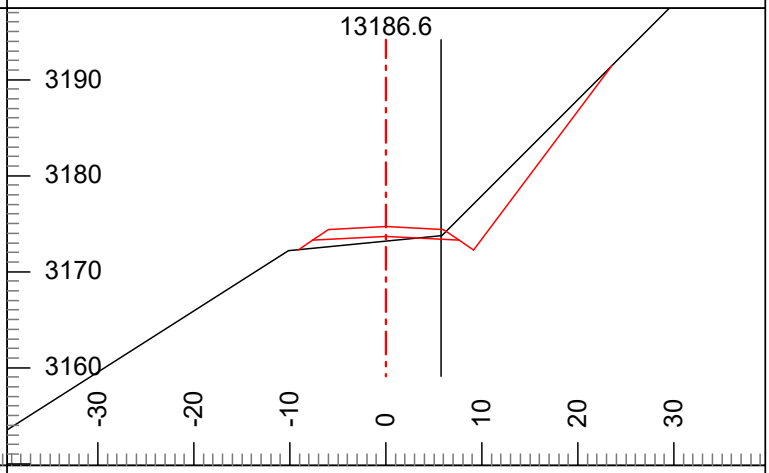
L-Stn :	12855.0	H. Offset:	0.5	Rd. Wd. L:	7.6
Index:	138	Cut Dp:	0.1	Rd. Wd. R:	7.6
Grd.Nxt.:	-6	CL Elev:	3187.1	Cul DIA:	18in
Grd.Lst:	-6	Rd. Wd.:	15.2		



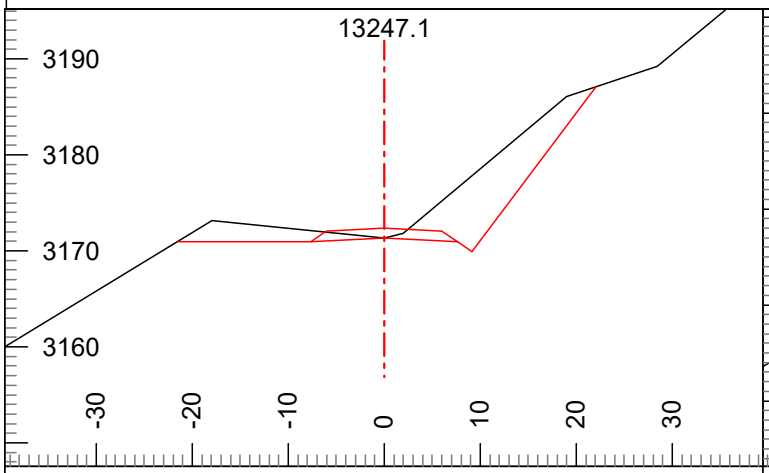
L-Stn :	12995.1	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	139	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3181.5	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



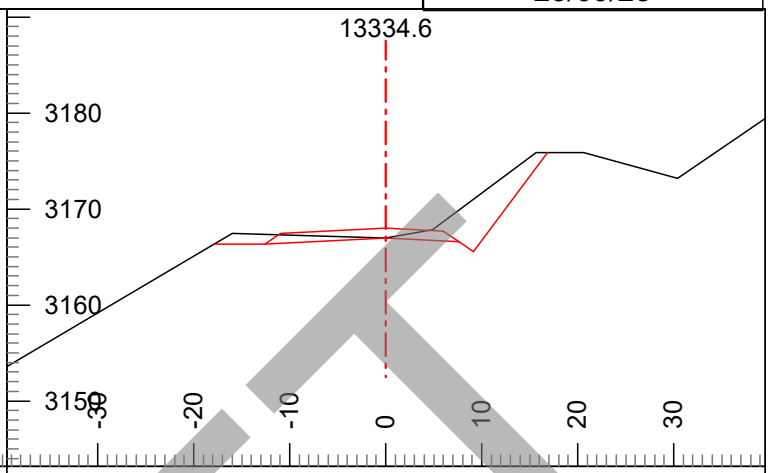
L-Stn :	13047.6	H. Offset:	-0.9	Rd. Wd. L:	7.6
Index:	140	Cut Dp:	0.4	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3178.8	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



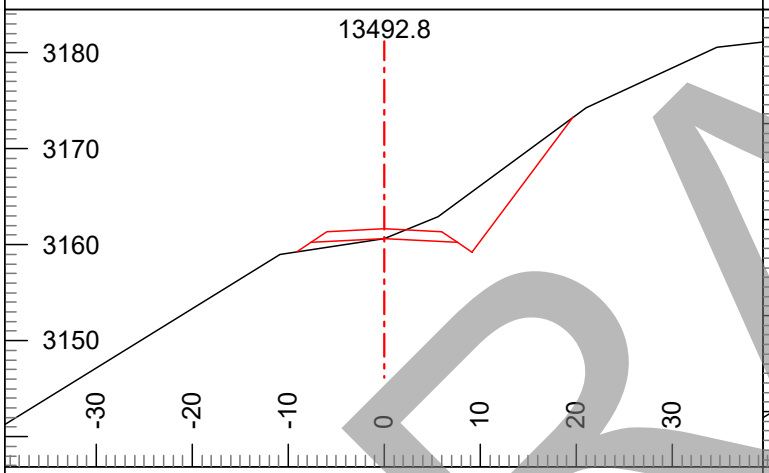
L-Stn :	13186.6	H. Offset:	-5.8	Rd. Wd. L:	7.6
Index:	141	Cut Dp:	-0.5	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3173.7	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



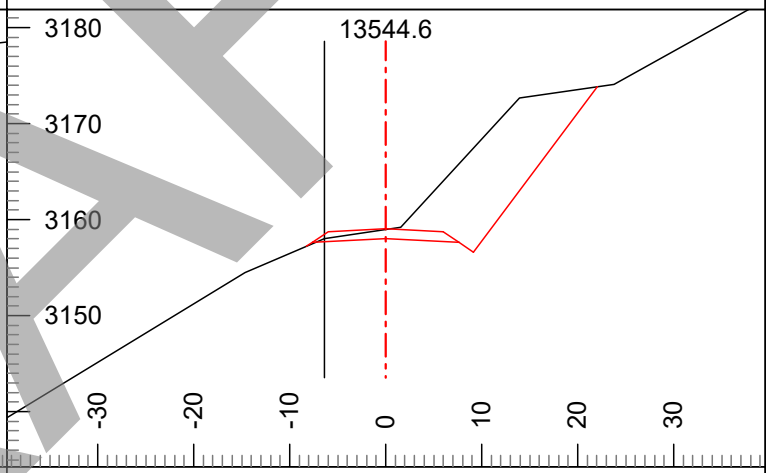
L-Stn :	13247.1	H. Offset:	0.0	Rd. Wd. L:	7.7
Index:	142	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3171.3	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.3		



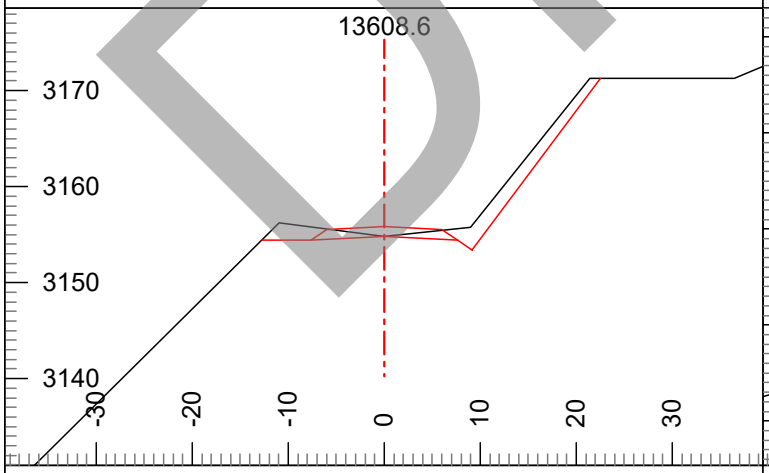
L-Stn :	13334.6	H. Offset:	0.0	Rd. Wd. L:	12.6
Index:	143	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3167.0	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	20.2		



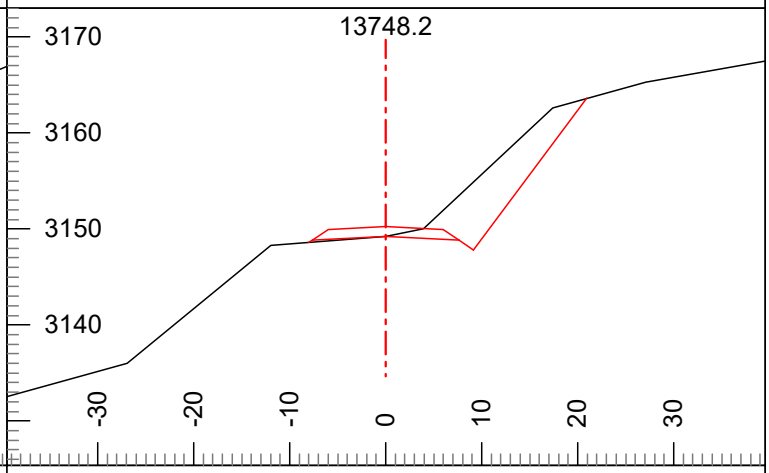
L-Stn :	13492.8	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	144	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3160.6	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



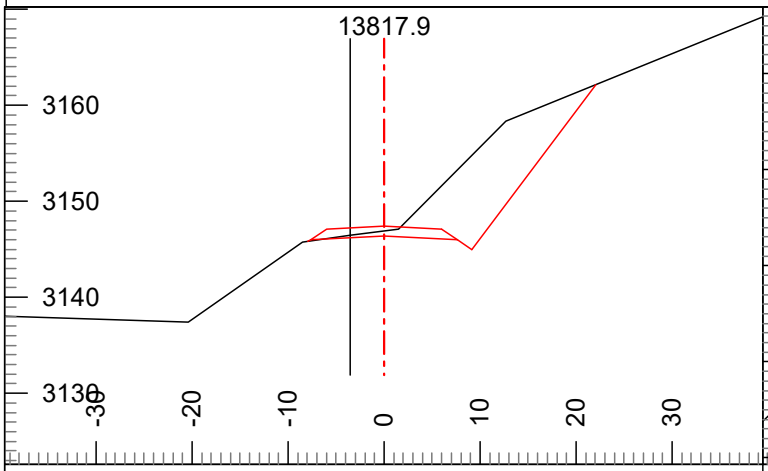
L-Stn :	13544.6	H. Offset:	6.4	Rd. Wd. L:	7.6
Index:	145	Cut Dp:	1.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-5	CL Elev:	3158.0	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



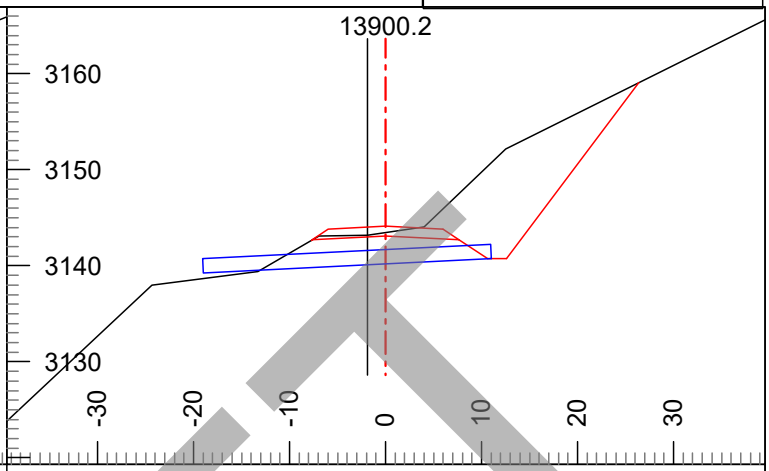
L-Stn :	13608.6	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	146	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3154.8	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	15.2		



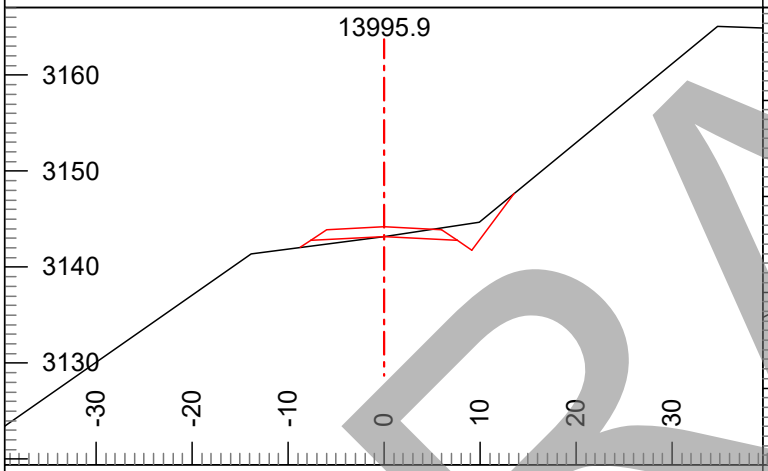
L-Stn :	13748.2	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	147	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3149.2	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



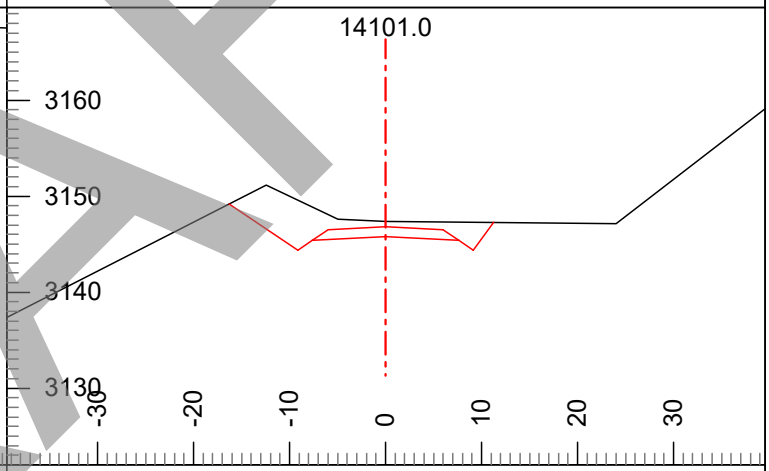
L-Stn :	13817.9	H. Offset:	3.5	Rd. Wd. L:	7.6
Index:	148	Cut Dp:	0.5	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3146.4	Cul DIA:	
Grd.Lst:	-4	Rd. Wd.:	15.2		



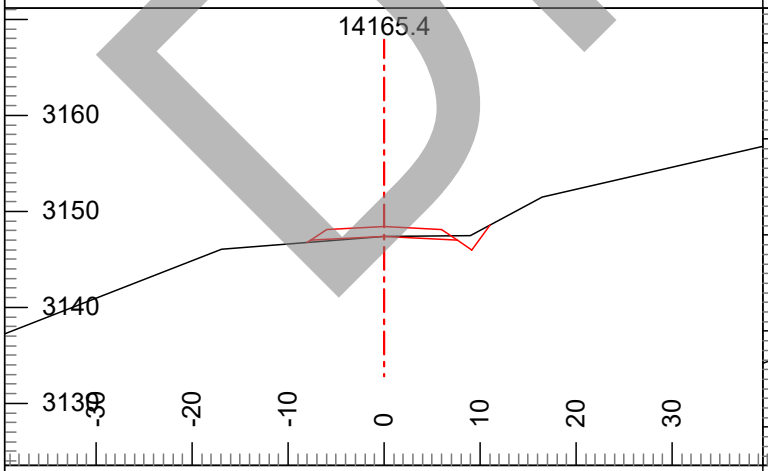
L-Stn :	13900.2	H. Offset:	1.9	Rd. Wd. L:	7.6
Index:	149	Cut Dp:	0.4	Rd. Wd. R:	7.6
Grd.Nxt.:	-4	CL Elev:	3143.1	Cul DIA:	18in
Grd.Lst:	-4	Rd. Wd.:	15.2		



