



**TIMBER NOTICE OF SALE**

**SALE NAME:** Q PORTRAIT

**AGREEMENT NO:** 30-106261

**AUCTION:** October 29, 2024 starting at 10:00 a.m.,  
Northeast Region Office, Colville, WA

**COUNTY:** Okanogan

**SALE LOCATION:** Sale located approximately 10 miles west of Loomis, WA.

**PRODUCTS SOLD  
AND SALE AREA:**

All conifer species except for leave trees banded with purple paint, leave trees bounded by yellow leave tree area tags and two standing snags per acre in Units 1, 2, 3, 4, 5, 6, 7 and 8 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 12 all in Township 38 North, Range 23 East, Sections 5, 6, 7, 8 and 18 all in Township 38 North, Range 24 East, W.M., containing 352 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 Ring DBH Count	Total MBF	MBF by Grade									
			P	SM	1S	2S	3S	4S	5S	6S	UT	
Douglas fir	12.8	2,365				439	1,490		436			
Spruce	11.7	620				58	468		94			
Lodgepole	9.7	382				7	241		134			
Alpine fir	11.1	62					46		16			
Sale Total		3,429										

**MINIMUM BID:** \$336,000.00

**BID METHOD:** Sealed Bids

**PERFORMANCE**

**SECURITY:** \$67,200.00

**SALE TYPE:** Lump Sum

**EXPIRATION DATE:** November 30, 2026

**ALLOCATION:** Export Restricted

**BID DEPOSIT:** \$33,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Ground based equipment, Track skidder, and Rubber tired skidder. Falling and Yarding will not be permitted from March 15 to June 1 unless authorized in writing by the Contract Administrator due to spring breakup. Falling and Yarding will not be permitted from May 1 to August 1 in Units 3, 5, 6 and 7 unless authorized in writing by the State due to wildlife timing restrictions.

**ROADS:** 73.22 stations of required construction. 312.47 stations of required prehaul maintenance. 6.19 stations of abandonment. 67.03 stations of decommissioning. Road construction will not be permitted from March 15 to June 1 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 Units 3, 5, 6, and 7 unless authorized in writing by the State due to wildlife timing restrictions. The hauling of forest products will not be permitted



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from March 15 to June 1 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. Ponderosa pine and western redcedar: 8.0 - 17.5 inches dbh has a minimum top of 4.6 inch dib. All other 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:** \$58,293.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

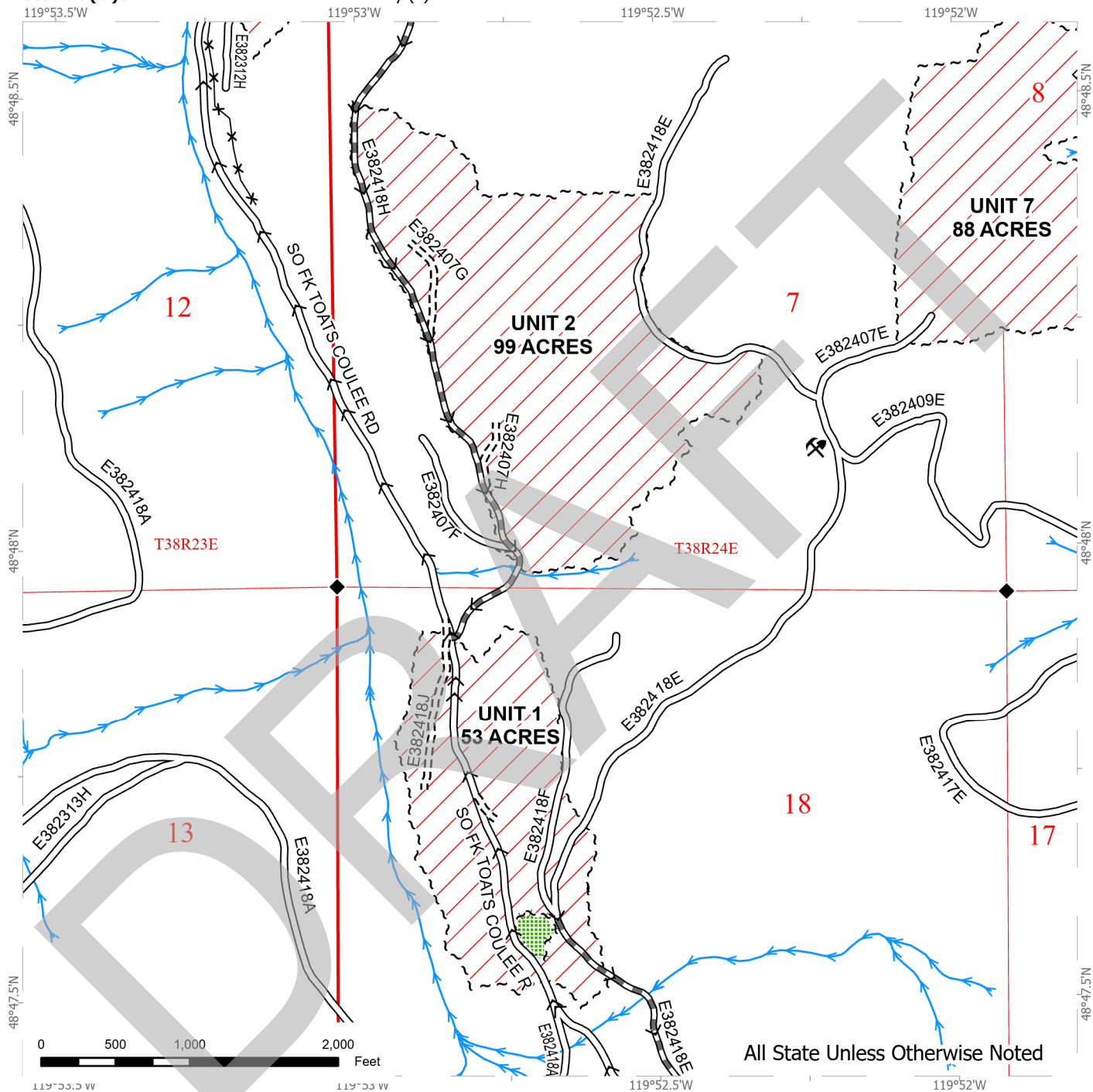
**SPECIAL REMARKS:** Locked gates restricts access to Units 6, 7 and 8. Contact the Northeast Region Office at (509) 684-7474 for access.

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# TIMBER SALE MAP

**SALE NAME:** Q PORTRAIT  
**AGREEMENT #:** 30-106261  
**TOWNSHIP(S):** T38R23E, T38R24E  
**TRUST(S):** Common School and Indemnity (3)

**REGION:** Northeast Region  
**COUNTY(S):** Okanogan  
**ELEVATION RGE:** 4600-5680

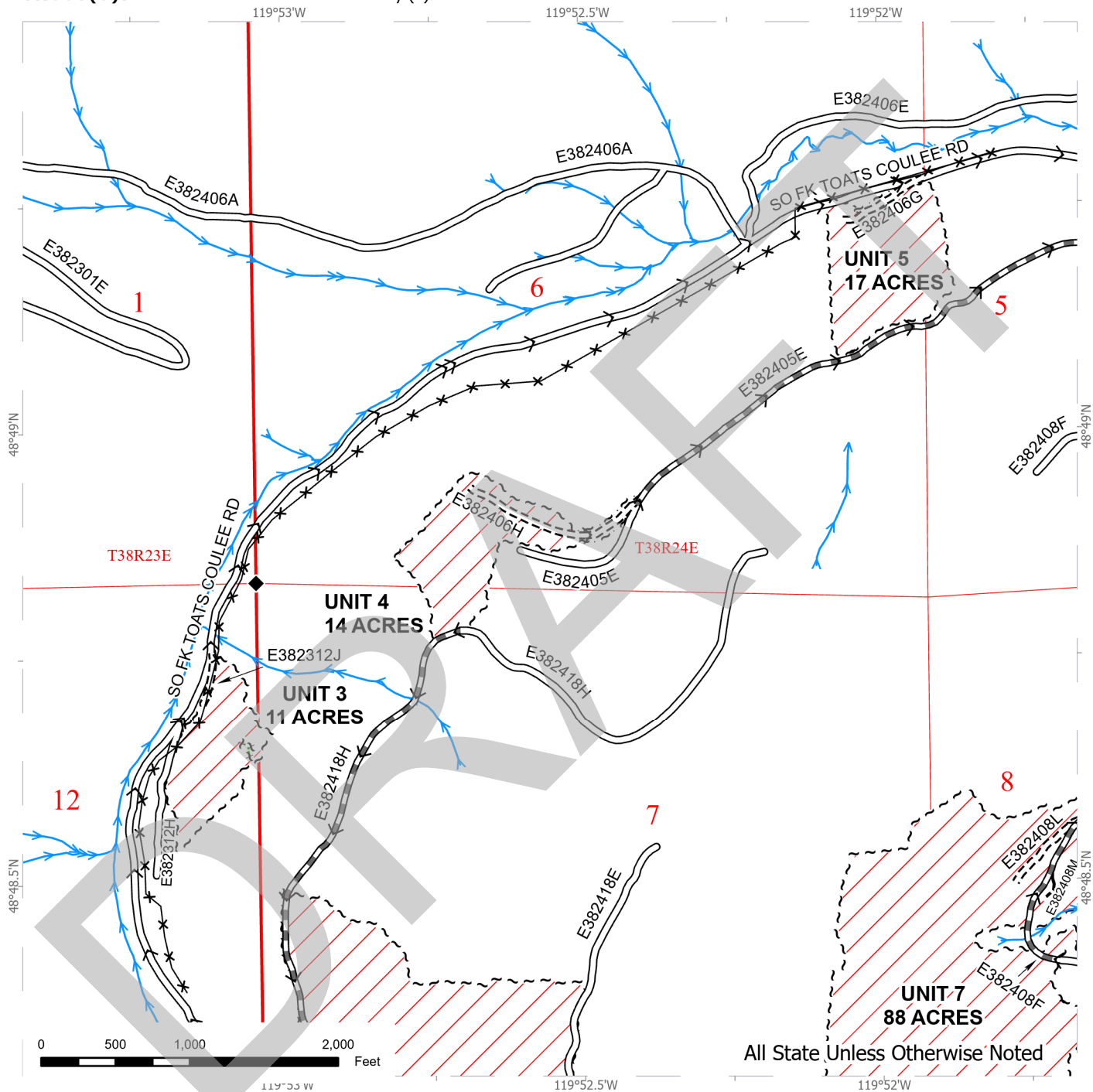


- |                              |                               |                 |
|------------------------------|-------------------------------|-----------------|
| Public Land Survey Townships | Existing Roads                | Streams         |
| DNR Managed Lands            | Required Pre-Haul Maintenance | Rock Pit        |
| Variable Retention Harvest   | Required Construction         | Survey Monument |
| Leave Tree Area              |                               | Haul Route      |
| Sale Boundary Tags           |                               |                 |
| Leave Tree Tags              |                               |                 |
| Fence                        |                               |                 |

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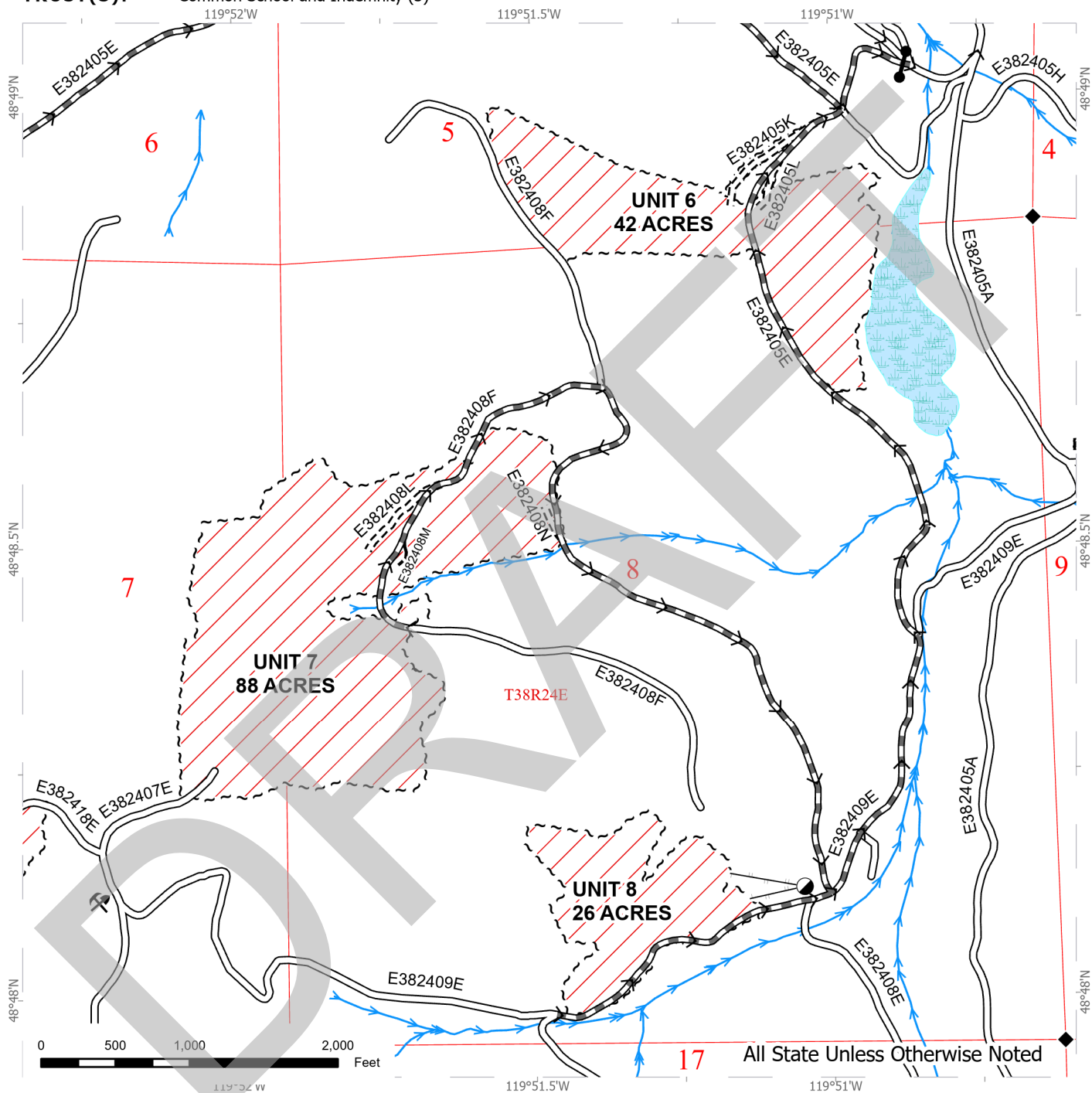
All State Unless Otherwise Noted

Public Land Survey Townships	Existing Roads	Streams
DNR Managed Lands	Required Pre-Haul Maintenance	Survey Monument
Variable Retention Harvest	Required Construction	Haul Route
Leave Tree Area	Optional Construction	
Sale Boundary Tags		
Leave Tree Tags		
Right of Way Tags = 2 acres		
Fence		

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Public Land Survey Townships	Existing Roads	Streams
DNR Managed Lands	Required Pre-Haul Maintenance	External Designated Landing
Variable Retention Harvest	Required Construction	Rock Pit
Sale Boundary Tags	Optional Construction	Gate
Right of Way Tags = 2 acres	Designated Skid Trail	Survey Monument
		Haul Route



# DRIVING MAP

**SALE NAME:** Q PORTRAIT  
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**TOWNSHIP(S):** T38R23E, T38R24E  
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Map may not be to scale

	Harvest Unit
	Highway
	Haul Route
	Other Route
	Distance Indicator
	Gate
	Rock Pit

**DRIVING DIRECTIONS:**

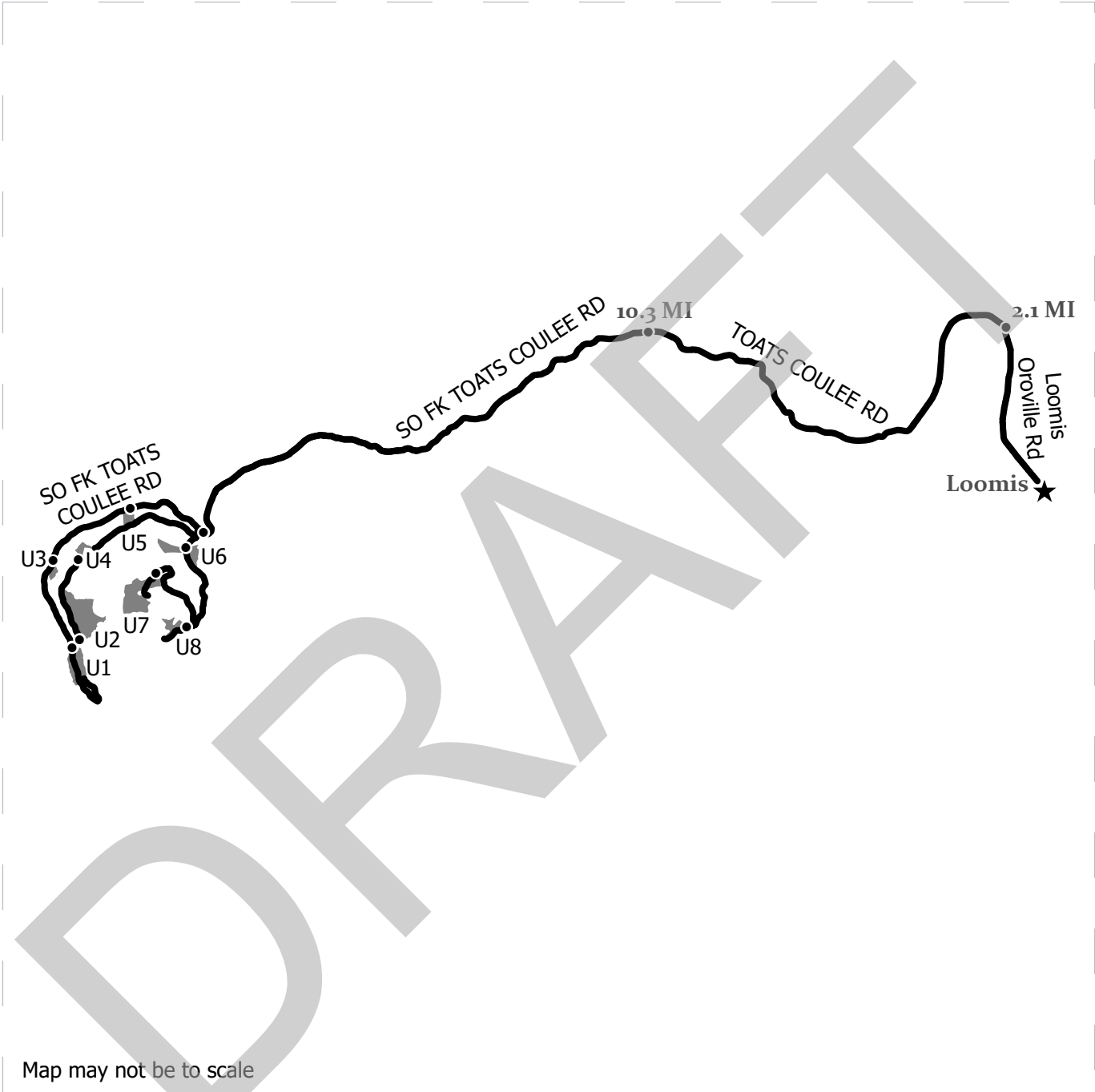
From Loomis, WA travel north on the Loomis-Oroville road for 2.1 miles and turn left on Toats Coulee Road. Travel approximately 10.3 miles on Toats Coulee then turn left onto South Fork Toats Coulee Road. Then, travel about 4.8 miles and stay right to stay on SF Toats Coulee Road. Travel for 1 mile on SF Toats Coulee Road to reach Unit 5. Continue for 1.3 miles to reach Unit 3. To reach Unit 1 continue for 1.4 miles and you have reached Unit 1. For Unit 2 and 4, continue for 1-mile past Unit 3 then turn left onto E382418H. Travel for about a quarter of a mile to reach Unit 2. Continue travelling on the 18H road for about 1.2 miles to reach the top of Unit 4. To access Units 6, 7, and 8, from the SF Toats Coulee and Cougar Creek turn off, travel 400 ft on SF Toats Coulee and turn left onto E382409E. Travel for 2,000 feet to reach Unit 6. For Unit 8 continue travelling on the 09E road for about 1.1 miles to access it. For Unit 7, continue travelling on the 09E road for 1-mile past Unit 6 and turn right onto E382408F road. Travel for about 1.2 miles to access Unit 7.



