



**TIMBER NOTICE OF SALE**

**SALE NAME:** PEPPER POTTS

**AGREEMENT NO:** 30-106703

**AUCTION:** December 18, 2024 starting at 10:00 a.m., **COUNTY:** Skagit  
Northwest Region Office, Sedro-Woolley, WA

**SALE LOCATION:** Sale located approximately 13 miles southeast of Sedro-Woolley, WA.

**PRODUCTS SOLD  
AND SALE AREA:**

All timber bounded by white timber sale boundary tags and the DL-43 Road, except trees 60 inches or larger measured at diameter at breast height, cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #1.

All timber bounded by white timber sale boundary tags, adjacent young stands, DL-43 Road and property lines, except trees 60 inches or larger measured at diameter at breast height, cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #2.

All timber bounded by white timber sale boundary tags, DL-ML Road and property lines, except trees 60 inches or larger measured at diameter at breast height, cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #3.

All forest products above located on part(s) of Sections 4 all in Township 34 North, Range 6 East, Sections 32 and 33 all in Township 35 North, Range 6 East, W.M., containing 36 acres, more or less.

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

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade									
				1P	2P	3P	SM	1S	2S	3S	4S	UT	
Douglas fir	22.4	9	566			35	49		330	127	25		
Hemlock	20.2		348						238	103	7		
Redcedar	22.7		283							260	23		
Spruce	31.9		22						20	2			
Red alder	19.3		22						13	3	3	3	
Cottonwood	27.5		18						17				1
Maple	23		3						2				1
Sale Total			1,262										

**MINIMUM BID:** \$499,000.00 **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$99,800.00 **SALE TYPE:** Lump Sum

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



## TIMBER NOTICE OF SALE

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- BID DEPOSIT:** \$49,900.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.
- HARVEST METHOD:** Cable OR tethered equipment; shovel, tracked skidder or "6-wheeled rubber-tired skidders with over-the-tire tracks spanning both sets of rear tires" on sustained slopes 40% or less; self-leveling equipment on sustained slopes 55% or less; also, a feller-buncher may be utilized on sustained slopes 40% or less for falling. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.
- ROADS:** 4.27 stations of optional construction. 3.42 stations of optional reconstruction. 343.26 stations of required prehaul maintenance. 7.69 stations of abandonment, if built.
- Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: Blair Pit at station 28+47 of the LT-ML Road. Potts Pit at Station 91+01 of the DL-43 Road.
- Development of an existing rock source(s) will involve clearing and sorting pitrun in-bank rock.
- An estimated total quantity of rock needed for this proposal: 240 cubic yards of riprap/oversize, 425 cubic yards of shotrock and 295 cubic yards of pitrun rock.
- Road work and the hauling of rock will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation. The HAULING OF FOREST PRODUCTS WILL NOT BE PERMITTED ON THE DL-43 ROAD from November 1 to March 31 UNLESS AUTHORIZED IN WRITING BY THE STATE. The hauling of forest products on ALL REMAINING ROADS is restricted as follows: The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.
- ACREAGE DETERMINATION**
- CRUISE METHOD:** Acres determined by GPS traverse for units. Cruise was conducted via variable plot sample type for Units #2 and 3, as well as 1/20-acre fixed plot for Unit #1. See Cruise Narrative for further details. Shapefiles of units are available upon request, and on the DNR website after the BNR meeting in which the sale is presented.
- FEES:** \$21,454.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.
- SPECIAL REMARKS:**
1. Trees marked with orange paint represent the last take tree along property line boundaries.
  2. HQ DF noted within the sale area. Also, DF and redcedar poles were noted within the sale area. No formal cruise was conducted for poles. See cruise for further details.
  3. A portion of the road work is on abandoned grade.
  4. Timing restriction on the DL-43 for log hauling, see road sections above.