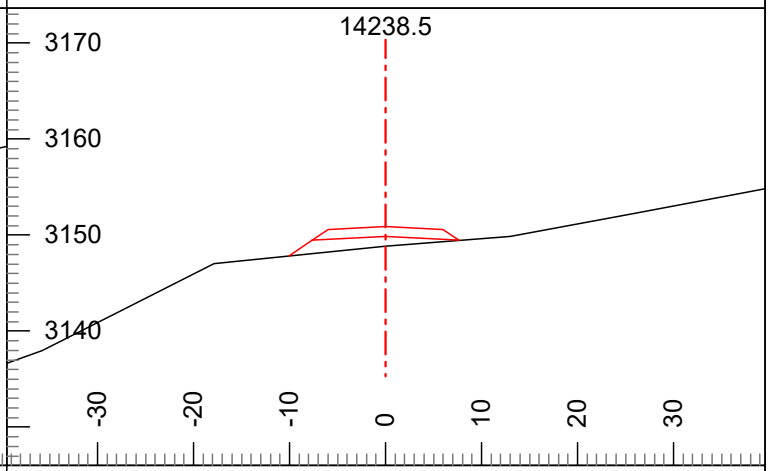
L-Stn :	13995.9	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	150	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	2	CL Elev:	3143.2	Cul DIA:	
Grd.Lst:	0	Rd. Wd.:	15.2		



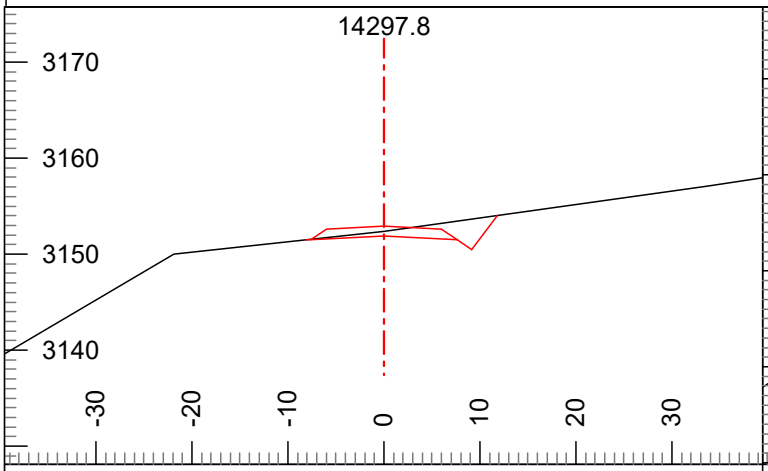
L-Stn :	14101.0	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	151	Cut Dp:	1.6	Rd. Wd. R:	7.6
Grd.Nxt.:	2	CL Elev:	3145.8	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	15.2		



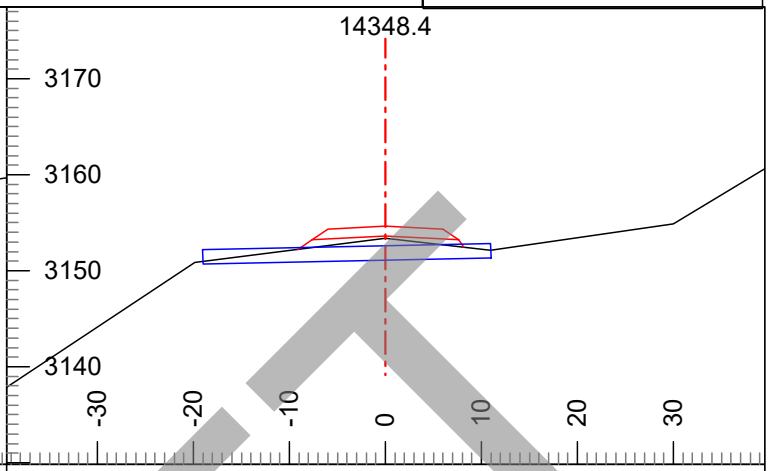
L-Stn :	14165.4	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	152	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3147.4	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	15.2		



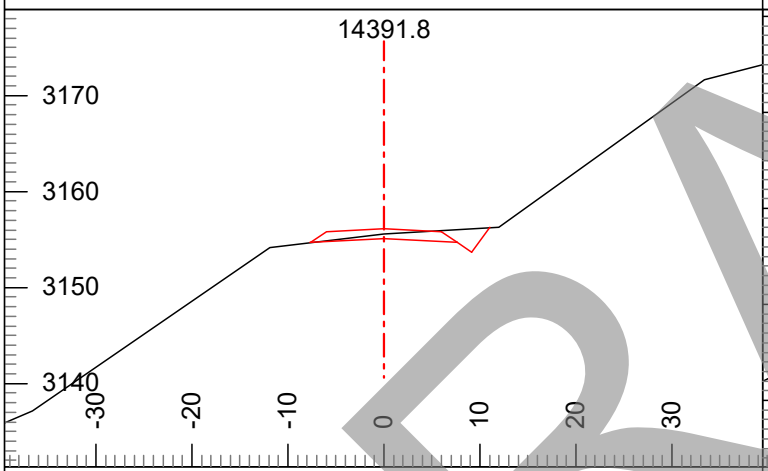
L-Stn :	14238.5	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	153	Cut Dp:	-1.0	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3149.9	Cul DIA:	
Grd.Lst:	3	Rd. Wd.:	15.2		



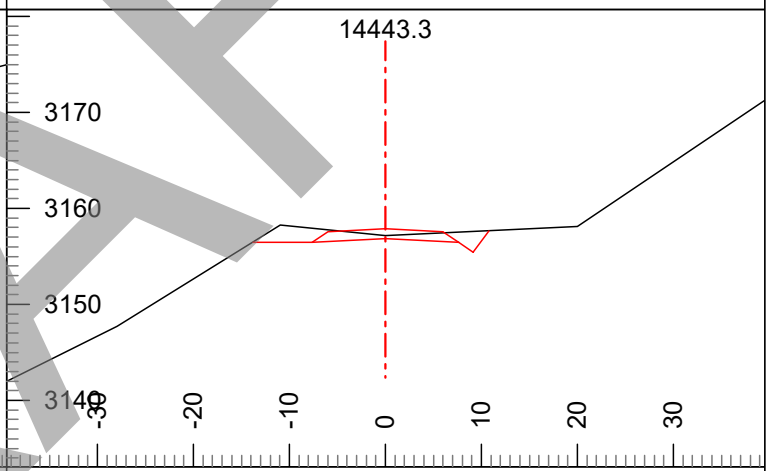
L-Stn :	14297.8	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	154	Cut Dp:	0.5	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3151.9	Cul DIA:	
Grd.Lst:	3	Rd. Wd.:	15.2		



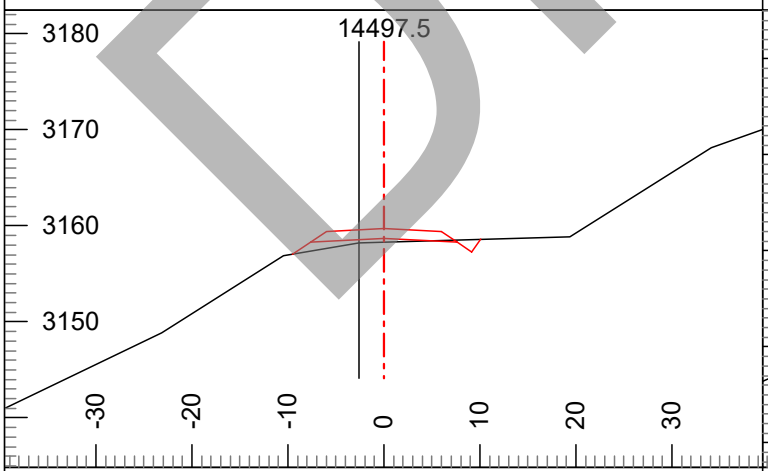
L-Stn :	14348.4	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	155	Cut Dp:	-0.2	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3153.6	Cul DIA:	18in
Grd.Lst:	3	Rd. Wd.:	15.2		



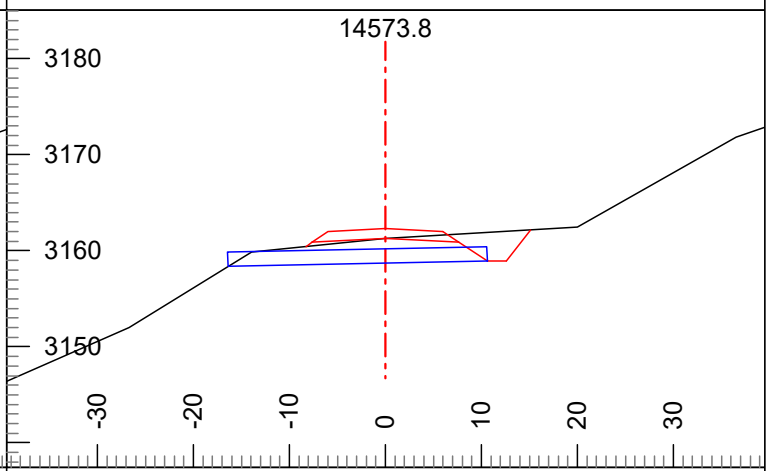
L-Stn :	14391.8	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	156	Cut Dp:	0.5	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3155.1	Cul DIA:	
Grd.Lst:	3	Rd. Wd.:	15.2		



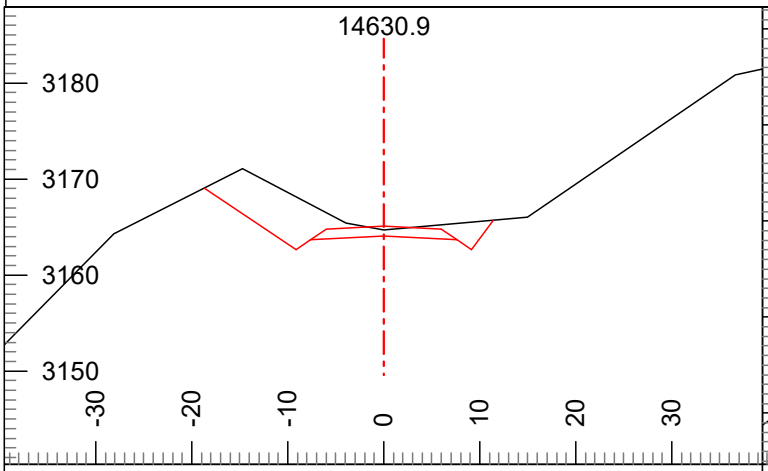
L-Stn :	14443.3	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	157	Cut Dp:	0.3	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3156.9	Cul DIA:	
Grd.Lst:	3	Rd. Wd.:	15.2		



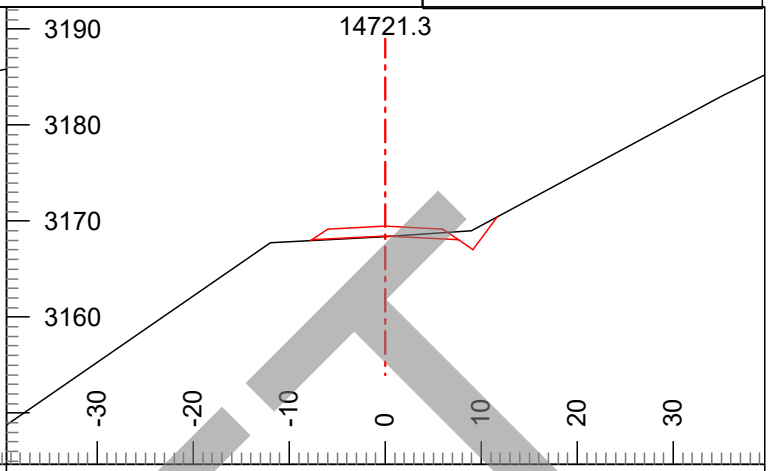
L-Stn :	14497.5	H. Offset:	2.6	Rd. Wd. L:	7.6
Index:	158	Cut Dp:	-0.4	Rd. Wd. R:	7.6
Grd.Nxt.:	3	CL Elev:	3158.7	Cul DIA:	
Grd.Lst:	3	Rd. Wd.:	15.2		



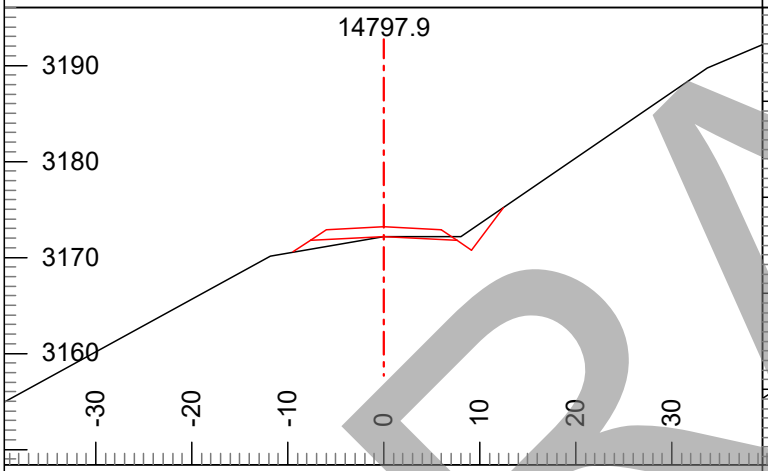
L-Stn :	14573.8	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	159	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	5	CL Elev:	3161.3	Cul DIA:	18in
Grd.Lst:	3	Rd. Wd.:	15.2		



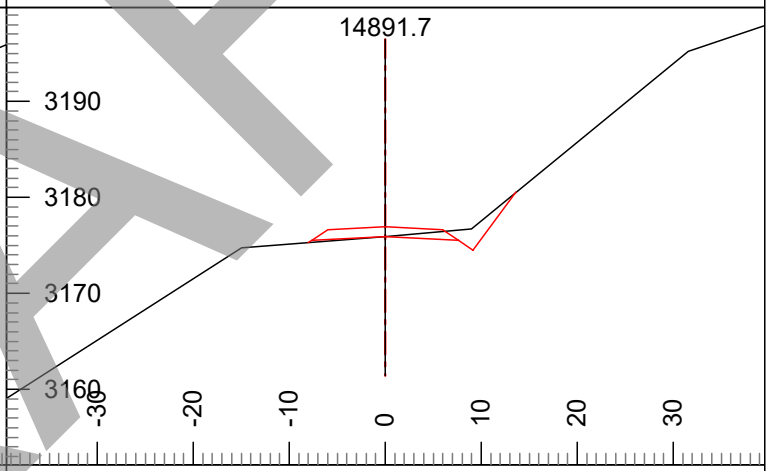
L-Stn :	14630.9	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	160	Cut Dp:	0.7	Rd. Wd. R:	7.6
Grd.Nxt.:	5	CL Elev:	3164.1	Cul DIA:	
Grd.Lst:	5	Rd. Wd.:	15.2		



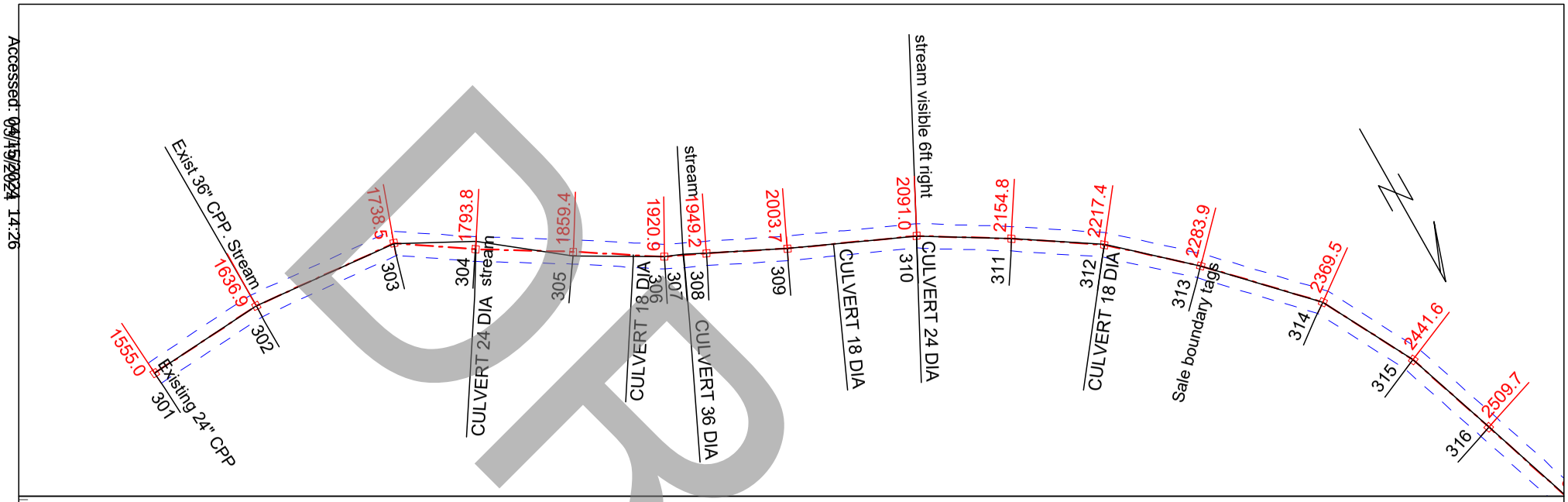
L-Stn :	14721.3	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	161	Cut Dp:	-0.1	Rd. Wd. R:	7.6
Grd.Nxt.:	5	CL Elev:	3168.5	Cul DIA:	
Grd.Lst:	5	Rd. Wd.:	15.2		