**OVERVIEW MAP**

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- Sale Units
- Haul Route
- Town
- Distance Indicator

**DRIVING DIRECTIONS:**  
 From Loomis, WA travel north on the Loomis-Oroville road for 2.1 miles and turn left on Toats Coulee Road. Travel approximately 10.3 miles on Toats Coulee then turn left onto South Fork Toats Coulee Road. Then, travel about 4.8 miles and stay right to stay on SF Toats Coulee Road. Travel for 1 mile on SF Toats Coulee Road to reach Unit 5. Continue for 1.3 miles to reach Unit 3. To reach Unit 1 continue for 1.4 miles and you have reached Unit 1. For Unit 2 and 4, continue for 1-mile past Unit 3 then turn left onto E382418H. Travel for about a quarter of a mile to reach Unit 2. Continue travelling on the 18H road for about 1.2 miles to reach the top of Unit 4. To access Units 6, 7, and 8, from the SF Toats Coulee and Cougar Creek turn off, travel 400 ft on SF Toats Coulee and turn left onto E382409E. Travel for 2,000 feet to reach Unit 6. For Unit 8 continue travelling on the 09E road for about 1.1 miles to access it. For Unit 7, continue travelling on the 09E road for 1-mile past Unit 6 and turn right onto E382408F road. Travel for about 1.2 miles to access Unit 7.



## Timber Sale Cruise Report Portrait

**Sale Name:** Q PORTRAIT

**Sale Type:** LUMP SUM

**Region:** NORTHEAST

**District:** HIGHLANDS

**Lead Cruiser:** Jake Culp

**Other Cruisers:** Hunter Lelifeld

**Cruise Narrative:**

**Location:**

Legal – Sections 5, 6, 7, 8, 18 of T38N R24E. Section 12 of T38N R23E

General – Approx. 10 miles west of Loomis, WA in Okanogan County.

Access – All units are accessed from Toats Coulee Rd, via Loomis Oroville Rd.

**Cruise Design:**

-This sale was cruised using variable radius plots, utilizing the cruise-count method. Plot locations found using a Garmin handheld GPS unit. 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: 7" DBH for all 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 purple paint. Leave all trees within tagged and flagged "Leave Tree Areas".

**Cruise Acres determination:**

Net harvest unit acreages are used for cruise acreages.

**Stand composition:**

The stands are second growth, even aged lodgepole, Engelman spruce and Douglas-fir with minor components of alpine fir. Large residual trees and legacy trees are found within the sale area. Units are generally well stocked with uniform stem density; however, a few small openings can be found.

**Timber quality:**

Timber to be harvested is comprised of domestic quality Douglas fir (69 %), Engelman spruce (18 %), lodgepole pine (11 %), and alpine fir (2 %). Majority of timber will be produced from 3 saw Douglas fir.

**Stand health/defect:**

Older timber in the sale area can be rough, with branch clusters, sweep, and crooks in the older DF. Other defects noted include forks, spike knots, wind and snow damage. Mistletoe can be found throughout the sale affecting the alpine fir and lodgepole. Many of the larger, mature Douglas fir are found dead/dying.

**Aspect:**

East, West, Northwest.

**Elevation:**

4600'-5800'.



Harvesting methods:  
100% ground based.

**Slope:**

Unit 1- Max 68%, Avg 25%  
Unit 2- Max 50%, Avg 20%  
Unit 3- Max 55%, Avg 25%  
Unit 4- Max 50%, Avg 17%  
Unit 5- Max 74%, Avg 28%  
Unit 6- Max 40%, Avg 17%  
Unit 7- Max 58%, Avg 19%  
Unit 8- Max 35%, Avg 22%

**Other considerations/remarks:**

This sale has a substantial amount of downfall covering majority of the landscape, especially in Units 1,3, and 7 but can be expected in all units. Rocky terrain can also be expected throughout the sale.

**Trust:**

This sale is 100% Trust #3.

**Timber Sale Notice Volume (MBF)**

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	12.8			2,365	439	1,490	437
ES	11.7			620	58	468	94
LP	9.7			382	7	241	133
AF	11.1			62		46	16
ALL	12.0			3,429	504	2,245	680

**Timber Sale Notice Weight (tons)**

Sp	Tons by Grade			
	All	2 Saw	3 Saw	4 Saw
DF	15,923	2,459	10,333	3,130
ES	3,512	294	2,656	562
LP	1,929	35	1,238	656
AF	339		243	97
ALL	21,704	2,789	14,470	4,445

**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 (%)
81.5	4.0	119.4	2.5	9,751	4.7

## Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Q PORTRAIT U1	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	53.3	55.9	41	15	3
Q PORTRAIT U2	B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	98.4	99.4	67	17	4
Q PORTRAIT U3	B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	10.6	10.8	7	3	0
Q PORTRAIT U4	B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	14.2	14.2	9	4	0
Q PORTRAIT U5	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	16.7	15.7	11	5	1
Q PORTRAIT U6	B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	42.0	44.2	32	11	1
Q PORTRAIT U7	B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	88.0	88.5	59	15	4
Q PORTRAIT U8	B1C: VR, 1 BAF (25.15) Measure/Count Plots, Sighting Ht = 4.5 ft	25.8	25.4	16	6	0
Q PORTRAIT ROW	B1: VR, 1 BAF (20) Measure All, Sighting Ht = 4.5 ft	2.6	2.7	7	7	2
All		351.6	356.8	249	83	15

## Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
AF	LIVE	3 SAW	Domestic	7.5	32	131	131	0.0	242.7	46.0
AF	LIVE	4 SAW	Domestic	5.2	20	47	47	0.0	96.7	16.5
DF	LIVE	2 SAW	Domestic	14.0	32	1,283	1,247	2.8	2,459.5	438.6
DF	LIVE	3 SAW	Domestic	8.0	32	4,358	4,237	2.8	10,333.1	1,490.0
DF	LIVE	4 SAW	Domestic	5.2	22	1,264	1,241	1.8	3,130.3	436.6
DF	LIVE	CULL	Cull	7.6	32	55	0	100.0	0.0	0.0
ES	LIVE	2 SAW	Domestic	12.7	32	175	165	5.7	293.9	58.1
ES	LIVE	3 SAW	Domestic	7.5	32	1,335	1,330	0.4	2,655.7	467.8
ES	LIVE	4 SAW	Domestic	5.1	20	268	267	0.4	562.2	93.7
ES	LIVE	CULL	Cull	5.0	18	14	0	100.0	0.0	0.0
LP	LIVE	2 SAW	Domestic	12.3	32	21	21	0.0	35.2	7.3
LP	LIVE	3 SAW	Domestic	7.1	32	727	685	5.7	1,238.4	240.9
LP	LIVE	4 SAW	Domestic	5.2	23	379	379	0.0	655.7	133.4
LP	LIVE	CULL	Cull	5.3	20	6	0	100.0	0.0	0.0

**Timber Sale Log Sort x Diameter Bin Summary**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
AF	5 - 8	LIVE	Domestic	5.8	25	120	0.0	242.4	42.2
AF	9 - 11	LIVE	Domestic	9.7	32	58	0.0	97.0	20.2
DF	5 - 8	LIVE	Domestic	5.9	26	3,343	2.6	8,792.0	1,175.7
DF	5 - 8	LIVE	Cull	6.3	32	0	100.0	0.0	0.0
DF	9 - 11	LIVE	Domestic	9.6	32	1,443	1.8	3,364.8	507.6
DF	9 - 11	LIVE	Cull	10.7	32	0	100.0	0.0	0.0
DF	12 - 14	LIVE	Domestic	12.8	32	936	2.0	1,928.1	329.0
DF	15 - 19	LIVE	Cull	15.7	32	0	100.0	0.0	0.0
DF	15 - 19	LIVE	Domestic	16.8	32	628	1.8	1,131.0	221.0
DF	20+	LIVE	Domestic	22.5	32	375	8.1	707.1	132.0
ES	5 - 8	LIVE	Cull	5.0	18	0	100.0	0.0	0.0
ES	5 - 8	LIVE	Domestic	6.0	26	1,102	0.1	2,257.6	387.6
ES	9 - 11	LIVE	Domestic	10.0	32	515	0.8	1,004.5	181.2
ES	12 - 14	LIVE	Domestic	12.5	32	100	9.1	182.7	35.2
ES	15 - 19	LIVE	Domestic	14.9	32	44	0.0	67.1	15.6
LP	5 - 8	LIVE	Cull	5.3	20	0	100.0	0.0	0.0
LP	5 - 8	LIVE	Domestic	5.8	27	937	3.1	1,653.8	329.6
LP	9 - 11	LIVE	Domestic	9.4	32	127	8.2	240.3	44.7
LP	12 - 14	LIVE	Domestic	12.3	32	21	0.0	35.2	7.3

## Cruise Unit Report Q PORTRAIT U1

### Unit Sale Notice Volume (MBF): Q PORTRAIT U1

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	11.3			273	44	156	73
LP	8.7			114		73	41
ES	10.7			55	10	30	15
AF	12.5			13		12	1
ALL	10.3			455	53	271	131

### Unit Cruise Design: Q PORTRAIT U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	53.3	55.9	41	15	3

### Unit Cruise Summary: Q PORTRAIT U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	26	105	2.6	0
LP	15	33	0.8	0
ES	11	16	0.4	0
AF	1	2	0.0	0
ALL	53	156	3.8	0

### Unit Cruise Statistics: Q PORTRAIT 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	51.2	103.3	16.1	99.9	31.4	6.2	5,116	108.0	17.3
LP	16.1	208.3	32.5	132.8	23.3	6.0	2,137	209.6	33.1
ES	7.8	221.0	34.5	131.1	36.7	11.1	1,024	224.0	36.2
AF	1.0	640.3	100.0	258.2	0.0	0.0	252	640.3	100.0
ALL	76.1	70.3	11.0	112.1	38.0	5.2	8,529	80.0	12.2

## Unit Summary: Q PORTRAIT U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	1	ALL	12.5	95	121	252	252	0.0	1.1	1.0	0.3	13.4
DF	LIVE	CUT	26	ALL	11.3	53	65	5,232	5,116	2.2	73.5	51.2	15.2	272.7
ES	LIVE	CUT	11	ALL	10.7	52	64	1,062	1,024	3.6	12.5	7.8	2.4	54.6
LP	LIVE	CUT	15	ALL	8.7	62	77	2,317	2,137	7.8	39.0	16.1	5.5	113.9
ALL	LIVE	CUT	53	ALL	10.5	56	69	8,863	8,529	3.8	126.1	76.1	23.4	454.6
ALL	ALL	ALL	53	ALL	10.5	56	69	8,863	8,529	3.8	126.1	76.1	23.4	454.6

## Cruise Unit Report Q PORTRAIT U2

### Unit Sale Notice Volume (MBF): Q PORTRAIT U2

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.5			824	81	624	119
ES	13.9			88		78	10
LP	11.8			26		22	5
ALL	13.4			938	81	725	133

### Unit Cruise Design: Q PORTRAIT 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	98.4	99.4	67	17	4

### Unit Cruise Summary: Q PORTRAIT U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	52	200	3.0	0
ES	2	14	0.2	0
LP	3	5	0.1	0
ALL	57	219	3.3	0

### Unit Cruise Statistics: Q PORTRAIT 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	75.1	76.8	9.4	111.5	44.1	6.1	8,374	88.6	11.2
ES	5.3	348.9	42.6	170.3	10.0	7.1	895	349.0	43.2
LP	1.9	484.5	59.2	142.9	28.8	16.6	268	485.3	61.5
ALL	82.2	66.6	8.1	116.0	42.5	5.6	9,537	79.1	9.9

### Unit Summary: Q PORTRAIT U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	52	ALL	13.5	51	63	8,630	8,374	3.0	75.5	75.1	20.4	824.0
ES	LIVE	CUT	2	ALL	13.9	70	88	895	895	0.0	5.0	5.3	1.4	88.0

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
LP	LIVE	CUT	3	ALL	11.8	53	66	268	268	0.0	2.5	1.9	0.5	26.4
ALL	LIVE	CUT	57	ALL	13.5	53	65	9,793	9,537	2.6	83.0	82.2	22.4	938.4
ALL	ALL	ALL	57	ALL	13.5	53	65	9,793	9,537	2.6	83.0	82.2	22.4	938.4

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## Cruise Unit Report Q PORTRAIT U3

### Unit Sale Notice Volume (MBF): Q PORTRAIT U3

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
ES	9.1			28	28	
DF	8.0			19		19
AF	9.1			16	7	9
LP	9.3			9	8	1
ALL	8.9			73	43	30

### Unit Cruise Design: Q PORTRAIT 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	10.6	10.8	7	3	0

### Unit Cruise Summary: Q PORTRAIT U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
ES	2	6	0.9	0
DF	2	5	0.7	0
AF	3	5	0.7	0
LP	2	2	0.3	0
ALL	9	18	2.6	0

### Unit Cruise Statistics: Q PORTRAIT 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 (%)
ES	21.6	105.0	39.7	124.4	12.8	9.0	2,682	105.7	40.7
DF	18.0	155.8	58.9	100.4	4.7	3.3	1,804	155.8	59.0
AF	18.0	133.2	50.3	85.4	49.2	28.4	1,535	142.0	57.8
LP	7.2	170.8	64.5	119.2	47.4	33.5	857	177.2	72.7
ALL	64.7	54.3	20.5	106.3	32.2	10.7	6,878	63.1	23.2



**Unit Summary: Q PORTRAIT U3**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	3	ALL	9.1	42	51	1,535	1,535	0.0	39.8	18.0	6.0	16.3
DF	LIVE	CUT	2	ALL	8.0	51	62	1,847	1,804	2.3	51.5	18.0	6.4	19.1
ES	LIVE	CUT	2	ALL	9.1	55	68	2,682	2,682	0.0	47.7	21.6	7.1	28.4
LP	LIVE	CUT	2	ALL	9.3	58	72	979	857	12.5	15.2	7.2	2.4	9.1
ALL	LIVE	CUT	9	ALL	8.8	50	62	7,042	6,878	2.3	154.2	64.7	21.8	72.9
ALL	ALL	ALL	9	ALL	8.8	50	62	7,042	6,878	2.3	154.2	64.7	21.8	72.9

## Cruise Unit Report Q PORTRAIT U4

### Unit Sale Notice Volume (MBF): Q PORTRAIT U4

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	10.6			88	7	64	18
LP	8.3			34		11	24
ES	15.1			23		22	1
ALL	10.1			145	7	96	43

### Unit Cruise Design: Q PORTRAIT U4

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	14.2	14.2	9	4	0

### Unit Cruise Summary: Q PORTRAIT U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	16	23	2.6	0
LP	4	7	0.8	0
ES	1	3	0.3	0
ALL	21	33	3.7	0

### Unit Cruise Statistics: Q PORTRAIT 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	64.3	73.5	24.5	96.6	35.2	8.8	6,210	81.5	26.0
LP	19.6	107.1	35.7	123.6	43.7	21.8	2,419	115.7	41.9
ES	8.4	150.0	50.0	193.0	0.0	0.0	1,618	150.0	50.0
ALL	92.2	59.4	19.8	111.1	38.4	8.4	10,246	70.7	21.5

### Unit Summary: Q PORTRAIT U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	16	ALL	10.6	50	61	6,271	6,210	1.0	104.9	64.3	19.7	88.2
ES	LIVE	CUT	1	ALL	15.1	81	103	1,618	1,618	0.0	6.7	8.4	2.2	23.0
LP	LIVE	CUT	4	ALL	8.3	51	62	2,419	2,419	0.0	52.1	19.6	6.8	34.3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	21	ALL	10.2	52	63	10,307	10,246	0.6	163.7	92.2	28.7	145.5
ALL	ALL	ALL	21	ALL	10.2	52	63	10,307	10,246	0.6	163.7	92.2	28.7	145.5

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## Cruise Unit Report Q PORTRAIT U5

### Unit Sale Notice Volume (MBF): Q PORTRAIT U5

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
ES	9.5			63	7	42	14
DF	13.3			57	37	13	7
LP	8.4			21	7	8	5
AF	13.2			5		3	1
ALL	10.5			145	51	67	27

### Unit Cruise Design: Q PORTRAIT U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	16.7	15.7	11	5	1

### Unit Cruise Summary: Q PORTRAIT U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
ES	8	17	1.5	0
DF	8	11	1.0	0
LP	3	6	0.5	0
AF	1	1	0.1	0
ALL	20	35	3.2	0

