WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: Q WOOD CHUTE* ***AGREEMENT NO**: 30-106639*

AUCTION: March 25, 2025 starting at 10:00 a.m., Northeast Region Office, Colville, WA **COUNTY:** Okanogan

SALE LOCATION: Sale located approximately 12 miles southwest of Loomis, WA.

PRODUCTS SOLD AND SALE AREA: All conifer species except for leave trees banded with blue paint, two standing snags per acre in Units 1, 2, 3, 4, 5 and 6 bounded by white timber sale boundary tags; all green conifer species except for leave trees banded with blue paint in Unit 7 bounded by white timber sale boundary tags; and all right of way timber bounded by orange right of way boundary tags.

All forest products above located on part(s) of Sections 2, 3, 4 and 10 all in Township 37 North, Range 24 East, Sections 28, 33, 34 and 35 all in Township 38 North, Range 24 East, W.M., containing 266 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade P	SM	1S	2S	3S	4S	5S	6S	UT
Douglas fir	14.6		2,364				728	1,286	350			
Spruce	14.4		523				168	306	49			
Alpine fir	11.9		390				46	254	90			
Lodgepole	9.9		149					92	57			
Larch	23.4		4				3	1				
Sale Total			3,430									

MINIMUM BID: $319,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $63,800.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: November 1, 2027 **ALLOCATION:** Export Restricted

BID DEPOSIT: $31,900.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Ground based equipment, Rubber tired skidder, and Dozer. Falling and Yarding will not be permitted from March 1 to June 15 unless authorized in writing by the Contract Administrator due to spring breakup and May 1 to August 1 in Units 1, 2 and 7 unless authorized in writing by the State due to wildlife timing restrictions.

ROADS: 124.93 stations of required construction. 270.55 stations of required prehaul maintenance. Road construction will not be permitted from March 1 to June 15 unless authorized in writing by the Contract Administrator due to spring breakup. Road construction will not be permitted from May 1 to August 1 in Unit 2 unless authorized in writing by the State due to wildlife timing restrictions. The hauling of forest products

will not be permitted from March 1 to June 15 unless authorized in writing by the Contract Administrator due to spring breakup.

ACREAGE DETERMINATION

CRUISE METHOD: Acreage determined using GPS methods. Acreage shown above is net harvest acres in harvest units. All species: 7.0 - 17.5 inches dbh has minimum top of 4.6 inch dib. All species 17.6 inches and greater dbh have a minimum top dib of 40% of dob at 16 feet or a 6 inch top whichever is greater.

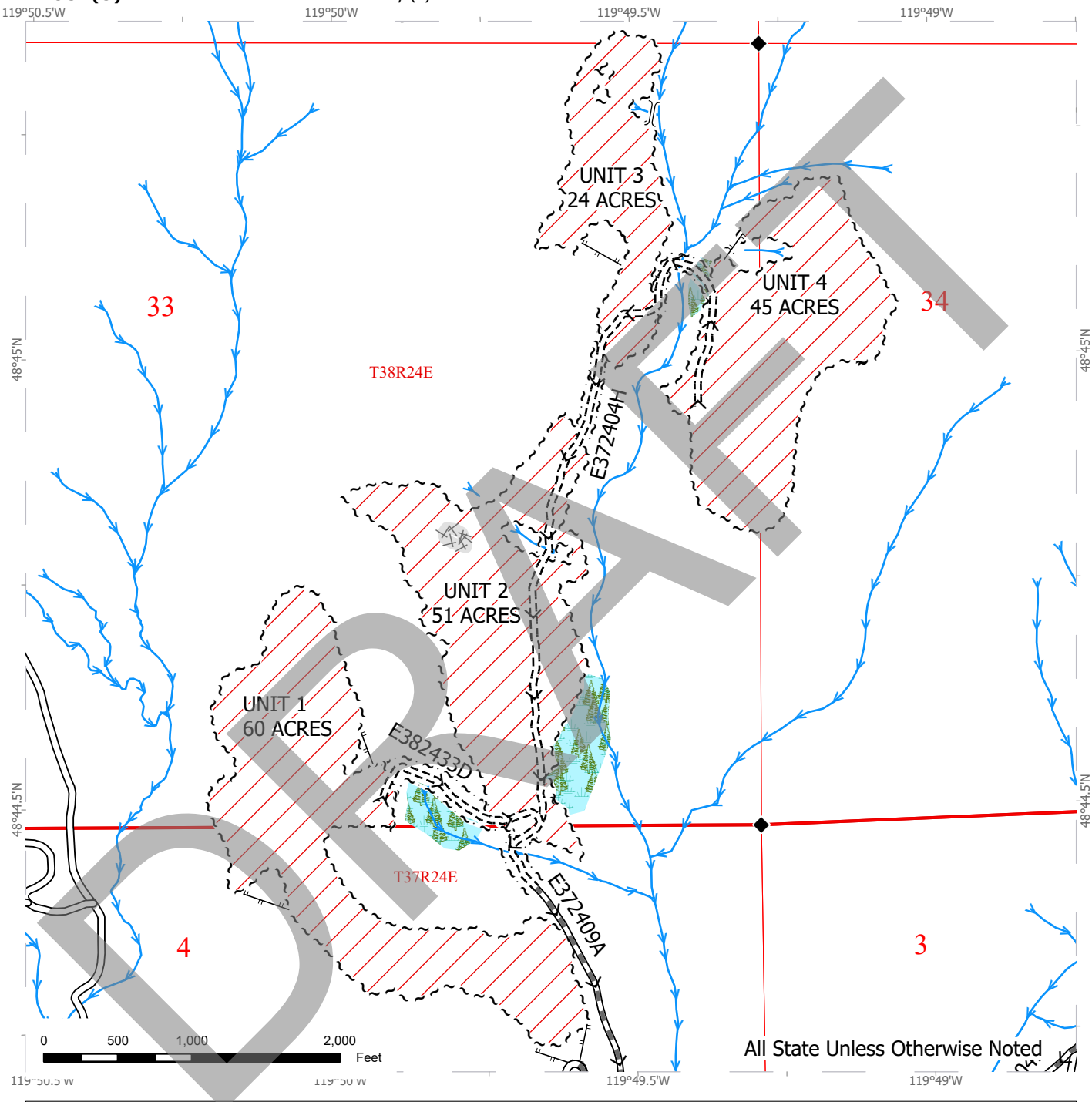
FEES: $58,310.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Locked gate restricts access to the sale area. Contact the Northeast Region Office at (509) 684-7474 for access. Unit 3 and 4 have temporary stream crossings see the contract and road plan for requirements and timing restrictions. No timber falling, yarding or processing in Unit 7 and no new road construction on the E372403E road will be permitted from March 1 to August 1 or later if the known American goshawk nest is active during the year of harvest.

TIMBER SALE MAP

SALE NAME: Q WOOD CHUTE
AGREEMENT#: 30-106639
TOWNSHIP(S): T37R24E, T38R24E
TRUST(S): Common School and Indemnity (3)

REGION: Northeast Region
COUNTY(S): Okanogan
ELEVATION RGE: 4880-5960



- Public Land Survey Sections
- DNR Managed Lands
- Variable Retention Harvest
- Forested Wetland
- Equipment Limitation Zone
- Sale Boundary Tags
- Right of Way Tags = 4 Acres
- Existing Road
- Required Pre-Haul Maintenance
- Required Construction
- Designated Skid Trail
- Streams
- Survey Monument
- Temporary Crossing
- Hauling Routes

N

Prepared By: ljen490
Accessed: 01/09/2025 13:25

Modification Date: ljen490 11/26/2024

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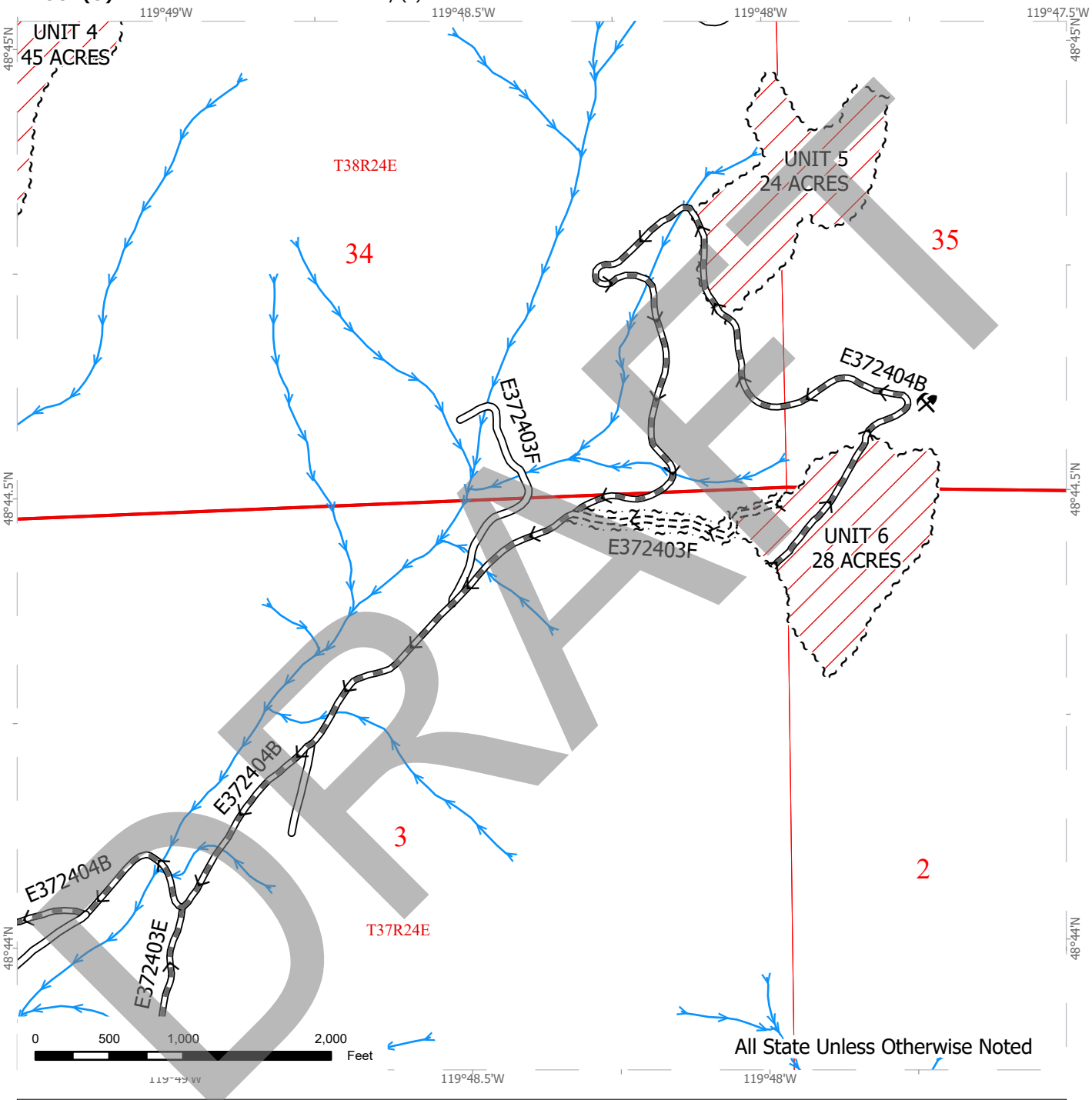

- Public Land Survey Sections
- DNR Managed Lands
- Variable Retention Harvest
- Sale Boundary Tags
- Right of Way Tags = 4 Acres
- Existing Road
- Required Pre-Haul Maintenance
- Required Construction
- Streams
- Rock Pit
- Hauling Routes

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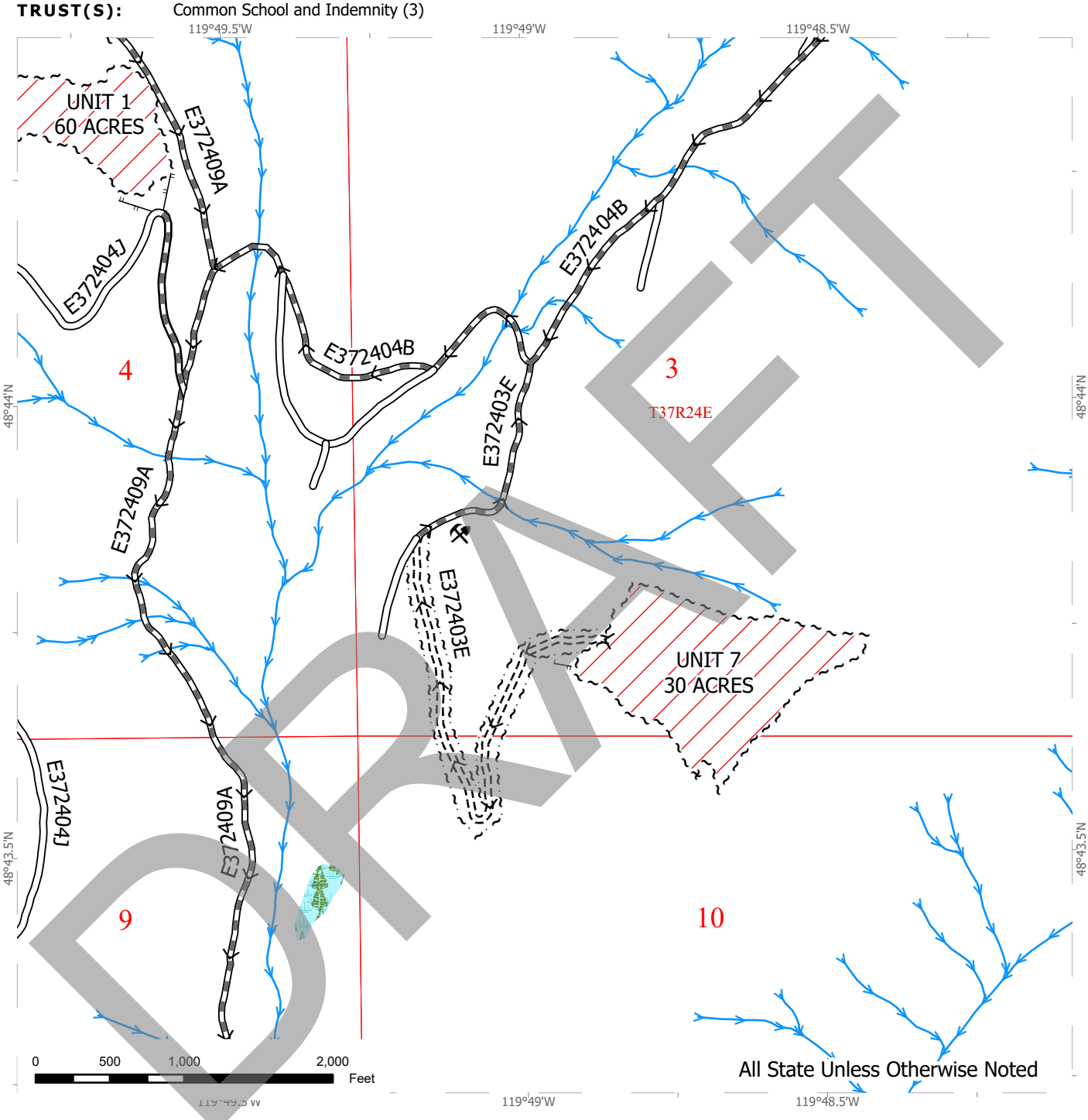

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DRIVING MAP

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Harvest Unit
Highway
Haul Route
Other Route
! Distance Indicator
1 Rock Pit

DRIVING DIRECTIONS:

From Loomis, WA travel south for 9.2 miles on Sinlahekin County Road and turn right on Sinlahekin Mainline Road, E372516A. Travel for 7.5 miles westward on the Sinlahekin Mainline Road and turn right on the E372409A road. Travel 1.7 miles north to reach Unit 1 or 1.9 miles to reach Unit 2. This location where the E372409A road arrives at Unit 2 is the hike in point for Units 3 and 4. To reach Unit 5 travel 3.0 miles east on the E372404B road from the intersection with the E372409A road or 3.6 miles to reach Unit 6. In order to reach Unit 8 travel 0.6 miles on the E372404B road from the intersection with the E372409A road and take a right on the E372403F road. Travel an additional 0.3 miles on the E372403E road to the hike in point for Unit 7.

3

Prepared By: rmil490
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OVERVIEW MAP

SALE NAME: Q WOOD CHUTE
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REGION: Northeast Region
COUNTY(S): Okanogan
ELEVATION RGE: 4880-5960

Sale Units
Hauling Routes
! Distance Indicator
^ Town

DRIVING DIRECTIONS:

From Loomis, WA travel south for 9.2 miles on Sinlahekin County Road and turn right on Sinlahekin Mainline Road, E372516A. Travel for 7.5 miles westward on the Sinlahekin Mainline Road and turn right on the E372409A road. Travel 1.7 miles north to reach Unit 1 or 1.9 miles to reach Unit 2. This location where the E372409A road arrives at Unit 2 is the hike in point for Units 3 and 4. To reach Unit 5 travel 3.0 miles east on the E372404B road from the intersection with the E372409A road or 3.6 miles to reach Unit 6. In order to reach Unit 8 travel 0.6 miles on the E372404B road from the intersection with the E372409A road and take a right on the E372403F road. Travel an additional 0.3 miles on the E372403E road to the hike in point for Unit 7.

3

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Timber Sale Cruise Report
Wood Chute

Sale Name: Q WOOD CHUTE

Sale Type: LUMP SUM

Region: NORTHEAST

District: HIGHLANDS

Lead Cruiser: Jake Culp

Other Cruisers: Hunter Leliefeld

Cruise Narrative:
Location:
Legal – Sections 28, 33, 34, 35 of T38R24E, and sections 4, 3, 2, 10 of T37R24E
General – Approx. 12 miles southwest of Loomis, WA in Okanogan County.
Access – All units are accessed from Sinlahekin Creek Rd, via Sinlahekin Rd out of Loomis.

Cruise Design:
-This sale was cruised using variable radius plots, utilizing the cruise-count method. Plot locations found using a Garmin handheld GPS unit and monumented with red and white flagging. The walk-through method was used on plots near boundaries.
-Minor species cruise intensity: We grade the first tree of all minor species encountered; then follow the set cruise design.
-Min. DBH: 8” DBH for PP and RC, 7" DBH for all other species
-Log Length and grades: 32' logs where possible, minimum of 12' lengths. Trees are graded using Eastside Scaling Rules.
-Top DIB: Trees less than 17.5" DBH have a minimum top of 4.6" DIB for all species; Trees 17.6" and greater DBH have a minimum top DOB of 40% of DOB at 16' or a 6" top, whichever is greater.

Take/Leave Prescription:
Cut all trees not marked with blue paint. Leave all hardwoods. Leave all trees within tagged and flagged “Leave Tree Areas”. Leave 2 of largest snags per acre.

Cruise Acres determination:
Net harvest unit acreages are used for cruise acreages.

Stand composition:
The stands are second growth, variable aged Douglas fir, Engelmann Spruce, and alpine fir with minor components of lodgepole pine and western larch. Large residual trees are found within the sale area.

Timber quality:
Timber to be harvested is comprised of domestic quality Douglas fir (73%), Engelmann spruce (14%), alpine fir (10%), lodgepole pine (4%), and western larch (<1%).

Stand health/defect:
Older timber in the sale area can be rough, with branch clusters, sweep, and crooks. Other defects noted include forks, spike knots, wind and snow damage. Timber blowdown is observed in all units.

Aspect:
North, Northwest, West, Southwest, South, Southeast, East, Northeast

Elevation:
4920’-6000’.

Harvesting methods:
100% ground based.