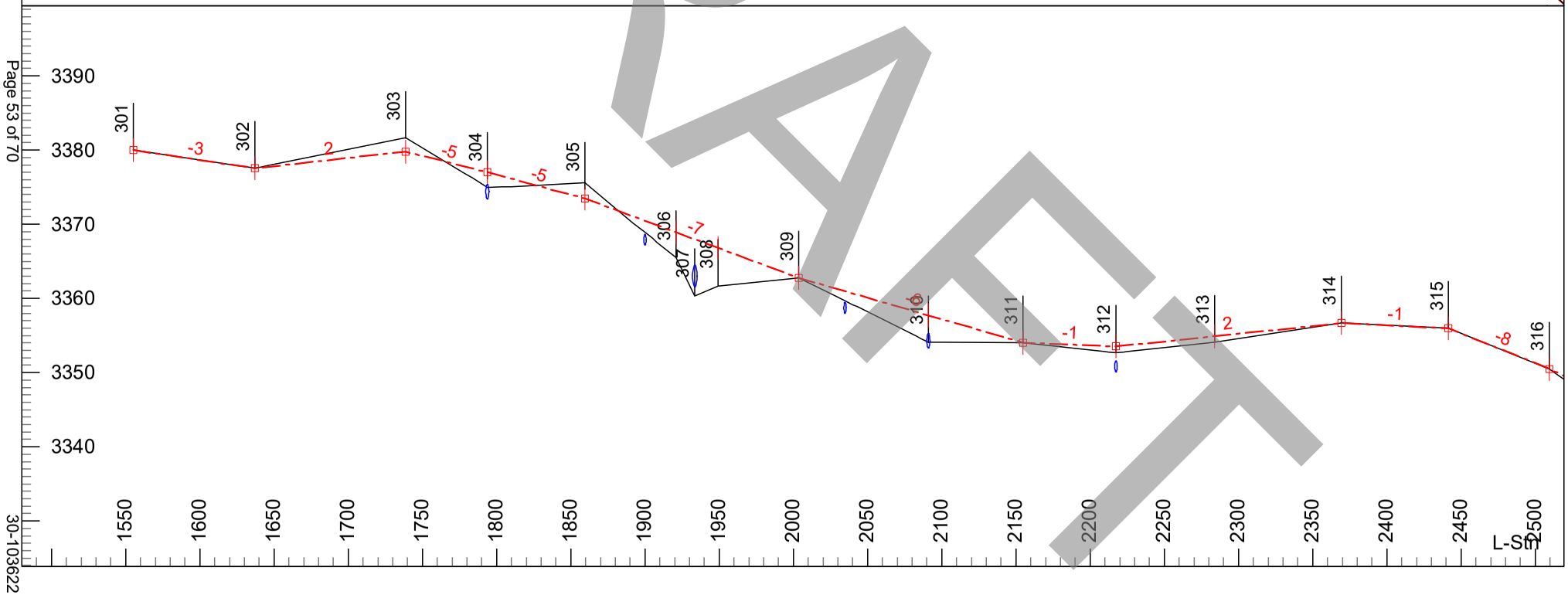


L-Stn :	14797.9	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	162	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	4	CL Elev:	3172.2	Cul DIA:	
Grd.Lst:	5	Rd. Wd.:	15.2		



L-Stn :	14891.7	H. Offset:	0.0	Rd. Wd. L:	7.6
Index:	163	Cut Dp:	0.0	Rd. Wd. R:	7.6
Grd.Nxt.:	n/a	CL Elev:	3175.9	Cul DIA:	
Grd.Lst:	4	Rd. Wd.:	15.2		





30-103622

Dew Dog Timber Sale
233-1ext Road August 1, 2023
Contract #: 30-103622

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200

Profile Vert Scale 1:240
Profile Horz Scale 1:1200

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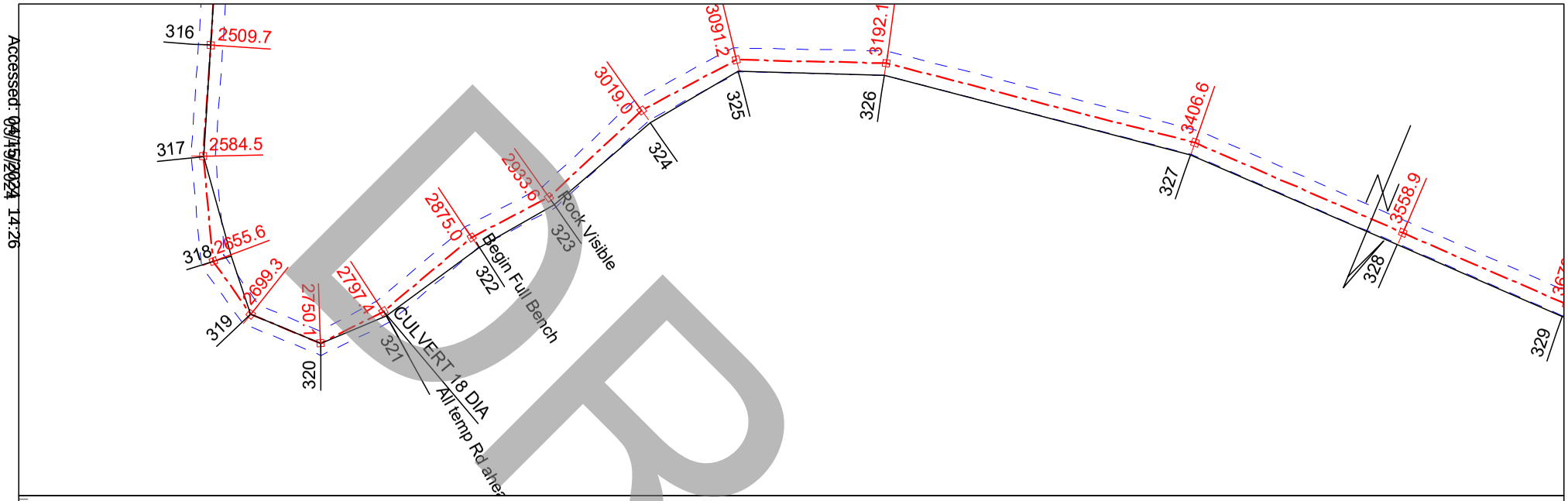

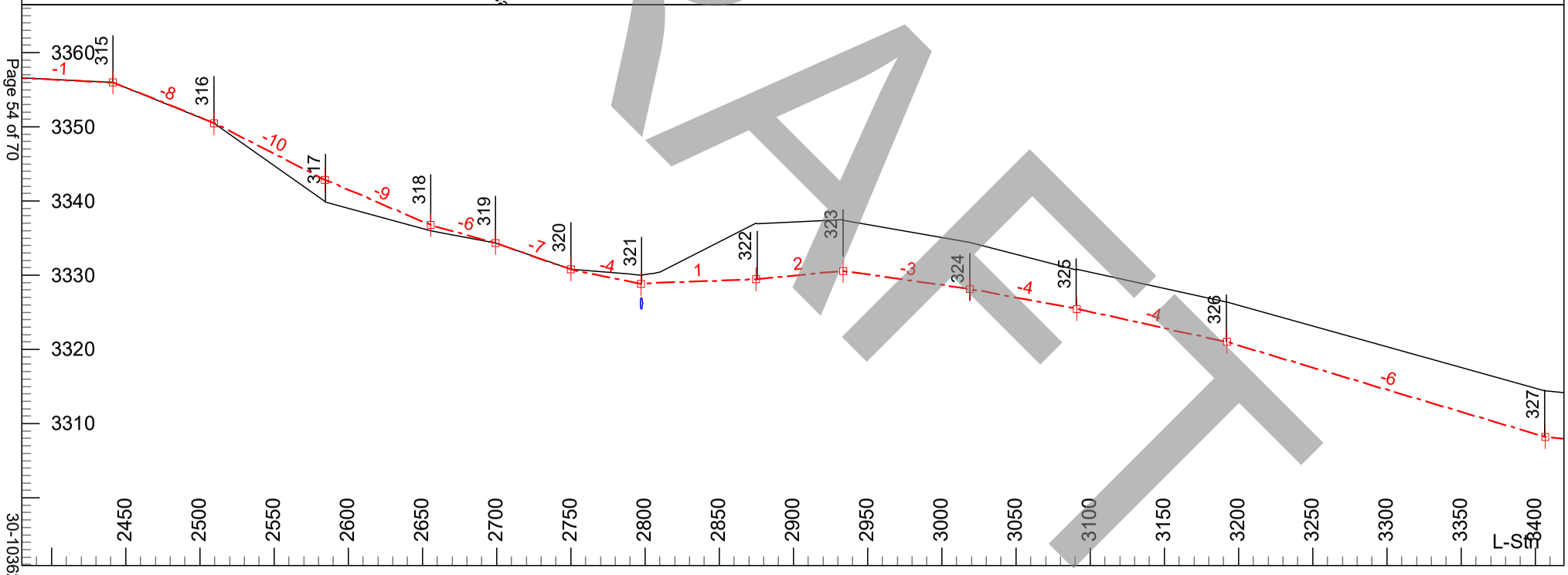

Dew Dog Timber Sale
233-1ext Road August 1, 2023
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Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200

Profile Vert Scale 1:240
Profile Horz Scale 1:1200

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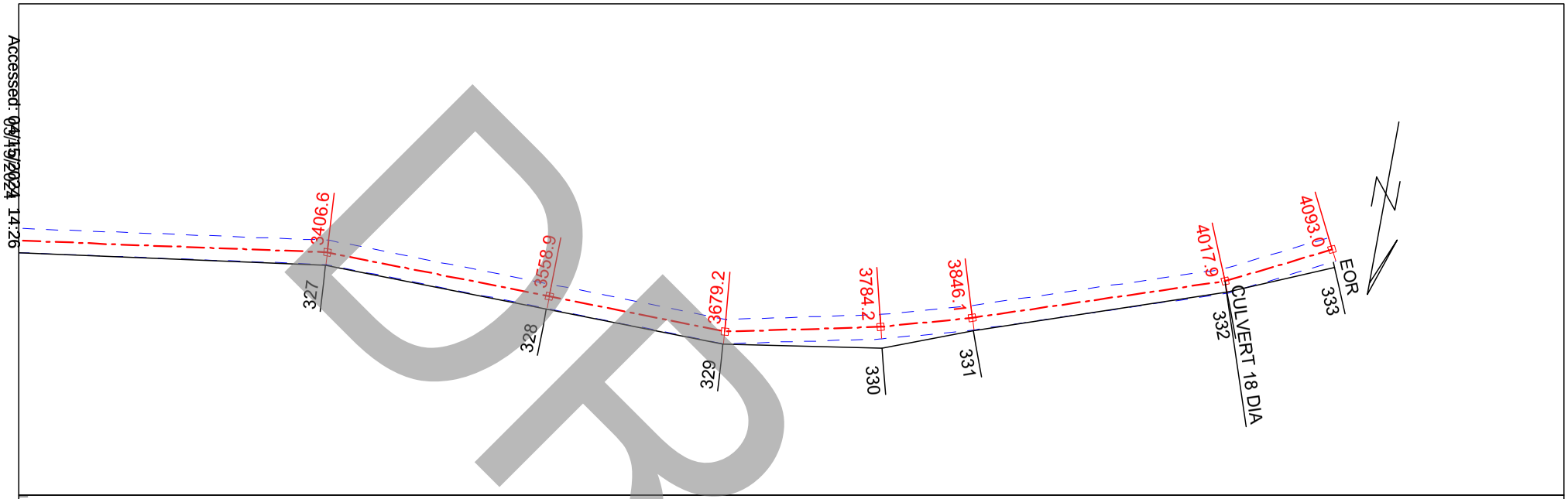
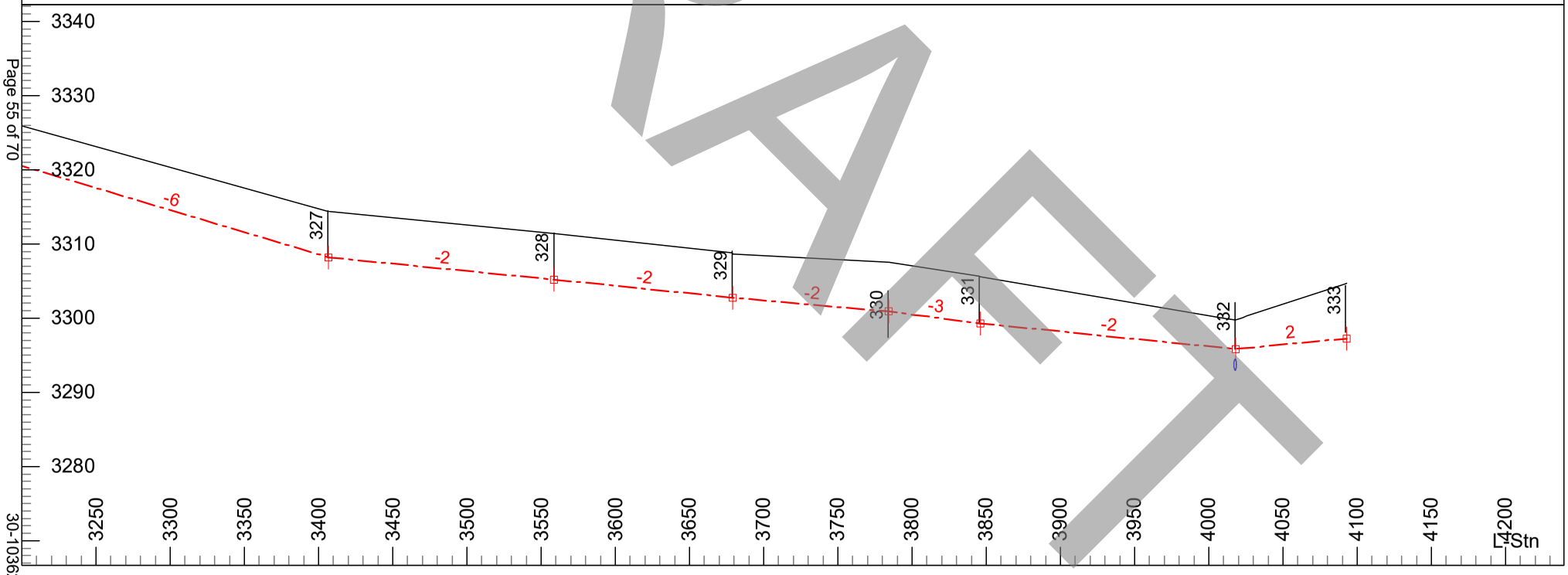
Printed: 23/09/28





Dew Dog Timber Sale
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Profile Horz Scale 1:1200