### Unit Cruise Statistics: Q PORTRAIT 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 (%)
ES	30.9	97.5	29.4	122.4	49.0	17.3	3,784	109.2	34.1
DF	20.0	118.3	35.7	169.3	58.5	20.7	3,385	132.0	41.2
LP	10.9	189.9	57.3	113.8	30.7	17.7	1,241	192.3	59.9
AF	1.8	331.7	100.0	150.5	0.0	0.0	274	331.7	100.0
ALL	63.6	52.2	15.8	136.5	55.2	12.3	8,685	76.0	20.0

**Unit Summary: Q PORTRAIT U5**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	1	ALL	13.2	71	90	274	274	0.0	1.9	1.8	0.5	4.6
DF	LIVE	CUT	8	ALL	13.3	55	68	3,757	3,385	9.9	20.7	20.0	5.5	56.5
ES	LIVE	CUT	8	ALL	9.5	52	65	4,084	3,784	7.3	62.8	30.9	10.0	63.2
LP	LIVE	CUT	3	ALL	8.4	52	64	1,241	1,241	0.0	28.3	10.9	3.8	20.7
ALL	LIVE	CUT	20	ALL	10.1	53	66	9,356	8,685	7.2	113.7	63.6	19.8	145.0
ALL	ALL	ALL	20	ALL	10.1	53	66	9,356	8,685	7.2	113.7	63.6	19.8	145.0

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## Cruise Unit Report Q PORTRAIT U6

### Unit Sale Notice Volume (MBF): Q PORTRAIT U6

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	11.8			297	20	206	71
ES	13.3			119	28	78	13
LP	8.0			24		14	10
ALL	11.5			441	49	299	94

### Unit Cruise Design: Q PORTRAIT U6

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	42.0	44.2	32	11	1

### Unit Cruise Summary: Q PORTRAIT U6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	27	74	2.3	0
ES	7	21	0.7	0
LP	3	6	0.2	0
ALL	37	101	3.2	0

### Unit Cruise Statistics: Q PORTRAIT 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	58.2	60.6	10.7	121.7	28.5	5.5	7,078	67.0	12.0
ES	16.5	137.4	24.3	172.0	20.4	7.7	2,838	138.9	25.5
LP	4.7	251.2	44.4	123.3	13.5	7.8	582	251.5	45.1
ALL	79.4	40.3	7.1	132.2	29.2	4.8	10,498	49.8	8.6

### Unit Summary: Q PORTRAIT U6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	27	ALL	11.8	58	72	7,210	7,078	1.8	76.6	58.2	16.9	297.3
ES	LIVE	CUT	7	ALL	13.3	65	81	2,838	2,838	0.0	17.1	16.5	4.5	119.2
LP	LIVE	CUT	3	ALL	8.0	55	67	582	582	0.0	13.5	4.7	1.7	24.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	37	ALL	11.7	59	73	10,630	10,498	1.2	107.2	79.4	23.1	440.9
ALL	ALL	ALL	37	ALL	11.7	59	73	10,630	10,498	1.2	107.2	79.4	23.1	440.9

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## Cruise Unit Report Q PORTRAIT U7

### Unit Sale Notice Volume (MBF): Q PORTRAIT U7

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	12.9			465	122	264	80
ES	10.2			175	12	131	33
LP	10.3			135		93	42
AF	11.3			28		24	5
ALL	11.5			803	134	511	159

### Unit Cruise Design: Q PORTRAIT U7

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	88.0	88.5	59	15	4

### Unit Cruise Summary: Q PORTRAIT U7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	28	112	1.9	0
ES	15	37	0.6	0
LP	6	25	0.4	0
AF	3	6	0.1	0
ALL	52	180	3.1	0

### Unit Cruise Statistics: Q PORTRAIT 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	47.7	94.7	12.3	110.7	53.2	10.1	5,283	108.6	15.9
ES	15.8	172.4	22.4	126.3	30.3	7.8	1,993	175.0	23.8
LP	10.7	260.0	33.9	143.8	21.0	8.6	1,532	260.9	34.9
AF	2.6	395.7	51.5	125.4	21.1	12.2	321	396.2	52.9
ALL	76.7	60.4	7.9	119.0	41.9	5.8	9,128	73.5	9.8



**Unit Summary: Q PORTRAIT U7**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
AF	LIVE	CUT	3	ALL	11.3	58	72	321	321	0.0	3.7	2.6	0.8	28.2
DF	LIVE	CUT	28	ALL	12.9	54	67	5,694	5,283	7.2	52.6	47.7	13.3	464.9
ES	LIVE	CUT	15	ALL	10.2	55	69	2,027	1,993	1.7	27.8	15.8	4.9	175.4
LP	LIVE	CUT	6	ALL	10.3	58	71	1,552	1,532	1.2	18.4	10.7	3.3	134.8
ALL	LIVE	CUT	52	ALL	11.7	55	69	9,593	9,128	4.8	102.5	76.7	22.3	803.3
ALL	ALL	ALL	52	ALL	11.7	55	69	9,593	9,128	4.8	102.5	76.7	22.3	803.3

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## Cruise Unit Report Q PORTRAIT U8

### Unit Sale Notice Volume (MBF): Q PORTRAIT U8

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.6			340	128	162	50
ES	12.9			61		54	7
LP	14.9			14		10	5
ALL	13.6			416	128	225	62

### Unit Cruise Design: Q PORTRAIT U8

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	25.8	25.4	16	6	0

### Unit Cruise Summary: Q PORTRAIT U8

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	25	64	4.0	0
ES	3	14	0.9	0
LP	1	3	0.2	0
ALL	29	81	5.1	0

### Unit Cruise Statistics: Q PORTRAIT U8

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	100.6	76.4	19.1	131.1	46.3	9.3	13,186	89.3	21.2
ES	22.0	186.0	46.5	108.2	2.5	1.4	2,382	186.1	46.5
LP	4.7	290.1	72.5	117.3	0.0	0.0	553	290.1	72.5
ALL	127.3	54.7	13.7	126.6	44.8	8.3	16,121	70.7	16.0

### Unit Summary: Q PORTRAIT U8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	25	ALL	13.6	57	71	13,252	13,186	0.5	99.7	100.6	27.3	340.2
ES	LIVE	CUT	3	ALL	12.9	55	69	2,382	2,382	0.0	24.2	22.0	6.1	61.5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
LP	LIVE	CUT	1	ALL	14.9	68	85	709	553	22.0	3.9	4.7	1.2	14.3
ALL	LIVE	CUT	29	ALL	13.5	57	71	16,343	16,121	1.4	127.8	127.3	34.6	415.9
ALL	ALL	ALL	29	ALL	13.5	57	71	16,343	16,121	1.4	127.8	127.3	34.6	415.9

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## Cruise Unit Report Q PORTRAIT ROW

### Unit Sale Notice Volume (MBF): Q PORTRAIT ROW

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
ES	10.7			6	1	4	2
LP	11.2			4		3	1
DF	16.6			2	0	2	0
ALL	11.6			12	2	8	3

### Unit Cruise Design: Q PORTRAIT ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (20) Measure All, Sighting Ht = 4.5 ft	2.6	2.6	7	7	2

### Unit Cruise Summary: Q PORTRAIT ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
ES	7	7	1.0	0
LP	3	3	0.4	0
DF	3	3	0.4	0
ALL	13	13	1.9	0

### Unit Cruise Statistics: Q PORTRAIT ROW

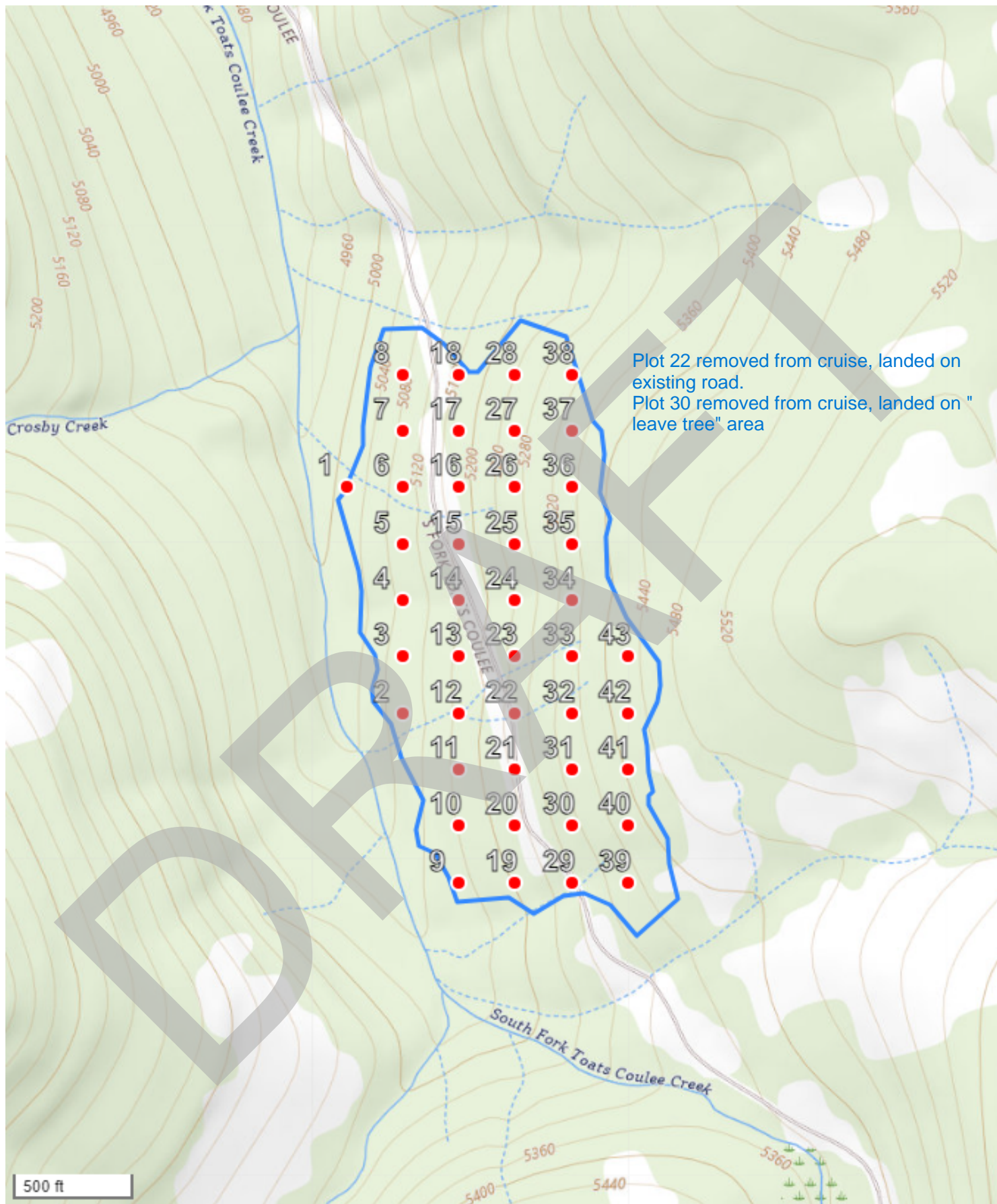
Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
ES	20.0	152.8	57.7	121.4	51.3	19.4	2,428	161.1	60.9
LP	8.6	183.6	69.4	157.7	12.5	7.2	1,352	184.0	69.8
DF	8.6	264.6	100.0	104.3	11.0	6.4	894	264.8	100.2
ALL	37.1	90.3	34.1	125.8	39.0	10.8	4,674	98.3	35.8

### Unit Summary: Q PORTRAIT ROW

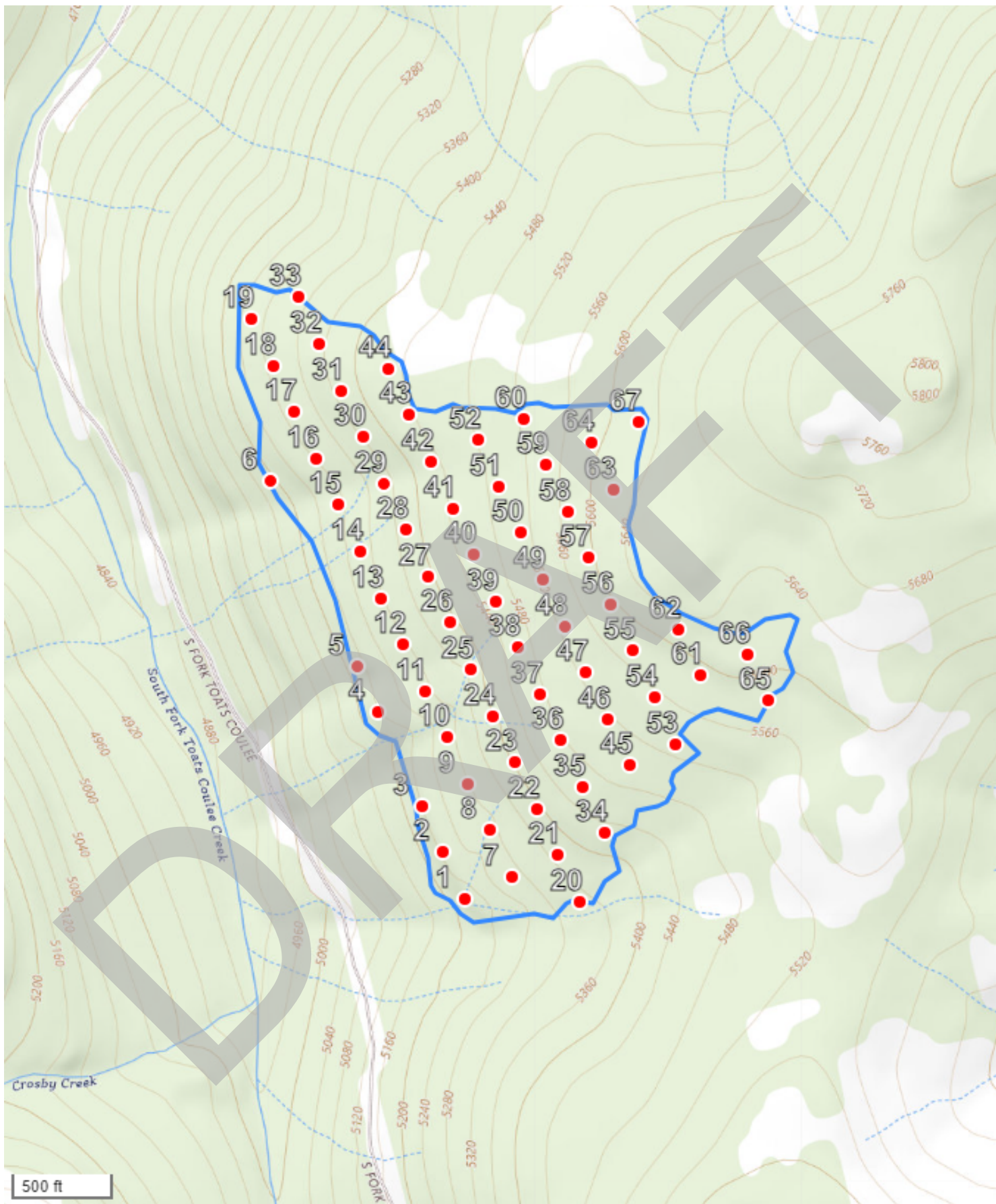
Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	16.6	61	77	954	894	6.3	5.7	8.6	2.1	2.4
ES	LIVE	CUT	7	ALL	10.7	56	70	2,624	2,428	7.4	32.0	20.0	6.1	6.4
LP	LIVE	CUT	3	ALL	11.2	64	80	1,352	1,352	0.0	12.5	8.6	2.6	3.6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	13	ALL	11.6	59	73	4,930	4,674	5.2	50.2	37.1	10.8	12.4
ALL	ALL	ALL	13	ALL	11.6	59	73	4,930	4,674	5.2	50.2	37.1	10.8	12.4

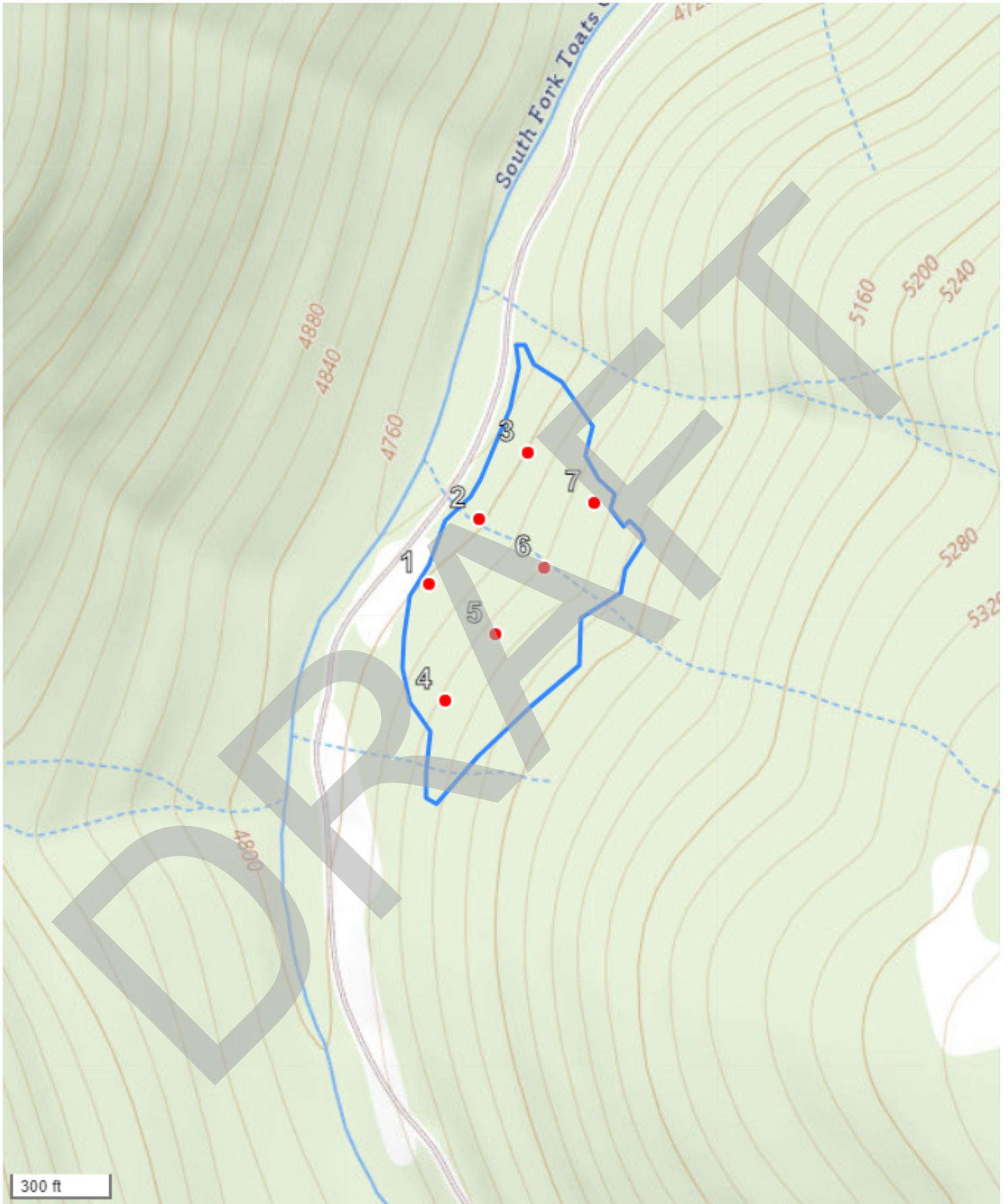
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FMA Name: Q PORTRAIT U1	N Plots: 43	Plot Spacing: 234.9 ft
Grid Name: Q PORTRAIT U1 - 1	Acres Treated: 53.3	Main Azimuth: 0 deg