**Schedule C**  
**Slash Piling Specifications**

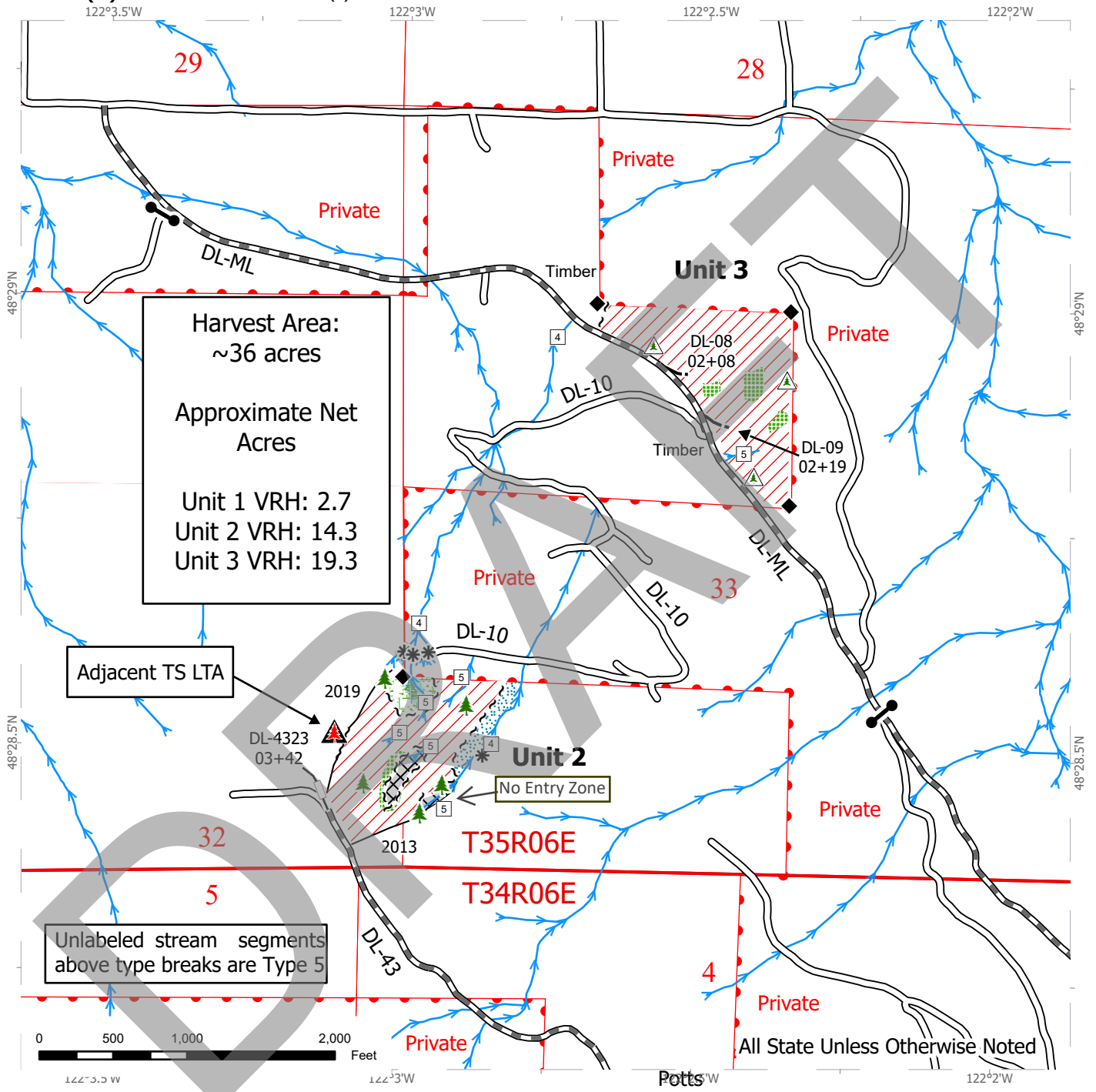
The areas shall be piled by creating circular piles of slash and brush conforming to the following specifications:

- A. Piles shall be a minimum of 11.5 feet tall by 8 feet wide to a maximum of 30 feet tall and 16 feet wide. Piles shall be cone shaped and stable.
- B. Piles shall be free of topsoil, large rotten logs and large stumps. No material larger than 8 inches in diameter shall be piled. Any burnable material shall be well scattered.
- C. Piles shall not be placed on large stumps or logs.
- D. Piles shall be stacked a minimum of 50 feet from all unit boundaries, Riparian Management Zones, leave trees, and any standing timber; a minimum of 100 feet from any public roads and highways; and a minimum of 200 feet from any structures.
- E. Piling shall be completed using an approved hydraulic shovel and grapples.
- F. Slash and displaced soil shall be removed from swales and natural drainage channels concurrent with yarding.
- G. Slash generated during cable yarding shall be stacked in dirt free piles and shall not block roads or interfere with functioning of drainage structures, ditches, or stream channels.