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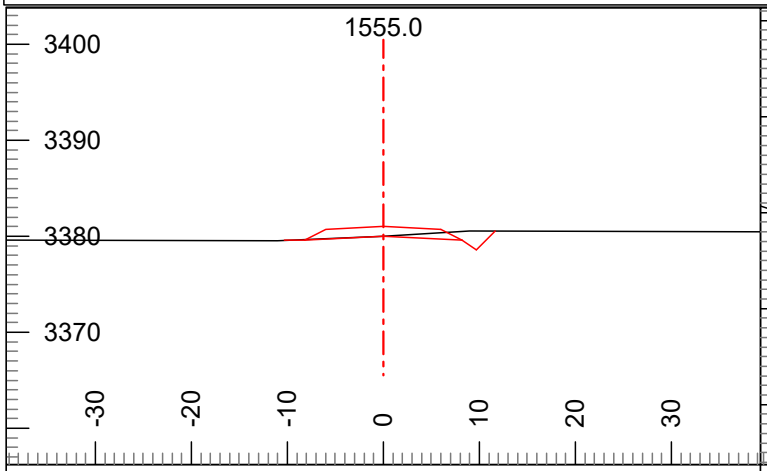

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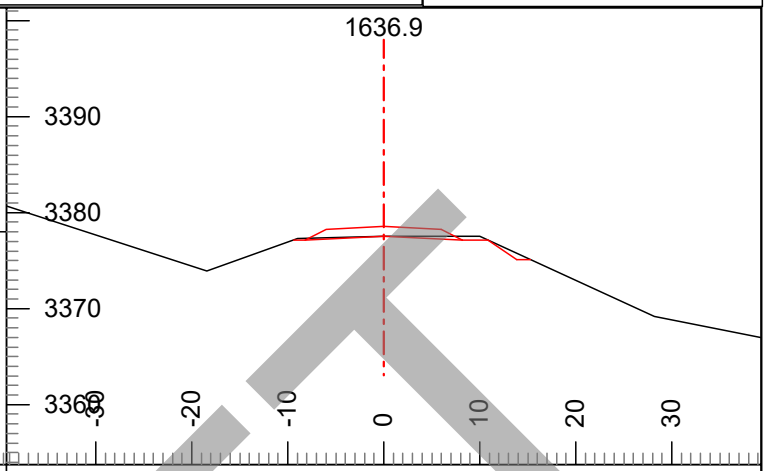
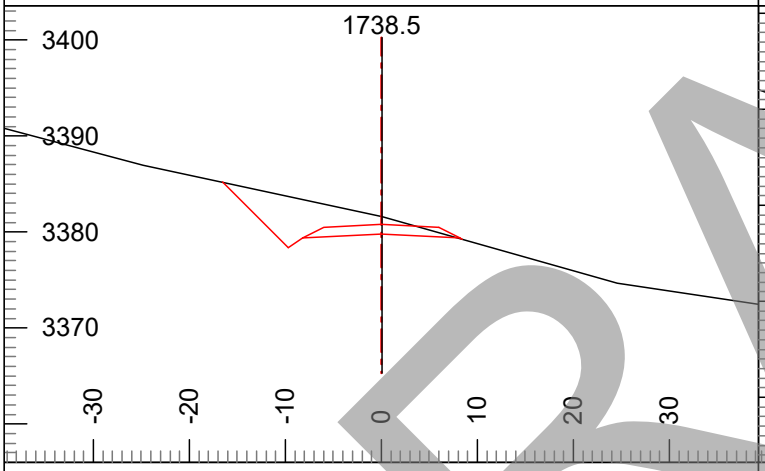
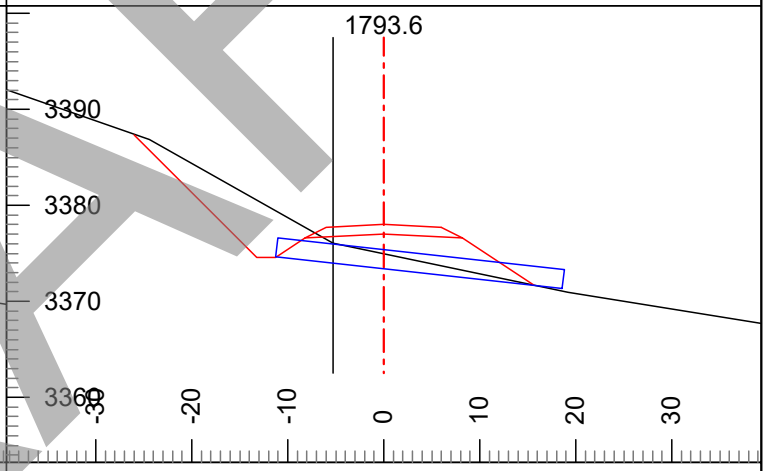
Index:	301	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-3	CL Elev:	3380.0	Cul DIA:	
Grd.Lst:	n/a	Rd. Wd.:	16.4		



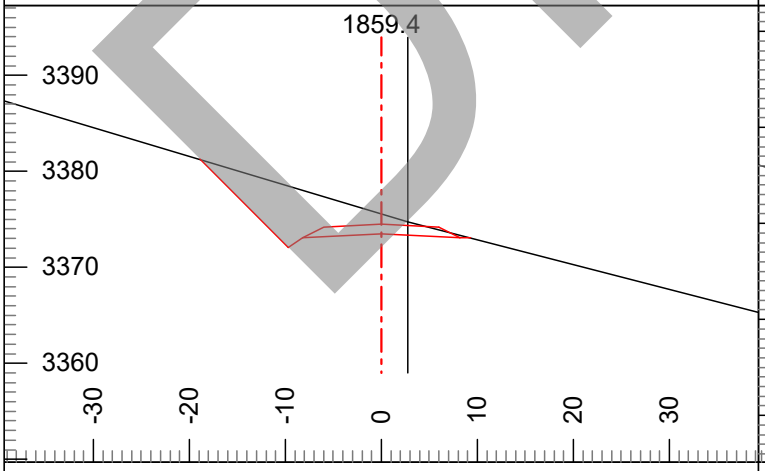
L-Stn :	1636.9	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	302	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	2	CL Elev:	3377.5	Cul DIA:	
Grd.Lst:	-3	Rd. Wd.:	16.4		



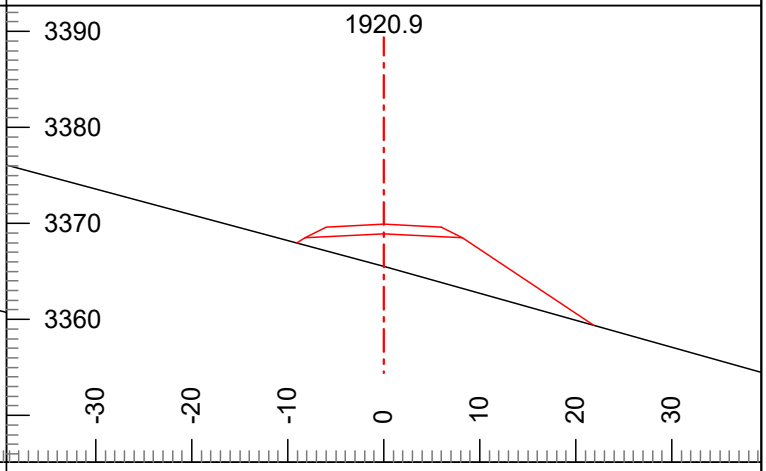
L-Stn :	1738.5	H. Offset:	-0.1	Rd. Wd. L:	8.2
Index:	303	Cut Dp:	1.8	Rd. Wd. R:	8.2
Grd.Nxt.:	2	CL Elev:	3379.8	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	16.4		



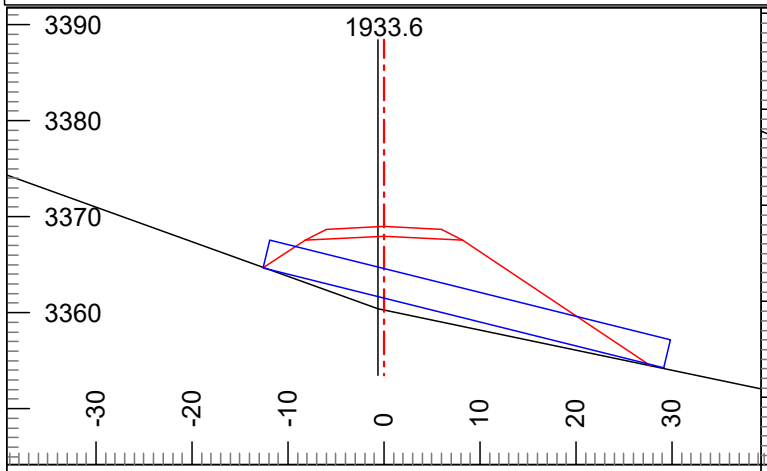
L-Stn :	1793.6	H. Offset:	5.2	Rd. Wd. L:	8.2
Index:	304	Cut Dp:	-2.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-5	CL Elev:	3377.0	Cul DIA:	24in
Grd.Lst:	-5	Rd. Wd.:	16.4		



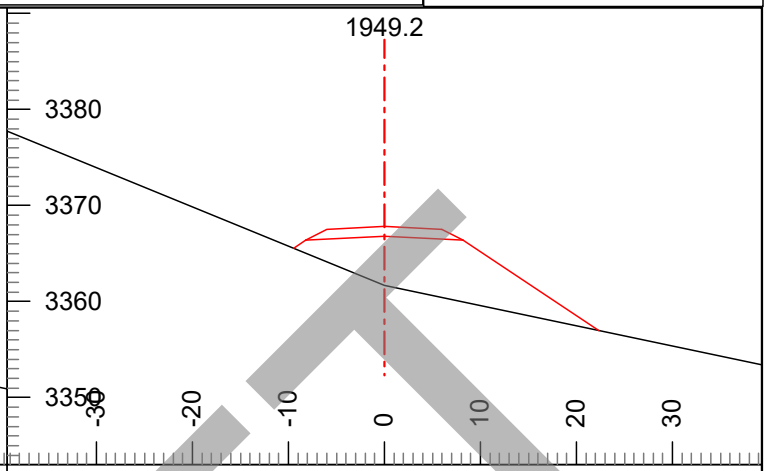
L-Stn :	1859.4	H. Offset:	-2.8	Rd. Wd. L:	8.2
Index:	305	Cut Dp:	2.1	Rd. Wd. R:	8.2
Grd.Nxt.:	-7	CL Elev:	3373.5	Cul DIA:	
Grd.Lst:	-5	Rd. Wd.:	16.4		



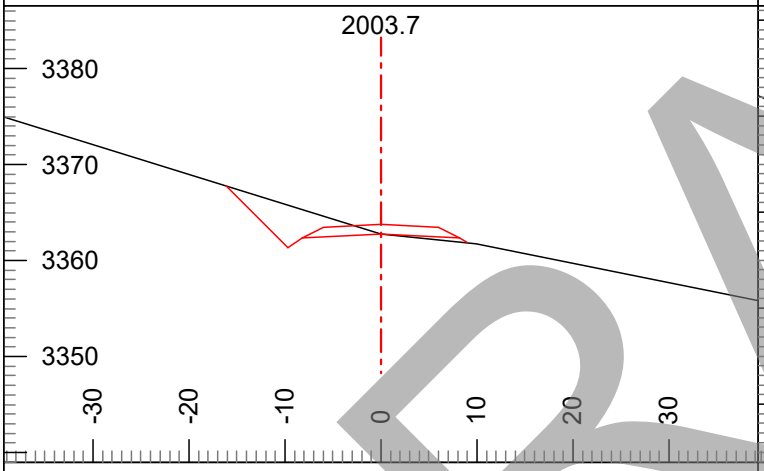
L-Stn :	1920.9	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	306	Cut Dp:	-3.4	Rd. Wd. R:	8.2
Grd.Nxt.:	-7	CL Elev:	3368.9	Cul DIA:	
Grd.Lst:	-7	Rd. Wd.:	16.4		



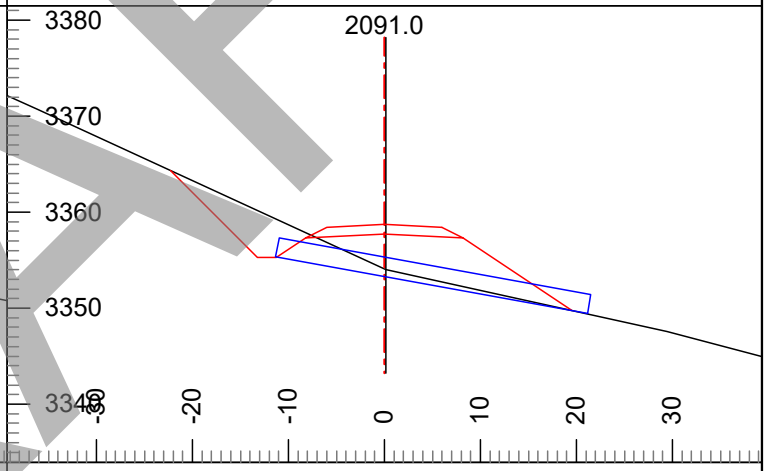
L-Stn :	1933.6	H. Offset:	0.6	Rd. Wd. L:	8.2
Index:	307	Cut Dp:	-7.7	Rd. Wd. R:	8.2
Grd.Nxt.:	-7	CL Elev:	3368.0	Cul DIA:	36in
Grd.Lst:	-7	Rd. Wd.:	16.4		



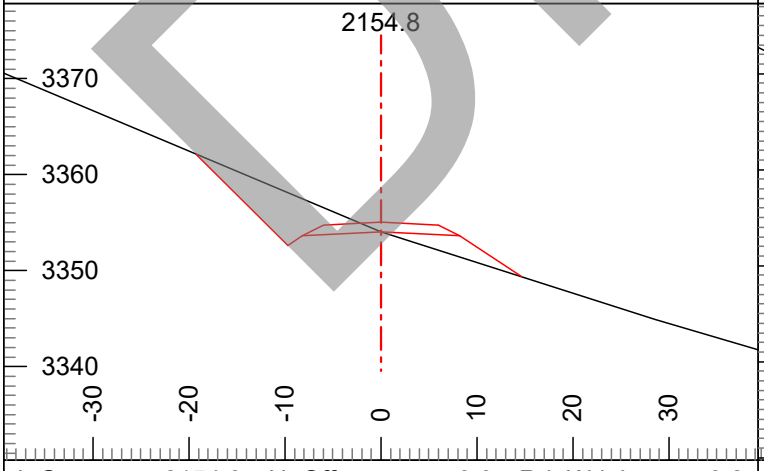
L-Stn :	1949.2	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	308	Cut Dp:	-5.1	Rd. Wd. R:	8.2
Grd.Nxt.:	-7	CL Elev:	3366.8	Cul DIA:	
Grd.Lst:	-7	Rd. Wd.:	16.4		



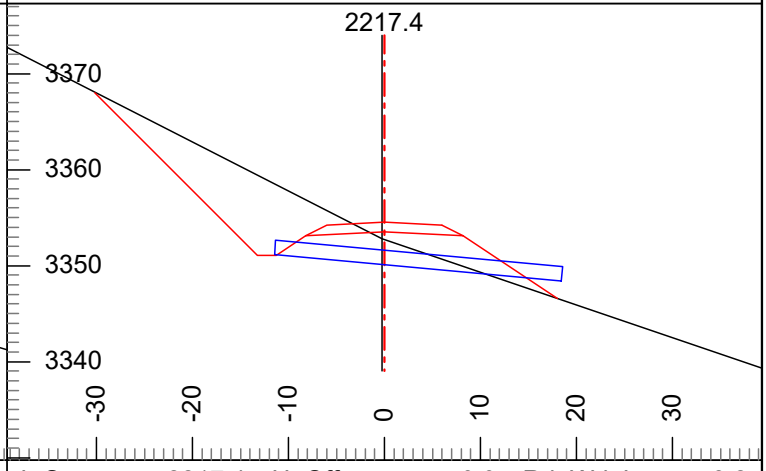
L-Stn :	2003.7	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	309	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-6	CL Elev:	3362.8	Cul DIA:	
Grd.Lst:	-7	Rd. Wd.:	16.4		