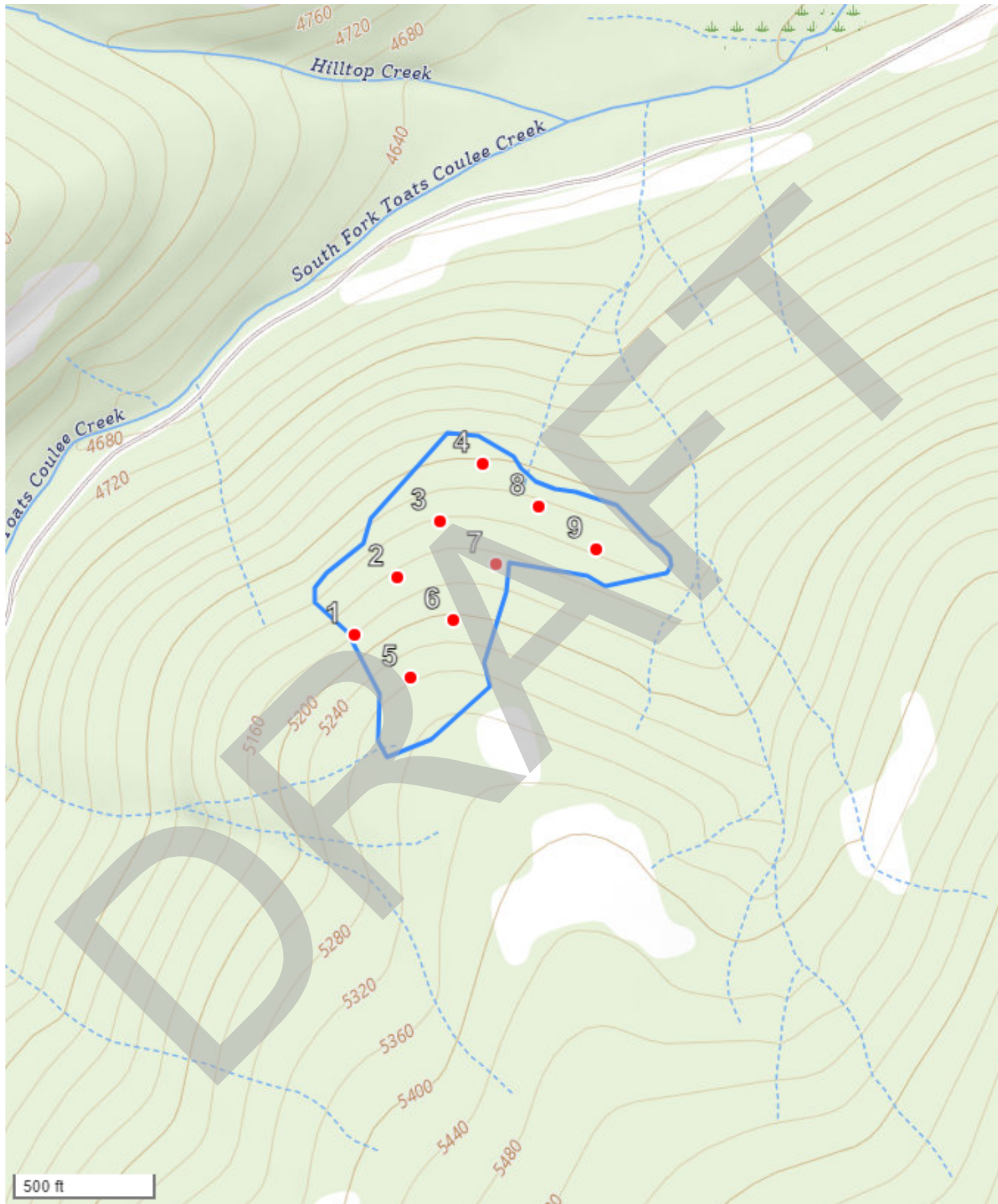


FMA Name: Q PORTRAIT U2	N Plots: 67	Plot Spacing: 253.9 ft
Grid Name: Q PORTRAIT U2 - 1	Acres Treated: 98.4	Main Azimuth: 335 deg

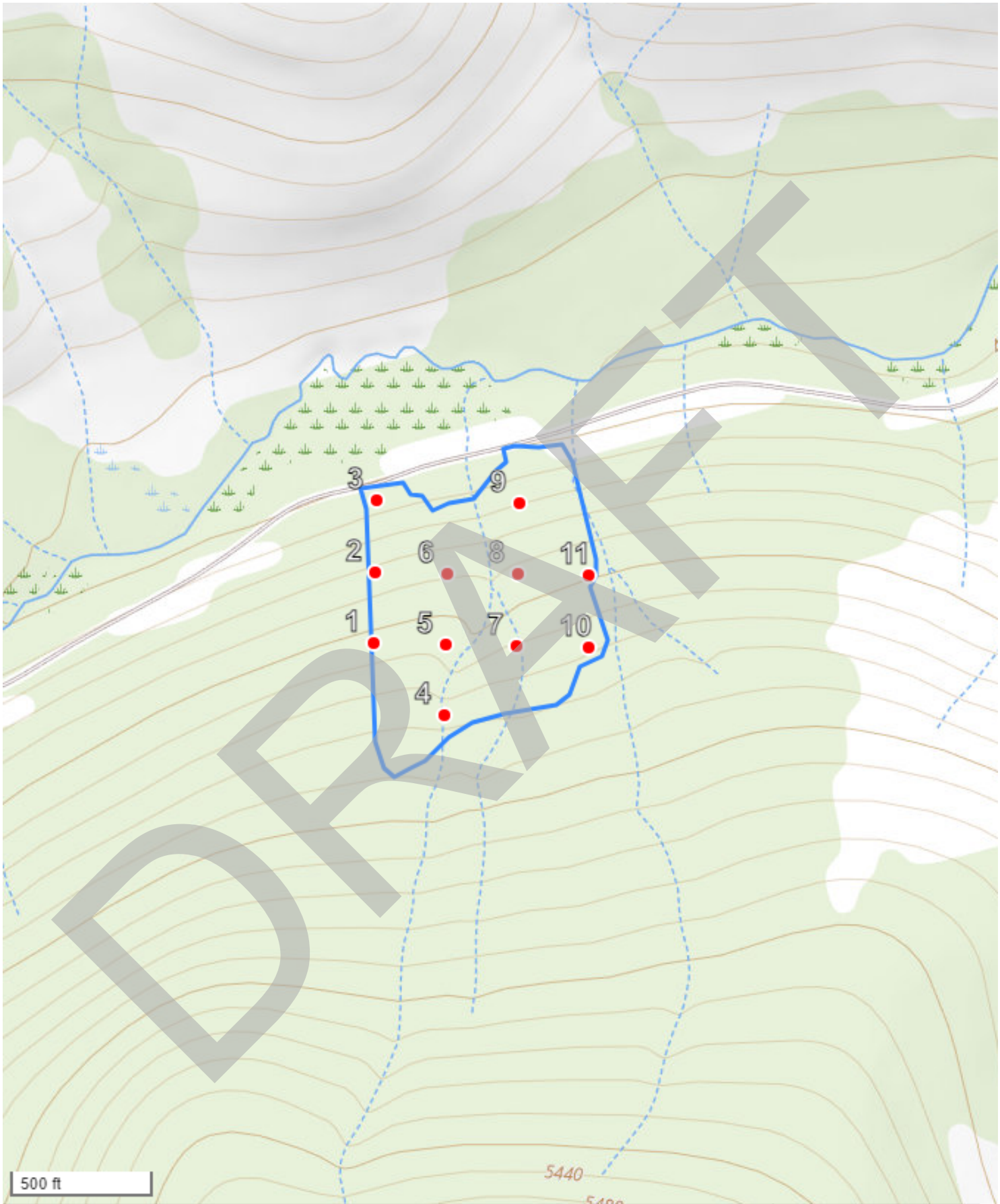


FMA Name: Q PORTRAIT U3	N Plots: 7	Plot Spacing: 242 ft
Grid Name: Q PORTRAIT U3 - 1	Acres Treated: 10.6	Main Azimuth: 37 deg

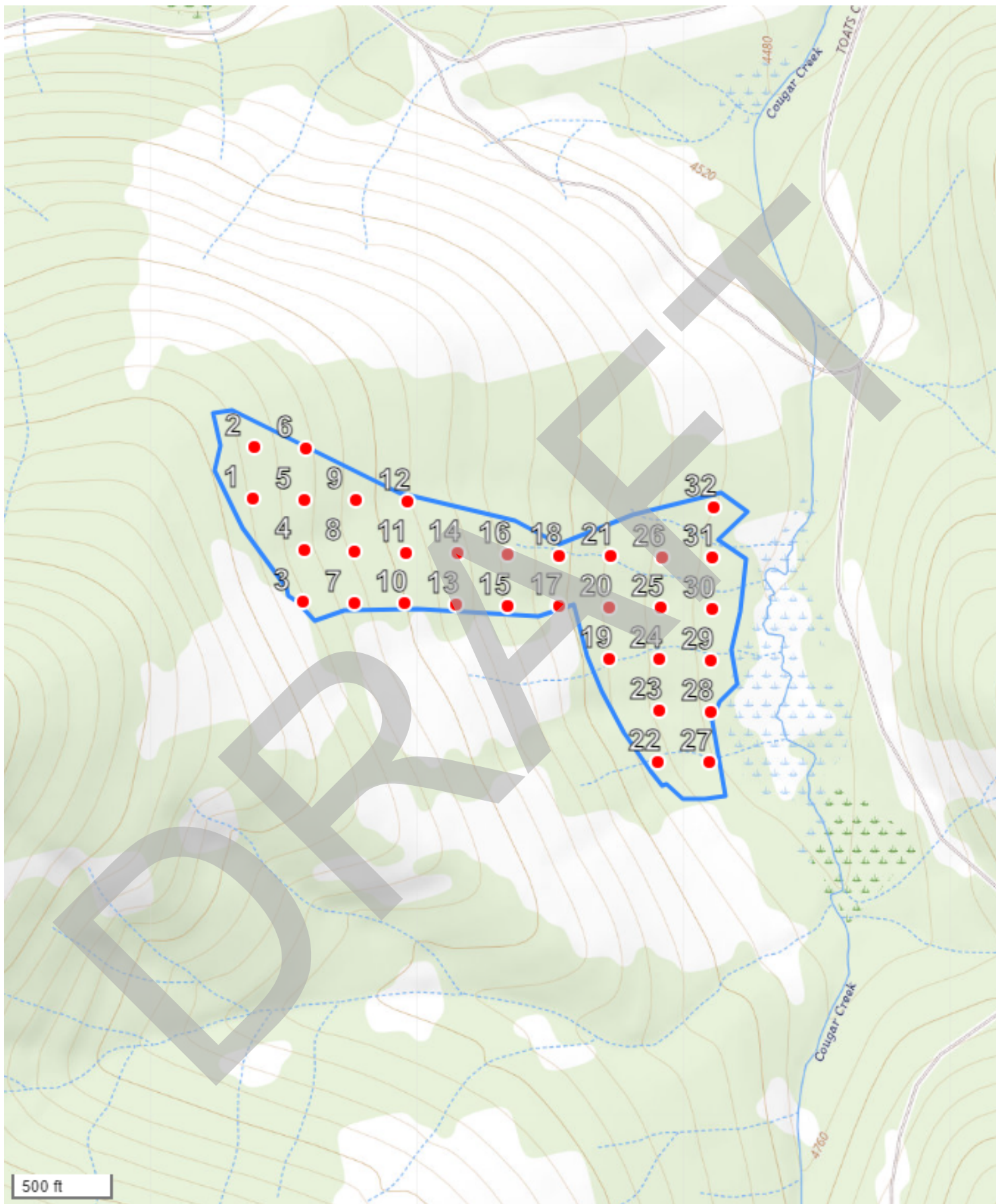




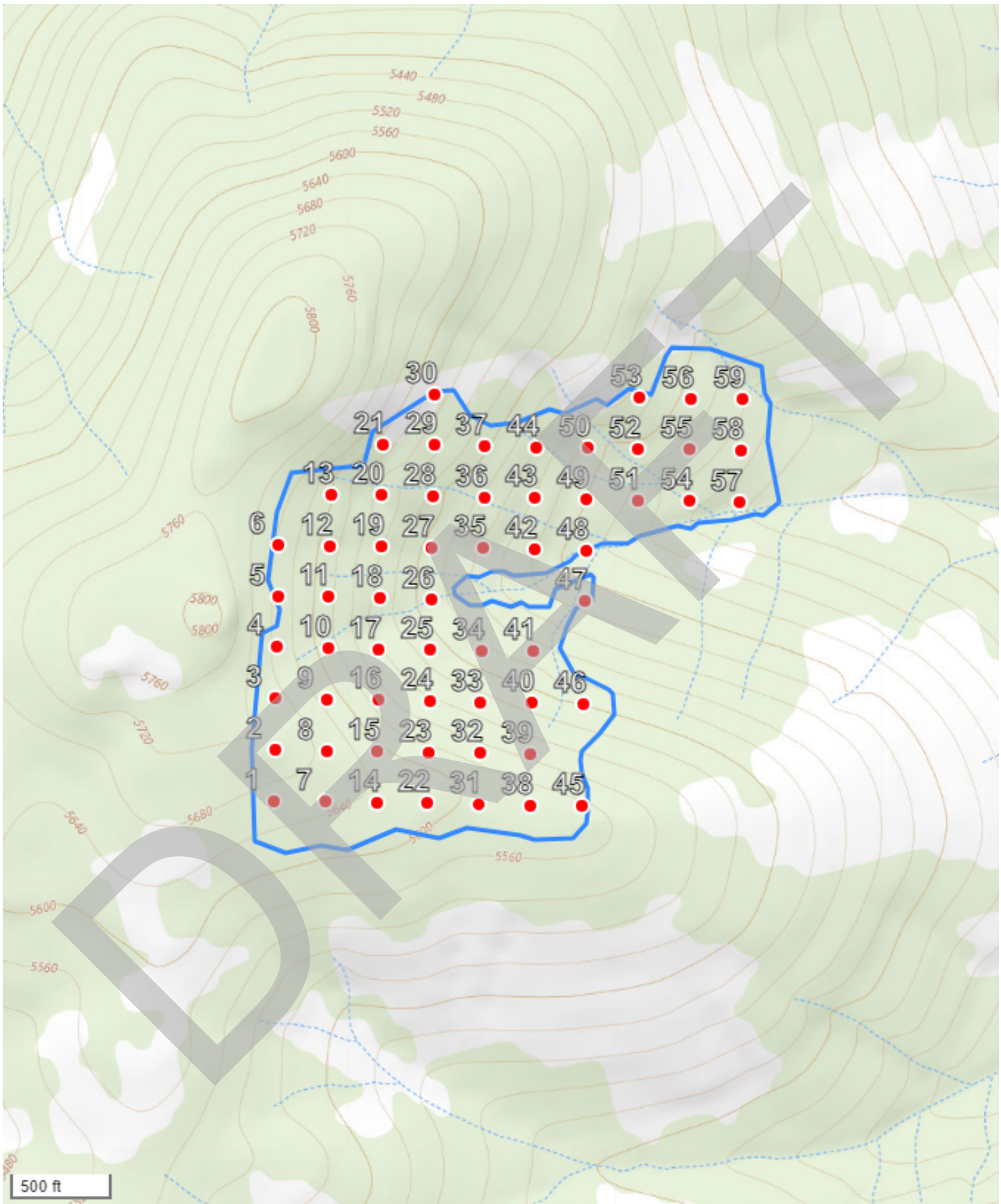
FMA Name: Q PORTRAIT U4	N Plots: 9	Plot Spacing: 248.6 ft
Grid Name: Q PORTRAIT U4 - 1	Acres Treated: 14.2	Main Azimuth: 37 deg