# TIMBER SALE MAP

**SALE NAME:** PEPPER POTTS  
**AGREEMENT #:** 30-106703  
**TOWNSHIP(S):** T34R6E, T35R6E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Skagit  
**ELEVATION RGE:** 280-1960



Sale Area	Sale Boundary Tags	Stream Type
Leave Tree Area (LTA)	Timber Type Change	Stream Break
Forested Wetland	Existing Roads	Leave Tree Area <1/4-acre
Wetland Mgt Zone	Required Pre-Haul Maintenance	Non-Tradeable Leave Trees
Riparian Mgt Zone	Optional Construction	Gate (F1-3 lock)
No Entry Zone	Optional Reconstruction	Survey Monument
	Streams	

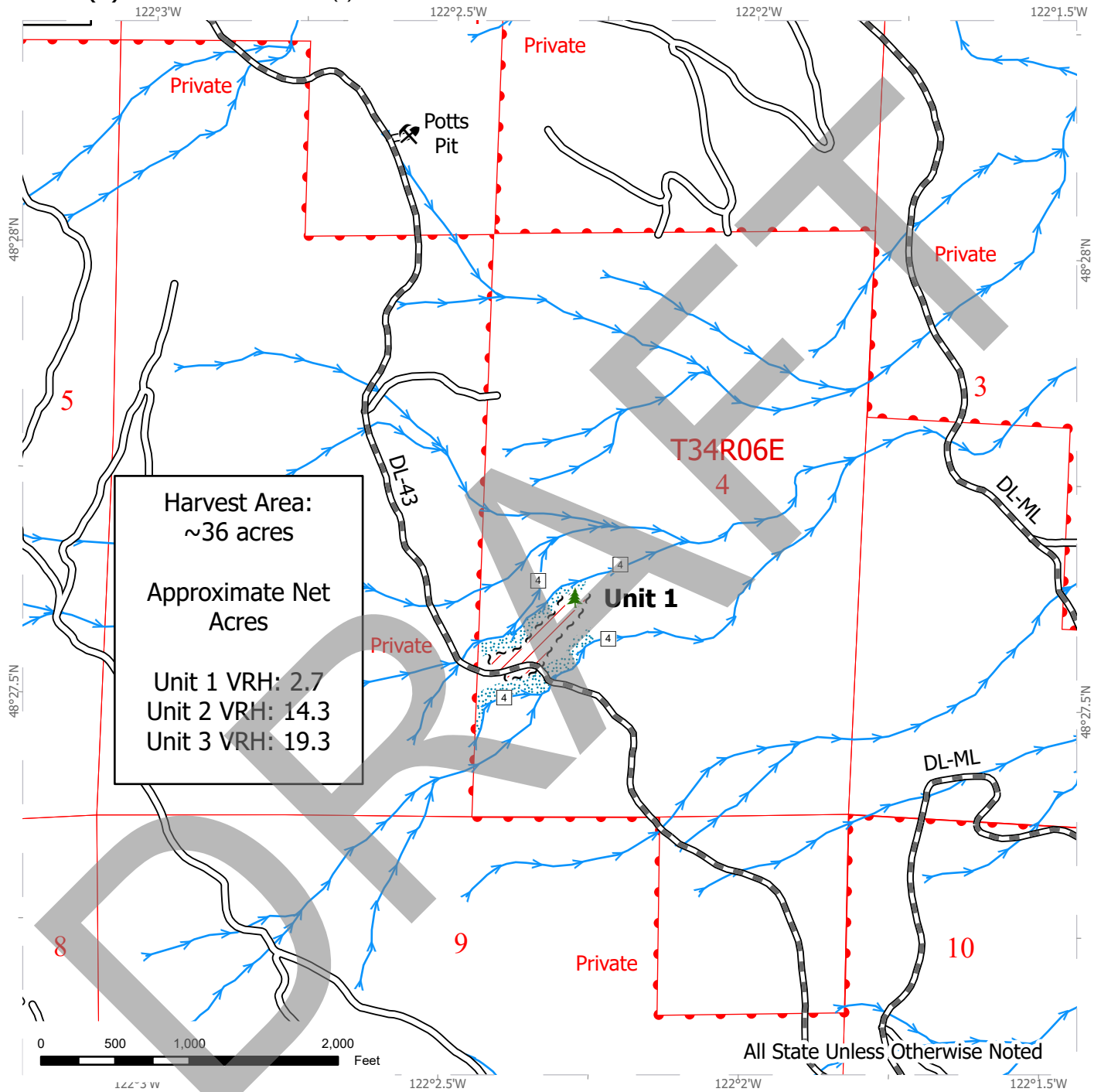