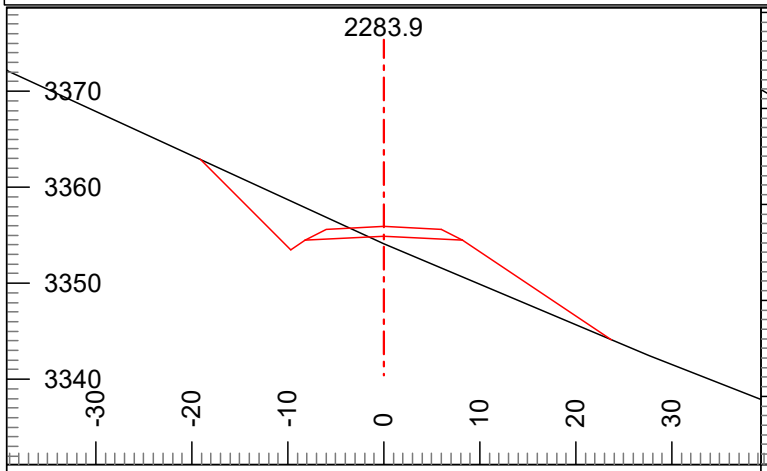
L-Stn :	2091.0	H. Offset:	-0.2	Rd. Wd. L:	8.2
Index:	310	Cut Dp:	-3.6	Rd. Wd. R:	8.2
Grd.Nxt.:	-6	CL Elev:	3357.7	Cul DIA:	24in
Grd.Lst:	-6	Rd. Wd.:	16.4		



L-Stn :	2154.8	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	311	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-1	CL Elev:	3354.0	Cul DIA:	
Grd.Lst:	-6	Rd. Wd.:	16.4		



L-Stn :	2217.4	H. Offset:	0.3	Rd. Wd. L:	8.2
Index:	312	Cut Dp:	-0.8	Rd. Wd. R:	8.2
Grd.Nxt.:	2	CL Elev:	3353.5	Cul DIA:	18in
Grd.Lst:	-1	Rd. Wd.:	16.4		



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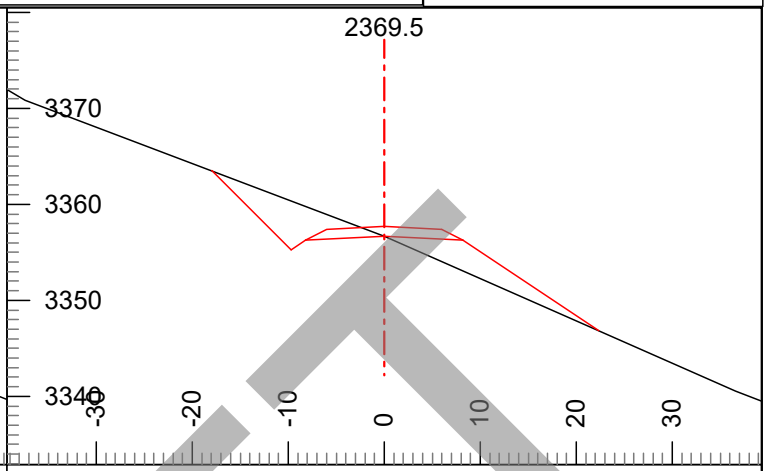
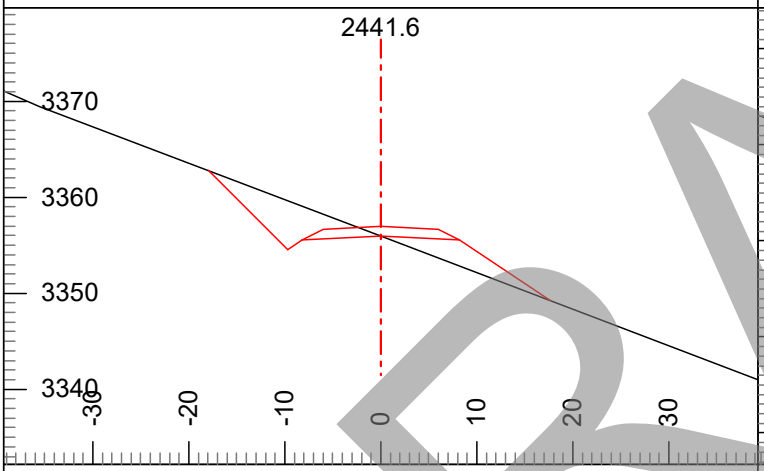
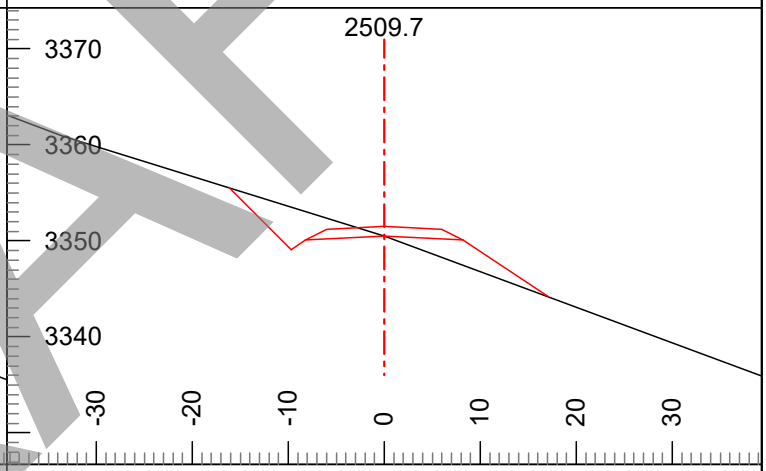
Index:	313	Cut Dp:	-0.8	Rd. Wd. R:	8.2
Grd.Nxt.:	2	CL Elev:	3354.9	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	16.4		



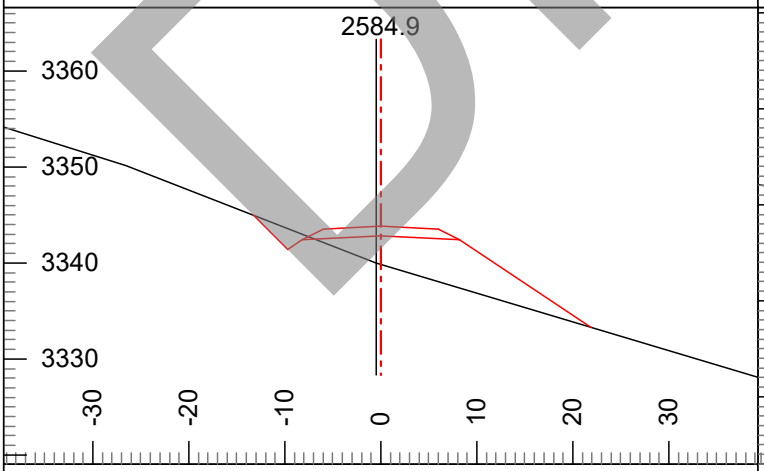
L-Stn :	2369.5	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	314	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-1	CL Elev:	3356.7	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	16.4		



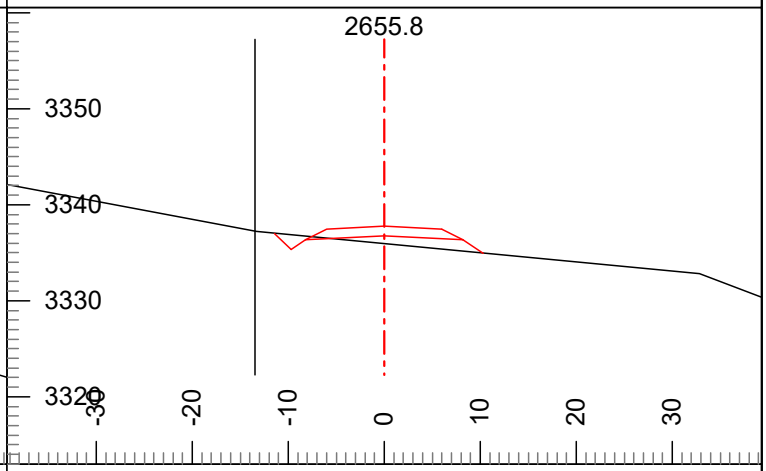
L-Stn :	2441.6	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	315	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-8	CL Elev:	3356.0	Cul DIA:	
Grd.Lst:	-1	Rd. Wd.:	16.4		



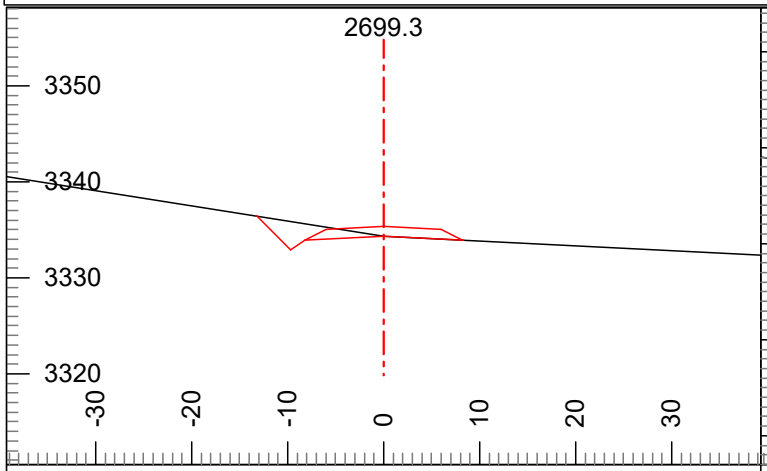
L-Stn :	2509.7	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	316	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-10	CL Elev:	3350.5	Cul DIA:	
Grd.Lst:	-8	Rd. Wd.:	16.4		



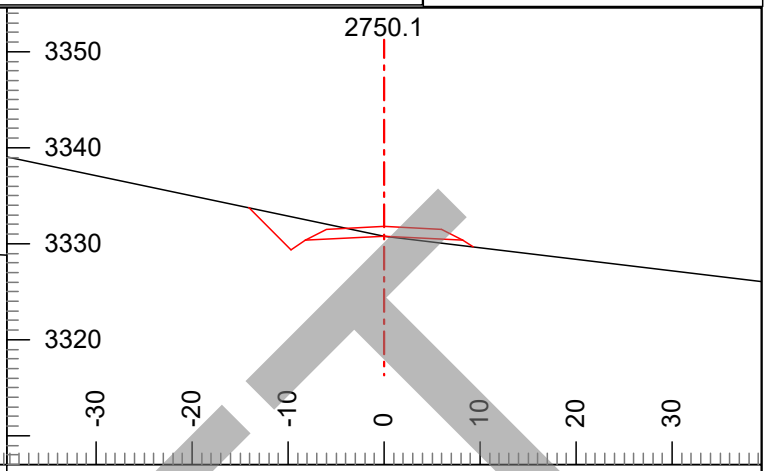
L-Stn :	2584.9	H. Offset:	0.4	Rd. Wd. L:	8.2
Index:	317	Cut Dp:	-3.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-9	CL Elev:	3342.8	Cul DIA:	
Grd.Lst:	-9	Rd. Wd.:	16.4		



L-Stn :	2655.8	H. Offset:	12.6	Rd. Wd. L:	8.2
Index:	318	Cut Dp:	-0.8	Rd. Wd. R:	8.2
Grd.Nxt.:	-6	CL Elev:	3336.8	Cul DIA:	
Grd.Lst:	-6	Rd. Wd.:	16.4		



L-Stn :	2699.3	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	319	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-7	CL Elev:	3334.3	Cul DIA:	
Grd.Lst:	-6	Rd. Wd.:	16.4		



L-Stn :	2750.1	H. Offset:	0.0	Rd. Wd. L:	8.2
Index:	320	Cut Dp:	0.0	Rd. Wd. R:	8.2
Grd.Nxt.:	-4	CL Elev:	3330.8	Cul DIA:	
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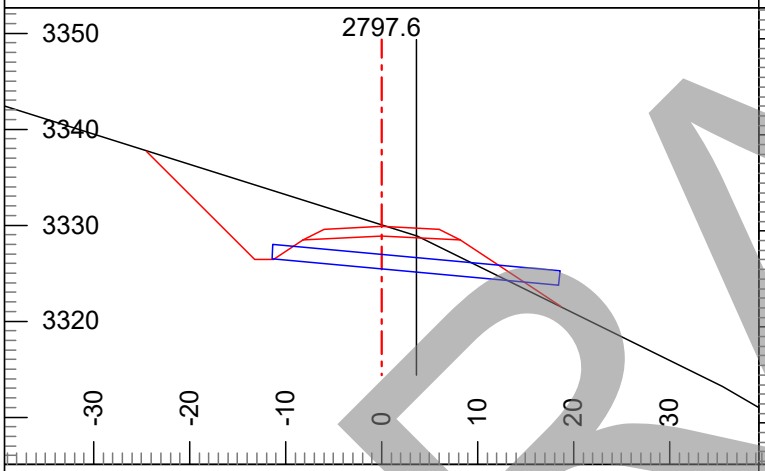

L-Stn :	2797.6	H. Offset:	-3.6	Rd. Wd. L:	8.2
Index:	321	Cut Dp:	1.2	Rd. Wd. R:	8.2
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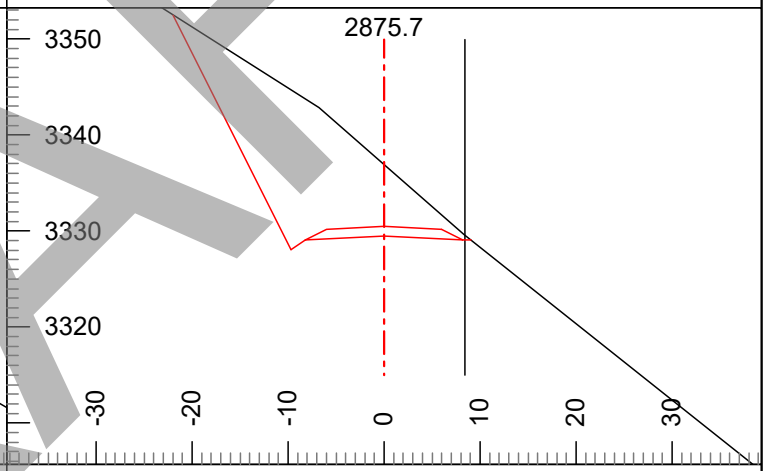
Grd.Lst:	1	Rd. Wd.:	16.4		



L-Stn :	2875.7	H. Offset:	-8.3	Rd. Wd. L:	8.2
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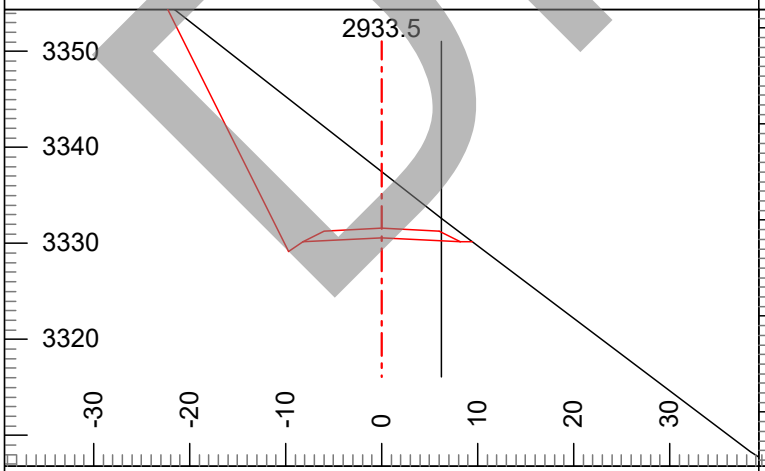
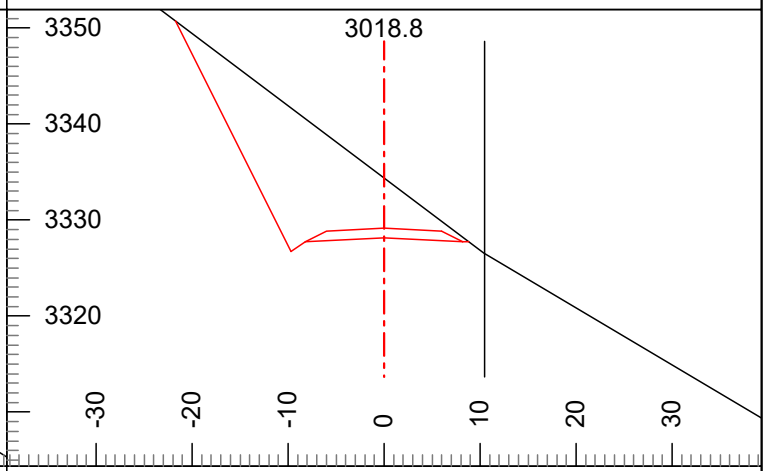
Grd.Nxt.:	2	CL Elev:	3329.5	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	16.4		