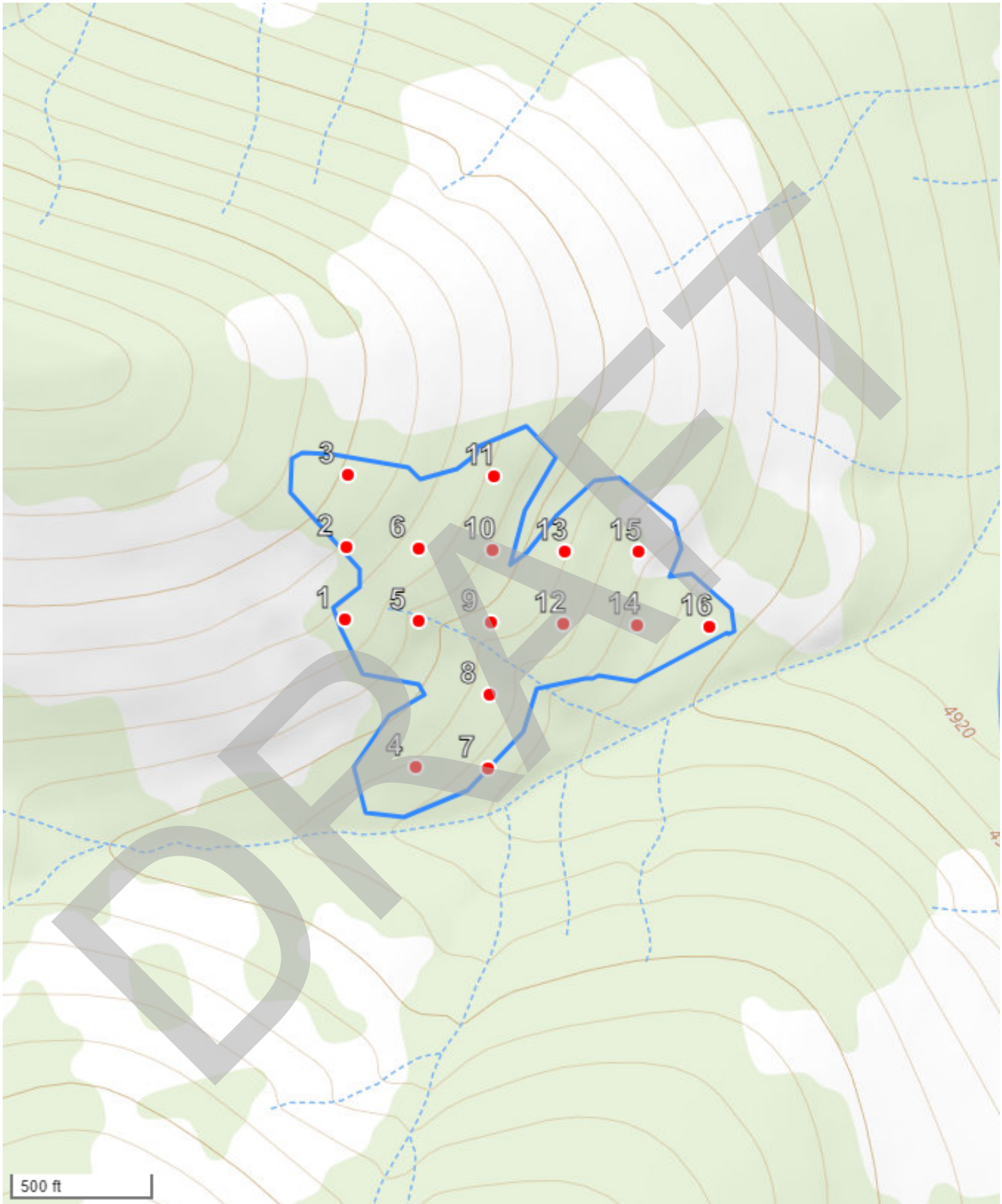
FMA Name: Q PORTRAIT U5	N Plots: 11	Plot Spacing: 249.2 ft
Grid Name: Q PORTRAIT U5 - 1	Acres Treated: 16.7	Main Azimuth: 1 deg



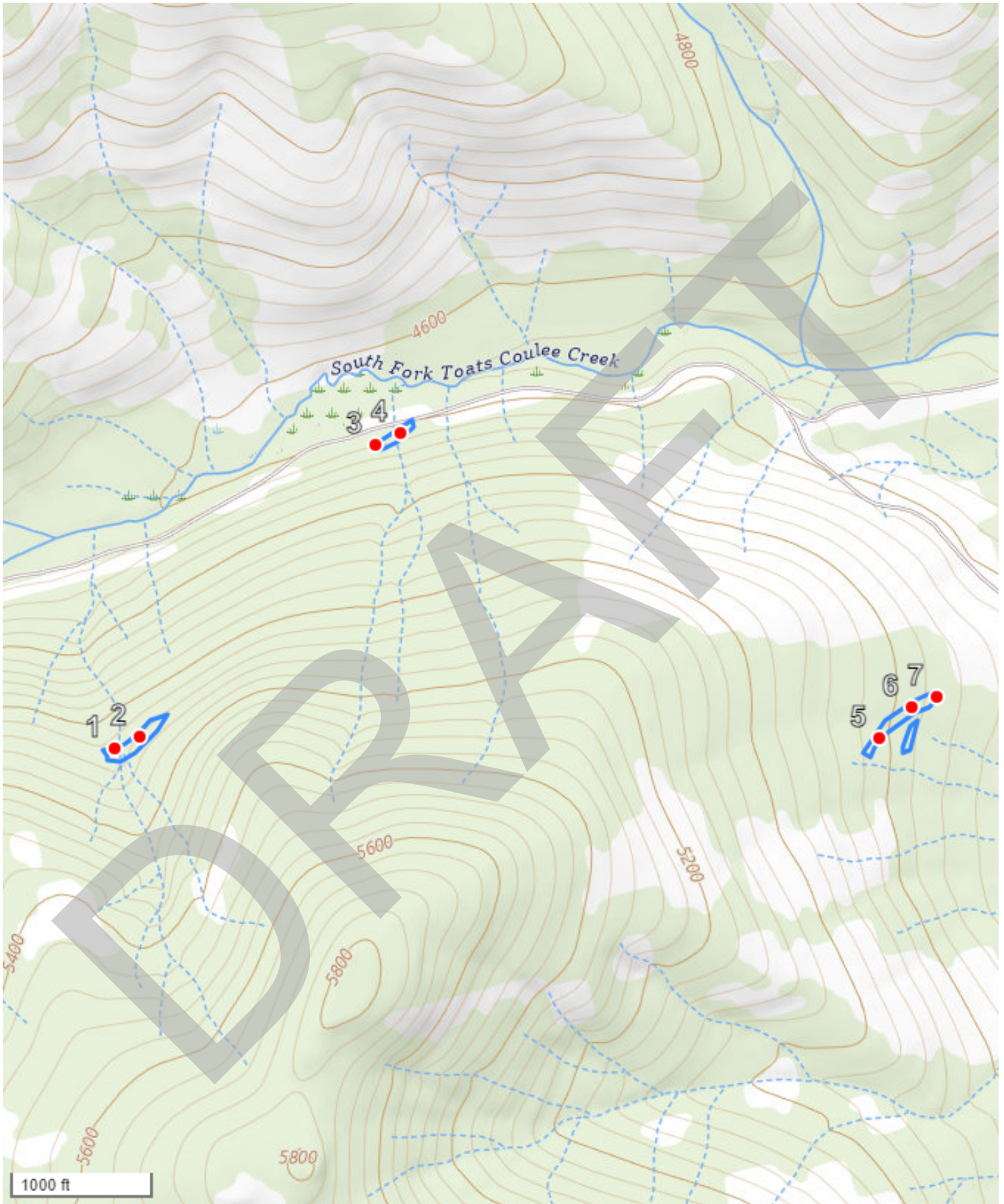
FMA Name: Q PORTRAIT U6	N Plots: 32	Plot Spacing: 253.1 ft
Grid Name: Q PORTRAIT U6 - 1	Acres Treated: 42	Main Azimuth: 1 deg



FMA Name: Q PORTRAIT U7	N Plots: 59	Plot Spacing: 253.1 ft
Grid Name: Q PORTRAIT U7 - 1	Acres Treated: 88	Main Azimuth: 1 deg



<b>FMA Name:</b> Q PORTRAIT U8	<b>N Plots:</b> 16	<b>Plot Spacing:</b> 254.6 ft
<b>Grid Name:</b> Q PORTRAIT U8 - 1	<b>Acres Treated:</b> 25.8	<b>Main Azimuth:</b> 1 deg



FMA Name: Q PORTRAIT ROW	N Plots: 7	Plot Spacing: 138.5 ft
Grid Name: Q PORTRAIT ROW - 1	Acres Treated: 2.65	Main Azimuth: 20.5 deg

# Washington State Department of Natural Resources

Sale Name: Portrait

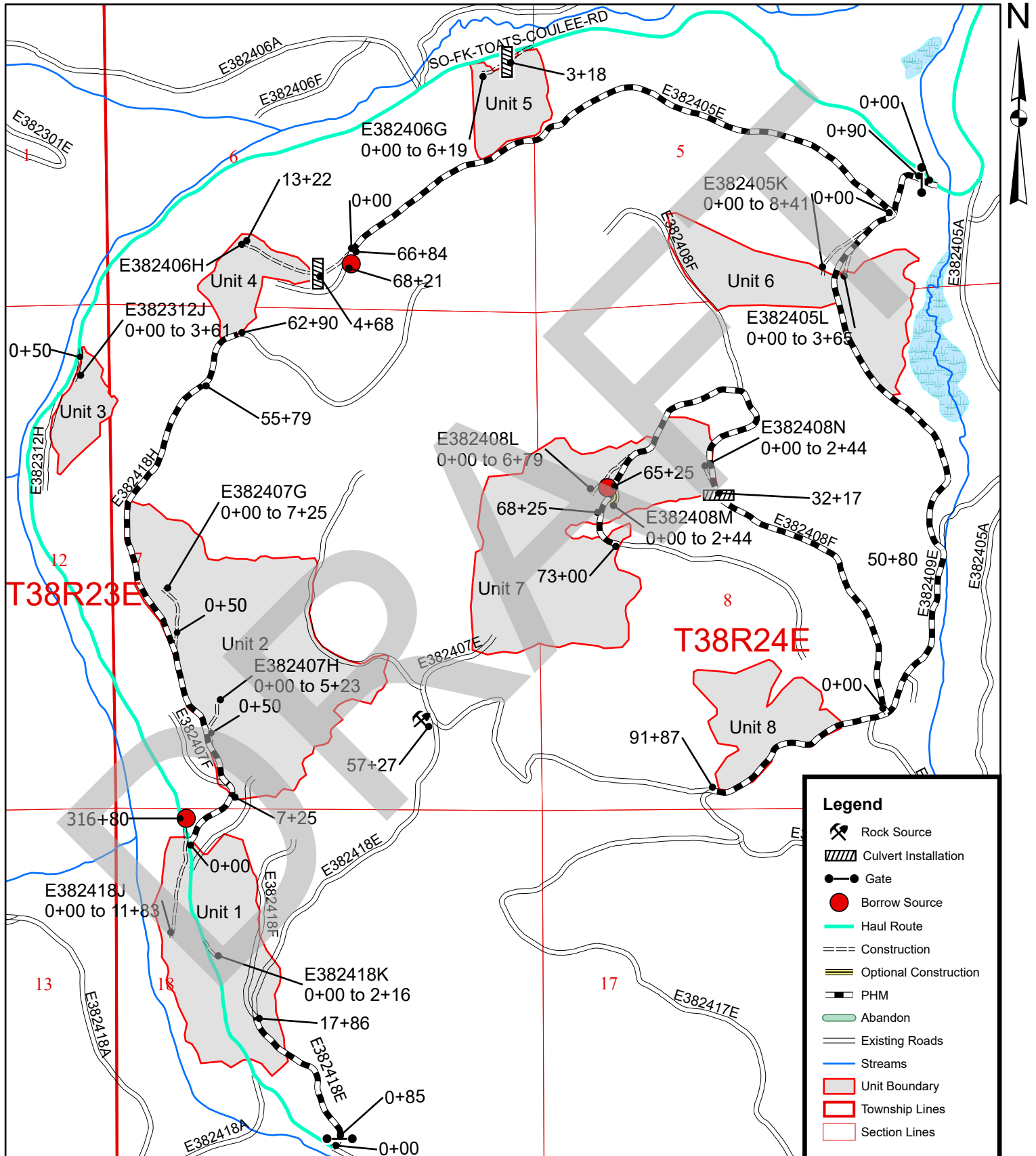
Road Plan Map

Region: Northeast

Agreement No: 30-106261

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County: Okanogan



0 0.13 0.25 0.5 0.75 1 Miles

1"=1375'

Colin Rojas

12/8/2023

# Washington State Department of Natural Resources

Sale Name: Portrait

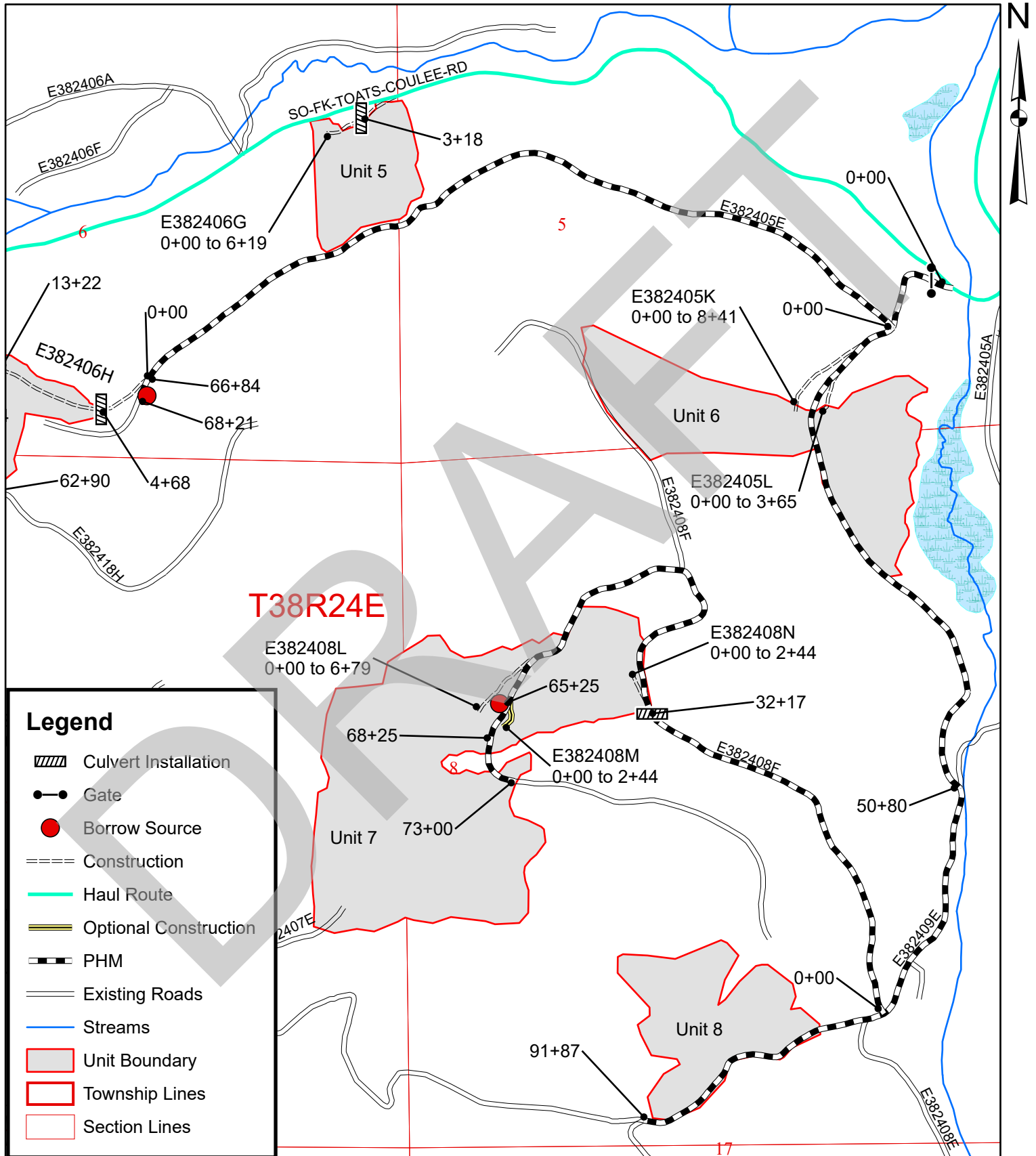
Road Plan Map

Region: Northeast

Agreement No: 30-106261

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County: Okanogan



**T38R24E**

**Legend**

- Culvert Installation
- Gate
- Borrow Source
- Construction
- Haul Route
- Optional Construction
- PHM
- Existing Roads
- Streams
- Unit Boundary
- Township Lines
- Section Lines