Slope:
Unit 1- Max 54%, Avg 12%
Unit 2- Max 49%, Avg 19%
Unit 3- Max 40%, Avg 18%
Unit 4- Max 44%, Avg 13%
Unit 5- Max 55%, Avg 19%
Unit 6- Max 55%, Avg 15%
Unit 7- Max 55%, Avg 15%

Other considerations/remarks:
Some rocky terrain is to be expected throughout the sale. Heavy blowdown observed throughout portions of the sale.

Trust:
This sale is 100% Trust #3.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	14.6			2,364	728	1,285	350
ES	14.4			523	168	306	49
AF	11.9			390	46	254	90
LP	9.9			149		92	57
WL	23.4			3	3	1	0
ALL	13.6			3,430	946	1,938	546

Timber Sale Notice Weight (tons)

	Tons by Grade			
Sp	All	2 Saw	3 Saw	4 Saw
DF	16,890	4,368	9,724	2,798
ES	3,212	868	1,998	346
AF	2,237	243	1,488	505
LP	868		567	302
WL	15	11	3	1
ALL	23,222	5,491	13,780	3,952

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 (%)
109.9	4.4	116.8	2.6	12,879	5.0

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Q WOOD CHUTE U1	B1C: VR, 1 BAF (25.15) Measure/ Count Plots, Sighting Ht = 4.5 ft	59.9	59.9	43	14	1
Q WOOD CHUTE U2	B1C: VR, 1 BAF (25.15) Measure/ Count Plots, Sighting Ht = 4.5 ft	51.1	51.1	40	10	1
Q WOOD CHUTE U3	B1C: VR, 1 BAF (25.15) Measure/ Count Plots, Sighting Ht = 4.5 ft	23.9	23.9	19	7	1
Q WOOD CHUTE U4	B1C: VR, 1 BAF (33.61) Measure/ Count Plots, Sighting Ht = 4.5 ft	45.2	45.2	35	10	2
WOOD CHUTE U5	B1C: VR, 1 BAF (33.61) Measure/ Count Plots, Sighting Ht = 4.5 ft	24.0	24.5	18	6	0
WOOD CHUTE U6	B1C: VR, 1 BAF (33.61) Measure/ Count Plots, Sighting Ht = 4.5 ft	28.1	28.6	21	7	0
Q WOOD CHUTE U7	B1C: VR, 1 BAF (33.61) Measure/ Count Plots, Sighting Ht = 4.5 ft	29.7	29.7	19	7	0
WOOD CHUTE ROW	B1: VR, 1 BAF (25.15) Measure All, Sighting Ht = 4.5 ft	4.4	4.4	17	17	2
All		266.3	267.3	212	78	7

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
AF	LIVE	2 SAW	Domestic	12.9	32	187	174	7.0	243.4	46.3
AF	LIVE	3 SAW	Domestic	7.7	32	960	953	0.6	1,488.1	253.9
AF	LIVE	4 SAW	Domestic	5.2	23	338	338	0.0	505.5	89.9
DF	LIVE	2 SAW	Domestic	13.7	32	2,833	2,735	3.4	4,368.2	728.3
DF	LIVE	3 SAW	Domestic	7.9	32	4,959	4,827	2.7	9,724.0	1,285.5
DF	LIVE	4 SAW	Domestic	5.3	23	1,349	1,313	2.7	2,797.6	349.7
DF	LIVE	CULL	Cull	8.0	28	66	0	100.0	0.0	0.0
ES	LIVE	2 SAW	Domestic	13.1	32	648	632	2.4	868.5	168.3
ES	LIVE	3 SAW	Domestic	7.9	32	1,202	1,150	4.3	1,997.8	306.3
ES	LIVE	4 SAW	Domestic	5.4	22	184	183	0.4	346.1	48.8
LP	LIVE	3 SAW	Domestic	6.9	32	358	345	3.6	566.6	91.8
LP	LIVE	4 SAW	Domestic	5.1	23	217	215	0.9	301.7	57.3

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
WL	LIVE	2 SAW	Domestic	17.5	32	10	10	0.0	10.7	2.6
WL	LIVE	3 SAW	Domestic	10.9	30	3	3	0.0	3.3	0.7
WL	LIVE	4 SAW	Domestic	6.6	24	0	0	0.0	0.9	0.1

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
AF	5 - 8	LIVE	Domestic	5.8	26	886	0.0	1,419.3	235.8
AF	9 - 11	LIVE	Domestic	9.9	32	406	1.5	574.3	108.0
AF	12 - 14	LIVE	Domestic	12.5	32	143	0.0	197.2	38.1
AF	15 - 19	LIVE	Domestic	14.7	32	31	30.0	46.3	8.2
DF	5 - 8	LIVE	Domestic	5.9	27	3,494	2.3	7,398.5	930.6
DF	5 - 8	LIVE	Cull	7.5	26	0	100.0	0.0	0.0
DF	9 - 11	LIVE	Cull	9.6	32	0	100.0	0.0	0.0
DF	9 - 11	LIVE	Domestic	9.8	32	2,541	3.0	4,953.1	676.5
DF	12 - 14	LIVE	Domestic	12.9	32	1,848	2.9	3,020.2	492.0
DF	15 - 19	LIVE	Domestic	16.4	32	855	5.3	1,320.6	227.8
DF	20+	LIVE	Domestic	21.8	32	137	0.6	197.5	36.6
ES	5 - 8	LIVE	Domestic	6.0	27	747	2.1	1,364.1	198.8
ES	9 - 11	LIVE	Domestic	9.8	32	515	6.6	877.3	137.2
ES	12 - 14	LIVE	Domestic	12.6	32	544	2.8	772.9	144.8
ES	15 - 19	LIVE	Domestic	16.2	32	160	0.0	198.0	42.7
LP	5 - 8	LIVE	Domestic	5.7	27	535	2.7	836.4	142.5
LP	9 - 11	LIVE	Domestic	9.7	32	25	0.0	31.8	6.6
WL	5 - 8	LIVE	Domestic	6.6	24	0	0.0	0.9	0.1
WL	9 - 11	LIVE	Domestic	10.9	30	3	0.0	3.3	0.7
WL	15 - 19	LIVE	Domestic	15.7	32	6	0.0	6.7	1.6
WL	20+	LIVE	Domestic	23.3	32	4	0.0	4.1	1.0

Cruise Unit Report
Q WOOD CHUTE U1

Unit Sale Notice Volume (MBF): Q WOOD CHUTE U1

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	15.8			403	174	176	54
ES	14.0			177	57	103	17
AF	12.5			63	6	47	10
LP	10.3			55		46	8
ALL	14.1			698	237	372	89

Unit Cruise Design: Q WOOD CHUTE U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	59.9	59.9	43	14	1

Unit Cruise Summary: Q WOOD CHUTE U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	24	94	2.2	0
ES	10	44	1.0	0
AF	9	15	0.3	0
LP	3	14	0.3	0
ALL	46	167	3.9	0

Unit Cruise Statistics: Q WOOD CHUTE 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	55.0	124.8	19.0	122.4	32.8	6.7	6,732	129.0	20.2
ES	25.7	173.9	26.5	114.9	42.3	13.4	2,957	179.0	29.7
AF	8.8	215.6	32.9	120.4	31.5	10.5	1,056	217.9	34.5
LP	8.2	282.1	43.0	111.1	16.7	9.6	910	282.6	44.1
ALL	97.7	63.6	9.7	119.3	33.3	4.9	11,655	71.8	10.9

Unit Summary: Q WOOD CHUTE U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	9	ALL	12.5	58	72	1,056	1,056	0.0	10.3	8.8	2.5	63.3
DF	LIVE	CUT	24	ALL	15.8	62	77	7,028	6,732	4.2	40.4	55.0	13.8	403.2
ES	LIVE	CUT	10	ALL	14.0	54	67	3,073	2,957	3.8	24.1	25.7	6.9	177.1
LP	LIVE	CUT	3	ALL	10.3	61	75	910	910	0.0	14.2	8.2	2.6	54.5
ALL	LIVE	CUT	46	ALL	14.2	59	73	12,067	11,655	3.4	89.0	97.7	25.7	698.2
ALL	ALL	CUT	46	ALL	14.2	59	73	12,067	11,655	3.4	89.0	97.7	25.7	698.2

Cruise Unit Report
Q WOOD CHUTE U2

Unit Sale Notice Volume (MBF): Q WOOD CHUTE U2

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	14.9			387	156	189	43
ES	14.8			167	65	84	18
AF	9.0			25			25
ALL	14.6			580	221	273	86

Unit Cruise Design: Q WOOD CHUTE U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	51.1	51.1	40	10	1

Unit Cruise Summary: Q WOOD CHUTE U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	26	106	2.7	0
ES	16	32	0.8	0
AF	1	8	0.2	0
ALL	43	146	3.7	0

Unit Cruise Statistics: Q WOOD CHUTE 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	66.6	77.6	12.3	113.7	40.9	8.0	7,581	87.8	14.7
ES	20.1	212.2	33.6	162.9	38.0	9.5	3,277	215.6	34.9
AF	5.0	258.2	40.8	97.3	0.0	0.0	490	258.2	40.8
ALL	91.8	62.2	9.8	123.6	46.1	7.0	11,347	77.5	12.1

Unit Summary: Q WOOD CHUTE U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	1	ALL	9.0	50	62	490	490	0.0	11.4	5.0	1.7	25.0
DF	LIVE	CUT	26	ALL	14.9	57	71	7,702	7,581	1.6	55.0	66.6	17.3	387.4
ES	LIVE	CUT	16	ALL	14.8	65	82	3,352	3,277	2.2	16.8	20.1	5.2	167.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	43	ALL	14.2	58	72	11,544	11,347	1.7	83.2	91.8	24.2	579.8
ALL	ALL	CUT	43	ALL	14.2	58	72	11,544	11,347	1.7	83.2	91.8	24.2	579.8

Cruise Unit Report
Q WOOD CHUTE U3

Unit Sale Notice Volume (MBF): Q WOOD CHUTE U3

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	12.7			115	15	69	31
AF	11.0			21	8	4	9
ES	14.2			16		12	3
LP	8.8			13		6	7
ALL	11.9			165	23	90	51

Unit Cruise Design: Q WOOD CHUTE U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	23.9	23.9	19	7	1

Unit Cruise Summary: Q WOOD CHUTE U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	10	42	2.2	0
AF	3	7	0.4	0
ES	3	5	0.3	0
LP	2	3	0.2	0
ALL	18	57	3.0	0

Unit Cruise Statistics: Q WOOD CHUTE 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	55.6	102.9	23.6	86.6	61.3	19.4	4,816	119.8	30.5
AF	9.3	225.5	51.7	95.4	73.4	42.4	884	237.1	66.9
ES	6.6	213.5	49.0	98.7	49.9	28.8	653	219.3	56.8
LP	4.0	317.6	72.9	138.5	28.6	20.2	550	318.9	75.6
ALL	75.5	80.9	18.6	91.5	56.9	13.4	6,903	98.9	22.9

Unit Summary: Q WOOD CHUTE U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	3	ALL	11.0	37	44	1,099	884	19.5	14.0	9.3	2.8	21.1
DF	LIVE	CUT	10	ALL	12.7	50	61	5,229	4,816	7.9	63.2	55.6	15.6	115.1
ES	LIVE	CUT	3	ALL	14.2	62	78	724	653	9.9	6.0	6.6	1.8	15.6
LP	LIVE	CUT	2	ALL	8.8	64	80	550	550	0.0	9.4	4.0	1.3	13.1
ALL	LIVE	CUT	18	ALL	12.2	50	61	7,602	6,903	9.2	92.6	75.5	21.5	165.0
ALL	ALL	CUT	18	ALL	12.2	50	61	7,602	6,903	9.2	92.6	75.5	21.5	165.0

Cruise Unit Report
Q WOOD CHUTE U4

Unit Sale Notice Volume (MBF): Q WOOD CHUTE U4

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	13.1			446	88	281	78
AF	10.6			111		69	42
LP	8.8			33		16	16
ES	9.0			10		10	
ALL	12.0			599	88	376	136

Unit Cruise Design: Q WOOD CHUTE U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (33.61) Measure/Count Plots, Sighting Ht = 4.5 ft	45.2	45.2	35	10	2

Unit Cruise Summary: Q WOOD CHUTE U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	30	93	2.7	0
AF	4	21	0.6	0
LP	2	8	0.2	0
ES	2	2	0.1	0
ALL	38	124	3.5	0

Unit Cruise Statistics: Q WOOD CHUTE U4

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	89.3	91.7	15.5	110.5	42.1	7.7	9,865	100.9	17.3
AF	20.2	181.7	30.7	121.7	13.2	6.6	2,454	182.2	31.4
LP	7.7	282.5	47.7	94.0	0.8	0.5	722	282.5	47.7
ES	1.9	591.6	100.0	113.2	3.1	2.2	217	591.6	100.0
ALL	119.1	67.9	11.5	111.3	37.5	6.1	13,258	77.5	13.0

Unit Summary: Q WOOD CHUTE U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	4	ALL	10.6	59	73	2,454	2,454	0.0	32.9	20.2	6.2	110.9
DF	LIVE	CUT	30	ALL	13.1	56	69	10,271	9,865	4.0	95.4	89.3	24.7	445.9
ES	LIVE	CUT	2	ALL	9.0	57	71	217	217	0.0	4.3	1.9	0.6	9.8
LP	LIVE	CUT	2	ALL	8.8	48	58	722	722	0.0	18.2	7.7	2.6	32.7
ALL	LIVE	CUT	38	ALL	12.0	56	69	13,665	13,258	3.0	150.8	119.1	34.1	599.3
ALL	ALL	CUT	38	ALL	12.0	56	69	13,665	13,258	3.0	150.8	119.1	34.1	599.3

Cruise Unit Report
WOOD CHUTE U5

Unit Sale Notice Volume (MBF): WOOD CHUTE U5

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	15.4			365	108	204	54
AF	14.0			31		31	
ES	11.2			16	7	5	3
LP	12.2			10		8	2
ALL	14.4			422	115	248	60

Unit Cruise Design: WOOD CHUTE U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (33.61) Measure/Count Plots, Sighting Ht = 4.5 ft	24.0	24.5	18	6	0

Unit Cruise Summary: WOOD CHUTE U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	22	72	4.0	0
AF	1	4	0.2	0
ES	3	3	0.2	0
LP	2	2	0.1	0
ALL	28	81	4.5	0

Unit Cruise Statistics: WOOD CHUTE U5

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	134.4	64.7	15.3	113.2	30.5	6.5	15,223	71.6	16.6
AF	7.5	246.7	58.2	173.1	0.0	0.0	1,293	246.7	58.2
ES	5.6	230.1	54.2	117.1	73.2	42.3	656	241.5	68.8
LP	3.7	291.0	68.6	115.8	14.4	10.2	432	291.4	69.4
ALL	151.2	60.6	14.3	116.4	34.5	6.5	17,604	69.7	15.7

Unit Summary: WOOD CHUTE U5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	1	ALL	14.0	71	90	1,293	1,293	0.0	7.0	7.5	2.0	31.0
DF	LIVE	CUT	22	ALL	15.4	62	77	16,356	15,223	6.9	103.9	134.4	34.3	365.4
ES	LIVE	CUT	3	ALL	11.2	48	59	828	656	20.8	8.2	5.6	1.7	15.7
LP	LIVE	CUT	2	ALL	12.2	58	73	488	432	11.5	4.6	3.7	1.1	10.4
ALL	LIVE	CUT	28	ALL	15.0	61	77	18,965	17,604	7.2	123.7	151.2	39.0	422.5
ALL	ALL	CUT	28	ALL	15.0	61	77	18,965	17,604	7.2	123.7	151.2	39.0	422.5

Cruise Unit Report
WOOD CHUTE U6

Unit Sale Notice Volume (MBF): WOOD CHUTE U6

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	15.0			304	120	159	25
ES	16.1			56	21	33	1
LP	8.8			29		9	21
AF	10.9			26		24	3
ALL	13.0			416	141	225	50

Unit Cruise Design: WOOD CHUTE U6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (33.61) Measure/Count Plots, Sighting Ht = 4.5 ft	28.1	28.6	21	7	0

Unit Cruise Summary: WOOD CHUTE U6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	20	62	3.0	0
ES	2	7	0.3	0
LP	4	7	0.3	0
AF	2	6	0.3	0
ALL	28	82	3.9	0

Unit Cruise Statistics: WOOD CHUTE U6

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	99.2	74.6	16.3	108.9	42.7	9.5	10,806	85.9	18.9
ES	11.2	238.7	52.1	177.7	13.7	9.7	1,991	239.1	53.0
LP	11.2	219.1	47.8	93.7	34.4	17.2	1,050	221.8	50.8
AF	9.6	162.0	35.4	98.1	19.2	13.6	942	163.2	37.9
ALL	131.2	45.0	9.8	112.7	40.3	7.6	14,789	60.4	12.4

Unit Summary: WOOD CHUTE U6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	2	ALL	10.9	52	64	942	942	0.0	14.8	9.6	2.9	26.5
DF	LIVE	CUT	20	ALL	15.0	54	66	11,004	10,806	1.8	80.9	99.2	25.6	303.7
ES	LIVE	CUT	2	ALL	16.1	79	101	2,043	1,991	2.5	7.9	11.2	2.8	56.0
LP	LIVE	CUT	4	ALL	8.8	47	58	1,140	1,050	8.0	26.5	11.2	3.8	29.5
ALL	LIVE	CUT	28	ALL	13.6	54	67	15,129	14,789	2.2	130.1	131.2	35.1	415.6
ALL	ALL	CUT	28	ALL	13.6	54	67	15,129	14,789	2.2	130.1	131.2	35.1	415.6

Cruise Unit Report
Q WOOD CHUTE U7

Unit Sale Notice Volume (MBF): Q WOOD CHUTE U7

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	14.3			322	61	199	63
AF	13.3			108	31	77	
ES	15.2			68	14	52	3
LP	14.0			8		7	2
ALL	14.3			508	106	334	68

Unit Cruise Design: Q WOOD CHUTE U7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (33.61) Measure/Count Plots, Sighting Ht = 4.5 ft	29.7	29.7	19	7	0

Unit Cruise Summary: Q WOOD CHUTE U7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	16	51	2.7	0
AF	3	15	0.8	0
ES	4	8	0.4	0
LP	1	1	0.1	0
ALL	24	75	3.9	0

Unit Cruise Statistics: Q WOOD CHUTE U7

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	90.2	87.9	20.2	120.3	34.1	8.5	10,856	94.2	21.9
AF	26.5	143.7	33.0	137.5	26.5	15.3	3,648	146.1	36.3
ES	14.2	182.5	41.9	162.6	22.2	11.1	2,301	183.9	43.3
LP	1.8	435.9	100.0	160.0	0.0	0.0	283	435.9	100.0
ALL	132.7	51.0	11.7	128.8	31.8	6.5	17,088	60.1	13.4

Unit Summary: Q WOOD CHUTE U7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	3	ALL	13.3	63	79	3,648	3,648	0.0	27.5	26.5	7.3	108.3
DF	LIVE	CUT	16	ALL	14.3	61	76	10,961	10,856	1.0	80.9	90.2	23.9	322.4
ES	LIVE	CUT	4	ALL	15.2	67	84	2,301	2,301	0.0	11.2	14.2	3.6	68.3
LP	LIVE	CUT	1	ALL	14.0	65	82	283	283	0.0	1.7	1.8	0.5	8.4
ALL	LIVE	CUT	24	ALL	14.2	62	78	17,193	17,088	0.6	121.3	132.7	35.2	507.5
ALL	ALL	CUT	24	ALL	14.2	62	78	17,193	17,088	0.6	121.3	132.7	35.2	507.5