L-Stn :	2933.5	H. Offset:	-6.3	Rd. Wd. L:	8.2
Index:	323	Cut Dp:	6.9	Rd. Wd. R:	8.2
Grd.Nxt.:	2	CL Elev:	3330.6	Cul DIA:	
Grd.Lst:	2	Rd. Wd.:	16.4		



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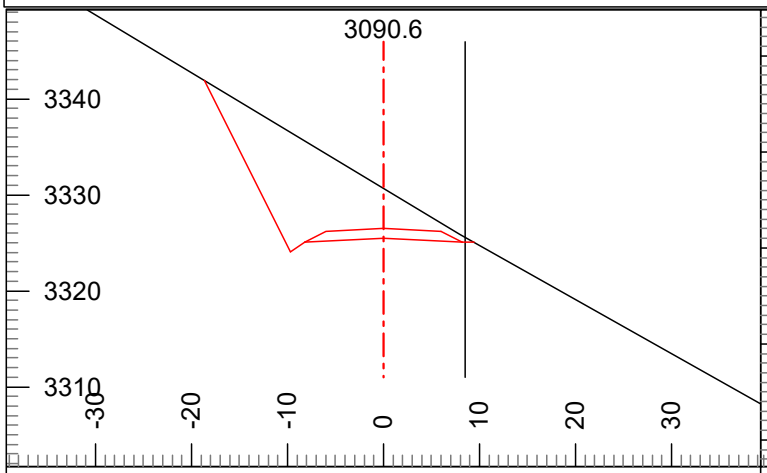

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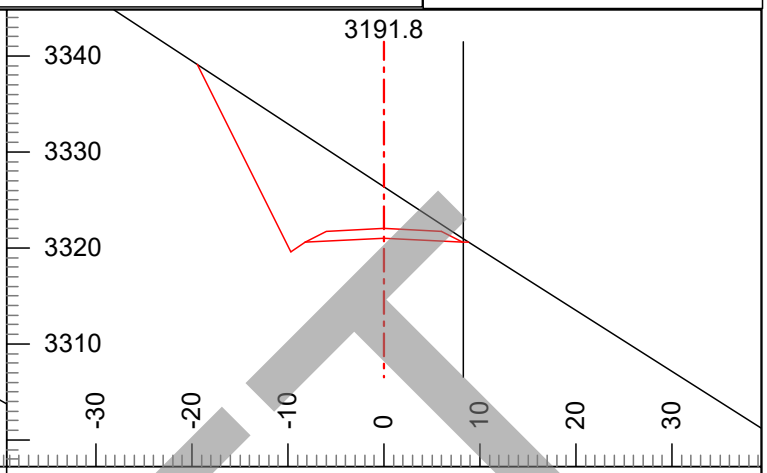

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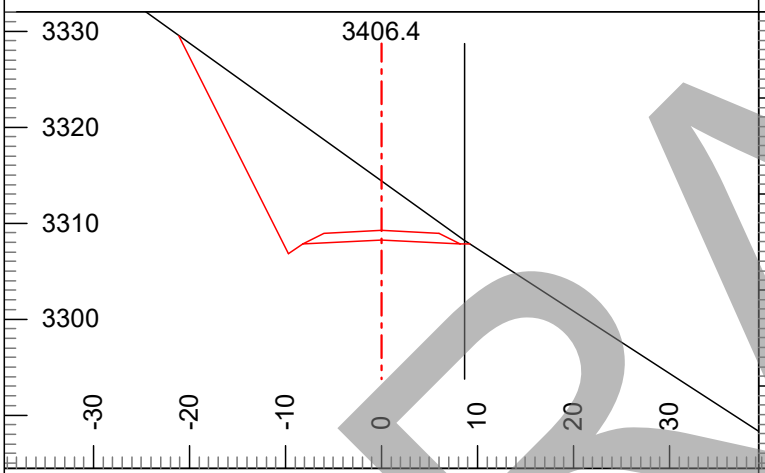

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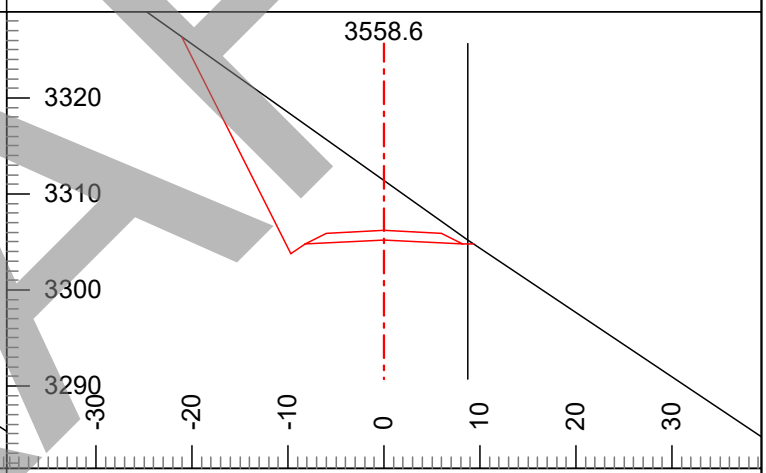

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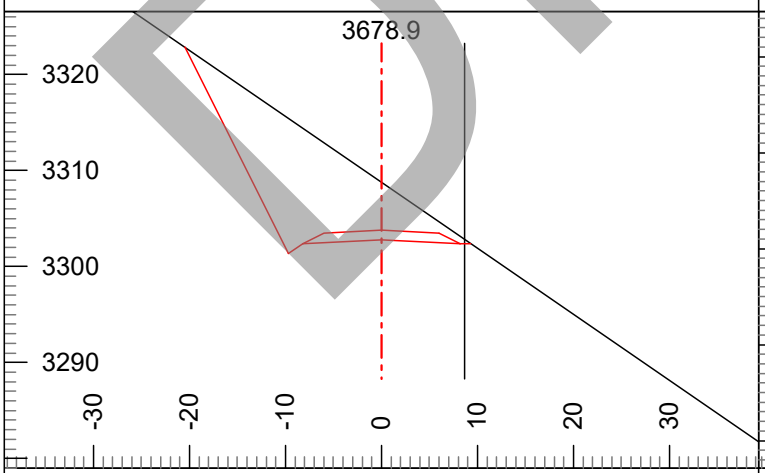
Grd.Lst:	-2	Rd. Wd.:	16.4		



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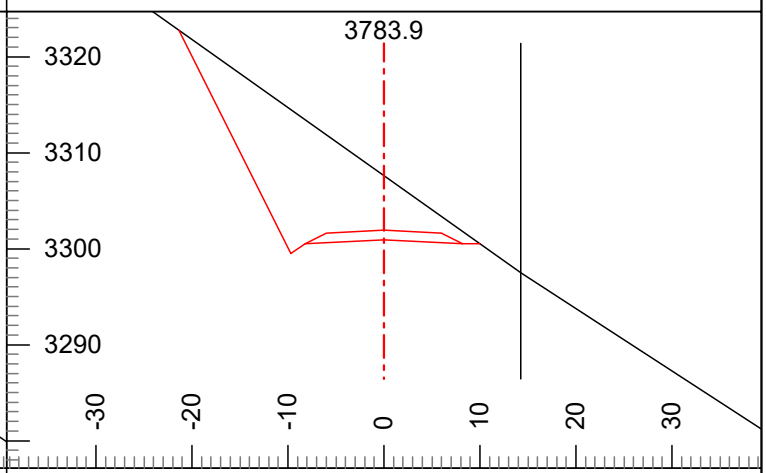
Grd.Lst:	-2	Rd. Wd.:	16.4		



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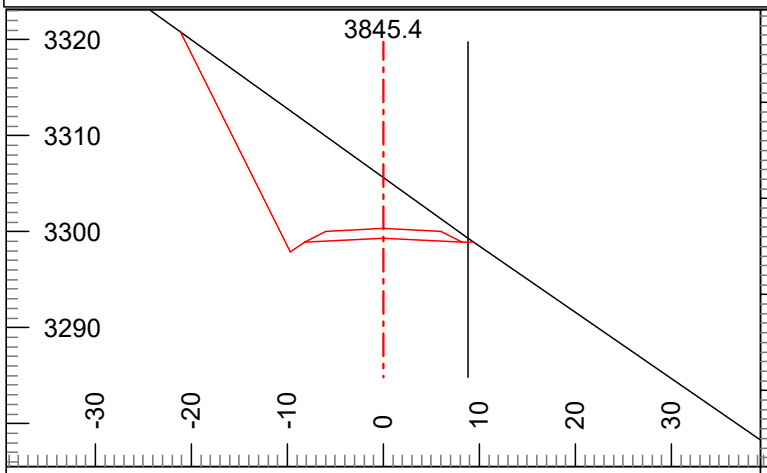
Grd.Lst:	-2	Rd. Wd.:	16.4		



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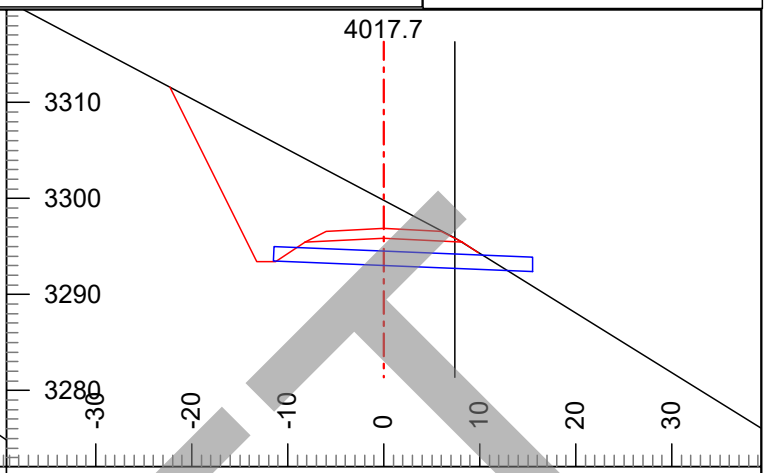

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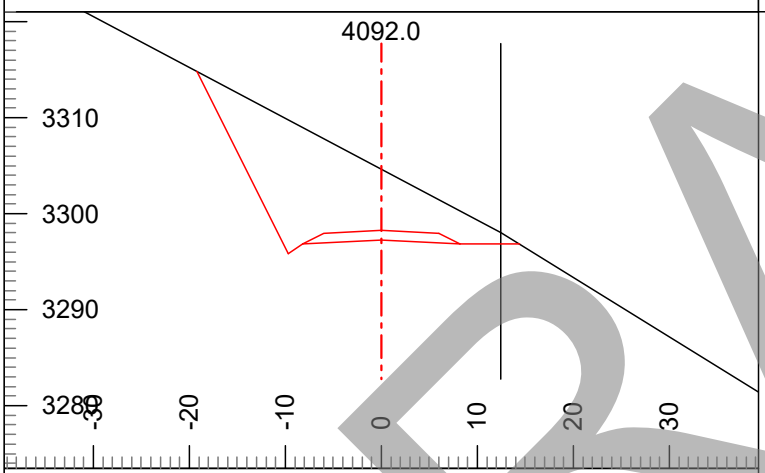
Grd.Lst:	-2	Rd. Wd.:	16.4		



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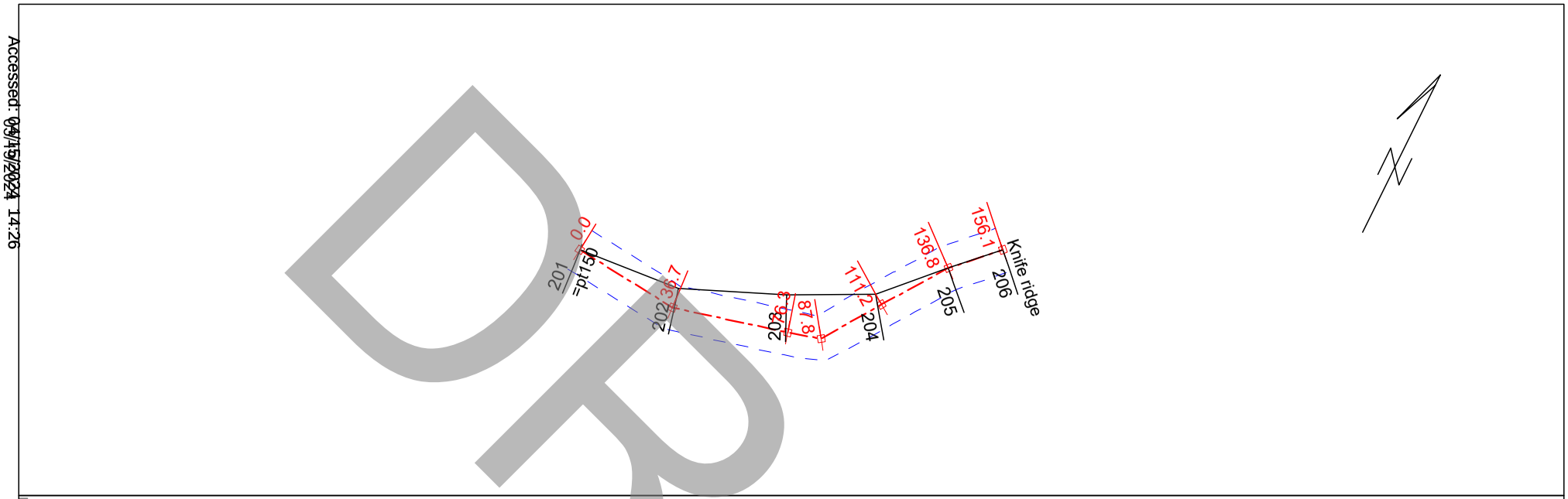
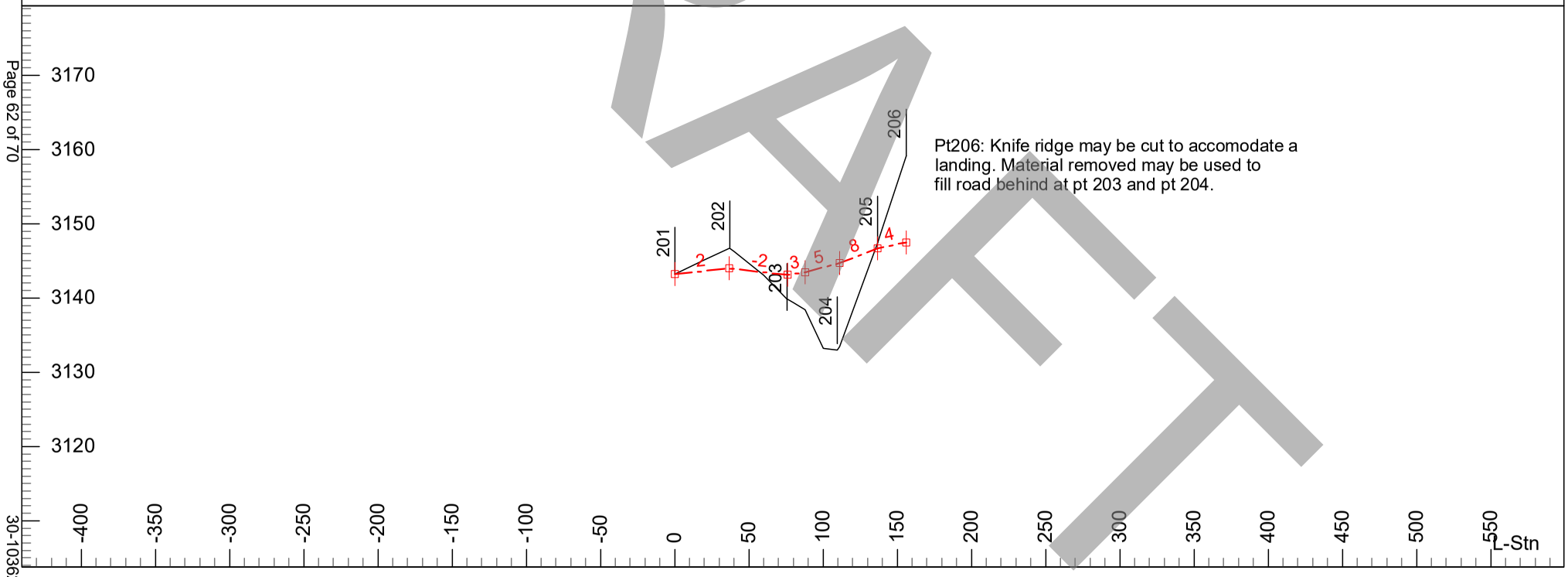
Grd.Lst:	2	Rd. Wd.:	16.4		





Pt206: Knife ridge may be cut to accomodate a landing. Material removed may be used to fill road behind at pt 203 and pt 204.