# Washington State Department of Natural Resources

Sale Name: Portrait

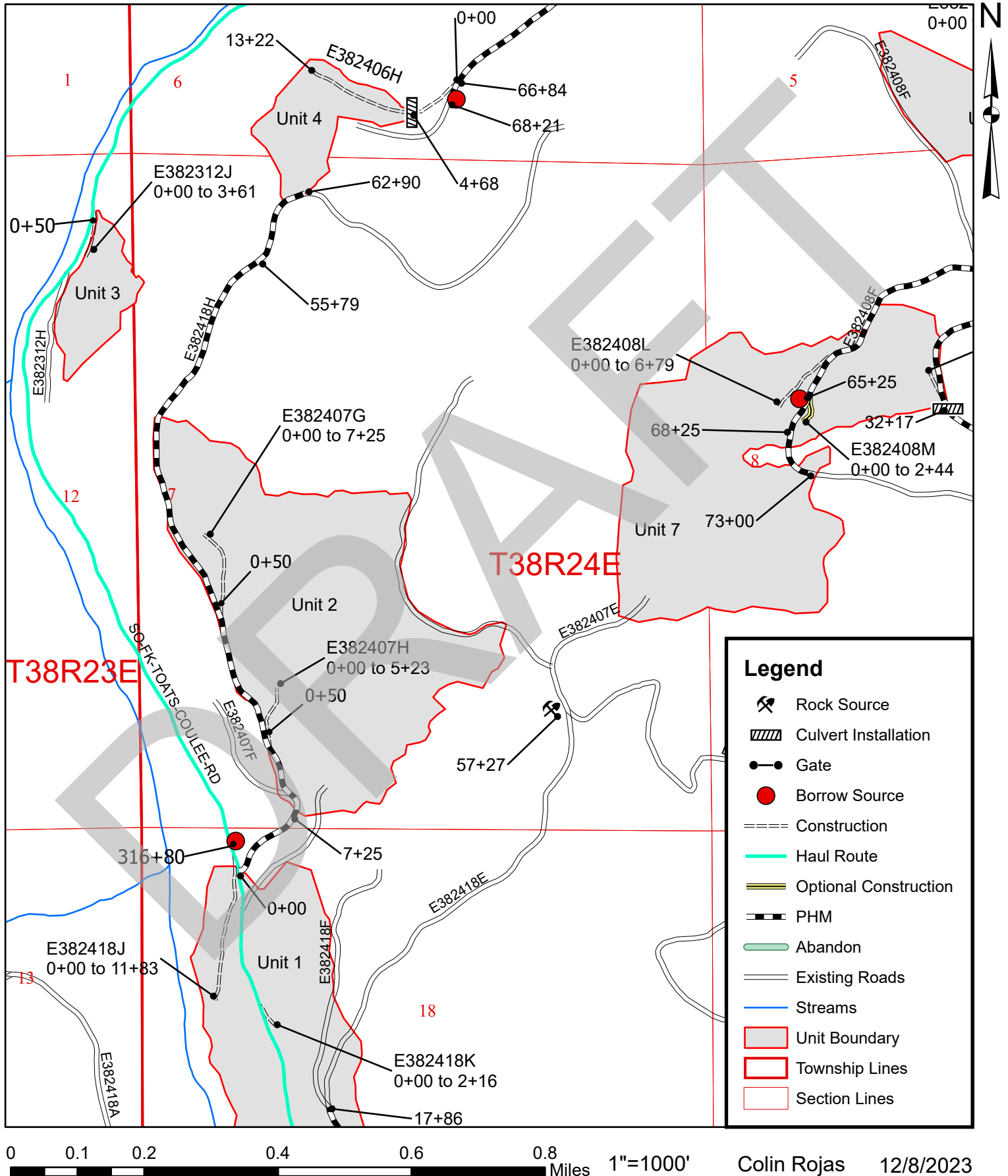
Road Plan Map

Region: Northeast

Agreement No: 30-106261

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County: Okanogan



# Washington State Department of Natural Resources

Sale Name: Portrait

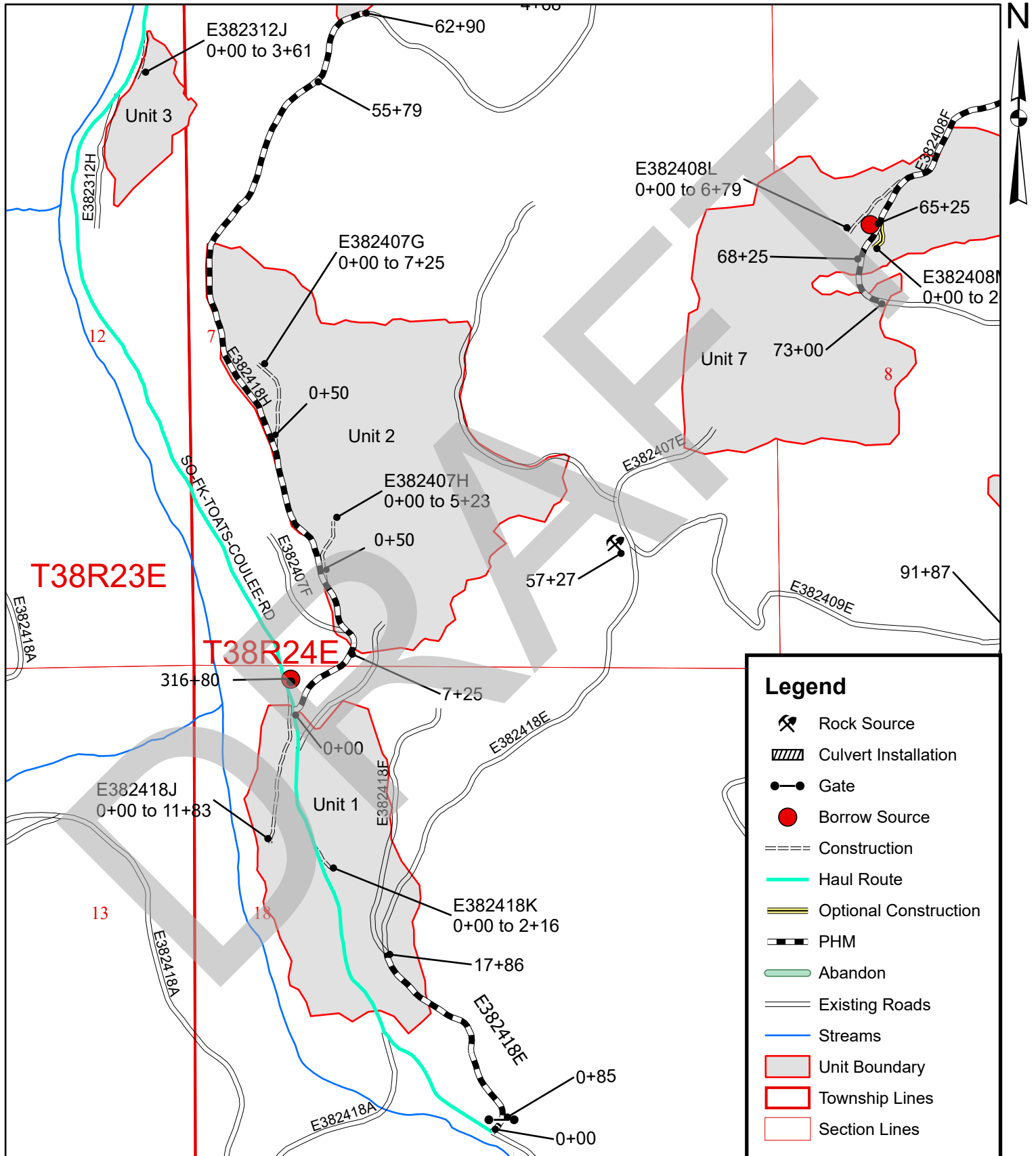
Road Plan Map

Region: Northeast

Agreement No: 30-106261

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County: Okanogan



0 0.1 0.2 0.4 0.6 0.8 Miles 1"=1000'

Colin Rojas 12/8/2023

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

PORTRAIT TIMBER SALE ROAD PLAN  
OKANOGAN COUNTY  
HIGHLANDS DISTRICT  
NORTHEAST REGION

AGREEMENT NO.: 30-106261

STAFF ENGINEER: COLIN ROJAS

DATE: 12/8/2023

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.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
E382312J	3.61	Construction
E382405E	66.84	Pre Haul Maintenance
E382405K	8.41	Construction
E382405L	3.65	Construction
E382406G	6.19	Construction
E382406H	13.22	Construction
E382407G	7.25	Construction
E382407H	5.23	Construction
E382408F	73.00	Pre Haul Maintenance
E382408L	6.79	Construction
E382408M	2.44	Construction
E382408N	2.44	Construction
E382409E	91.87	Pre Haul Maintenance
E382418E	17.86	Pre Haul Maintenance
E382418H	62.90	Pre Haul Maintenance
E382418J	11.83	Construction
E382418K	2.16	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.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E382312J	0+00 to 3+61	See sections 3, 4, and 5
E382405K	0+00 to 8+41	See sections 3, 4, and 5
E382405L	0+00 to 3+65	See sections 3, 4, and 5
E382406G	0+00 to 6+19	See sections 3, 4, and 5
E382406H	0+00 to 13+22	See sections 3, 4, and 5
E382407G	0+00 to 7+25	See sections 3, 4, and 5
E382407H	0+00 to 5+23	See sections 3, 4, and 5
E382408L	0+00 to 6+79	See sections 3, 4, and 5
E382408M	0+00 to 2+44	See sections 3, 4, and 5
E382408N	0+00 to 2+44	See sections 3, 4, and 5
E382418J	0+00 to 11+83	See sections 3, 4, and 5
E382418K	0+00 to 2+16	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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E382405E	0+00 to 66+84	Brushing, Grubbing, Grading, Road Widening
E382408F	0+00 to 73+00	Brushing, Grubbing, Grading, Culvert Installation, rocking road
E382409E	0+00 to 91+87	Brushing, Grubbing, Grading
E382418E	0+00 to 17+86	Brushing, Grubbing, Grading
E382418H	0+00 to 62+90	Brushing, Grubbing, Grading

**0-7 POST-HAUL MAINTENANCE**

This project includes post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE9-5 .

**0-9 DECOMMISSIONING**

This project includes decommissioning listed in Clause 9-20ROAD DECOMMISSIONING.

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.

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
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**

No operation of road construction equipment will be allowed on weekends or state recognized holidays, without written approval from the Contract Administrator.

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 15<sup>th</sup> - June 1<sup>st</sup>

**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.

**1-33 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.

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

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

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

**SECTION 2 – MAINTENANCE**

**2-1 GENERAL ROAD MAINTENANCE**

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

**2-4 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.

### **3-5 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.

### **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**

All disposal of organic debris, shall be completed 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 outside of the clearing limits or in natural openings unless otherwise directed by the Contract Administrator. 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.

## 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:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
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:

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

**4-7 SHAPING CUT AND FILL SLOPE**

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

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

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

**4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS**

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

<u>Road</u>	<u>Stations</u>
E382312J	0+00 to 0+75
E382405K	0+00 to 0+75
E382405L	0+00 to 0+75
E382406G	0+00 to 0+75
E382406H	0+00 to 0+75
E382407G	0+00 to 0+75
E382407H	0+00 to 0+75
E382408L	0+00 to 0+75
E382408M	0+00 to 0+75
E382408N	0+00 to 0+75
E382418J	0+00 to 0+75
E382418K	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 **4-5 CUT 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.

#### **4-35 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 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, 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.

#### **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.
- On non DNR Land.

#### **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.

**4-49 BORROW SOURCE**

Purchaser shall obtain borrow material from the listed borrow. Development of the borrow source must be in accordance with Section 4-5 CUT SLOPE RATIO.

<u>Road</u>	<u>Station</u>	<u>Type</u>
E352405E	68+21	Common Borrow
E382408F	65+25	Common Borrow
SF Toats Coulee	316+80	Common Borrow

**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. 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.

### 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, aluminum, or polyethylene meeting the material specifications in Clauses 10-15 through 10-23. Culvert placement shall precede embankment construction.

### 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" and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe shall be installed in a manner consistent with the manufacturer's recommendations.

### 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

**5-30 DRIVABLE WATERBAR CONSTRUCTION**

Purchaser shall construct drivable waterbars in accordance with the DRIVABLE WATERBAR DETAIL.

**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.

**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.

**SECTION 6 – ROCK AND SURFACING**

**6-2 ROCK SOURCE ON STATE LAND**

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

<u>Road</u>	<u>Station</u>	<u>Rock Type</u>
E382418E	57+27	1 ¼"

**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.

**6-21 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.

**6-22 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.

**6-28 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.

**6-50 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:

<u>Quantity</u>	<u>Approximate Size Range</u>
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:

<u>Quantity</u>	<u>Size Range</u>
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.

**6-76 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.

**7-57 CULVERT SHAPE CONTROL**

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

**7-70 GATE CLOSURE**

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul.

<u>Road</u>	<u>Station</u>	<u>Comment</u>
E382409E	0+90	Steel Gate
E382418E	0+85	Steel Gate

**SECTION 9 – POST-HAUL ROAD WORK**

**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

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
E382312J	3.61	Post Haul Grading, and refer to FARMS Specifications
E382405E	66.84	Post Haul Grading, and refer to FARMS Specifications
E382405K	8.41	Post Haul Grading, and refer to FARMS Specifications
E382405L	3.65	Post Haul Grading, and refer to FARMS Specifications
E382406H	13.22	Post Haul Grading, and refer to FARMS Specifications
E382407G	7.25	Post Haul Grading, and refer to FARMS Specifications
E382407H	5.23	Post Haul Grading, and refer to FARMS Specifications
E382408F	73.00	Post Haul Grading, and refer to FARMS Specifications
E382408L	6.79	Post Haul Grading, and refer to FARMS Specifications
E382408M	2.44	Post Haul Grading, and refer to FARMS Specifications
E382408N	2.44	Post Haul Grading, and refer to FARMS Specifications
E382409E	91.87	Post Haul Grading, and refer to FARMS Specifications
E382418E	17.86	Post Haul Grading, and refer to FARMS Specifications
E382418H	62.90	Post Haul Grading, and refer to FARMS Specifications
E382418J	11.83	Post Haul Grading, and refer to FARMS Specifications
E382418K	2.16	Post Haul Grading, and refer to FARMS Specifications

**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.

**9-20 ROAD DECOMMISSIONING**

Purchaser shall decommission the following roads before the termination of this contract

<u>Road</u>	<u>Stations</u>	<u>Type</u>
E382312J	0+00 to 3+61	Light Decommissioning & Barricade
E382405K	0+00 to 8+41	Light Decommissioning
E382405L	0+00 to 3+65	Light Decommissioning
E382406H	0+00 to 13+22	Light Decommissioning
E382407G	0+00 to 7+25	Light Decommissioning & Barricade
E382407H	0+00 to 5+23	Light Decommissioning & Barricade
E382408L	0+00 to 6+79	Light Decommissioning
E382408M	0+00 to 2+44	Light Decommissioning
E382408N	0+00 to 2+44	Light Decommissioning
E382418J	0+00 to 11+83	Light Decommissioning
E382418K	0+00 to 2+16	Light Decommissioning

All Barricades are to be placed at station 0+50 as shown in the attached maps for the listed roads above.

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>	<u>Date</u>
E382406G	0+00 to 6+19	Light Abandonment	<b>After Use</b>

**9-22 LIGHT DECOMMISSIONING**

- Remove road shoulder berms except as directed.
- Construct drivable waterbars according to the attached DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 200 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL for select roads indicated in section 9-20.

**9-23 LIGHT ABANDONMENT**

- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 200 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove culvert.

**SECTION 10 MATERIALS**

**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.

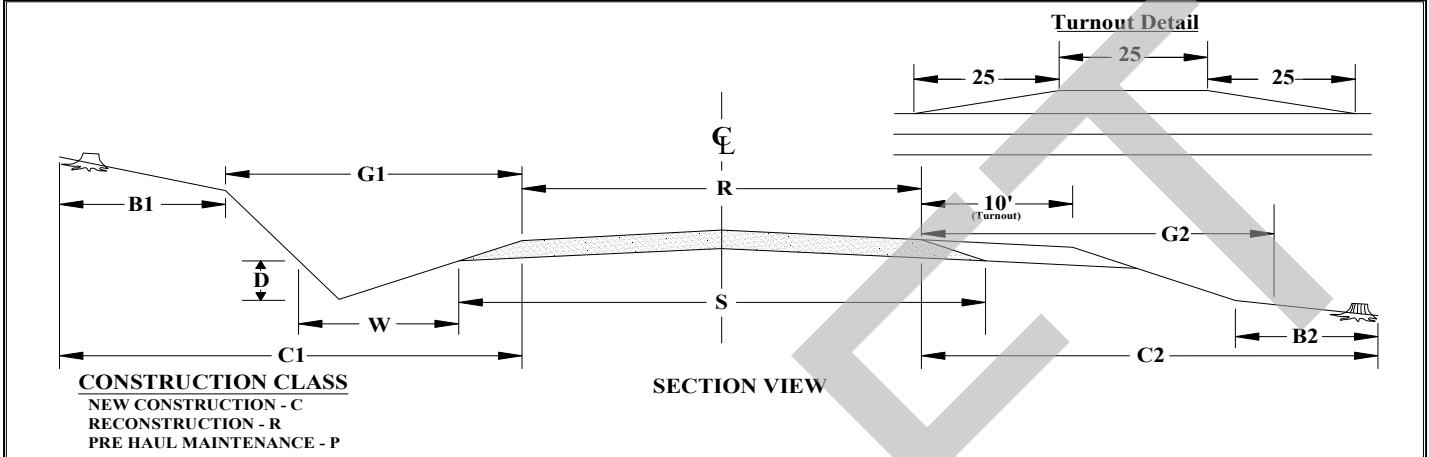
<u>Diameter</u>	<u>Gauge</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	12 (0.109")	3" X 1"

State of Washington  
Department of Natural Resources

Application No. : 30-106261

Name of Sale: Portrait

## Typical Section Sheet



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)
E382312J	0+00	3+61	C				4								6	6		
E382405E	0+00	66+84	P										3	3			6	6
E382405K	0+00	8+41	C				4								6	6		
E382405L	0+00	3+65	C				4								6	6		
E382406G	0+00	6+19	C				4								6	6		
E382406H	0+00	13+22	C				4								6	6		
E382407G	0+00	7+25	C				4								6	6		
E382407H	0+00	5+23	C				4								6	6		
E382408F	0+00	73+00	P										3	3			6	6
E382408L	0+00	6+79	C				4								6	6		
E382408M	0+00	2+44	C				4								6	6		
E382408N	0+00	2+44	C				4								6	6		
E382409E	0+00	91+87	P										3	3			6	6
E382418E	0+00	17+86	P										3	3			6	6
E382418H	0+00	62+90	P										3	3			6	6
E382418J	0+00	11+83	C				4								6	6		
E382418K	0+00	2+16	C				4								6	6		

Date: 12-08-2023



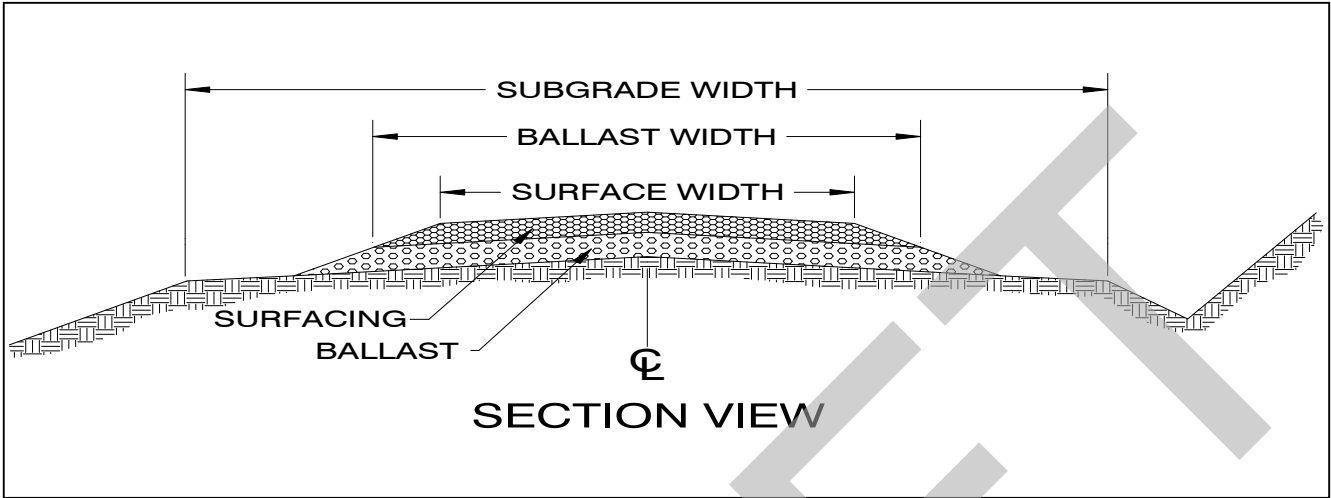


STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-0

Name of Sale: Portrait

# ROCK LIST



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)
E382408F	31+67	32+67					0		14	8	37	
E382408F	68+26	73+01					0		14	8	37	
E382418H	6+75	7+75					0		14	8	37	
E382418H	55+29	56+29					0		14	8	37	
							0				0	
							0				0	
							0				0	
							0				0	
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## **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