Cruise Unit Report
WOOD CHUTE ROW

Unit Sale Notice Volume (MBF): WOOD CHUTE ROW

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	16.2			20	7	10	3
ES	12.2			13	4	7	2
AF	9.8			4	1	2	1
WL	23.4			3	3	1	0
LP	7.9			1			1
ALL	13.2			42	15	20	7

Unit Cruise Design: WOOD CHUTE ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (25.15) Measure All, Sighting Ht = 4.5 ft	4.4	4.4	17	17	2

Unit Cruise Summary: WOOD CHUTE ROW

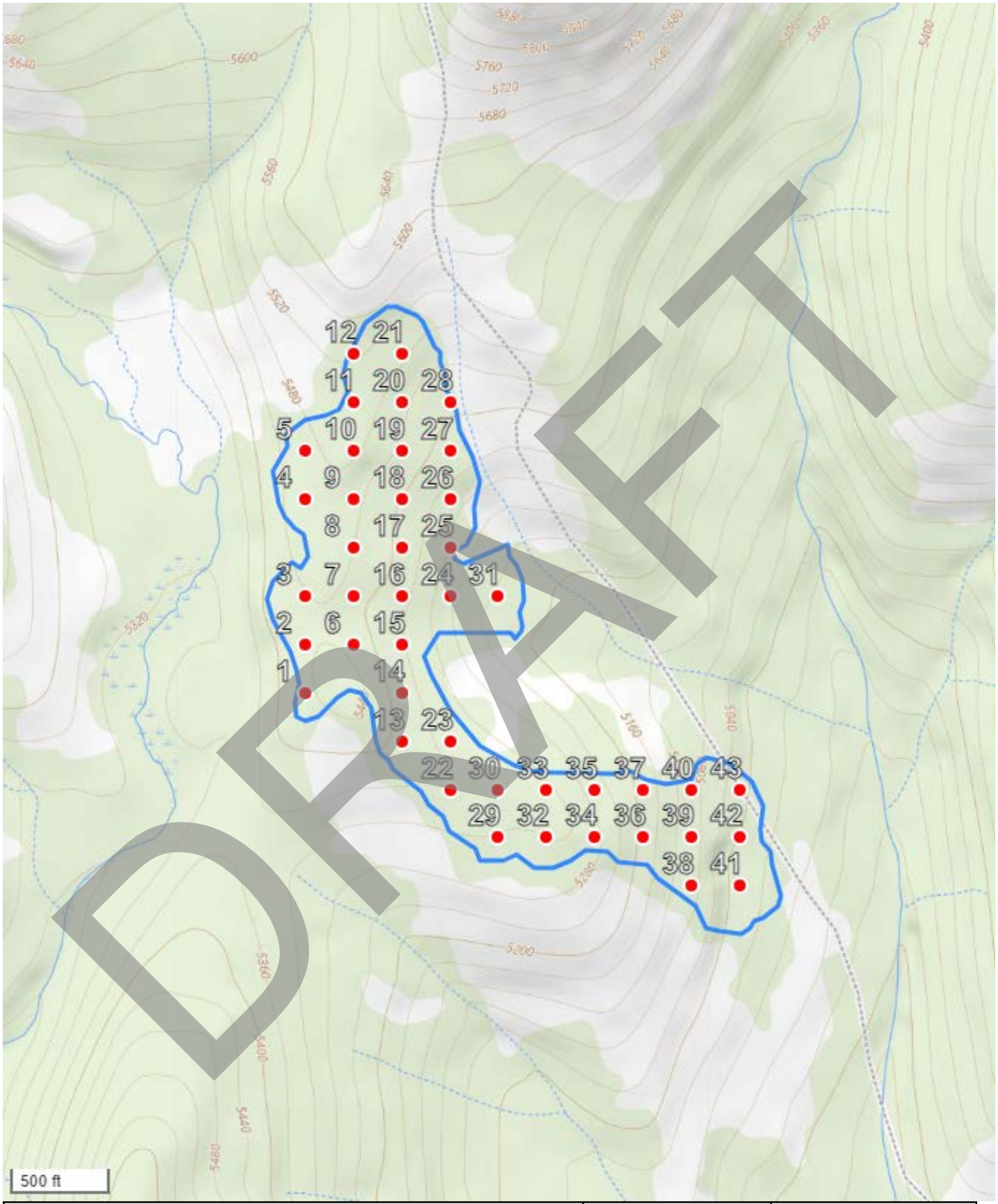
Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	21	21	1.2	0
ES	15	15	0.9	0
AF	5	5	0.3	0
WL	2	2	0.1	0
LP	1	1	0.1	0
ALL	44	44	2.6	0

Unit Cruise Statistics: WOOD CHUTE ROW

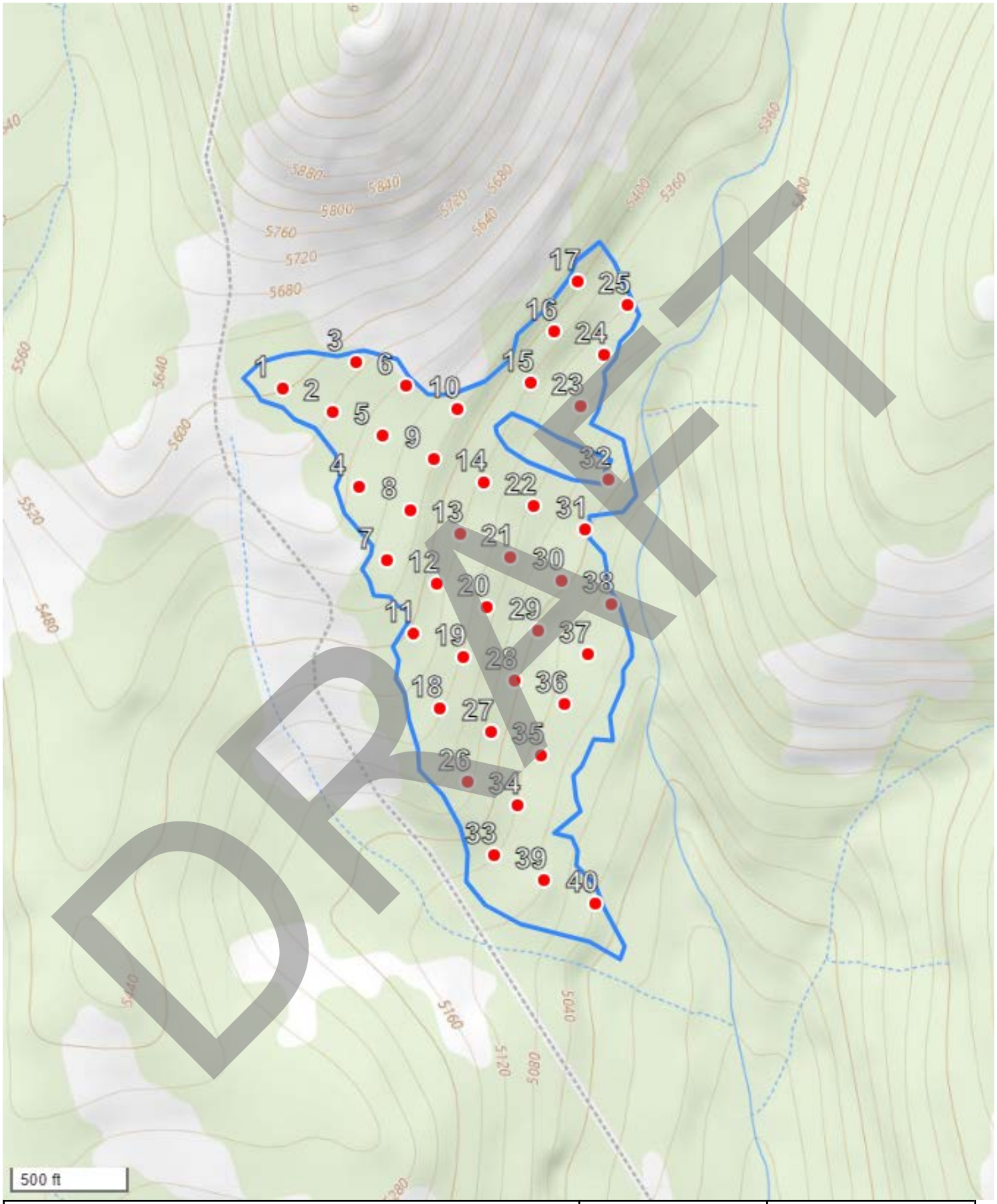
Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	31.1	116.4	28.2	149.7	52.1	11.4	4,652	127.5	30.4
ES	22.2	164.6	39.9	137.3	42.0	10.9	3,046	169.9	41.4
AF	7.4	233.2	56.6	121.8	44.5	19.9	901	237.4	60.0
WL	3.0	282.3	68.5	260.9	13.0	9.2	772	282.6	69.1
LP	1.5	412.3	100.0	91.1	0.0	0.0	135	412.3	100.0
ALL	65.1	78.5	19.0	146.0	48.4	7.3	9,506	92.3	20.4

Unit Summary: WOOD CHUTE ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	5	ALL	9.8	50	62	901	901	0.0	14.1	7.4	2.4	4.0
DF	LIVE	CUT	21	ALL	16.2	58	73	4,745	4,652	1.9	21.7	31.1	7.7	20.5
ES	LIVE	CUT	15	ALL	12.2	53	66	3,056	3,046	0.3	27.3	22.2	6.4	13.4
LP	LIVE	CUT	1	ALL	7.9	51	63	135	135	0.0	4.3	1.5	0.5	0.6
WL	LIVE	CUT	2	ALL	23.4	91	116	772	772	0.0	1.0	3.0	0.6	3.4
ALL	LIVE	CUT	44	ALL	13.2	55	68	9,609	9,506	1.1	68.4	65.1	17.6	41.8
ALL	ALL	CUT	44	ALL	13.2	55	68	9,609	9,506	1.1	68.4	65.1	17.6	41.8

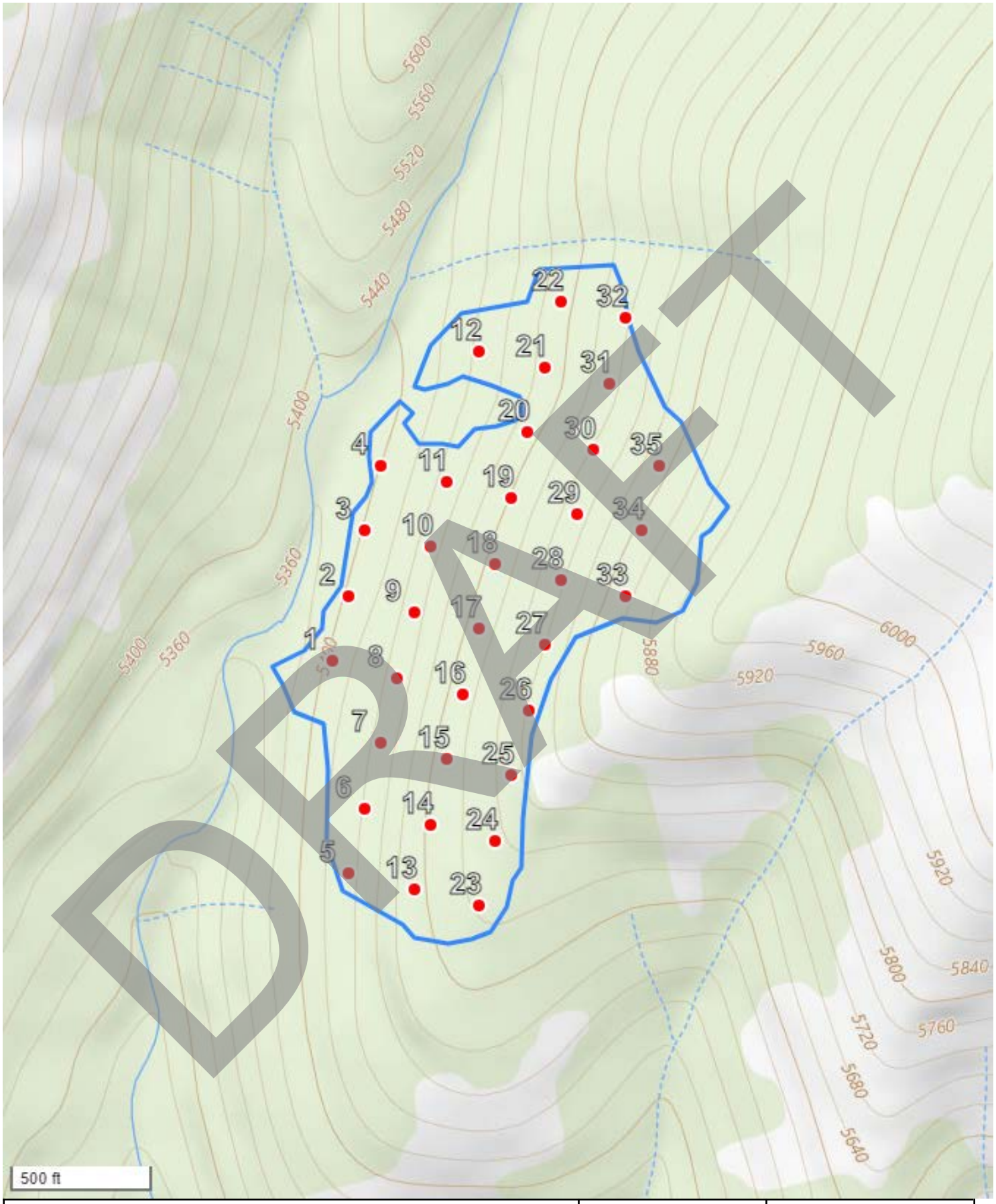


FMA Name: Q WOOD CHUTE U1	**N Plots:** 43	**Plot Spacing:** 240.5 ft
Grid Name: Q WOOD CHUTE U1 - 1	**Acres Treated:** 59.9	**Main Azimuth:** 0 deg



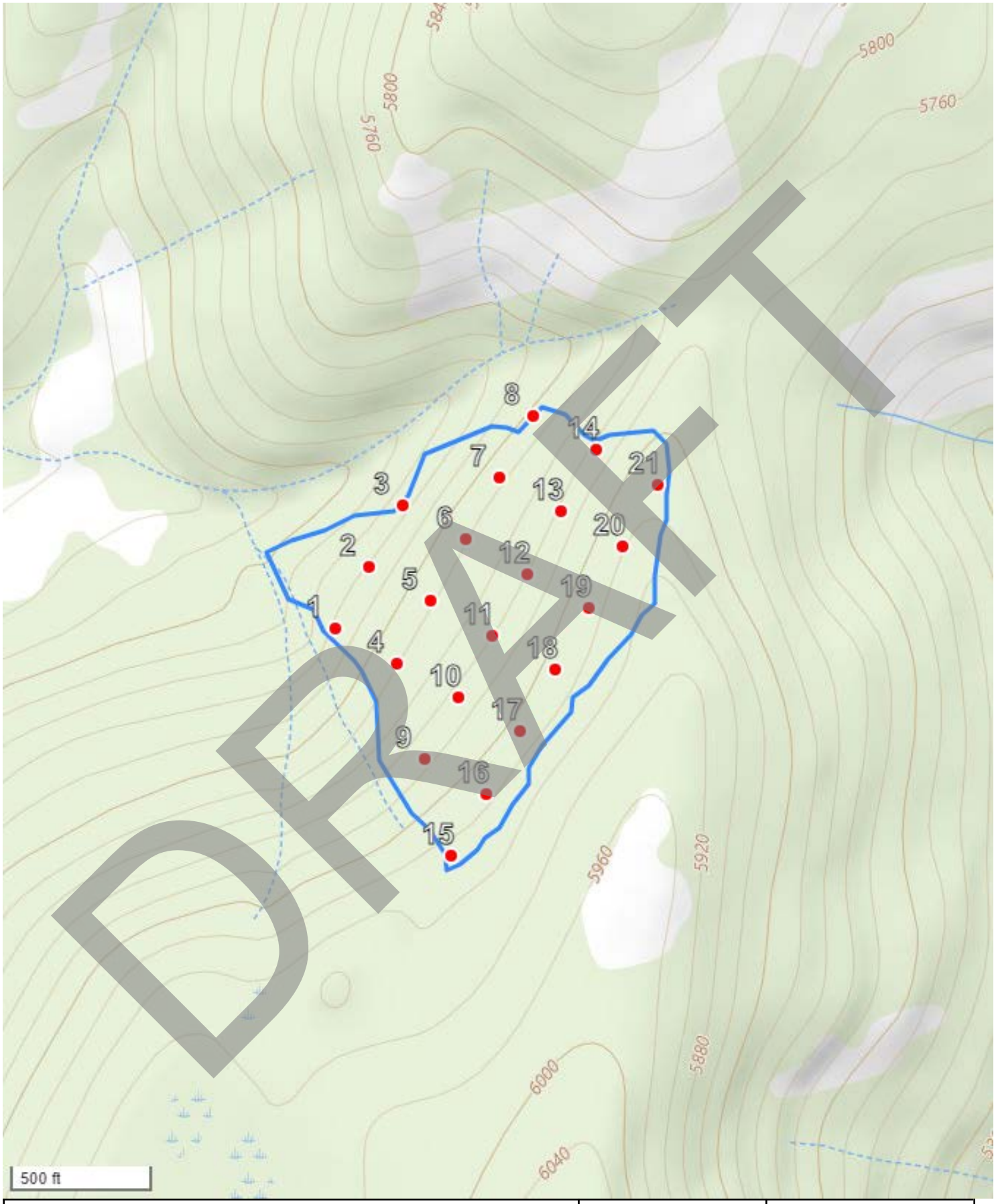
FMA Name: Q WOOD CHUTE U2	**N Plots:** 40	**Plot Spacing:** 232.6 ft
Grid Name: Q WOOD CHUTE U2 - 1	**Acres Treated:** 51.1	**Main Azimuth:** 25 deg

FMA Name: Q WOOD CHUTE U3	**N Plots:** 19	**Plot Spacing:** 227.8 ft
Grid Name: Q WOOD CHUTE U3 - 1	**Acres Treated:** 23.9	**Main Azimuth:** 17 deg



FMA Name: Q WOOD CHUTE U4	**N Plots:** 35	**Plot Spacing:** 237 ft
Grid Name: Q WOOD CHUTE U4 - 1	**Acres Treated:** 45.2	**Main Azimuth:** 14 deg

FMA Name: WOOD CHUTE U5	**N Plots:** 18	**Plot Spacing:** 230.5 ft
Grid Name: WOOD CHUTE U5 - 1	**Acres Treated:** 24	**Main Azimuth:** 0 deg



FMA Name: WOOD CHUTE U6	**N Plots:** 21	**Plot Spacing:** 249.2 ft
Grid Name: WOOD CHUTE U6 - 1	**Acres Treated:** 28.1	**Main Azimuth:** 29 deg

FMA Name: Q WOOD CHUTE U7	**N Plots:** 19	**Plot Spacing:** 254.1 ft
Grid Name: Q WOOD CHUTE U7 - 1	**Acres Treated:** 29.7	**Main Azimuth:** 59 deg

FMA Name: WOOD CHUTE ROW	**N Plots:**	**Plot Spacing:** NaN ft
Grid Name: WOOD CHUTE ROW	**Acres Treated:** 4.2	**Main Azimuth:** NaN deg