Dew Dog Timber Sale
233-3 Road August 1, 2023
Contract #: 30-103622

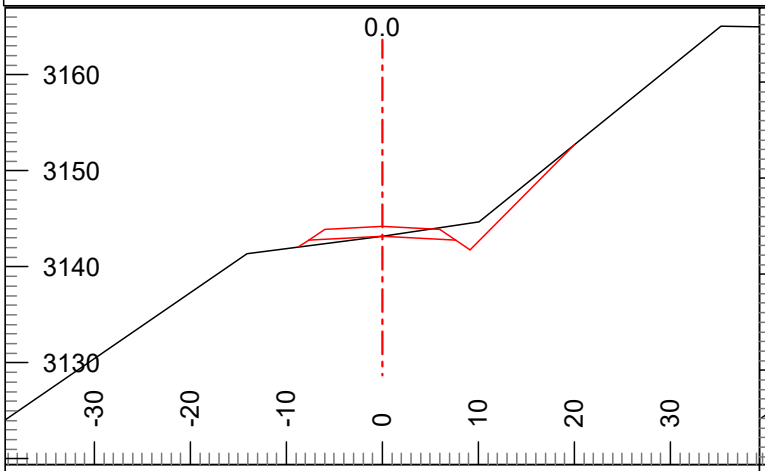
Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:600

Profile Vert Scale 1:240
Profile Horz Scale 1:1200

Engineer: M. Bell
Page 1 of 2
Printed: 23/08/14

ROADENG Section	Section Scale 1:240	Page 2 of 2
233-3 Road		23/08/14



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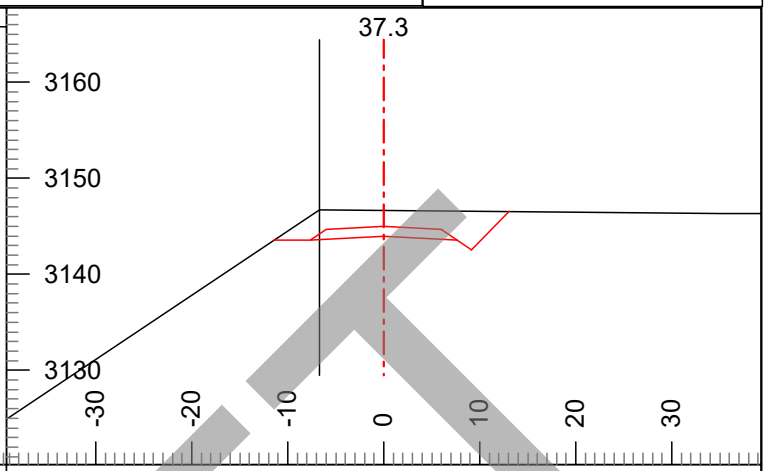
Grd.Nxt.:	2	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	n/a	Cut Dp:	0.0	Rd. Wd. R:	7.6



L-Stn :	37.3	Ssl:	-67	CL Elev:	3144.0
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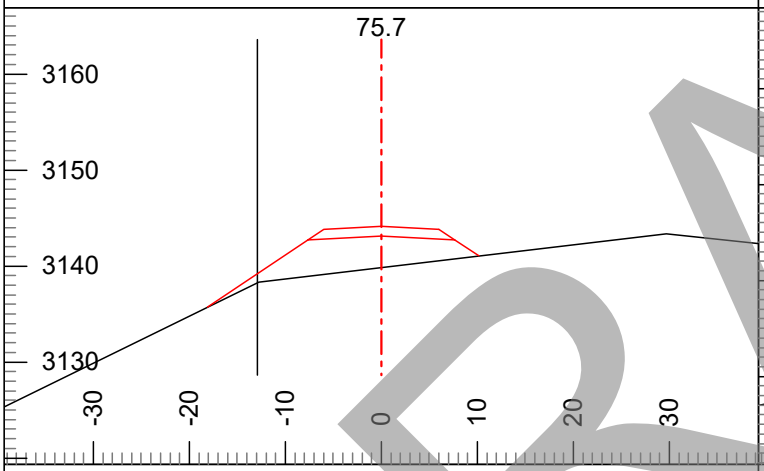
Grd.Nxt.:	-2	H. Offset:	6.7	Rd. Wd. L:	7.6
Grd.Lst:	-2	Cut Dp:	2.7	Rd. Wd. R:	7.6



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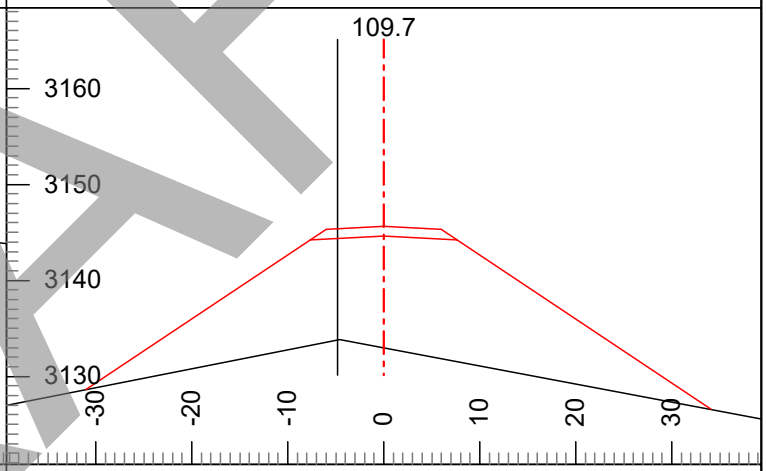
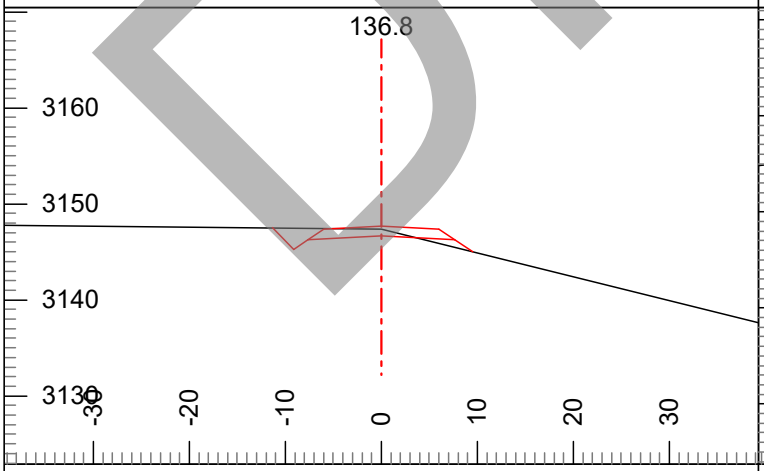
Index:	203	Ssr:	12	Rd. Wd.:	15.2
Grd.Nxt.:	-2	H. Offset:	12.6	Rd. Wd. L:	7.6
Grd.Lst:	-2	Cut Dp:	-3.3	Rd. Wd. R:	7.6



L-Stn :	109.7	Ssl:	-21	CL Elev:	3144.6
Index:	204	Ssr:	-20	Rd. Wd.:	15.2
Grd.Nxt.:	5	H. Offset:	4.3	Rd. Wd. L:	7.6
Grd.Lst:	5	Cut Dp:	-11.6	Rd. Wd. R:	7.6



L-Stn :	136.8	Ssl:	1	CL Elev:	3146.7
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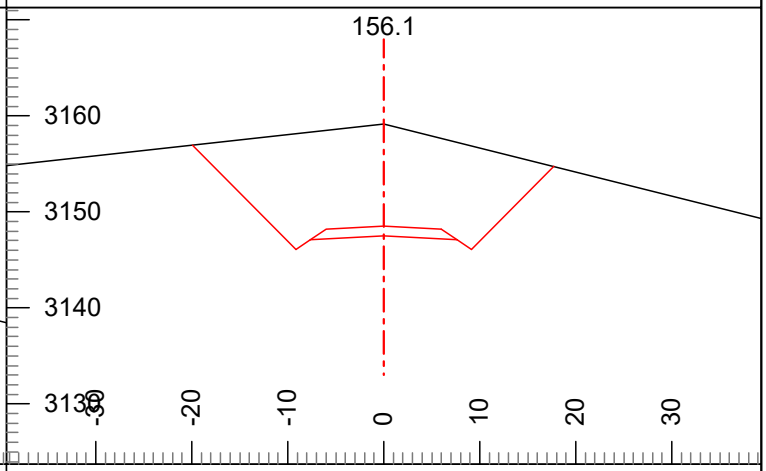
Grd.Nxt.:	4	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	8	Cut Dp:	0.7	Rd. Wd. R:	7.6



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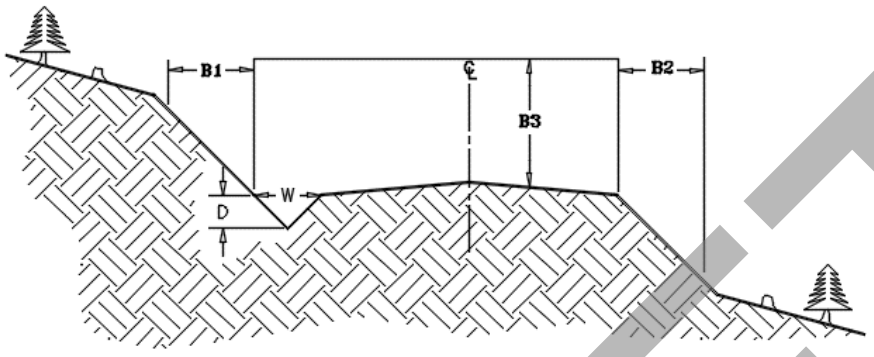
Grd.Lst:	4	Cut Dp:	11.7	Rd. Wd. R:	7.6

BRUSHING DETAIL

(not to scale)



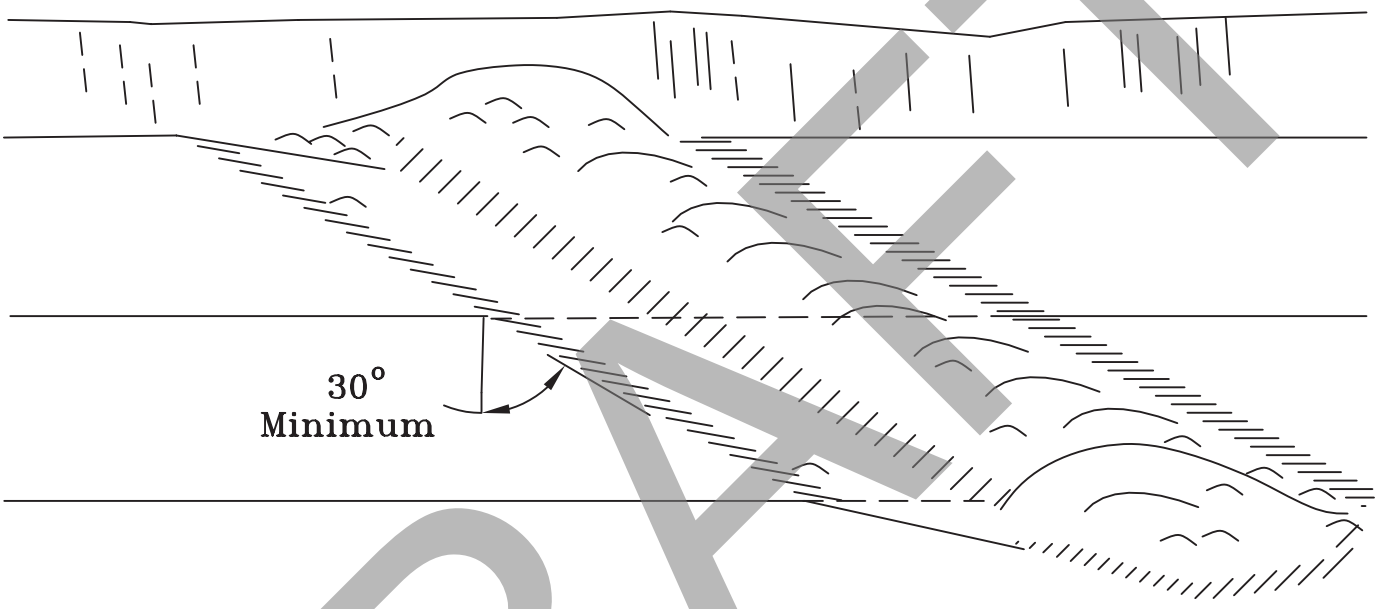
BRUSHING LIST

Road Number	Road Width (feet)	Ditch		Brushing Limits (feet)			Remarks
		Width (feet)	Depth (feet)				In addition to brushing…
		W	D	B1	B2	B3	
1	14	2	1	5	5	14	Cut brush an extra 5 feet on the inside of curves to provide extra visibility on switchbacks and curves
2	14	2	1	5	5	14	
23	14	2	1	5	5	14	
233	14	2	1	5	5	14	
233-1	14	2	1	5	5	14	

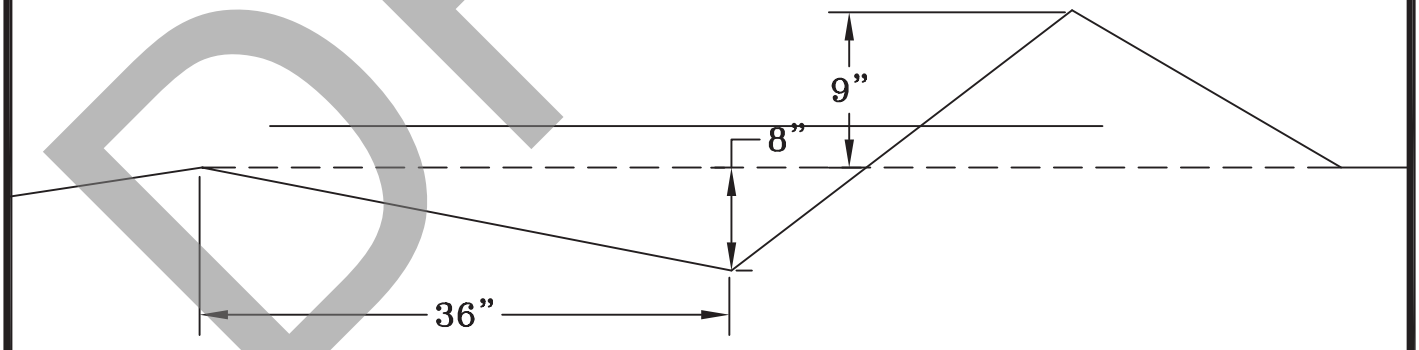
B1 extends horizontally the specified distance in feet from the back of the ditch. B2 extends horizontally the specified distance in feet from the outside edge of the running surface. Brush is defined as all non-merchantable vegetative material found within the specified limits. Brush that is cut shall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

Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

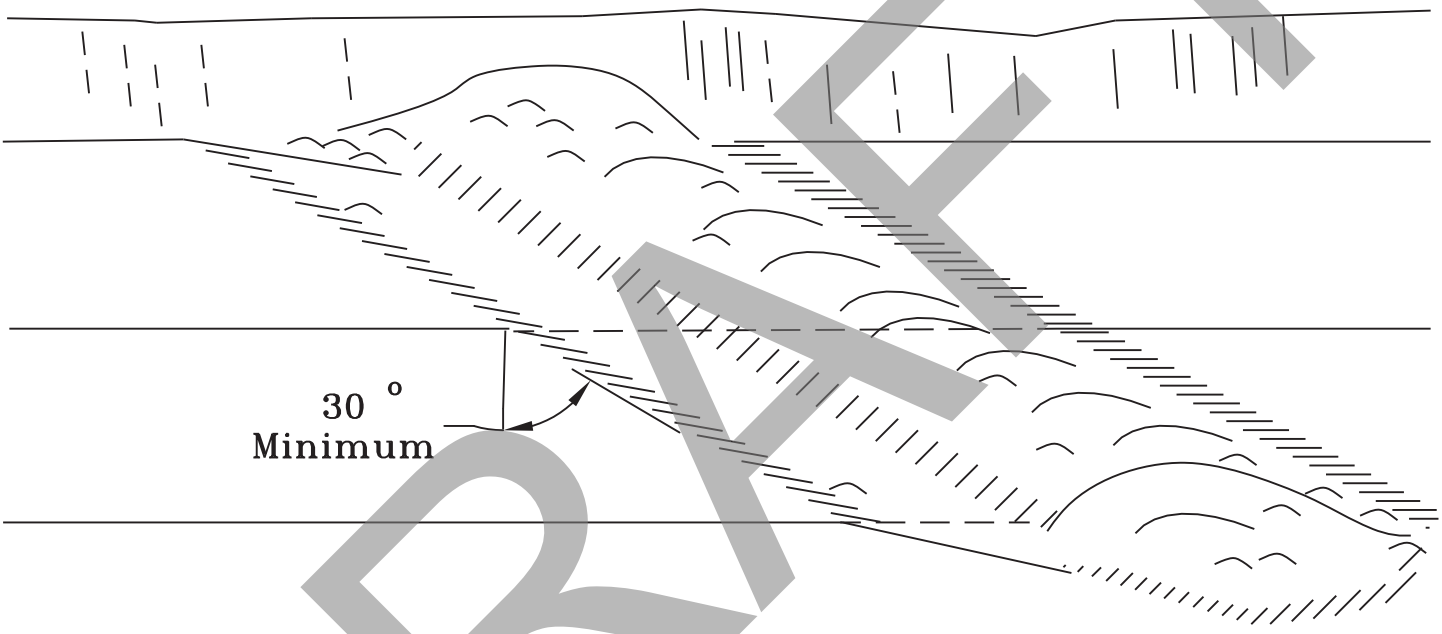


Drivable Water Bar Detail

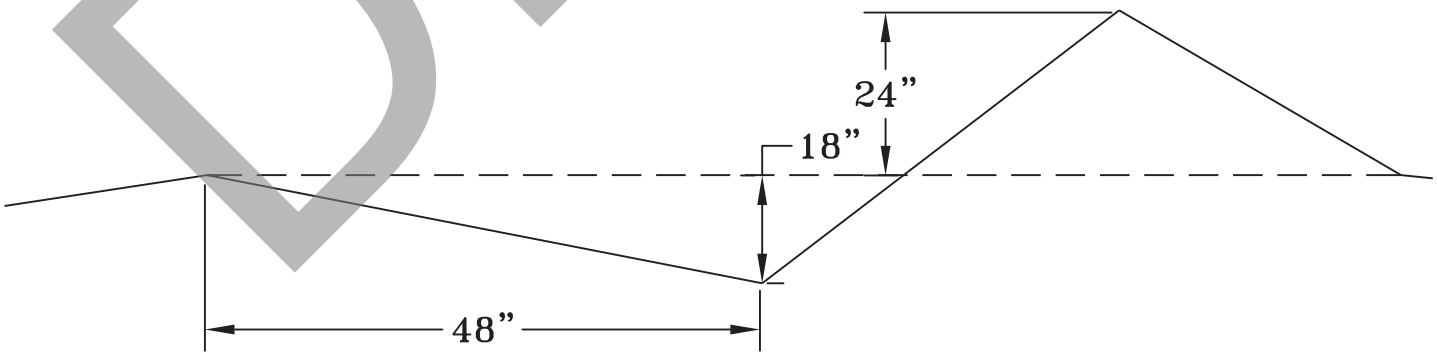
Scale : None
Drawn by: M.A.D.

Non-Drivable Water Bar Detail

Cross Ditch



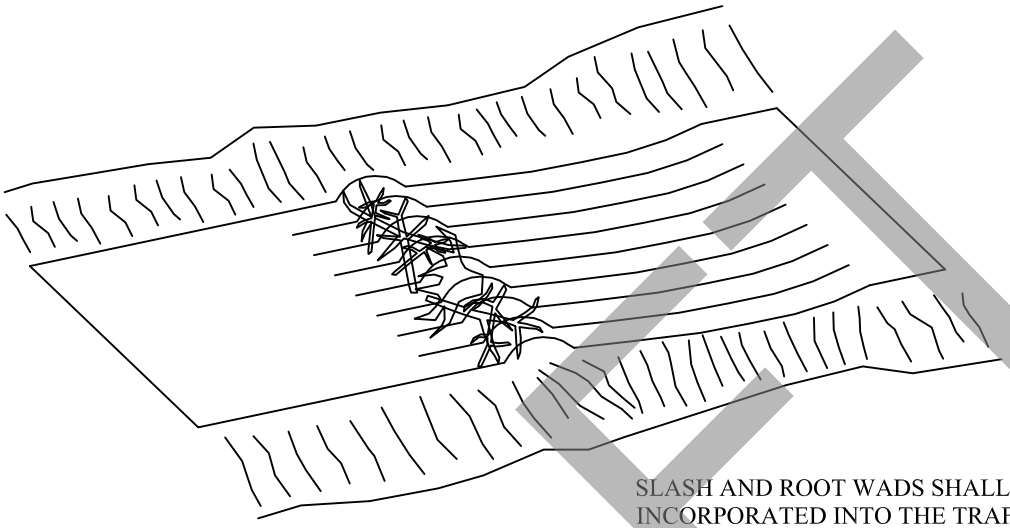
Cross Section at Centerline



Non-Drivable Water Bar Detail

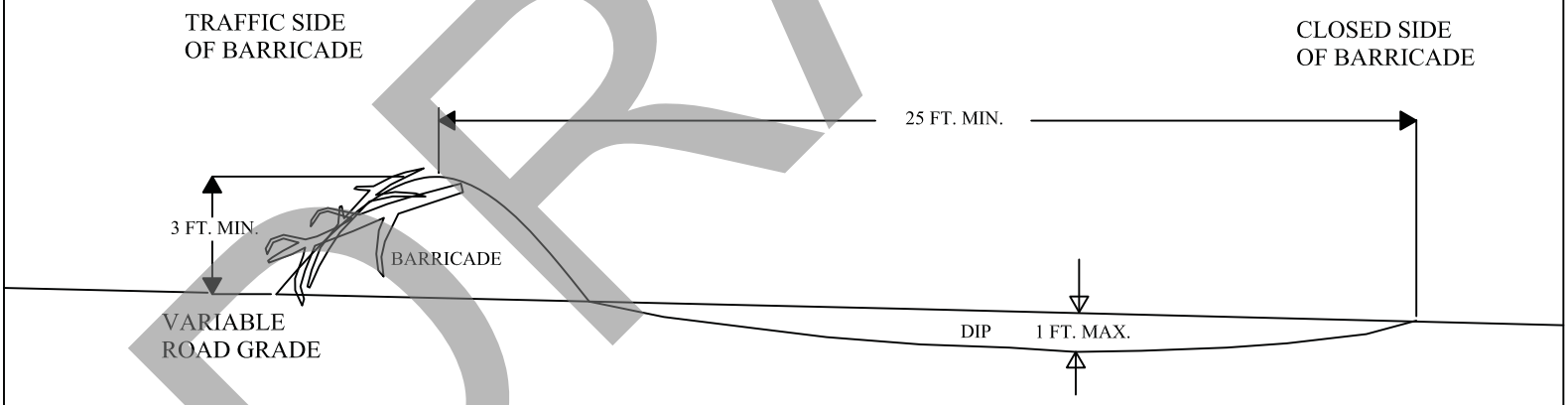
Scale : None
Drawn by: M.A.D.

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

Legal Description: NE ¼ Section 9 Township 14 North Range 06 East

Rock Pit Name: Donkey Pit

PIT DEVELOPMENT PLAN, pg 1 of 3

In addition to Clause 6-12 ROCK SOURCE SPECIFICATIONS, the following specifications apply:

See "Donkey Pit Plan Map, pg 3 of 3" drawing for additional information.

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

Overburden and Slash:

- Pile root wads and organic debris larger than one cubic foot in volume in clean, burnable piles in designated waste areas as shown as *Clearing Debris* on the attached map. Additional areas shall be approved by the Contract Administrator.

- Pile all reject rock and overburden away from pit working area as shown in the *Overburden Waste Area.* Waste shall be compact in lifts not to exceed 2 ft by routing equipment over the entire area. Waste shall not be placed against standing timber.

- Overburden and organic debris shall be kept separate.

Oversize:

Any new oversize material shall not exceed 5% of the total mined for the sale within this rock source. Oversize material is defined as rock fragments larger than 2 feet in any dimension.

Rock Crushing and Crushed Stockpile:

- Prior and during crushing operations the Contract Administrator will approve the rock used for crushing.

Specifications:

- A minimum stripping width of 20 feet must be maintained from all pit faces and at the termination of operations pit shall be left in said condition. No undercutting shall be permitted.
- Pit floor shall not be lowered without written approval from the Contract Administrator.
- Pit floor shall be sloped to allow drainage. No ponding will be allowed.
- Maximum face height shall not exceed 30 feet in height.
- Working bench width shall be a minimum of 15 feet.

Legal Description: NE ¼ Section 9 Township 14 North Range 06 East

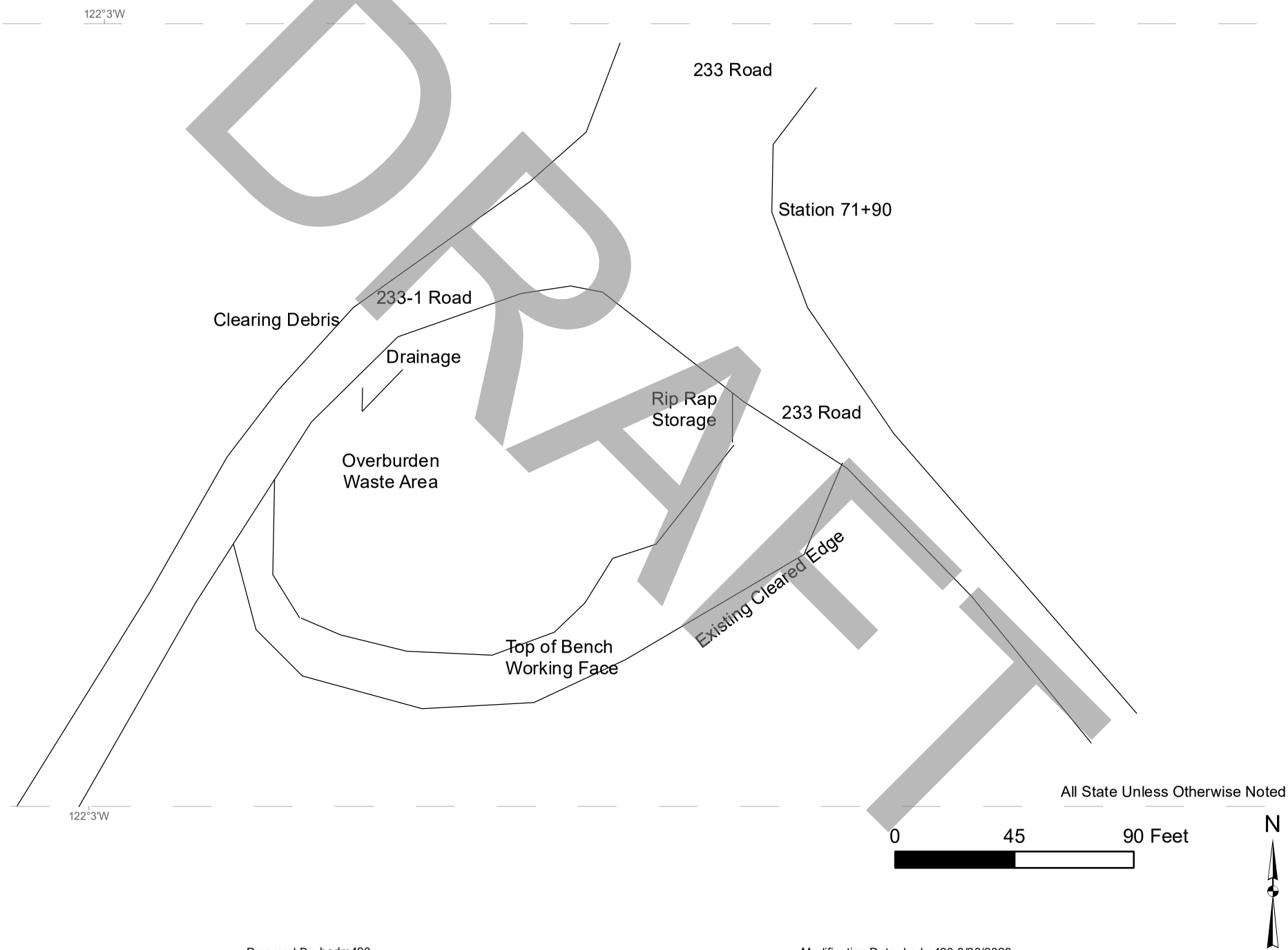
Rock Pit Name: Donkey Pit

PIT DEVELOPMENT PLAN, pg 2 of 3

End of Use:

- At the termination of use, rock pit face shall have a maximum backslope of 1/2V:1H.
- At the termination of use, all overburden shall have a maximum backslope of 1 ½: 1.
- At the completion of operations, the working rock face shall be scaled to remove loose rock.
- At the 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.
- At the completion of operations, all access roads to the top of the pit shall be blocked.
- At the completion of operations, Contractor shall request written approval from the Contract Administrator for final rock source condition and compliance with the terms of this plan.

Donkey Pit Plan Map, pg 3 of 3



Prepared By: hadm490

Modification Date: hadm490 8/23/2023

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

SUMMARY - ROAD DEVELOPMENT COSTS

(COSTS ARE ESTIMATES ONLY & ARE NOT GUARANTEED BY THE STATE OR PART OF THE ROAD PLAN.)

SALE/PROJECT NAME: **Dew Dog** CONTRACT NUMBER: **30-103622**

TYPE:	Construction	Reconstruction	Pre-Haul Maintenance
NUMBER OF STATIONS:	73.91	0.00	525.10
AVG. SIDESLOPE:	47	0	
CLEARING AND GRUBBING:	$19,008	$0	
EXCAVATION AND FILL:	$134,383	$0	
MISC. MAINTENANCE:			$14,686
ROCK TOTALS (Cu. Yds.):			
Ballast:	$50,015	$0	$0
Surfacing:	$2,859	$0	$0
Riprap/Quarry Spalls:	$94	$0	$0
Stockpiles:			$0
CULVERTS AND FLUMES:	$14,439	$0	$0
STRUCTURES:	$0	$0	$0
GENERAL EXPENSES:	$17,664	$0	$1,469
MOBILIZATION:	$3,750	$0	$3,750
TOTAL COSTS:	**$242,212**	**$0**	**$19,904**
COST PER STATION:	$3,277	#DIV/0!	$38

POST HAUL COSTS:	**$3,708**

NOTE1: This appraisal has no allowance for profit and risk.

TOTAL (All Roads) =	$265,825
SALE VOLUME MBF =	4,963
TOTAL COST PER MBF =	$53.56

Plans to be furnished by: Compiled by: M. Bell Date: 08/14/23