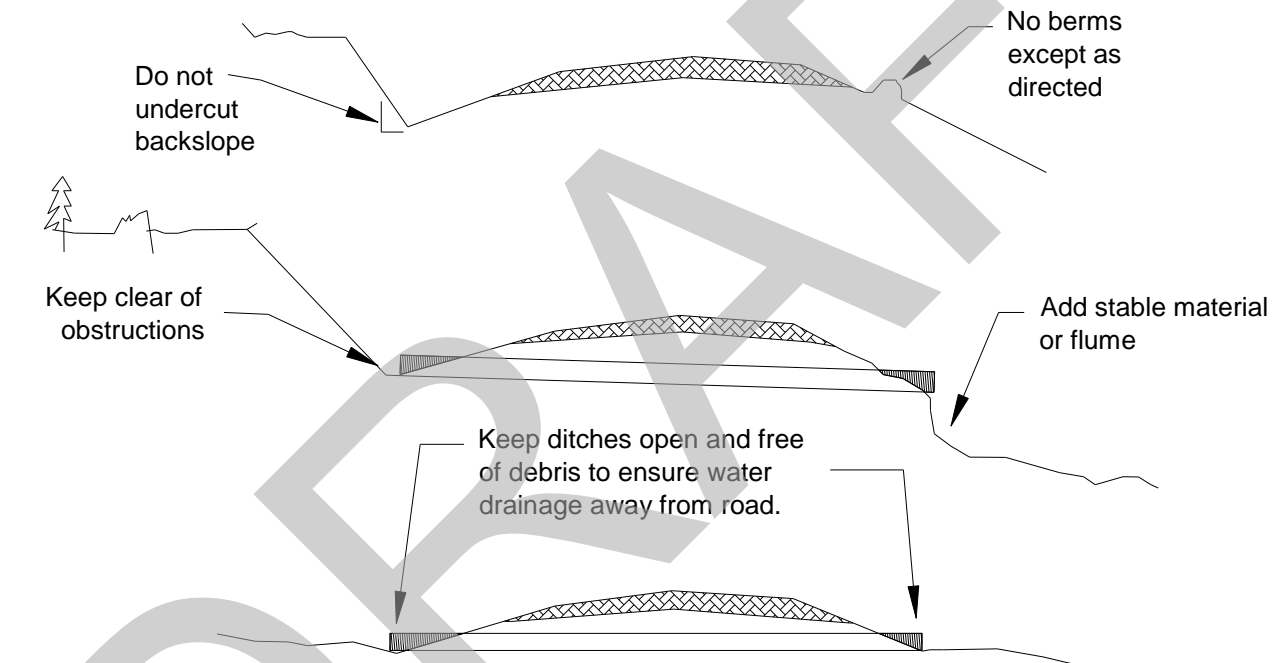
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

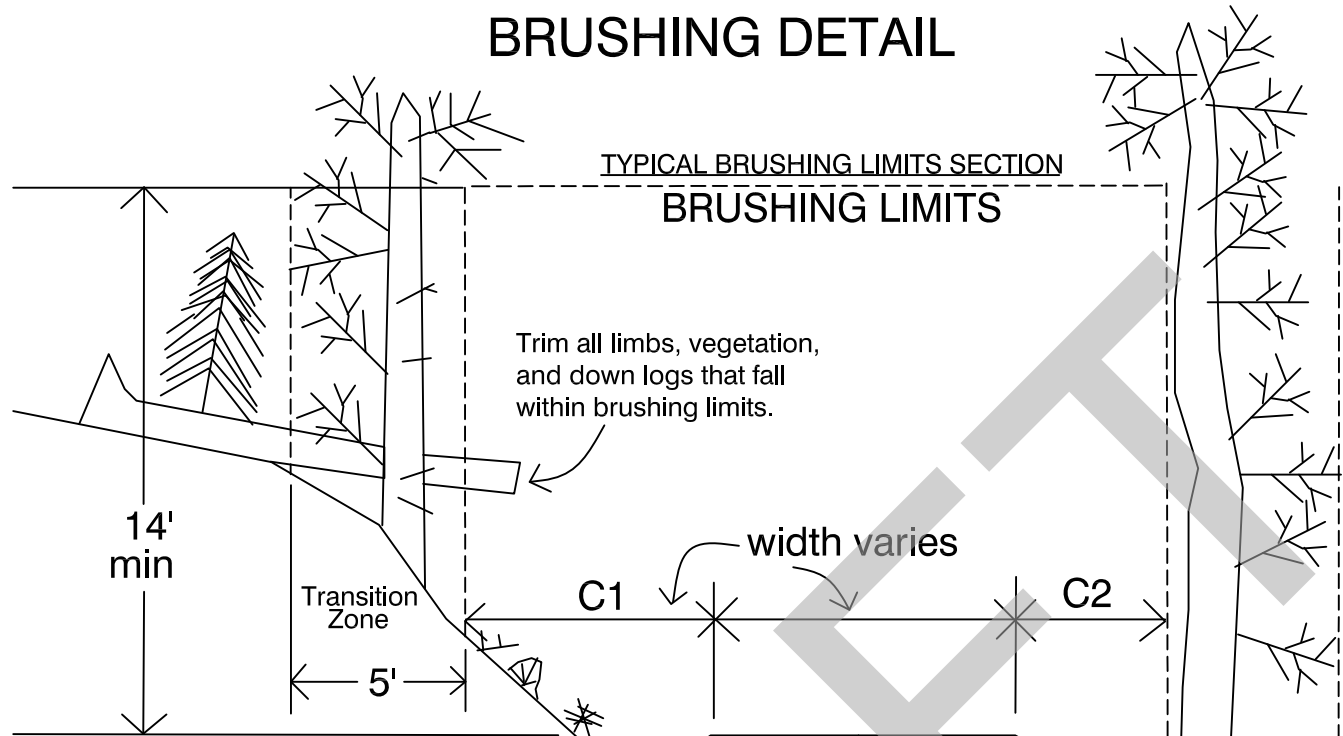
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

### Debris

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



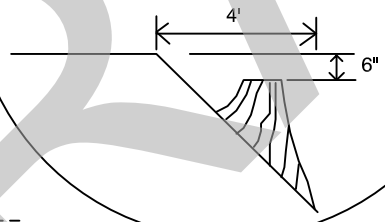
# BRUSHING DETAIL



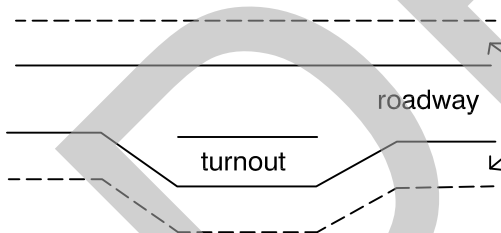
All limbs on standing trees that extend into the brushing limits shall be trimmed within 6" of the stem

Any trees less than 6" in diameter shall be cleared within the transition zones.

Trim all stumps and vegetation within 4' of edge of road and in ditch to at least 6" below the elevation of the edge of road.

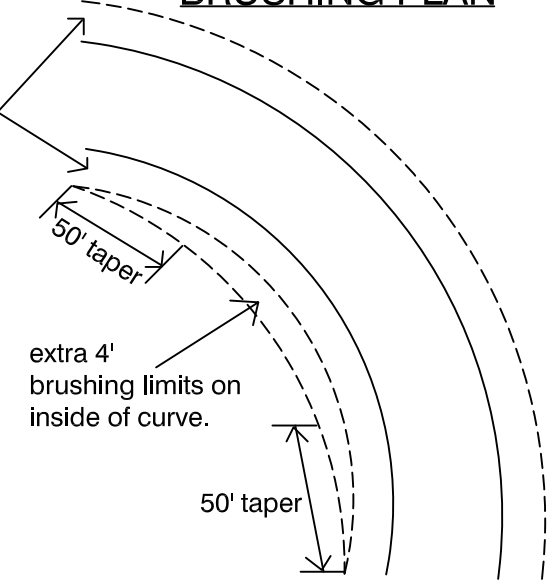


## CURVE BRUSHING PLAN



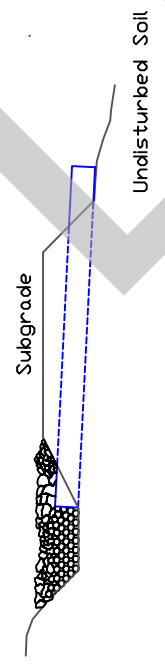
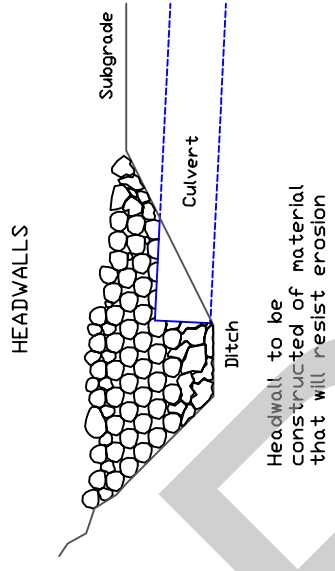
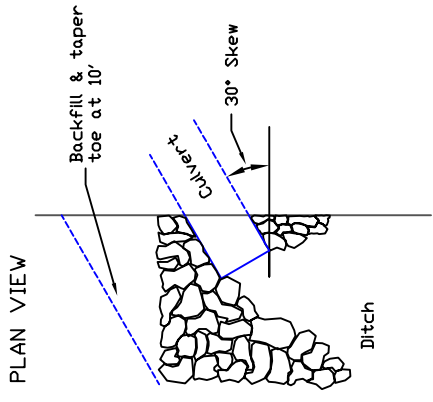
## TURNOUT BRUSHING PLAN

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.

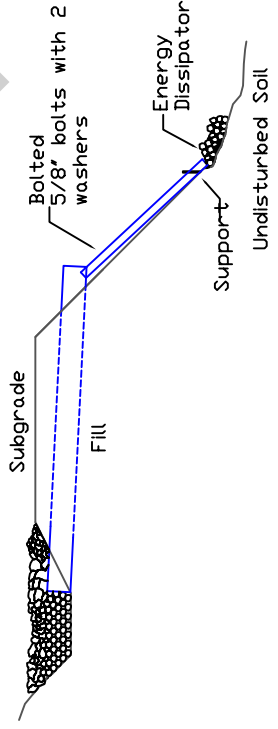


Brushing limits as shown on typical section

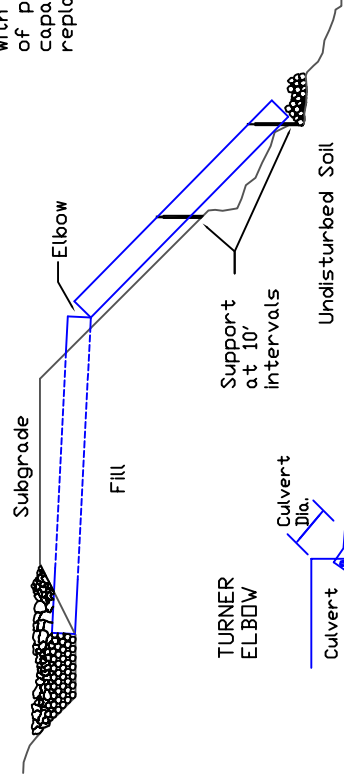
# CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1



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



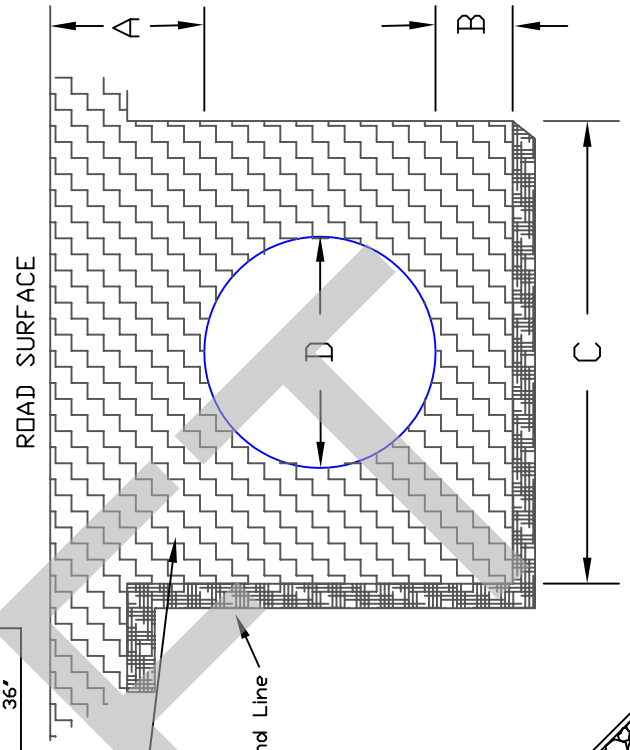
**DOWNSPOUT**  
Use where ground conditions are irregular.



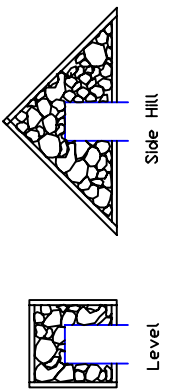
**TURNER ELBOW**  
Culvert Dia.  
Culvert  
Bolted 5/8" bolts with bridge washers on both sides

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

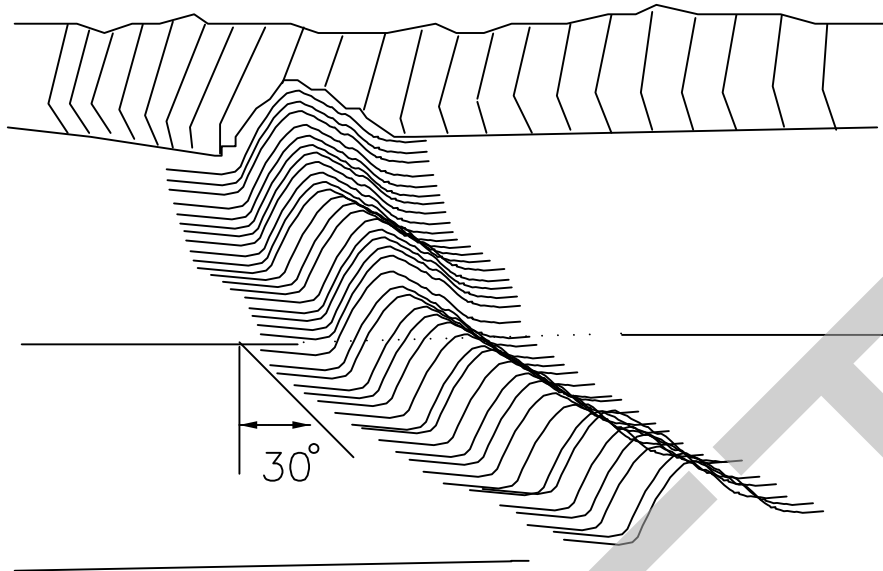
**CULVERT BACKFILL & BASE PREPARATION**  
(For Culverts Less Than 36')



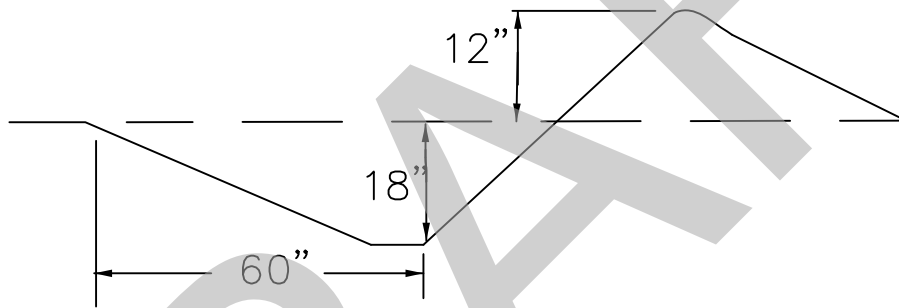
**DISSIPATOR SPEC'S**  
Size in Culvert Diameters  
Area 2 X 2  
Depth 1  
Aggregate 1/3



Top View

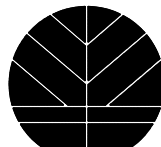


Side View



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



WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**

Northeast Region  
Colville, Washington

Designed By: Stash Slabinski 9/06/05

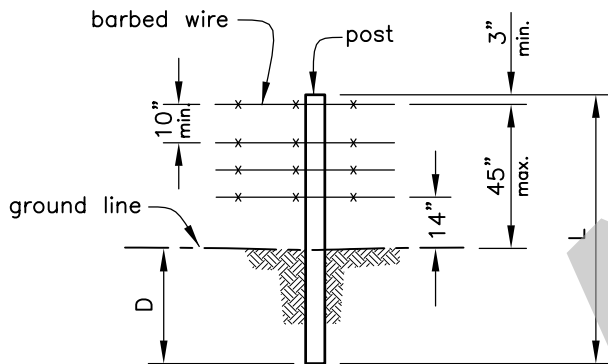
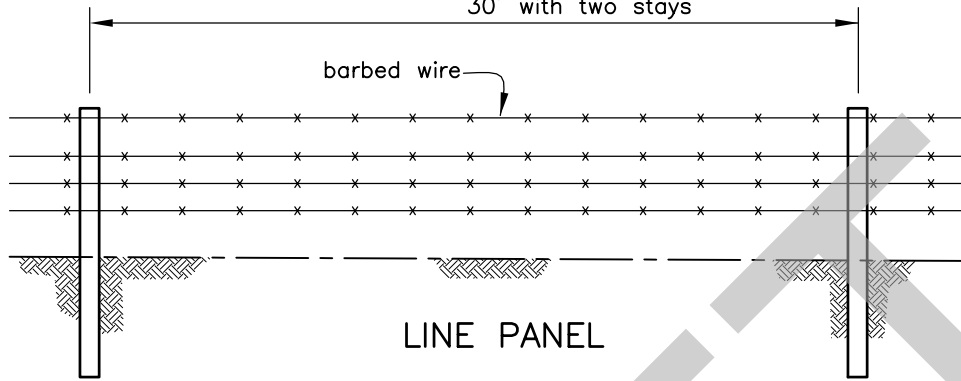
Drawn By: Stash Slabinski 9/06/05

Revised:

1 OF 1

4 STRAND STANDARD POST AND WIRE FENCE

max. spacing = 20' without stay  
25' with one stay  
30' with two stays



BARBED WIRE 12 1/2 gauge conventional or 15 1/2 gauge high-tension

2 twisted strands with 14 gauge or heavier two-point barbs on approx. 5 inch centers.

Class 1 (min. or equiv.) zinc-coating as per ASTM A-121.