Washington State Department of Natural Resources

Sale Name: Wood Chute | Road Plan Map | Region: Northeast

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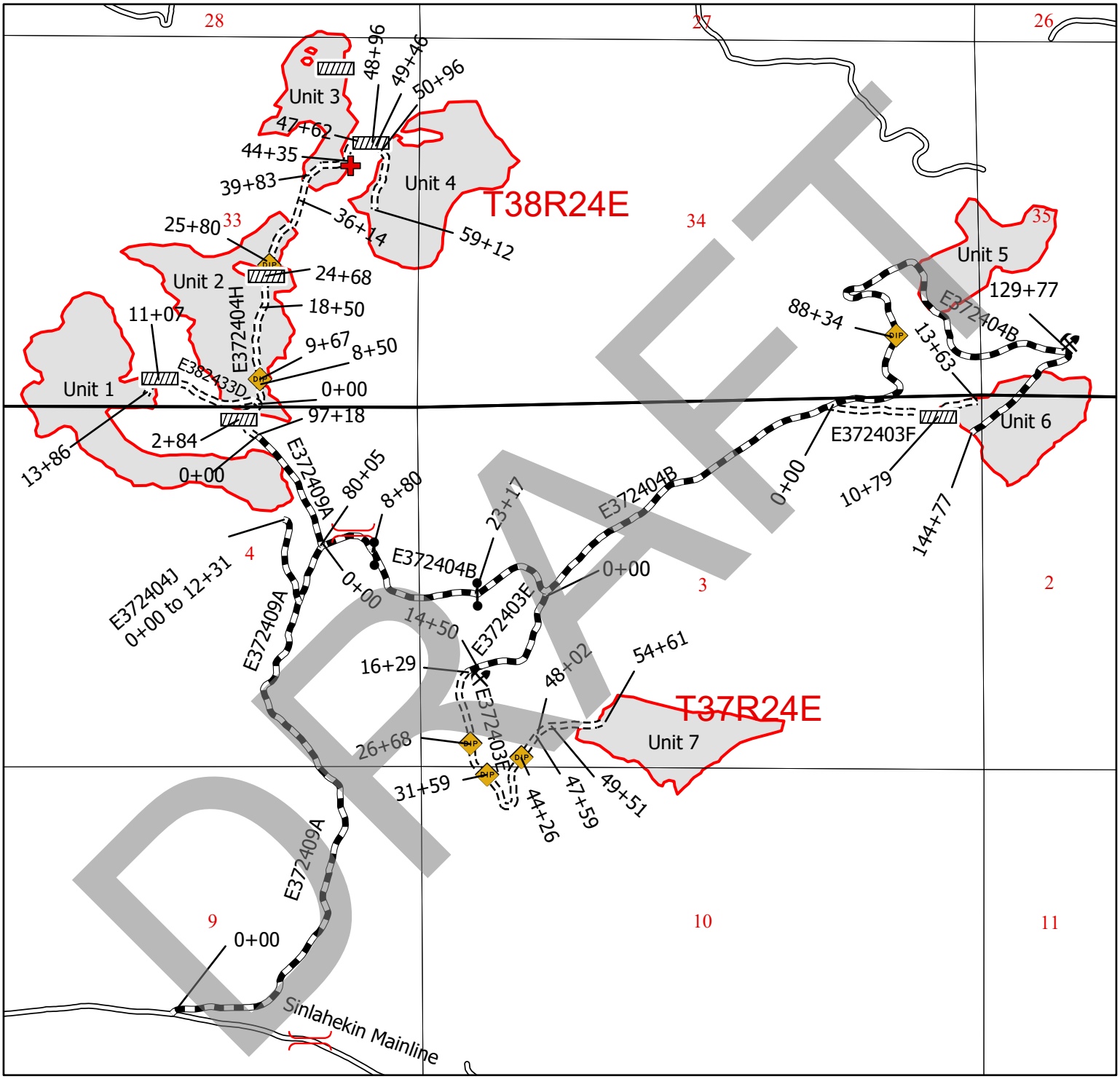

N W E S

0 500 1,000 2,000 3,000 4,000 Feet

Legend

- Culvert
- Section Lines
- Township Lines
- Roads
- Existing Roads
- consruction
- PHM
- ArmoredDip
- RockSource
- Gate
- Waste Area
- Unit Boundary
- Bridge

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Sale Name: Wood Chute | Road Plan Map | Region: Northeast

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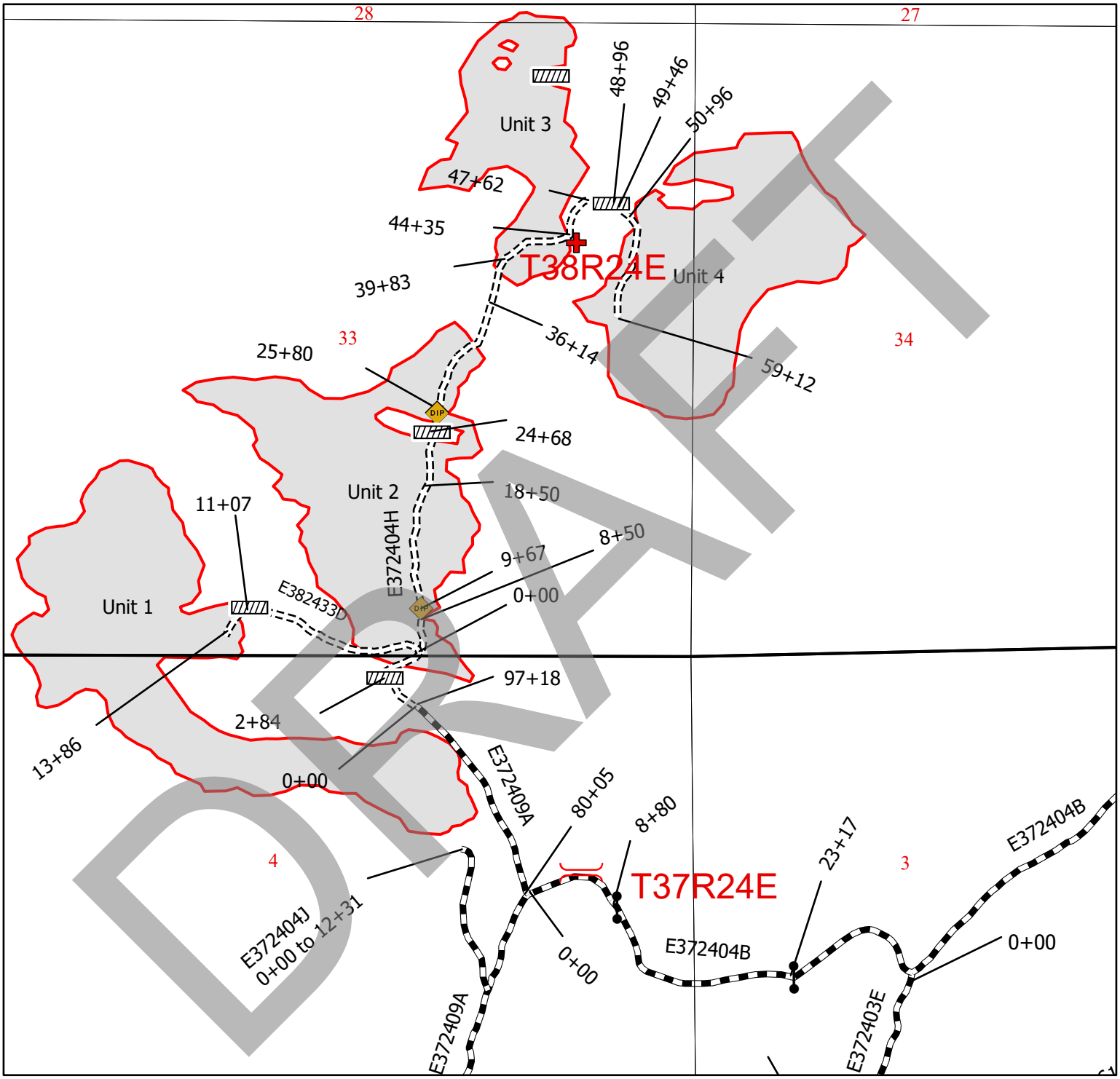

N W E S

0 375 750 1,500 2,250 3,000 Feet

Legend

- Culvert
- Section Lines
- Township Lines
- Roads
- Existing Roads
- consruction
- PHM
- ArmoredDip
- RockSource
- Gate
- Waste Area
- Bridges
- Unit Boundary

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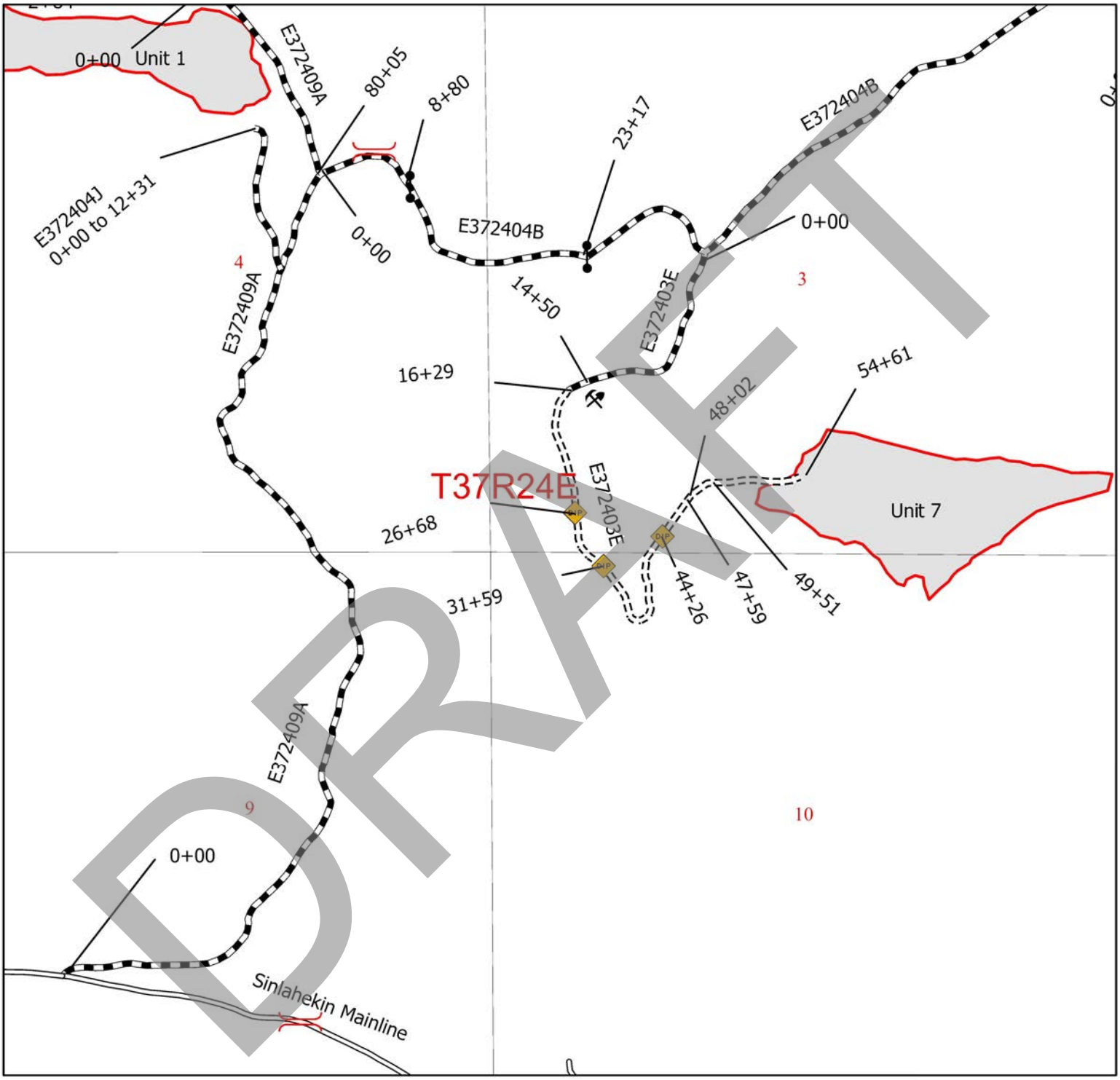

N

W E

S

0 375 750 1,500 2,250 3,000 Feet

Legend

- Culvert
- Section Lines
- Township Lines

Roads

- Existing Roads
- consruction
- PHM

- ArmoredDip
- RockSource
- Gate
- Waste Area
- Unit Boundary
- Bridge

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Sale Name: Wood Chute | Road Plan Map | Region: Northeast

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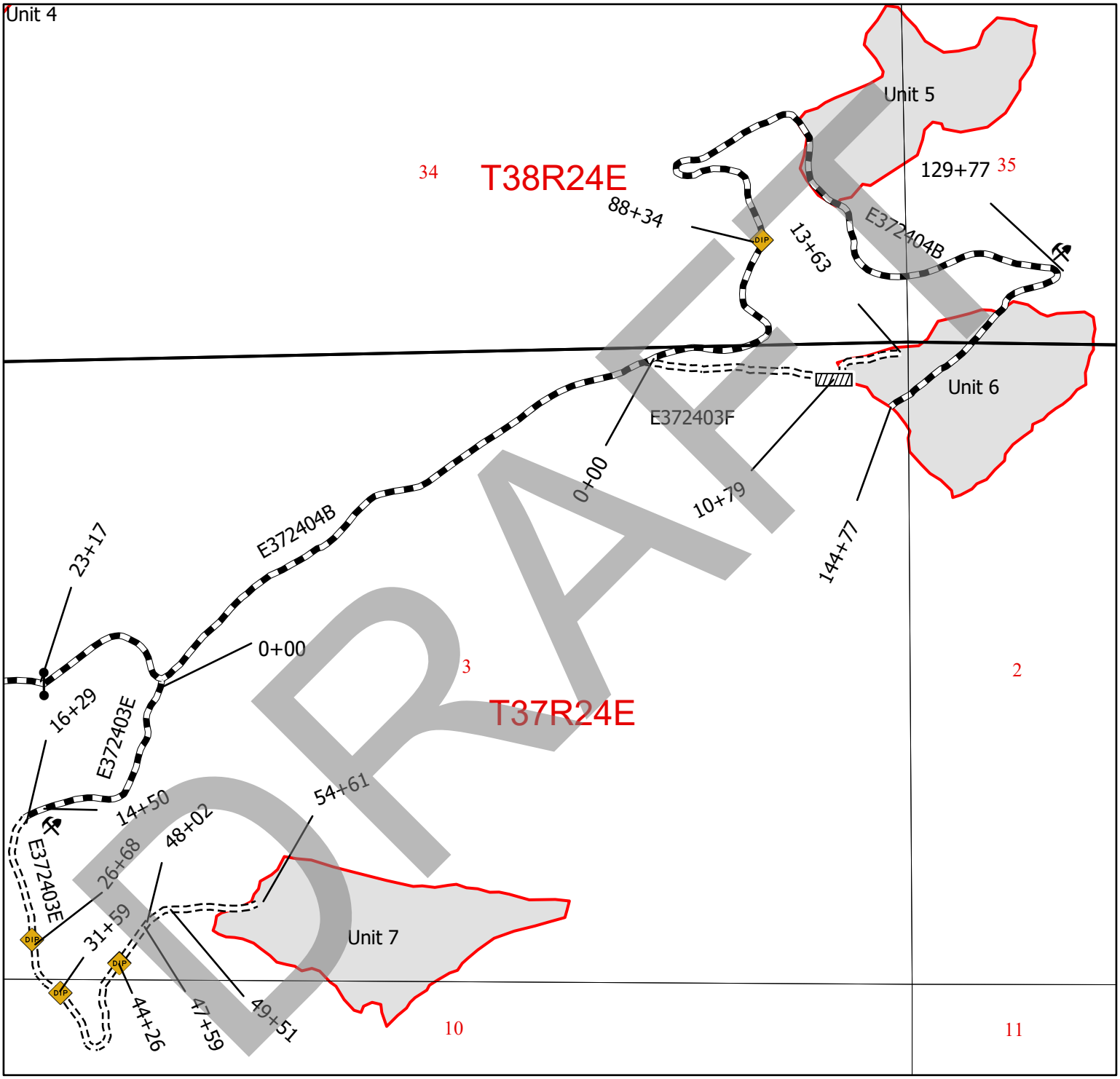

N

W E

S

0 437.5 875 1,750 2,625 3,500 Feet

Legend

- Culvert
- Section Lines
- Township Lines

Roads

- Existing Roads
- consruction
- PHM

- ArmoredDip
- RockSource
- Gate
- Waste Area
- Unit Boundary

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Sale Name: Wood Chute | Road Plan Map | Region: Northeast

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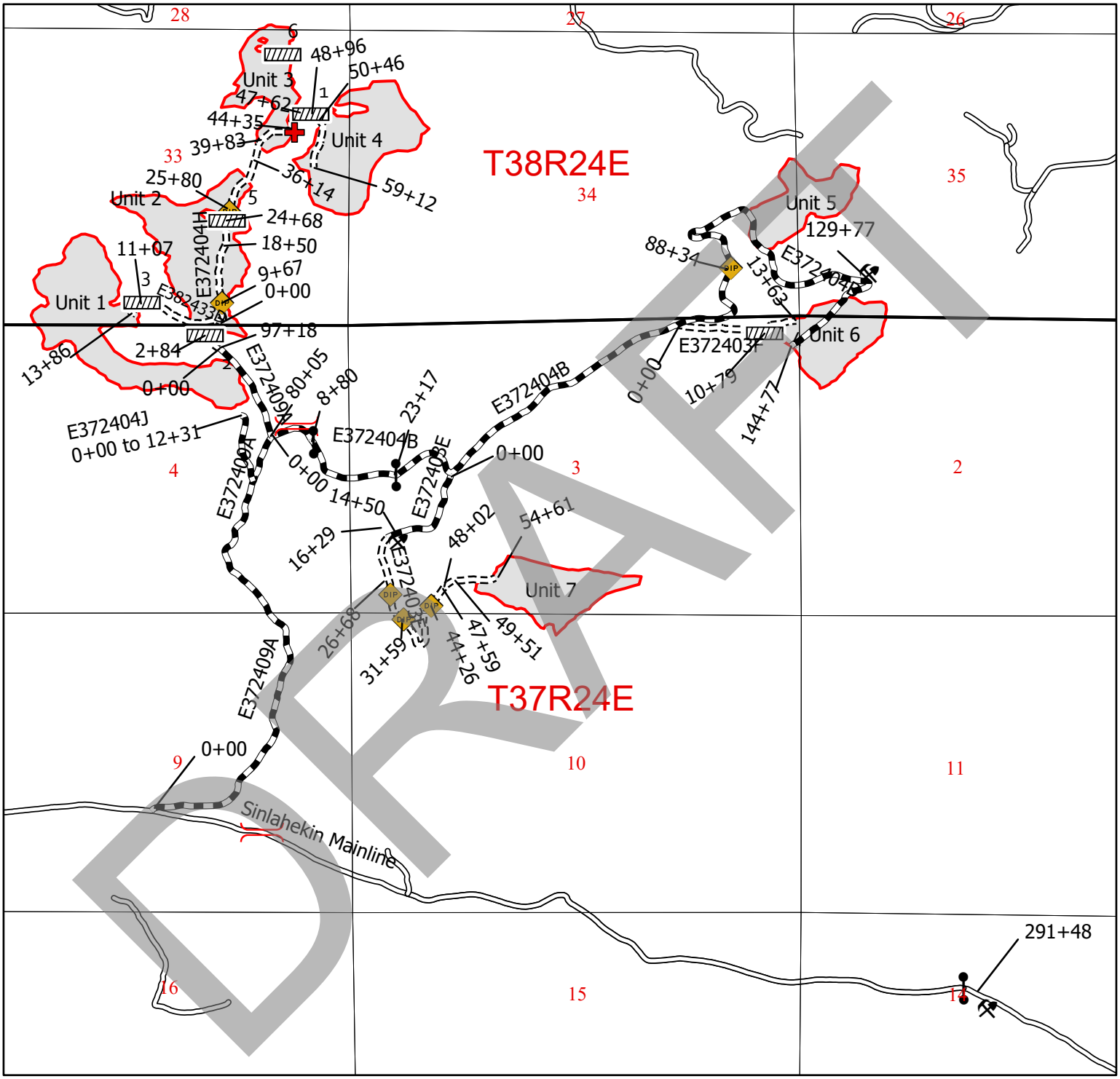

N W E S

0 1,000 2,000 4,000 6,000 8,000 Feet

Legend

- Culvert
- Section Lines
- Township Lines
- Roads
  - Existing Roads
  - consruction
  - PHM
- ArmoredDip
- RockSource
- Gate
- Waste Area
- Bridge
- Unit Boundary

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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

WOOD CHUTE TIMBER SALE ROAD PLAN
OKANOGAN COUNTY
HIGHLANDS DISTRICT
NORTHEAST REGION

AGREEMENT NO.: 30-106639 STAFF ENGINEER: COLIN ROJAS

DATE: 7/10/2024 DRAWN & COMPILED BY: COLIN ROJAS

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
E372403E	16.29	Pre Haul Maintenance
E372403E	38.32	Construction
E372403F	13.63	Construction
E372404B	144.77	Pre Haul Maintenance
E372404H	59.12	Construction
E372404J	12.31	Pre Haul Maintenance
E372409A	97.18	Pre Haul Maintenance
E382433D	13.86	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing & grubbing, pioneering & decking logs, subgrade construction, rolling dip, cross drain, and culvert installation, Fish passage structure installation, cut & fill, embankment construction, riprap and rock application. Construct to the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications, unless otherwise specified in design details.