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**SALE NAME:** PEPPER POTTS  
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**TOWNSHIP(S):** T34R6E, T35R6E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Skagit  
**ELEVATION RGE:** 280-1960



**Harvest Area:**  
 ~36 acres

**Approximate Net Acres**

Unit 1 VRH: 2.7  
 Unit 2 VRH: 14.3  
 Unit 3 VRH: 19.3

All State Unless Otherwise Noted

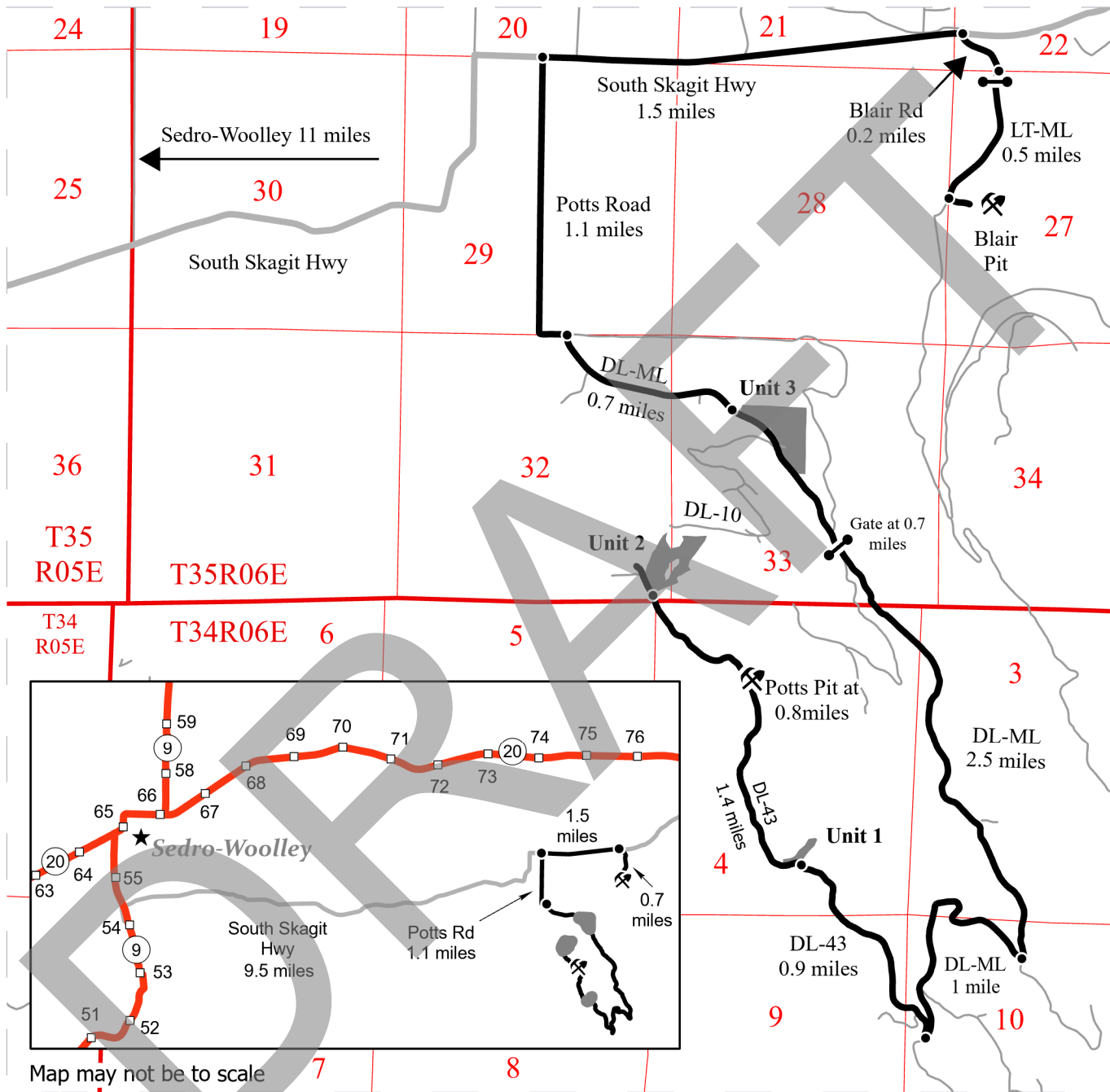
Sale Area	Sale Boundary Tags	Stream Type
Riparian Mgt Zone	Existing Roads	Stream Break
	Required Pre-Haul Maintenance	Leave Tree Area <1/4-acre
	Streams	Rock Pit
		Survey Monument