BARBED WIRE DETAIL

LINE	Plastic:	L = 6 ft. min. D = 24 in. min. Dia. = 3-3/8 in. min.	Fiberglass:	L = 6 ft. min. D = 24 in. min. Dia. = 1-1/4 in. min.
	Wood:	L = 6 ft. min. D = 24 in. min. Dia. = 3 in. min.	Steel:	L = 5-1/2 ft. min. D = 18 in. min. Standard "T" or "U"; > 1.25 lbs/ft of length
CORNER OR GATE	Wood:	L = 7 ft. min. D = 3 ft. min. Dia. = 5 in. min.	Steel:	L = 7 ft. min. D = 3 ft. min. (set in conc.) Dia. = Round 2-3/8 in. O.D. or Angle iron 2-1/2 x 2-1/2 x 1/4 (in.)
STAYS	Wood: 1-1/2 in. dia. min. of durable wood Fiberglass: Any manufactured for this purpose Wire: 9 1/2 gauge, zinc coated, twisted, manufactured for this purpose			

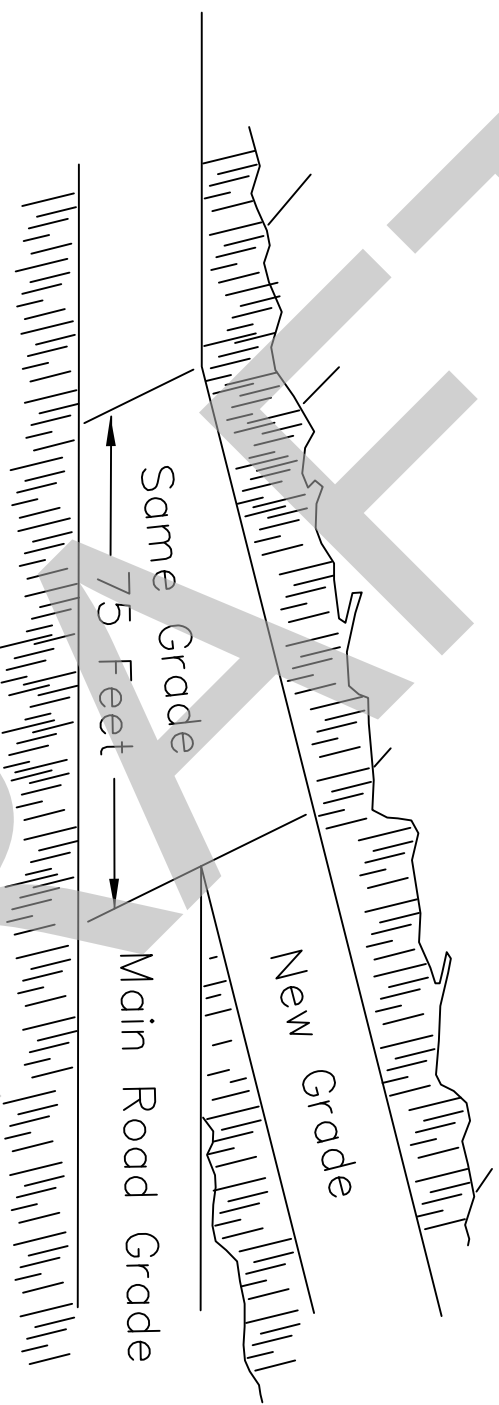
SPECIES for all wood: \_\_\_\_\_

SPECIAL INSTRUCTIONS  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Drawing not to scale. Standardized drawing must be adapted to the specific site.

JOB CLASS	Date
CAD FILE NO. LSK-0010.DWG	Designed _____
SHEET OF	Drawn _____
	Checked _____
	Approved _____

# Intersection Detail

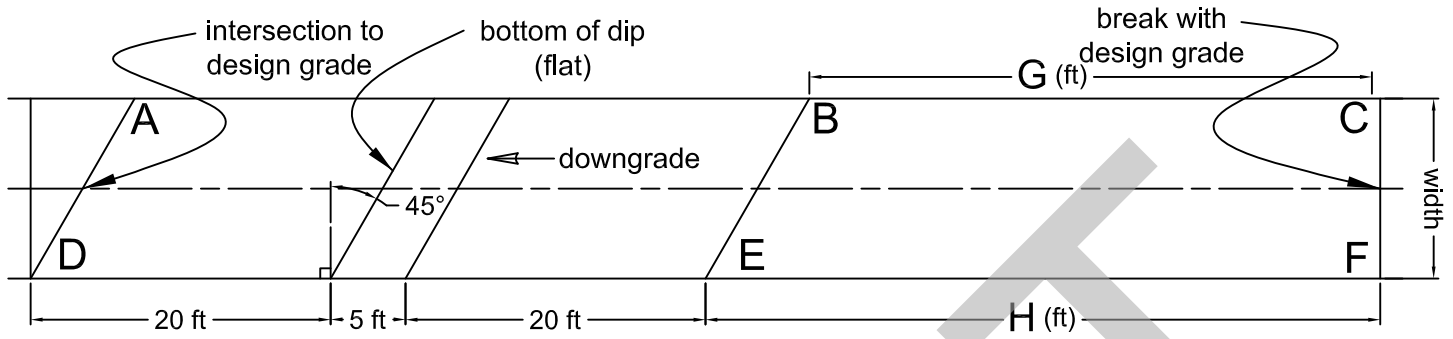


Main road and spur must have the same grade until there is horizontal separation from each other.

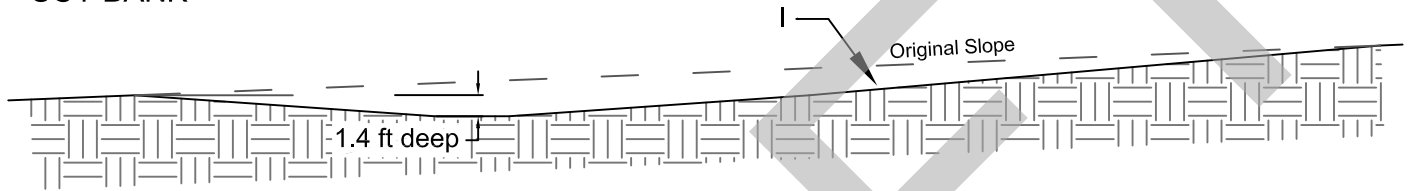


# STANDARD 45° ROLLING DIP

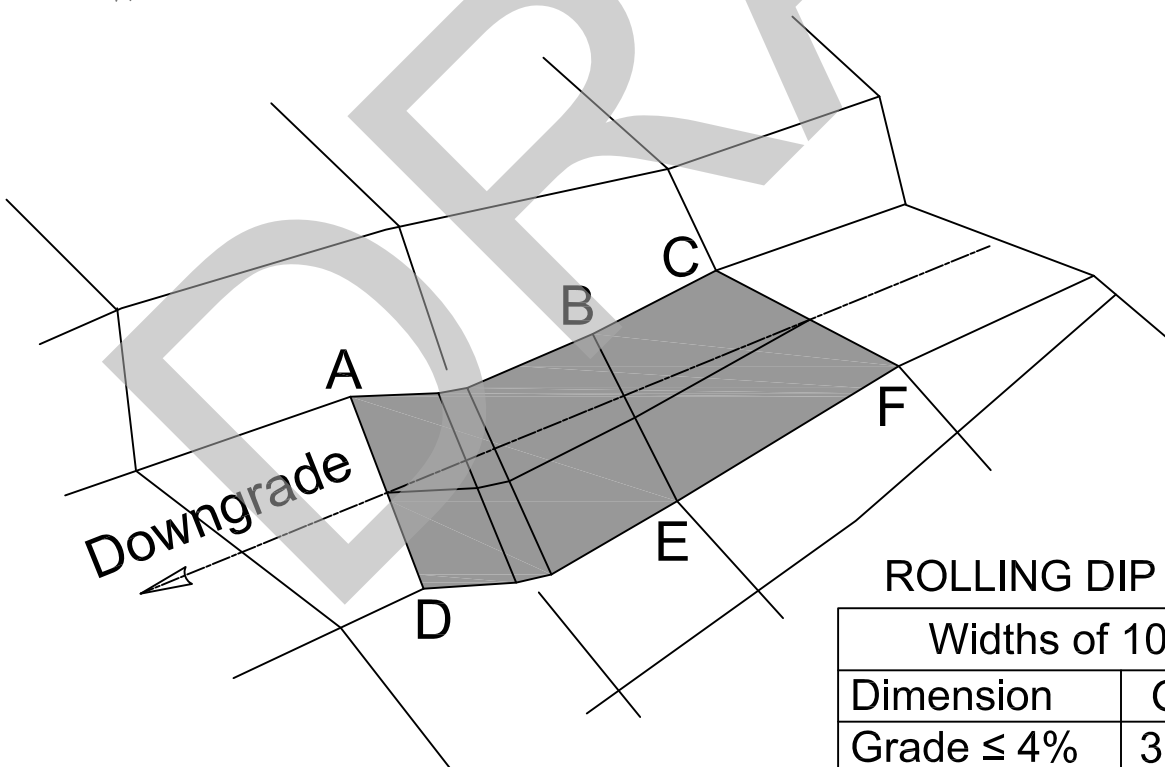
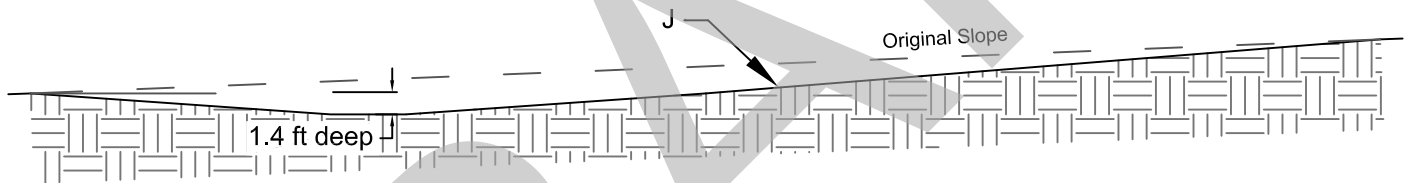
## PLAN OF ROLLING DIP



## CUT BANK



## FILL SLOPE

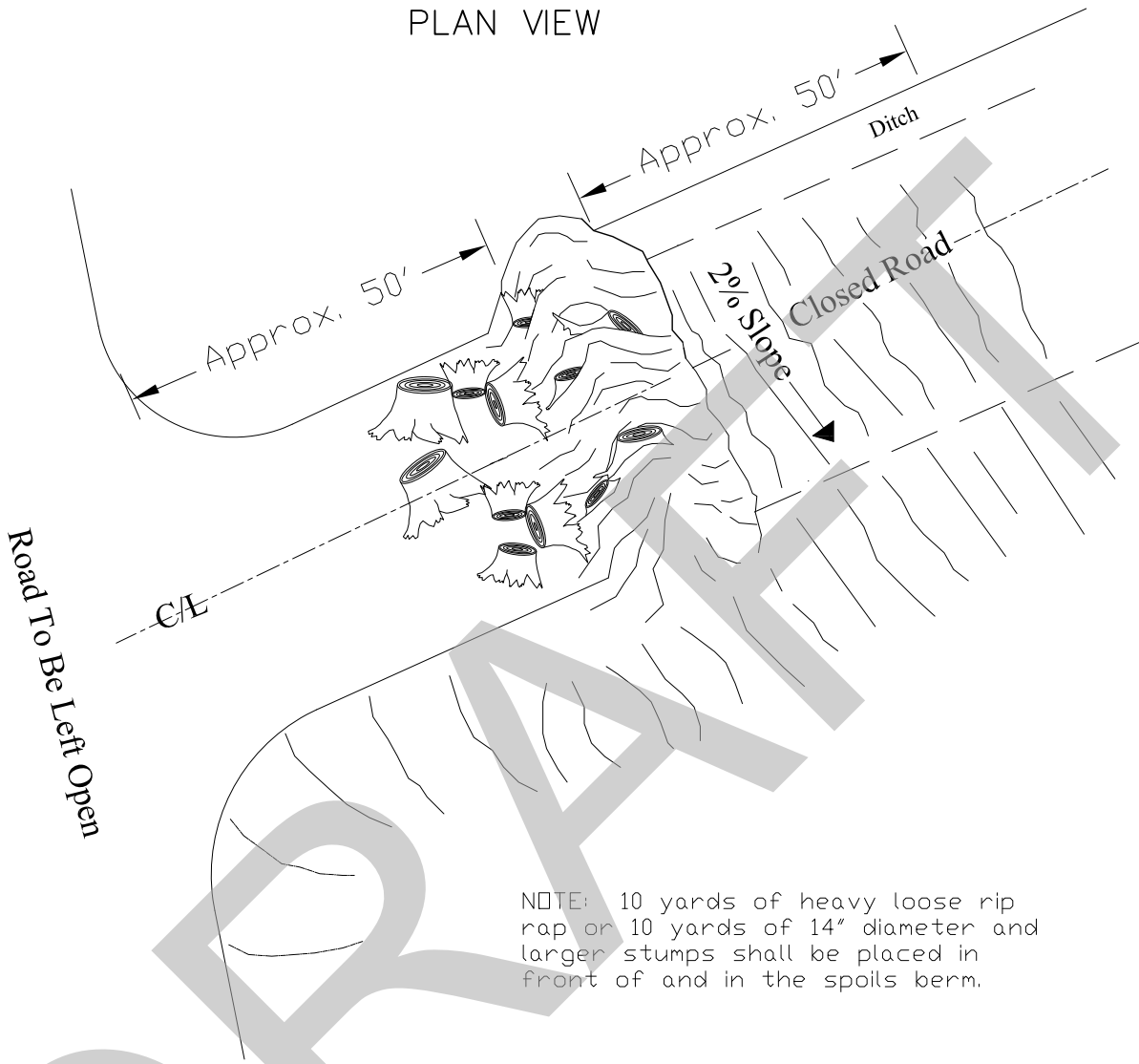


## ROLLING DIP DEMENSIONS

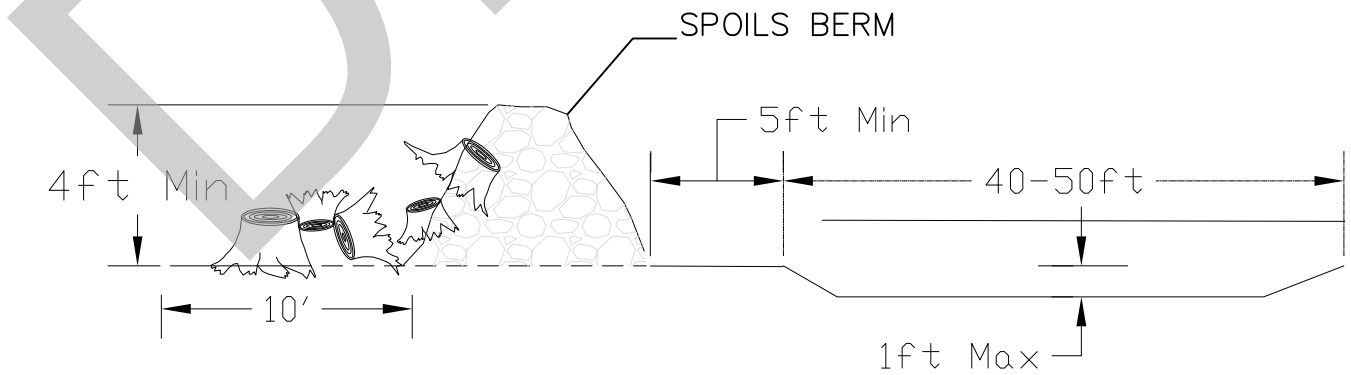
Widths of 10' through 14'				
Dimension	G	H	I	J
Grade ≤ 4%	38'	45'	9%	8%
Grade = 6%	48'	55'	11%	11%
Grade = 8%	58'	65'	14%	14%

# SPOILS BERM DETAIL

## PLAN VIEW

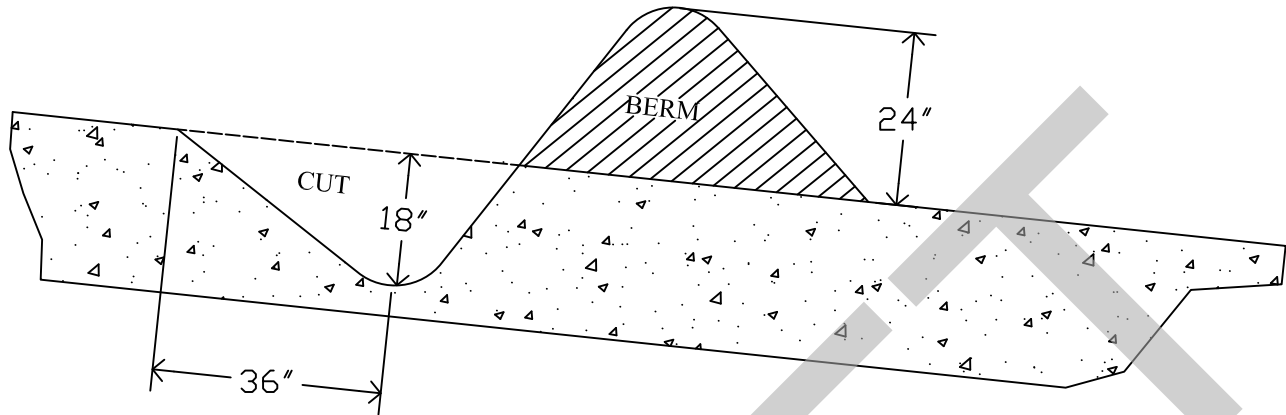


NOTE: 10 yards of heavy loose rip rap or 10 yards of 14" diameter and larger stumps shall be placed in front of and in the spoils berm.



Note:  $\frac{1}{3}$  of stumps or rip rap shall be partially buried in the spoils berm and/or road surface.

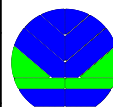
# Non-Driveable Water Bar Detail



Notes:

1. WATERBAR CONSTRUCTION FOR FOREST ROADS WITH NO TRAFFIC. SPECIFICATIONS ARE AVERAGE AND MAY BE ADJUSTED TO CONDITIONS.
2. TIE BERM INTO BANK. IF DITCH EXISTS, TIE CUT INTO DITCH.
3. CONSTRUCT CROSS DRAIN BERM APPROXIMATELY 24 IN. HIGH.
4. CUT WATERBAR A MINIMUM OF 18 IN.
5. ENSURE PROPER DRAINAGE AT OUTLET.
6. SKEW WATERBAR 30 DEGREES DOWNGRADE WITH ROAD CENTERLINE.

## Non-Driveable Waterbar Detail



WASHINGTON STATE DEPARTMENT OF  
Natural Resources

Northeast Region Colville, Washington		
Designed By:	Stash Slabinski	4/21/05
Drawn By:	Stash Slabinski	4/21/05

Revised:

1 OF 1