Road	Stations	Requirements
E372403E	16+29 to 54+61	See sections 3, 4, and 5
E372403F	0+00 to 13+63	See sections 3, 4, and 5
E372404H	0+00 to 59+12	See sections 3, 4, and 5
E382433D	0+00 to 13+86	See sections 3, 4, and 5

0-6 PRE-HAUL MAINTENANCE

Maintenance includes, but is not limited to brushing, subgrade reshaping, subgrade lifting, rolling dip, and culvert installation, grading, riprap and rock application. Reference the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications. Boundaries

Road	Stations	Requirements
E372403E	0+00 to 16+29	Brushing, grubbing, grading
E372404B	0+00 to 144+77	Brushing, grubbing, grading, ditch cleaning/reshaping, clean culvert inlets and outlets, reshape dips, improve road drainage
E372404J	0+00 to 12+31	grading
E372409A	0+00 to 97+18	Brushing, grubbing, grading, improve dips, clean culvert inlets and outlets.

0-7 POST-HAUL MAINTENANCE

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

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 shall be submitted, in writing, to the Contract Administrator for consideration. The State must approve the submitted plans before construction begins.

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

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

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. These tolerances do not supersede clauses 1-6, 4-3, and 4-4.

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.

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

1-7 TEMPORARY ROAD CLOSURE

The Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction shall not close any road for more than 21 consecutive days.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during road work or operation activities. Repairs and replacements shall be directed by the Contract Administrator. Repairs to structural materials will be made according to the manufacturer's recommendation, and shall not begin without written approval from the Contract Administrator.

1-9 DAMAGED METALLIC COATING

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

1-15 ROAD MARKING

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

- Road work and maintenance is marked with orange flagging or red tipped stakes

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

The Purchaser shall notify the Contract Administrator a minimum of 14 calendar days before any road work begins.

1-23 ROAD WORK PHASE APPROVAL

Written approval by Contract Administrator must be received upon completion of the following phases of road work:

- Subgrade construction
- Drainage installation
- Subgrade compaction

1-25 ACTIVITY TIMING RESTRICTION

Construction restrictions apply to this contract. All construction and transportation of heavy equipment and/or trucks is prohibited between the following dates, except as may be authorized in writing by the Contract Administrator.

March 15th - June 1st

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTIONS, the Purchaser shall provide a maintenance plan to include further protection of state resources. The Contract Administrator must approve the maintenance plan, in writing, before operation in the closure period. The Purchaser shall be required to maintain all haul roads at their own expense.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- Wheel track rutting exceeds 4 inches on jaw run/pit run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 8 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- 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.

1-32 BRIDGE SURFACE RESTRICTION

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

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

Purchaser shall have bridges load rated by a Registered Professional Engineer licensed in the State of Washington. All load rating reports, calculations, or drawings must be stamped by the licensed engineer and submitted to the Contract Administrator prior to allowing any work to continue. All damage to the bridge from transporting equipment will be repaired at the Purchaser's expense.

1-33 SNOW PLOWING RESTRICTION

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-4 PASSAGE OF LIGHT VEHICLES

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

A grader shall be used to shape existing surfaces.

2-6 CLEANING CULVERTS

All inlets and outlets of culverts shall be cleaned before the haul of timber and shall be subject to the written approval of the Contract Administrator.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean all ditches and catch basins. Work shall be completed before haul of timber.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

Vegetative material up to 3 inches in diameter, including limbs, shall be cut as shown on the BRUSHING DETAIL-D2. Brushing shall be achieved by manual or mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation shall not be disturbed unless directed by the Contract Administrator.

3-2 BRUSHING RESTRICTION

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal shall not be used for brushing. The Purchaser is required to submit a detailed list of equipment and methods to be used during brushing, for approval by the Contract Administrator before starting work. Excavator buckets, log loaders and similar equipment shall not be used for brushing unless otherwise approved in writing by the Contract Administrator.

3-3 BRUSH REMOVAL

Remove brushing debris from the road surface, ditch lines, and culvert inlets and outlets.

3-5 CLEARING

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

3-7 RIGHT-OF-WAY DECKING

Deck all right-of-way timber. Decks shall be parallel to the road centerline and placed within the cleared right-of-way. Decks shall be free of dirt, limbs and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

3-8 PROHIBITED DECKING AREAS

Right-of-way timber shall not be decked in the following areas:

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 40%.
- Against standing trees.

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Those stumps outside the grubbing limits but with undercut roots shall also be removed. Stumps over 22 inches diameter shall be split. Stumps over 40 inches shall be quartered. Grubbing shall be completed before starting excavation and embankment. All stump holes shall be filled and compacted, and repair any damage caused due to ripping stumps out of the ground.

3-12 STUMP PLACEMENT

Grubbed stumps shall be placed outside of the clearing limits as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps shall be piled. Piles shall be dirt free and piled with a hydraulic excavator.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, before approval of final maintenance.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris shall be located within the cleared right-of-way or in natural openings approved in writing by the Contract Administrator.

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland, on road subgrades road prism excavation and embankment slopes embankments as shown on the TYPICAL SECTION SHEET.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris in natural openings unless otherwise detailed in this road plan. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

3-30 EXCLUSION OF DOZER BLADES

Dozer blades are not permitted for the piling of organic debris.

3-31 PILING

Organic debris shall be piled. Debris piles shall be made to be burnable, clean, tight, and free of rock or soil. Piles shall be made no closer than 20 feet from standing timber, and no higher than 10 feet. Debris piles shall be placed within the cleared right-of-way, or in natural openings, as designated by the Contract Administrator. Placement of debris piles outside of the right-of-way limits is subject to the written approval of the Contract Administrator.

3-32 END HAULING ORGANIC DEBRIS

On slopes greater than 55%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause **3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS** or to a waste area located by the Contract Administrator.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

The Purchaser shall use a track mounted hydraulic excavator for construction work, unless authorized, in writing, by the Contract Administrator.

4-2 PIONEERING

Pioneering shall not extend past construction that will be completed during the current construction season. Pioneering shall not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions shall be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed except as designed:

- Grade and alignment shall have smooth continuity, without abrupt changes in direction.
- Maximum grade shall not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Sag vertical curves shall not have a grade change greater than 5% in 100 feet.
- Crest vertical curves shall not have a grade change greater than 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. The following standards for switchbacks shall be followed:

- Adverse grades on switchbacks shall not exceed 10%.
- Favorable grades through switchbacks shall not exceed 12%.
- Transition grades entering and leaving switchbacks shall not exceed a 5% grade change.
- Transition grades required to meet switchback grade limitations shall be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes no steeper than shown on the following table**:**

Material Type	Excavation Slope Ratio	Excavation Slope Percent
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
Common Earth (on slopes over 70%)	½:1	200
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

4-6 EMBANKMENT SLOPE RATIO

Unless construction staked or designed, embankment slopes shall be constructed no steeper than shown on the following table:

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

4-12 FULL BENCH CONSTRUCTION

On the following road(s),and where side slopes exceed 55%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed. If designated, Purchaser shall end haul waste material to the location specified in Clause **4-37 WASTE AREA LOCATION**.

Road	Full Bench Location	Comments
E372404H	9+67 to 18+50	
E372404H	36+14 to 39+83	
E372404H	44+37 to 47+62	

4-14 ONE-FOOT EXCAVATION LIMIT

Where side slopes are 0% to 15%, the cut at centerline shall not exceed one foot unless approved by the Contract Administrator.

4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS

On the following roads, Purchaser shall construct the subgrade to the dimensions shown on the INTERSECTION DETAIL.

Road	Stations
E372403E	16+29 to 17+04
E372403F	0+00 to 0+75
E372404H	5+00 to 5+75
E382433D	0+00 to 0+75

4-21 TURNOUTS

Turnouts shall be intervisible with maximum of 1,000 feet between turnouts, unless shown otherwise on drawings. Locations shall be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the TYPICAL SECTION SHEET. Turnouts are subject to written approval from the contract administrator.

4-22 TURNAROUNDS

Turnarounds shall be no larger than 30 feet long and 30 feet wide. Locations shall be subject to approval by the Contract Administrator.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be scattered outside the grubbing limits.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

The Purchaser shall construct ditch outs as identified and as needed and as directed by the Contract Administrator. Ditch outs shall be constructed in a manner that diverts ditch water onto the forest floor and shall have excavation back slopes no steeper than a 1:1 ratio.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Waste material may be side cast on side slopes up to 55% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, all excavation shall be end hauled or pushed to designated embankment sites and waste areas.

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 as listed below.

Road	Waste Area Location	Quantity allowed
E372404H	44+35	500 cu yds

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited 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 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.
- Waste Disposal areas are subject to written approval from the contract administrator.

4-46 COMMON BORROW

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines in the sample cannot be rolled, between the hand and a smooth surface, into a thread at any moisture content. Common borrow material must be free of rocks greater than 6 inches in any dimension.

4-55 ROAD SHAPING

The road subgrade and surface shall be shaped as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape shall ensure runoff in an even, un-concentrated manner, and shall be uniform, firm, and rut-free. Surface material is not to be pushed off the road and over the edge of the road. All material from road surface shall remain on road surface. All grading shall be accomplished using a motor grader with a minimum of 175 horsepower.

4-56 DRY WEATHER SHAPING

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

4-60 FILL COMPACTION

All embankment and waste material shall be compacted. Minimum acceptable compaction is achieved by placing embankments in 1 foot or shallower lifts, and routing excavation equipment over the entire width of each lift. Except as otherwise specified in this plan, a vibratory plate compactor or tamper shall be used for areas specifically requiring keyed embankment construction, and for embankment segments too narrow to accommodate equipment. Compaction with a plate compactor shall be made by a minimum of three full coverages; each lift shall not exceed 6 inches in depth.

4-61 SUBGRADE COMPACTION

Constructed or reconstructed subgrades shall be compacted full width. Subgrade compaction shall be approved, in writing, by the Contract Administrator before rock application or timber haul.

4-62 DRY WEATHER COMPACTION

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

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Berms shall be removed from road shoulders to permit the escape of runoff. The construction of ditch outs will be required where ponding will result from the effects of side cast debris. Berms can be brought back onto the road surface if it is not contaminated with any organic material. Berms must be of similar material as road surface in order to bring berm back onto road surface.

5-5 CULVERTS

Culverts shall be installed as part of this contract. Culverts shall be installed concurrently with subgrade work and shall 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 shall be adjusted to fit as-built conditions and shall not terminate directly on unprotected soil that will erode. Culverts shall be new steel or aluminum meeting the material specifications in Clauses 10-15 through 10-23. Culvert placement shall precede embankment construction.

5-6 CULVERT TYPE

Purchaser shall install culverts made of steel in accordance with Clauses 10-15 through 10-24.

5-7 USED CULVERT MATERIAL

On temporary roads, Purchaser may install used culverts. All other roads must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-24.

5-8 TEMPORARY STREAM CULVERT INSTALLATION

Purchaser shall install temporary culverts as shown in the Engineer Drawings. Temporary stream culverts must be located in the natural channel of the stream. Temporary culverts shall only be in place between June 15th and September 30th, and must be removed upon completion of road use.

Road	Stations
E372404H	48+96

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, 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.

5-15 CULVERT INSTALLATION

Installation shall 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".

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 30 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts shall 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 shall be installed with a depth of cover specified in the Engineer's design, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

5-20 ENERGY DISSIPATERS

Energy dissipaters shall be installed to prevent erosion and are subject to approval by the Contract Administrator. The type of energy dissipater and the amount of material shall be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Energy dissipaters will be consistent with light loose rip rap specifications.

5-25 CATCH BASINS

Catch basins shall be constructed to resist erosion in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 4 feet wide and 4 feet long with back slopes consistent with Clause 4-5 CUT SLOPE RATIO.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Headwalls shall be constructed in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all permanent cross drain culverts. Rock used for headwalls shall meet the specifications for Light Loose Rip Rap. Rock shall 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 shall not restrict the flow of water into culvert inlets or catch basins. Placement shall be by zero-drop-height method only. No placement by end dumping or dropping of rock shall be allowed

5-27 ARMORING FOR CULVERTS

Purchaser shall place Light Loose Rip Rap in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT & DRAINAGE LIST and CULVERT AND DRAINAGE SPECIFICATIONS DETAIL. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Light Loose Rip Rap must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP.

5-28 ARMORING FOR ARMORED DIPS

At the following locations, Purchaser shall place rock in accordance with the ARMORED ROLLING DIP DETAIL. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

Road	Stations	Volume (CY)*
E372404H	25+80	10
E372404H	9+67	10
E372404B	88+34	10
E372403E	26+68	10
E372403E	31+59	10
E372403E	44+26	10

5-30 DRIVABLE WATERBAR CONSTRUCTION

Purchaser shall construct drivable waterbars in accordance with the DRIVABLE WATERBAR DETAIL. Minimum frequency of drivable waterbars shall be at a maximum spacing of 300 feet horizontal or one for every 10 feet of vertical change. Where grade exceeds 15% slope, minimum frequency of drivable waterbars shall be at a maximum spacing of 150 feet horizontal.

5-31 ROLLING DIP CONSTRUCTION

Rolling dips shall be constructed in accordance with the ROLLING DIP DETAIL and as specified on the CULVERT & DRAINAGE LIST. Rolling dips shall be installed concurrently with construction of the subgrade and shall be maintained in an operable condition. Minimum frequency of rolling dips shall be at a maximum spacing of 400 feet horizontal or one for every 10 feet of vertical change. Dips are to be armored with rock to prevent erosion.

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads shall be water barred by November 1. Water bars shall be constructed according to the attached DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between water bars or between natural drainage paths, and with a maximum spacing of 300 feet.

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the rock list may be obtained from the following source on state land at no charge to the Purchaser.

Road	Stations	Comments
E372403E	14+50	Existing rock source
E372404B	129+77	Rocky cut slope
Sinlahekin Mainline	291+48	Pit Run. Larger rock used to lift Road E372404H through the wetland

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

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

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

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

Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.

- All vehicle access to the top of the pit faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- There needs to be a minimum of a 14' of gradable road surface after drilling and shooting during road construction.
- All solid rock within road prism must have a minimum of 1 feet of fill over it.
- Purchaser shall notify the Contract Administrator a minimum of 7 working days before blasting operations.
- 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.

6-21 IN-PLACE PROCESSING

The Purchaser may use in-place processing, such as a grid roller or other method, if suitable crushing can be demonstrated to meet the surfacing size restrictions. The use of in-place processing methods is subject to written approval by the Contract Administrator.

6-21 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate shall have at least one fractured face. Coarse aggregate is the material retained on each specification sieve sized 1/4-inch and above, if that sieve retains more than 5% of the total sample.

6-23 ROCK GRADATION TYPES

Purchaser shall provide or manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-28 1 ¼-INCH MINUS CRUSHED ROCK

% Passing 1 ¼" square sieve	100%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	5%

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

6-38 4-INCH IN-PLACE ROCK

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

In-place rock may not contain organic debris and trash. No more than 50 percent of rock may be larger than 6 inches in any dimension and no rock may be larger than 8 inches in any dimension.

6-41 SELECT PIT RUN ROCK

No more than 50 percent of the rock may be larger than 6 inches in any dimension and no rock may be larger than 8 inches in any dimension. Select Pit Run rock may not contain organic debris, dirt, and trash. Rock may require processing to meet this specification.

Road	Station	Comment
Sinlahekin Mainline	291+48	Pit Run Is located in piles off to the side of the road just before passing through the gate on the Sinlahekin Mainline

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

Heavy 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. Heavy loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

Quantity	Size Range
30% to 90%	1 ton to 2 ton (28”- 36”)
30% to 70%	500 lbs. to 1 ton (18”- 28”)
20% to 50%	50 lbs. to 500 lbs. (8”- 18”)
10% to 20%	3 inch to 50 lbs. (3”- 8”)

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(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 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.

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**.**

6-76 DRY WEATHER ROCK COMPACTION

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

6-80 WATERING FOR DUST ABATEMENT

Purchaser shall use water for dust abatement

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures must be removed from state Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately. Purchaser shall retrieve all material carried downstream from the jobsite.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

Purchaser must construct bank protection in accordance with the stream crossing, design, specifications, and details.

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

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

7-57 CULVERT SHAPE CONTROL

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

7-70 GATE CLOSURE

On the following roads, Purchaser shall keep gates closed at all times. All gates must be closed at termination of use, unless authorized in writing by the contract administrator.

Road	Station	Comment
E372404B	8+80	Stretch gate
E372404B	23+17	Stretch gate
Sinlahekin Mainline	291+48	Steel Gate

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

Road	Stations	Requirements
E372403E	54.61	Grading, installing waterbars, and refer to Forest Access Road Maintenance Specification
E372403F	13.63	Grading, installing waterbars, and refer to Forest Access Road Maintenance Specification
E372404B	144.77	Grading, re installing waterbars, improving dips, cleaning ditches, improving ditch drainage, and refer to Forest Access Road Maintenance Specification
E372404H	59.12	Grading, installing waterbars, pulling temporary fish culver, and refer to Forest Access Road Maintenance Specification
E372404J	12.31	Grading
E372409A	97.18	Grading, installing waterbars, and refer to Forest Access Road Maintenance Specification
E382433D	13.86	Grading, installing waterbars, and refer to Forest Access Road Maintenance Specification

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface as approved, in writing, by the Contract Administrator.

9-11 LANDING EMBANKMENT

Landing embankments shall be sloped to original construction specifications.

10-2 GEOTEXTILE FOR SEPARATION

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for separation. Material must be free of defects, cuts, and tears.

	ASTM Test	Requirements
Type	--	Non-woven
Apparent opening size	D 4751	No. 30 max
Water permittivity	D 4491	0.02 sec^{-1}
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	>= 50%
Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts shall meet AASHTO M-36 (ASTM A-760) specifications. Culverts shall be galvanized (zinc coated meeting AASHTO M-218)

10-21 METAL BAND

Metal coupling and end bands must meet the AASHTO specification designated for the culvert and must have matching corrugations. Culverts 24 inches and smaller must have bands with a minimum width of 12 inches. Culverts over 24 inches must have bands with a minimum width of 24 inches.

10-24 GAUGE AND CORRUGATION

Unless otherwise stated in the engineer's design, metal culverts shall conform to the following specifications for gage and corrugation as a function of diameter.

Diameter	Gauge	Corrugation
18"	16 (0.064")	2 $^{2}/_{3}$" X $^{1}/_{2}$"
24" to 48"	14 (0.079")	2 $^{2}/_{3}$" X $^{1}/_{2}$"
54" to 96"	12 (0.109")	3" X 1"

11-01 ROAD STATION CALLOUTS

All roads and stationing with associated road work are listed below.

Road	Station	Notes
E372403E	0+00	Start PHM
	14+50	Rock Source
	16+29	End PHM & Start Construction
	26+68	Install Armored Dip
	31+59	Install Armored Dip
	44+26	Install Armored Dip
	47+59	Fill 3.25 feet
	48+02	Cut 3.25 feet and 2 stations of potential D&S
	49+51	1 station of potential D&S
	54+61	End Construction
E372403F		
	0+00	Start Construction
	10+79	Curve Widening and Install 18’ X 50’ culvert
	13+63	End Construction
E372404B		
	0+00	Start PHM, Ditch Cleaning/Improving,clean all culverts and improve all dips.
	8+80	Stretch Gate
	23+17	Stretch Gate
	88+34	Install Armored Dip
	129+77	Rock Source
	144+77	End of PHM, Ditch Cleaning/Improving,clean all culverts and improve all dips.
E372404H		
	0+00	Start Construction
	2+84	Install 24’ X 42’ Culvert
	8+50	Lay down 50’ of fabric through wetland, and fill ontop of it with pitrun. Cap the pit run with 1 ¼” rock.
	9+67	Start Full Bench End Haul, and install armored dip
	18+50	End Full Bench End Haul
	24+68	Install 24’ X 42’ Culvert
	25+80	Install Armored Dip to prevent surface water to flow into NP stream below
	36+14	Start Full Bench
	39+83	End Full Bench
	44+35	Waste Area & Start Full Bench

	47+62	End Full Bench
	48+96	Install Temporary Fish Culvert 36’ X 38’
	49+46	Start lifting road with fabric, Pit run rock off sinlahekan mainline, and smaller rock to cap the pit run through the wetland. Through the wetland the fill will range anywhere from 3-4 feet of pit run.
	50+96	End road lift and rocking through wetland
	59+12	End Construction
E372404J		
	0+00	Start PHM
	12+31	End PHM
E372409A		
	0+00	Start PHM
	80+05	Begin Heavy PHM and reshaping of road for hauling
	97+18	End PHM and reshaping of road for hauling
E382433D		
	0+00	Start Construction
	11+07	Install 24’ X 46’ Culvert
	13+86	End Construction

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-106639 **Name of Sale: Wood Chute** **Date: 7/10/2024**

CULVERT & DRAINAGE LIST

Road Name	Station	CULVERT			LENGTH			RIPRAP			Ditch	Staked	Rolling Dip	Notes
		Diameter (in)	Gauge	Skew	Culvert (ft)	Downspout	Flume	Inlet C.Y.	Outlet C.Y.	Catchbasin				
E372403E	26+68												X	9,12
E372403E	31+59												X	9,12
E372403E	44+26												X	9,12
E372403F	10+79	18	16		50									1,2,3,6,10,11
E372404B	88+34												X	9,12
E372404H	2+84	24	14		42									1,2,3,6,10,11
E372404H	9+67												X	9,12
E372404H	24+68	24	14		42									1,2,3,6,10,11
E372404H	25+80												X	9,12
*E372404H	48+96	36	14		38									1,2,3,6,10,11
E382433D	11+07	24	14		46									1,2,3,6,10,11
*Unit 3 Skid Trail		18	16		36									
*Temporary Culvert														

STRUCTURE NOTES

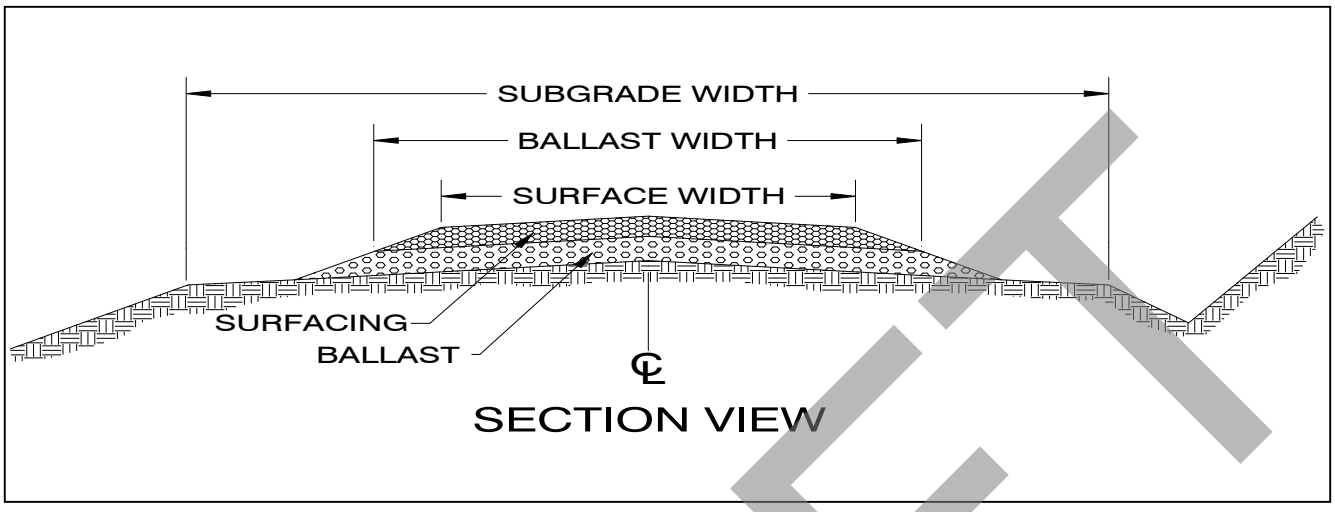
1. Install Headwall - See Detail D1
2. Install Catchbasin - See Detail D1
3. Armor Catchbasin - See Detail D1
4. Armor Ditch
5. Heavy Loose RipRap
6. Light Loose RipRap
7. Step Bevel Pipe Ends
8. Remove Existing Pipe
9. See Rolling Dip Detail D5
10. See Pipe Installation Detail D1
11. Install Energy dissipator - See D1
12. Armor Dip

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-106639 **Name of Sale: Wood Chute**

ROCK LIST



SECTION VIEW

1. ROCK DEPTHS ARE DEFINED AS COMPACTED DEPTHS.
2. LOOSE YARD QUANTITIES ARE DEPENDANT ON SOURCE.
3. ROCK SLOPES SHALL BE 1.5(H) : 1(V).
4. ALL ROCK SOURCES ARE SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	BALLAST SOURCE	BALLAST WIDTH (ft)	BALLAST DEPTH (in)	BALLAST QTY (cu.yd./sta	SURFACE SOURCE	SURFACE WIDTH (ft)	SURFACE DEPTH (in)	SURFACE QTY (cu.yd./sta	FABRIC WIDTH (ft)
E372403E	26+43	26+93					0		14	5	20	
E372403E	31+34	31+84					0		14	5	20	
E372403E	44+01	44+51					0		14	5	20	
E372404B	88+09	88+59					0		14	5	20	
E372404H	2+34	3+34					0		14	6	27	
E372404H	24+18	25+18					0		14	6	27	
E372404H	25+55	26+05					0		14	5	20	
E372404H	47+96	50+96					0		14	6	27	
E382433D	10+57	11+57					0		14	6	27	
							0				0	

DATE: 7/10/2024

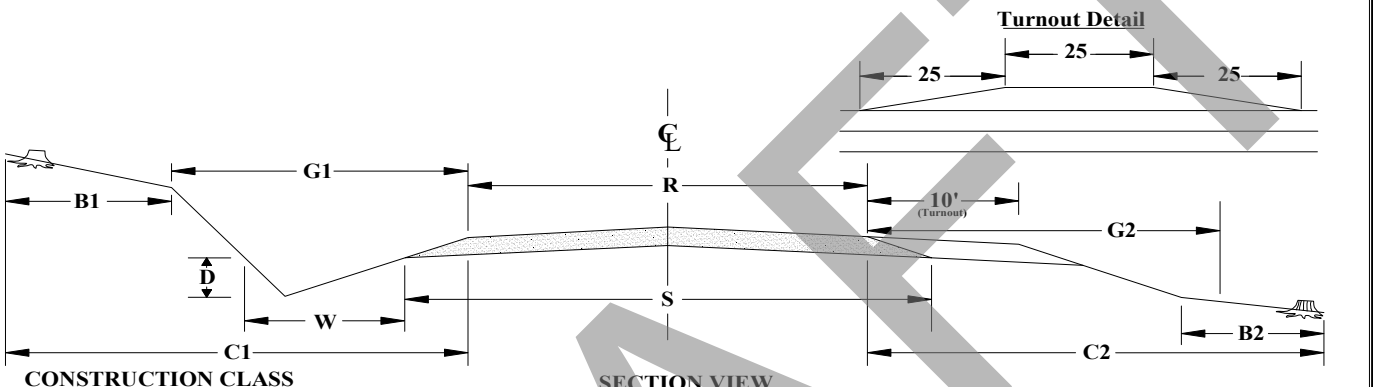
State of Washington

Department of Natural Resources

Application No. : 30-106639

Name of Sale: Wood Chute

Typical Section Sheet



CONSTRUCTION CLASS
NEW CONSTRUCTION - C
RECONSTRUCTION - R
PRE HAUL MAINTENANCE - P

ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	INSLOPE "/10'	OUTSLOPE "/10'	CROWN " AT CL	DITCH WIDTH (W)	DITCH DEPTH (D)	DITCH 2 SIDES			GRUBBING CUT BANK (G	GRUBBING FILL TOE (G2	ROAD CUT CLEARING (B	ROAD FILL CLEARING (B	R/W CUT CLEARING (C1)	R/W FILL CLEARING (C2)
E372403E	0+00	16+29	P		14									3	3			6	6
E372403E	16+29	54+61	C		14		4									6	6		
E372403F	0+00	13+63	C		14		4									6	6		
E372404B	0+00	144+77	P		14									3	3			6	6
E372404H	0+00	59+12	C		14		4									6	6		
E372404J	0+00	12+31	P		14									3	3			6	6
E372409A	0+00	97+18	P		14									3	3			6	6
E382433D	0+00	13+86	C		14											6	6		

Date: 07/11/2024

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the construction materials. 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 as directed, to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away , 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.

Sturctures

- Repair culverts, bridges, gates, fences, cattle guards, signs, and other road structures as required because of purchaser use. Repairs shall be subject to Contract Administrator's approval.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Preventative Maintenance

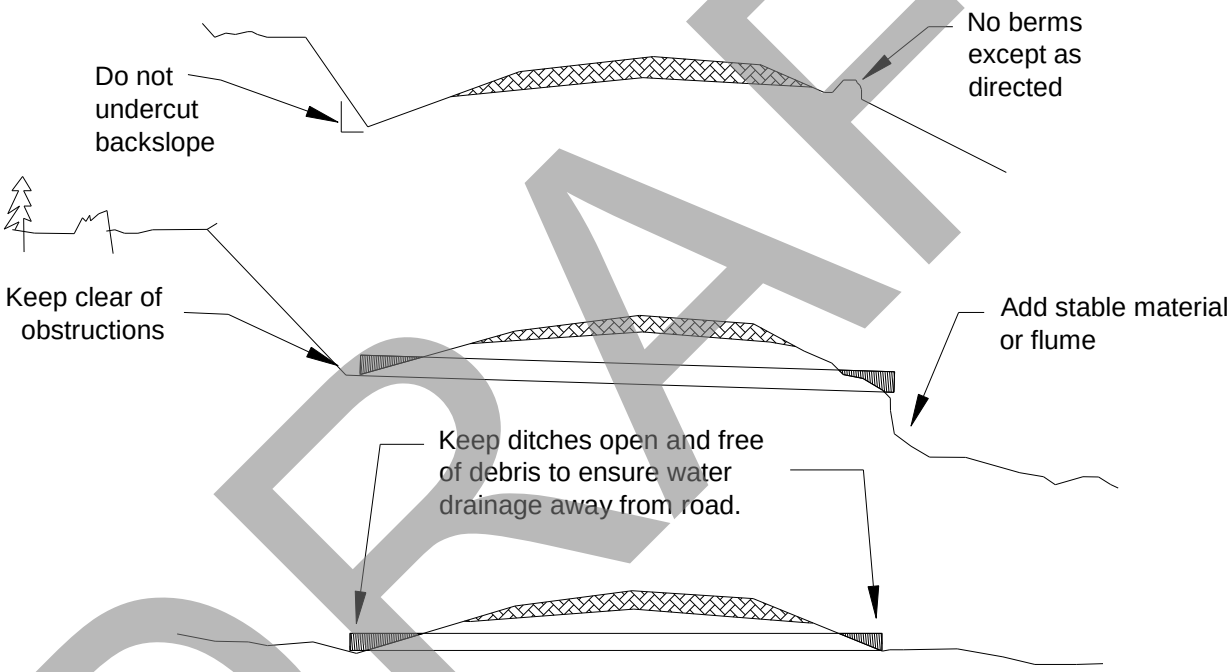
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

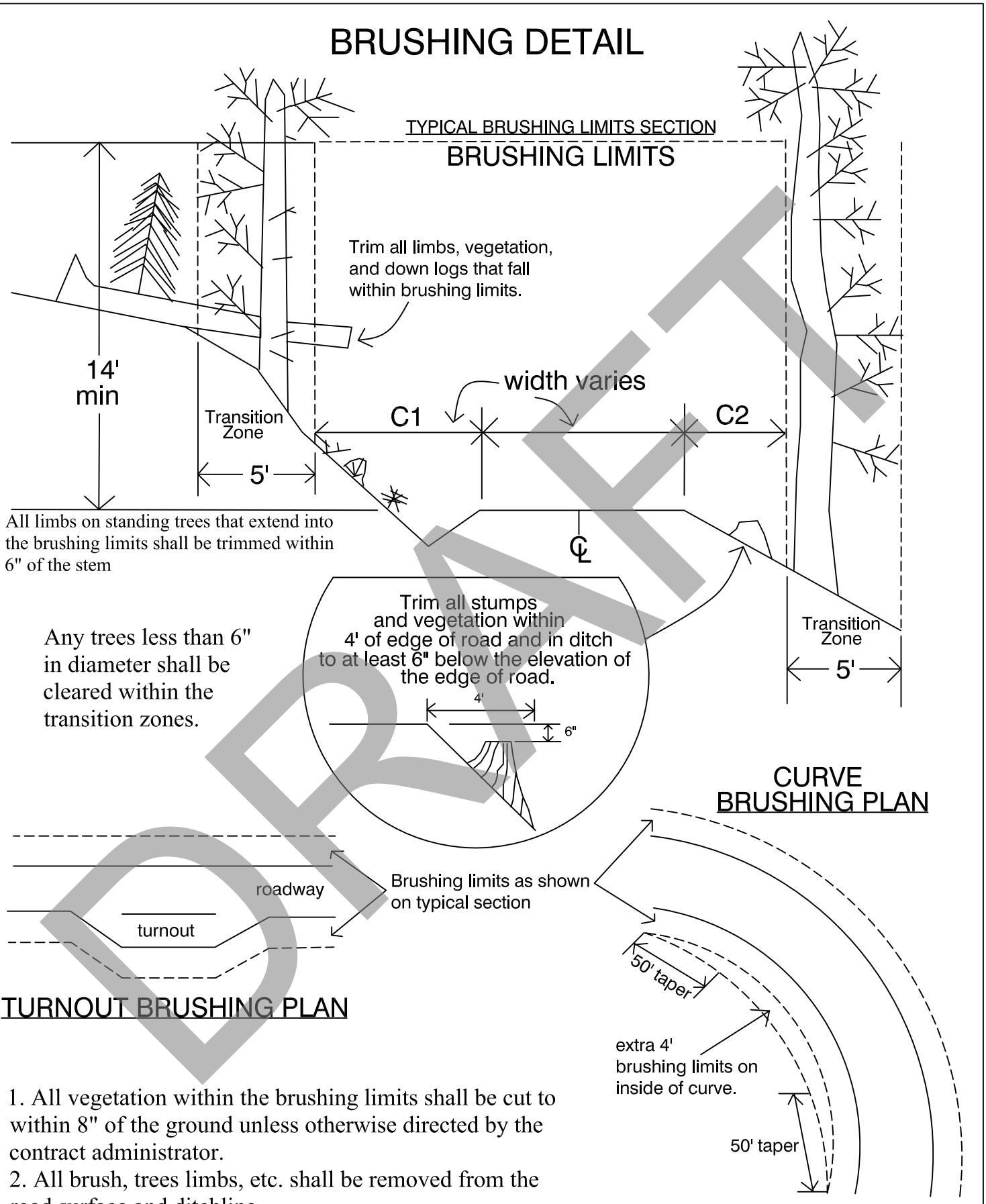
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



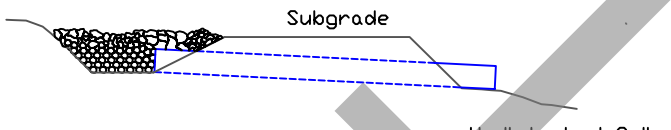
BRUSHING DETAIL



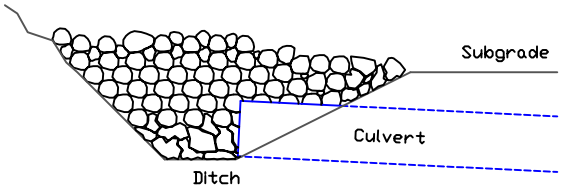
TURNOUT BRUSHING PLAN

1. All vegetation within the brushing limits shall be cut to within 8" of the ground unless otherwise directed by the contract administrator.
2. All brush, trees limbs, etc. shall be removed from the road surface and ditchline.
3. All debris that may roll or migrate into the ditchline shall be removed.

CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1

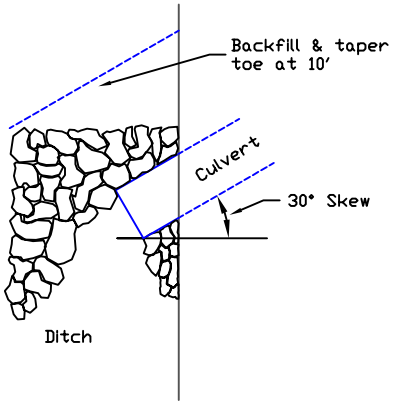


HEADWALLS



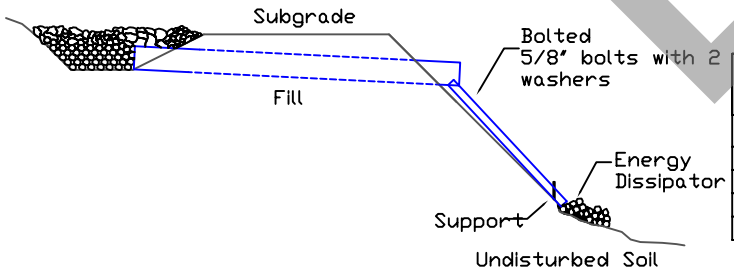
Headwall to be constructed of material that will resist erosion

PLAN VIEW



FLUME

Use where ground conditions are uniform, providing for stability of flume.



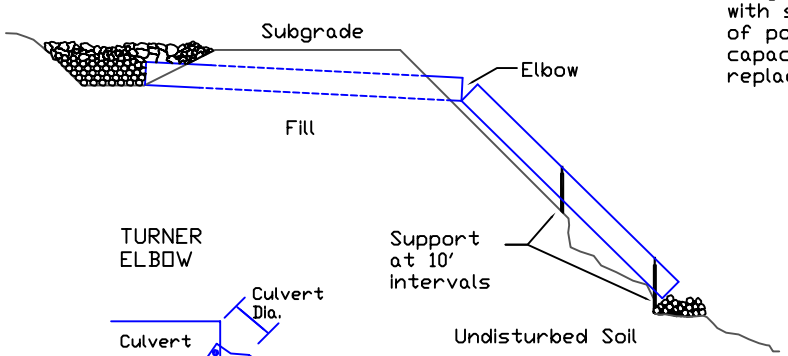
Minimum Cover	Minimum Bed Depth	Min. Trench Width	Nominal Diameter
A	B	C	D
12"	6"	36"	18"
12"	6"	42"	24"
12"	6"	48"	30"
12"	6"	54"	36"

CULVERT BACKFILL & BASE PREPARATION

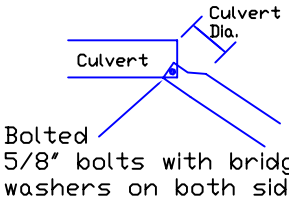
(For Culverts Less Than 36")

DOWNSPOUT

Use where ground conditions are irregular.



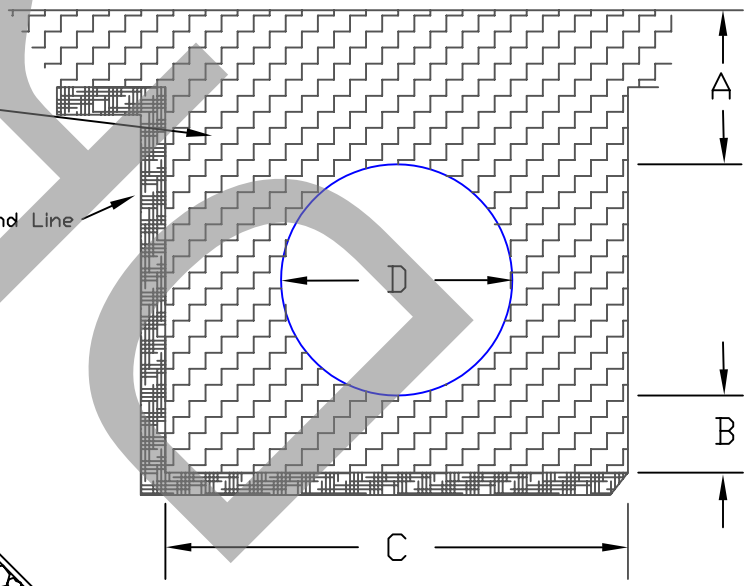
TURNER ELBOW



BEDDING MATERIAL:

Use granular material - 3" minus. Large rocks shall be replaced with suitable material. Materials of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill.

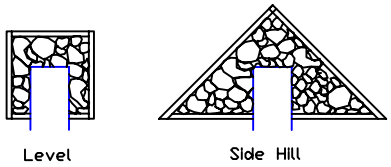
ROAD SURFACE



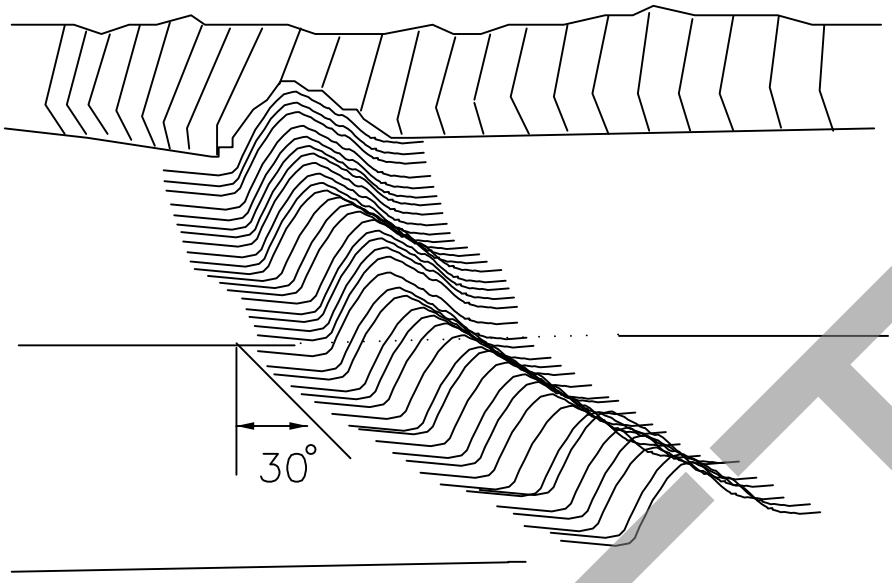
DISSIPATOR SPEC'S

Size in Culvert Diameters

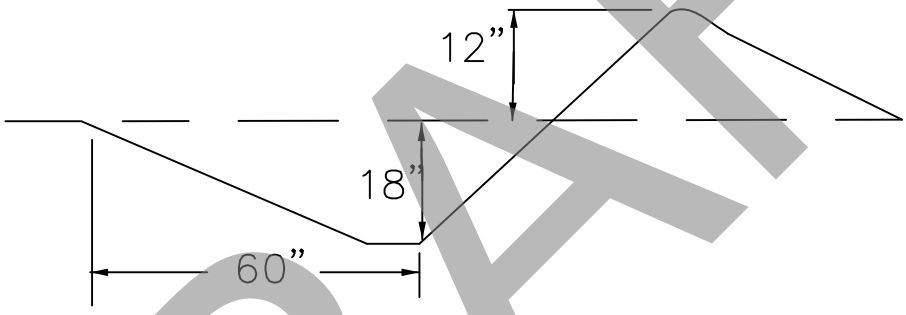
Area	2 X 2
Depth	1
Aggragate	1/3



Top View



Side View



1. Waterbar construction for forest roads with little or no traffic.
2. Specifications are average and may be adjusted to conditions.
3. Bottom of waterbar must be outsloped to ensure proper drainage.
4. Rock outlet if steep fill slope is present.

Driveable Waterbar Detail

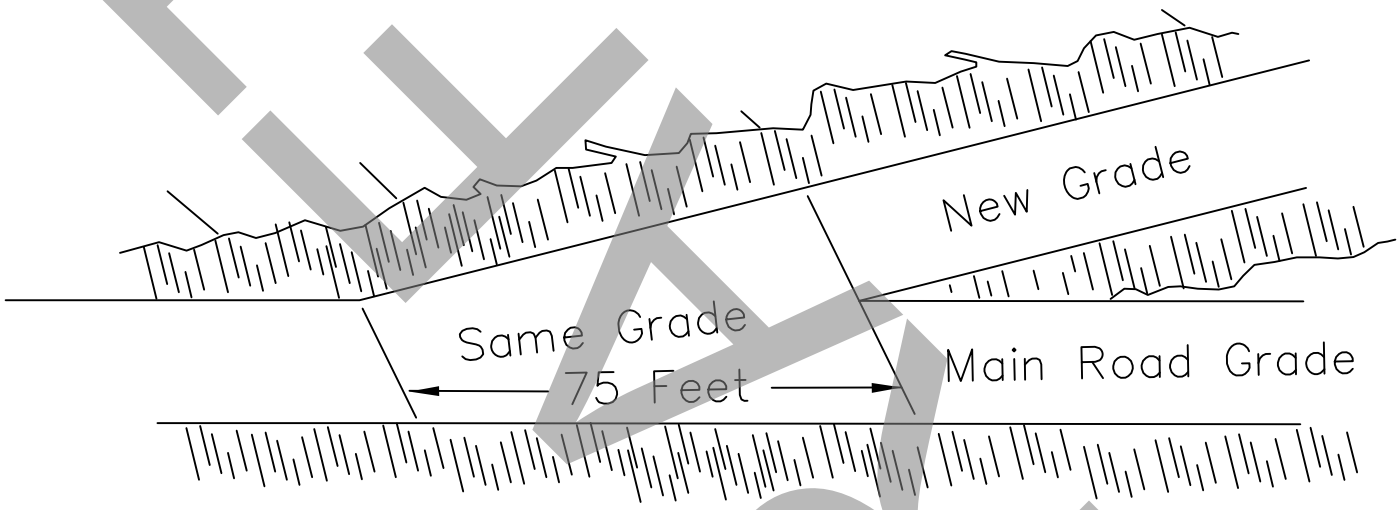
Northeast Region
Colville, Washington

WASHINGTON STATE DEPARTMENT OF
Natural Resources

Designed By:	Stash Slabinski	9/06/05
Drawn By:	Stash Slabinski	9/06/05

Revised:

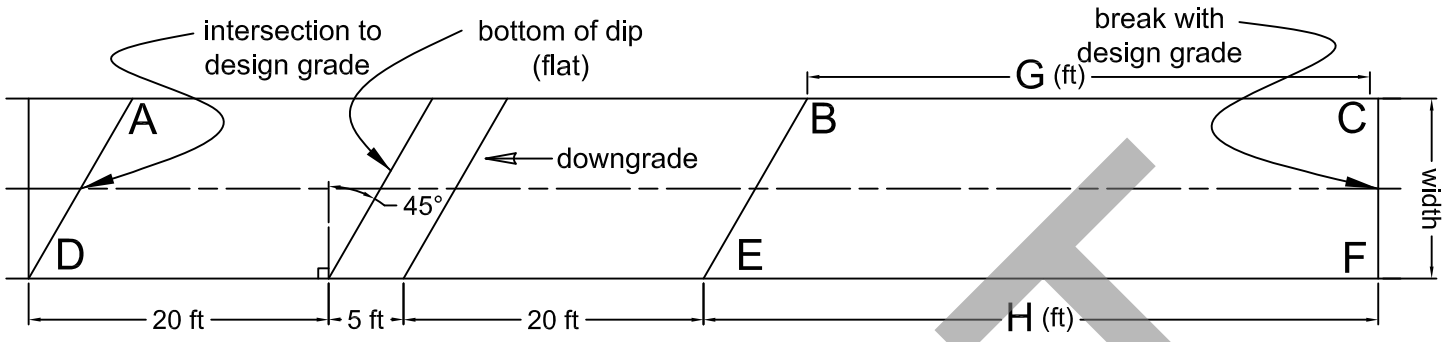
Intersection Detail



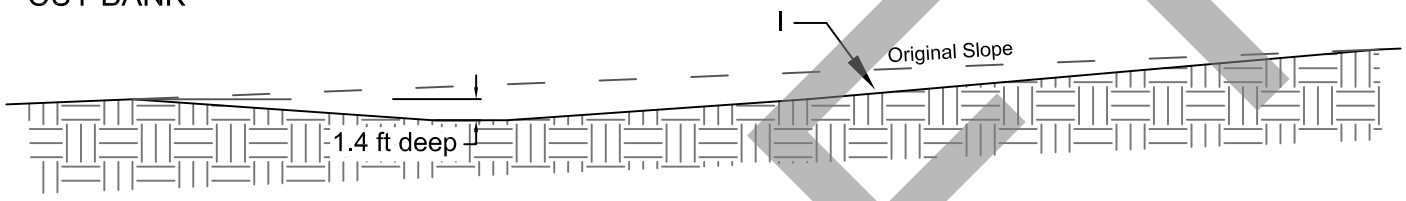
Main road and spur must have he same grade until there is horizontal separation from each other.

STANDARD 45° ROLLING DIP

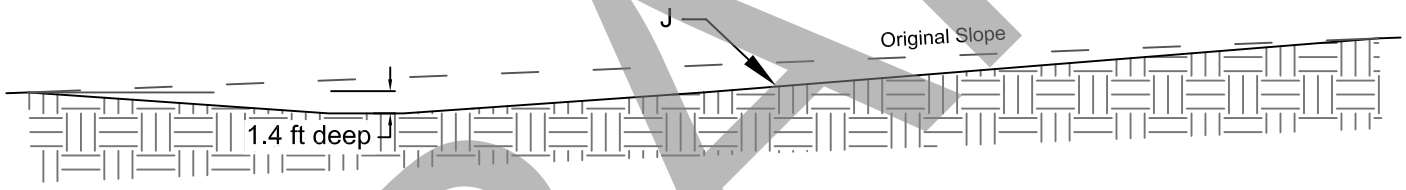
PLAN OF ROLLING DIP

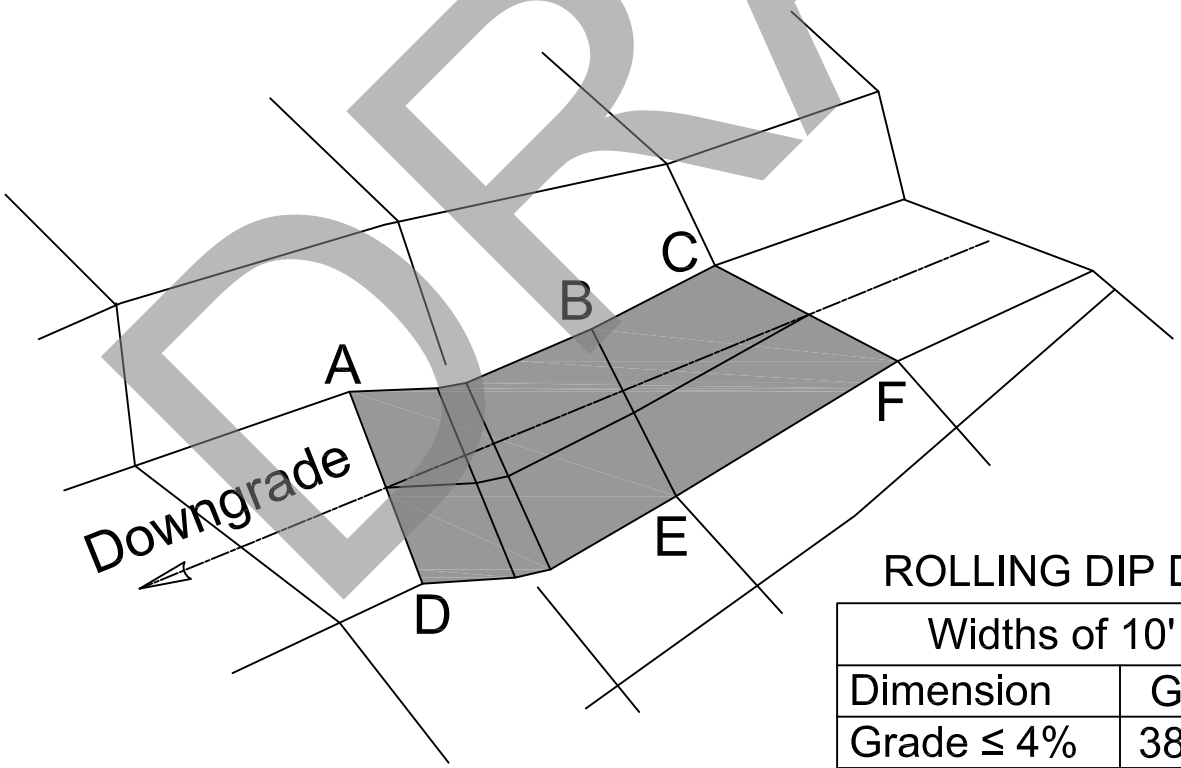


CUT BANK



FILL SLOPE



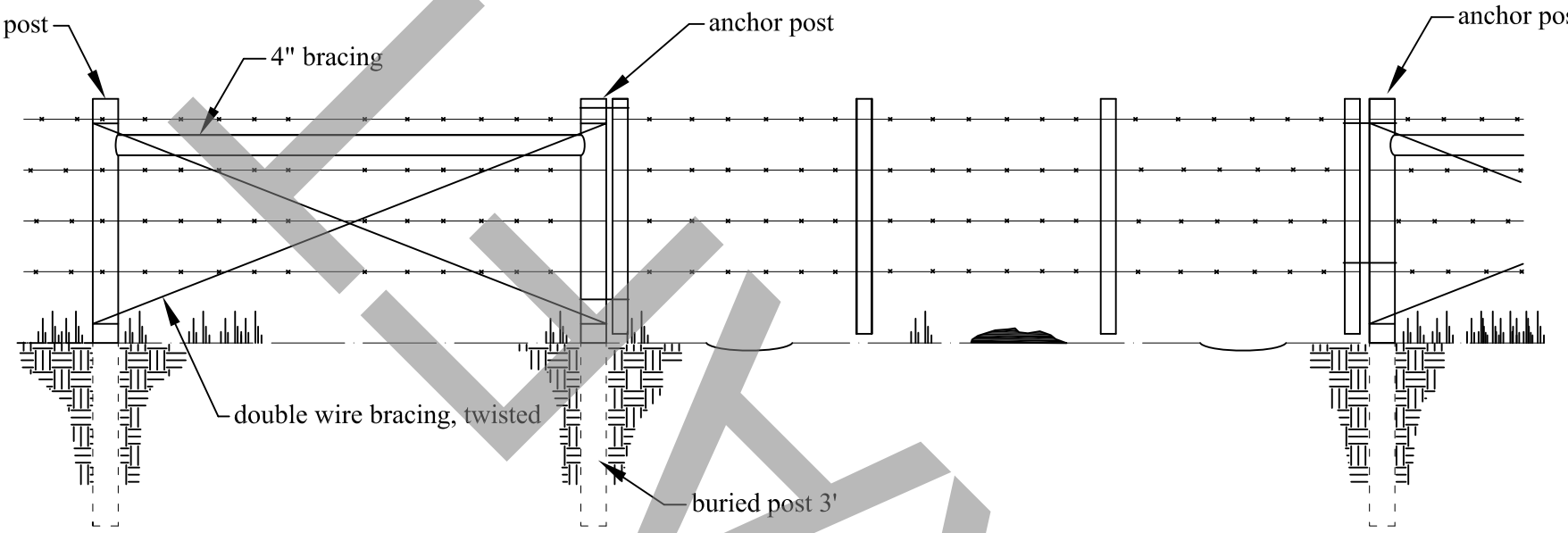


ROLLING DIP DEMENSIONS

Widths of 10' through 14'				
Dimension	G	H	I	J
Grade ≤ 4%	38'	45'	9%	8%
Grade = 6%	48'	55'	11%	11%
Grade = 8%	58'	65'	14%	14%

Erica Kemp 05/2008

4 Strand Wire Gate and Gate Brace Detail



1. First wire from ground must be 14" high.
2. Subsequent wires must be no less than 10" apart.
3. Double wrap all bracing.
4. All brace posts must be 7' long, 5" in diameter, and embedded 3'.
5. Dap braces into posts.
6. Spike braces to posts.
7. There must be 8' on center between anchor post and brace post.
8. The gate stays must be no less than 5' apart and 1 ½" in diameter.
9. Barbed wire must be 12 ½ gauge conventional or 15 ½ gauge high-tension. 2 twisted strands with 14 gauge or heavier two-point barbs on approx. 5 in centers. Class 1 (min. or equivelant) zinc-coating as per ASTM A-121.
10. There must be a gate brace at both ends of the gate.

Washington State Department of
Natural Resources

Northeast Region
Colville, Washington

Drawn by:	Jason Bauer
Revised:	10/06/2009

Live Stream Water Bypass Example

Order of Work is as follows:;

1. Contractor shall notify the State of intent to start project, and a pre-work conference shall be held before move in of equipment.
2. Assemble the items on the “Materials List” below onsite before proceeding
3. Set up pumps
4. Upstream from inlet of culvert, dig a hole that will damn up the stream water.
5. Route clean water, at the inlet, around work site and back into stream using a clean water pump (dissipate flow from pump outlet).
6. Start pump and monitor for presence of fish. If fish are found, move them to an appropriate location that will ensure survival.
7. Use dirty water pump to pump any dirty water from the construction site itself to the forest floor at least 50 feet from the stream (to ensure the silt laden water does not reenter the stream.)
8. With all water removed from site, begin construction

Materials List (quantities below are minimums and may require more to achieve specified results listed above):

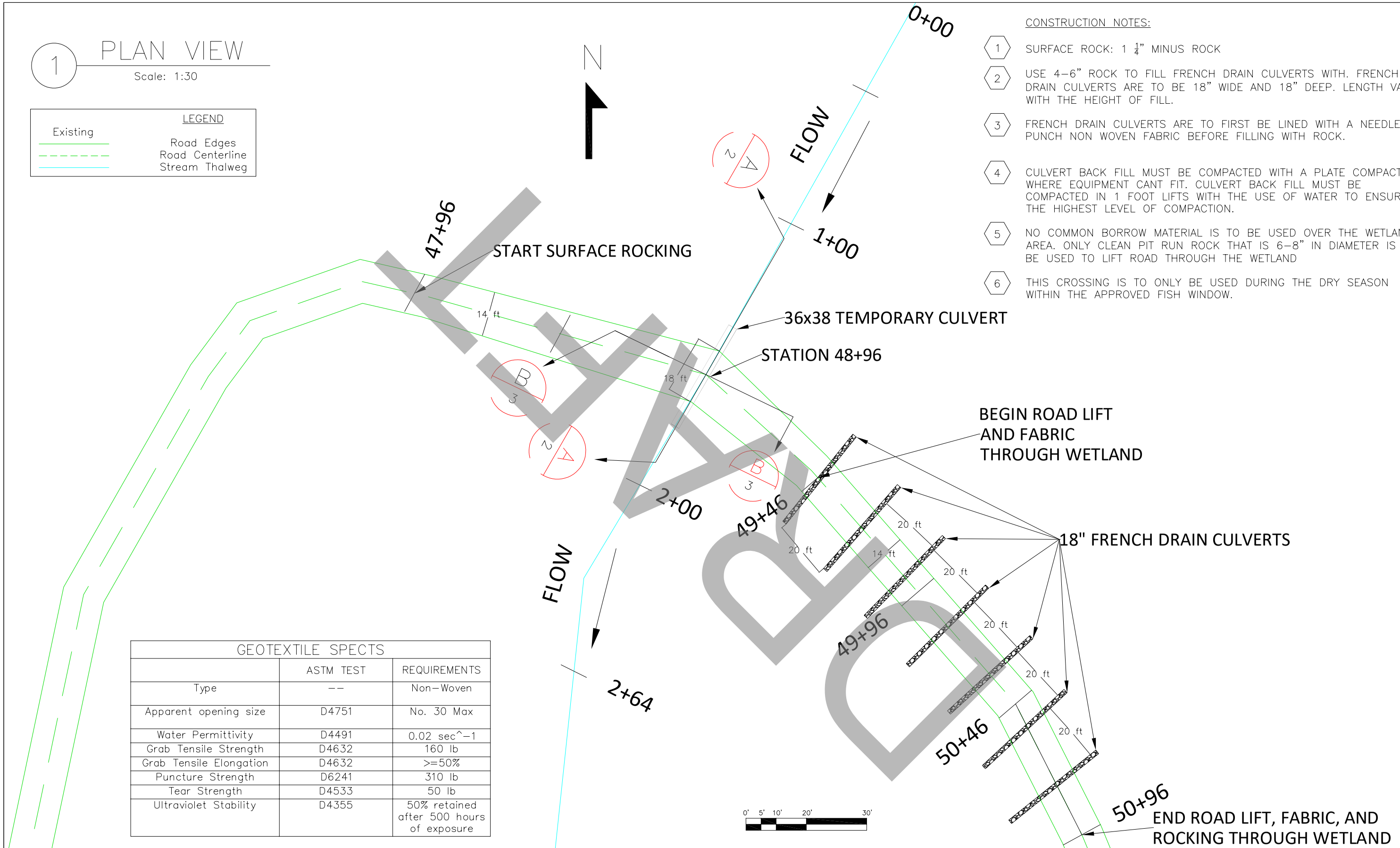
1. 3 pumps with approved screens for intakes
    a) Clean water pump up steam from culvert inlet shall have a minimum capacity equal to or greater than the streams capacity at seasonal high flow
    b) Dirty water pump shall have a minimum capacity of 300 gallons per minute
    c) Backup pump shall have a minimum capacity of 400 gallons per minute

1 PLAN VIEW

Scale: 1:30

LEGEND

Existing
- Road Edges
- Road Centerline
- Stream Thalweg



CONSTRUCTION NOTES:

1. SURFACE ROCK: 1 ¼" MINUS ROCK
2. USE 4–6" ROCK TO FILL FRENCH DRAIN CULVERTS WITH. FRENCH DRAIN CULVERTS ARE TO BE 18" WIDE AND 18" DEEP. LENGTH VARY WITH THE HEIGHT OF FILL.
3. FRENCH DRAIN CULVERTS ARE TO FIRST BE LINED WITH A NEEDLE PUNCH NON WOVEN FABRIC BEFORE FILLING WITH ROCK.
4. CULVERT BACK FILL MUST BE COMPACTED WITH A PLATE COMPACTOR WHERE EQUIPMENT CANT FIT. CULVERT BACK FILL MUST BE COMPACTED IN 1 FOOT LIFTS WITH THE USE OF WATER TO ENSURE THE HIGHEST LEVEL OF COMPACTION.
5. NO COMMON BORROW MATERIAL IS TO BE USED OVER THE WETLAND AREA. ONLY CLEAN PIT RUN ROCK THAT IS 6–8" IN DIAMETER IS TO BE USED TO LIFT ROAD THROUGH THE WETLAND
6. THIS CROSSING IS TO ONLY BE USED DURING THE DRY SEASON WITHIN THE APPROVED FISH WINDOW.

GEOTEXTILE SPECTS

	ASTM TEST	REQUIREMENTS
Type	--	Non-Woven
Apparent opening size	D4751	No. 30 Max
Water Permittivity	D4491	0.02 sec^-1
Grab Tensile Strength	D4632	160 lb
Grab Tensile Elongation	D4632	>=50%
Puncture Strength	D6241	310 lb
Tear Strength	D4533	50 lb
Ultraviolet Stability	D4355	50% retained after 500 hours of exposure

NO.	REVISION DESCRIPTION	DATE	BY

DESIGN BY: C. Rojas
DRAWN BY: C. Rojas
CHECKED BY:
DATE: 9/22/2024

1.0"
VERIFY SCALE
If bar does not measure 1.0", adjust scales accordingly

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Wood Chute Temporary Fish Culvert

PLAN VIEW

SHEET 1 OF 3

3/12/2018 1:05 PM

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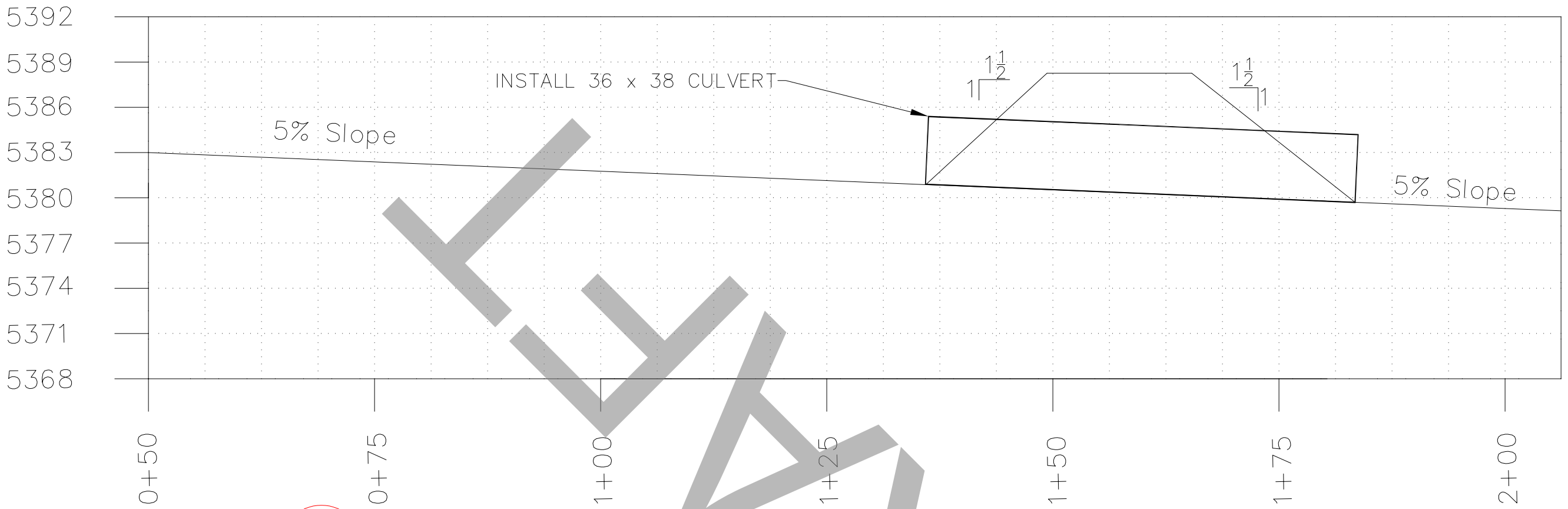
2 STREAM CROSS SECTIONS

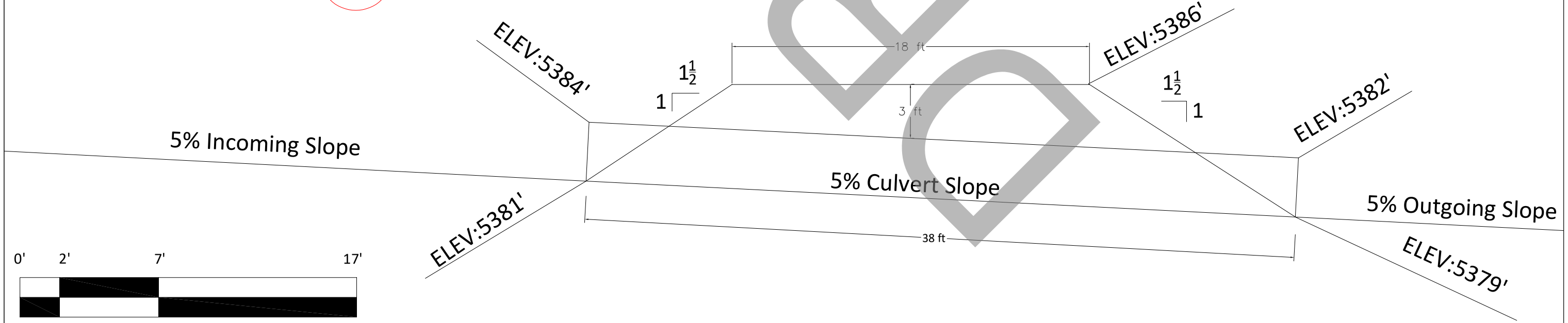
Scale: 1:12.5



Culvert Cross Section A

SCALE: 1" = 5'

Sheet 1



	NO.	REVISION DESCRIPTION	DATE	BY
DESIGN BY: C. Rojas				
DRAWN BY: C. Rojas				
CHECKED BY:				
DATE: 9/22/2024				

1.0"

VERIFY SCALE

If bar does not measure 1.0", adjust scales accordingly

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Wood Chute Temporary Fish Culvert

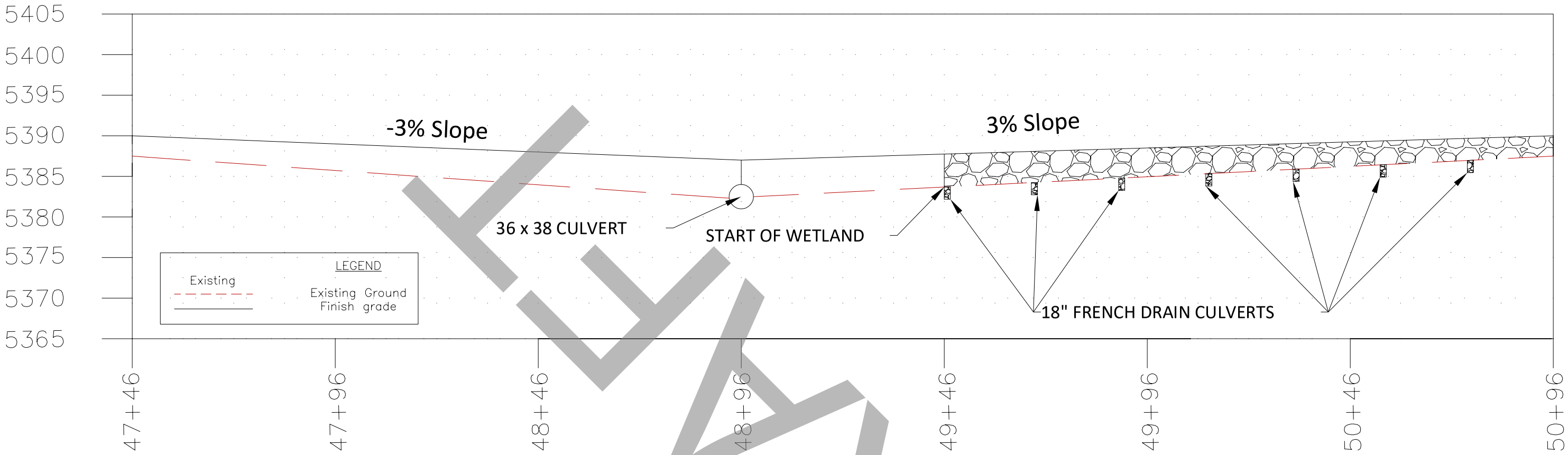
Culvert Cross Section

SHEET 2 OF 3

3/12/2018 1:05 PM

3 ROAD CROSS SECTIONS

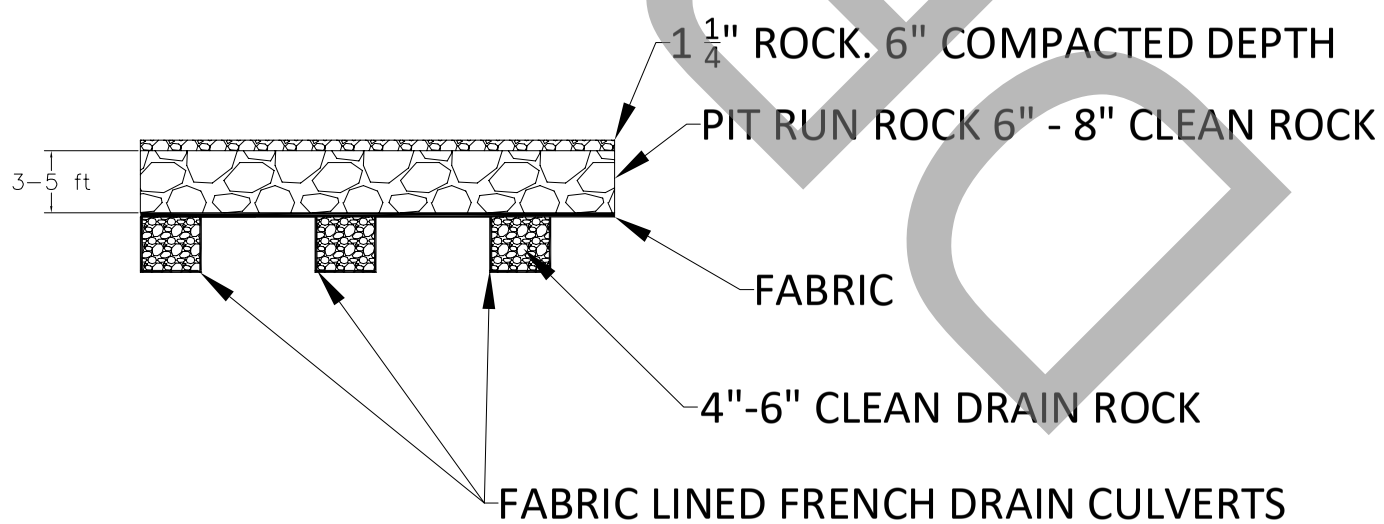
Scale: 1:12.5



CONSTRUCTION NOTES:

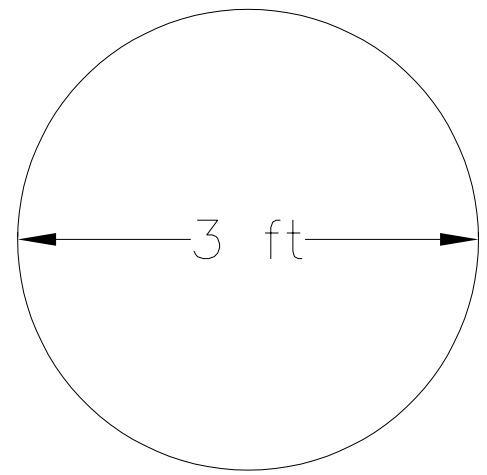
1. NO DRIVING ON TOP OF FABRIC. THERE MUST BE A MINIMUM OF 1 FT LIFT OF ROCK ON TOP OF FABRIC BEFORE DRIVING ON TOP OF IT.
2. CULVERT MUST BE REMOVED AFTER USE. REFER TO ROAD PLAN FOR ABANDONMENT DETAILS
3. ROAD SURFACE NEEDS TO BE CROWNED. SURFACE ROCK IS TO COMPACTED TO 6" IN DEPTH.
4. LIFT ROAD THROUGH WETLAND WITH GEOTEXTILE FABRIC, PIT RUN ROCK (6–8" diameter), AND 1 $\frac{1}{4}$ " CAP ROCK.
5. PIT RUN AND ROCK LIFT VARRIES IN HEIGHT THROUGHOUT THE LENGTH OF THE WET LAND. IT IS A 5 FT LIFT CLOSER TO THE CULVERT, AND CLOSER TO A 3 FEET LIFT AT THE END OF THE WETLAND.

4 ROAD LIFT CROSS SECTION



Culvert Cross Section B 1

SCALE: 1" = 1.2'



	NO.	REVISION DESCRIPTION	DATE	BY
DESIGN BY: C. Rojas				
DRAWN BY: C. Rojas				
CHECKED BY:				
DATE: 9/22/2024				

1.0"
VERIFY SCALE
If bar does not measure 1.0", adjust scales accordingly

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Wood Chute Temporary Fish Culvert

Culvert Cross Section

SHEET 3 OF 3

3/12/2018 1:05 PM

Wood Chute - Road Development Costs

REGION: Northeast CONTRACT #: 30-106639

DISTRICT: Highlands

			Construction	*Reconstruction*	*Maintenance*	*Abandonment*	*Decomission*
ROAD NUMBERS:			E372403E E372403F E372404H E382433D		E372403E E372404B E372404J E372409A		
Comments:							
ROAD STANDARD:			*Construction*	*Reconstruction*	*Maintenance*	*Abandonment*	*Decomission*
NUMBER OF STATIONS:			***124.93***	***0.00***	***270.55***	***0.00***	***0.00***
CLEARING, GRUBBING, GRADING			$ 1,249.30	$ -	$ 16,517.87	$ -	$ -
EXCAVATION AND FILL:			$ 58,509.20	$ -	$ 2,400.00	$ -	$ -
MISC. MAINTENANCE:			$ 17,312.00	$ -	$ 842.00	$ -	$ -
ROAD ROCK:			$ 5,500.00	$ -	$ -	$ -	$ -
ADDITIONAL ROCK:			$ -	$ -	$0	$0	$0
CULVERTS AND FLUMES:			$ 20,657.74	$ -	$ -	$ -	$ -
STRUCTURES/MATERIALS:			$0	$0	$0	$0	$0
TOTAL COSTS:			$103,228	$0	$19,760	$ -	$ -
COST PER STATION:			*$826*	*$0*	*$73*	*$0*	*$0*

	Moveing cost	Total
MOBILIZATION:	$3,250	$126,238

15% increase in price due to inflation **$ 126,238.11**

Total Volume (MBF) **3,430**

$/MBF **$ 36.80**