# DRIVING MAP

**SALE NAME:** PEPPER POTTS  
**AGREEMENT #:** 30-106703  
**TOWNSHIP(S):** T34R6E, T35R6E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Skagit  
**ELEVATION RGE:** 280-1960



Map may not be to scale

**Legend**

- Harvest Unit
- Haul Route
- Highway
- Paved Road
- Other Roads
- Rock Pit
- Gate
- Distance indicator
- Milepost Markers

**DRIVING DIRECTIONS:**

Units: From Hwy 9 between mileposts 54 & 55 head east on South Skagit Hwy for 9.5 miles. Turn right (south) onto Potts Rd. In 1.1 miles Potts Rd will become the DL-ML. Continue 0.7 miles to Unit 3. From Unit 3 continue 2.5 miles (gate in 0.7 miles) and turn right to stay on the DL-ML. Continue 1 mile and turn right onto the DL-43. Continue 0.9 miles to Unit 1. From Unit 1 continue 1.4 miles to Unit 2.

Potts Pit: 0.8 miles north of Unit 1 on the DL-43 Rd.  
 Blair Pit: From South Skagit Hwy head south on Blair Rd for 0.2 miles. Travel through the gate and Blair Rd becomes the LT-ML. Continue 0.5 miles to the pit (spur to the left/east).



## Timber Sale Cruise Report Pepper Potts - NW

**Sale Name:** PEPPER POTTS

**Sale Type:** LUMP SUM

**Region:** NORTHWEST

**District:** CLEAR LAKE

**Lead Cruiser:** Bailey Vos

**Other Cruisers:** Matt Llobet

**Legal -** S4,32,33 of T34,35N R06E

**General -** Pepper Potts Timber Sale is located east of Sedro Woolley, off the Potts Road.

**Access -** Forest roads provide good drive access to all 3 units.

For this cruise basal area factors were selected based on stocking levels and tree sizes. Unit 1 was sampled using 1/20th acre fix radius plots and Units 2 and 3 were sampled using a 62.5/40.0 BAF combination. Plots were generated in GIS and located in the field using Avenza Maps. Bole height was measured with a Relaskop/laser and taken to a 5" top or break point (40% of diameter at 16 feet). Trees were segmented into common west-side log lengths and defect was observed at each cruise plot. Throughout the sale - 1 plot per .68 acres was installed and a cruise-all sample was applied.

The total net cruise volume for Pepper Potts is 1,262 MBF. The timber type throughout the sale showed a dominant Douglas fir and western hemlock overstory, with a minor component of western red cedar and hardwoods. The majority of the sale volume comes from domestic 2 Saw DF and WH grade. Western red cedar(22%) was scattered throughout all 3 units amounting to 283 MBF. Douglas fir HQ logs(HQB+ 12"+) were cruised throughout the sale, amounting to 148 MBF.

Harvesting conditions throughout Units 1 and 3 is straightforward with productive shovel ground. Unit 2 showed steep cable ground and then transitions into mild topography towards the northern portion of the unit. There are moderate amounts of slash and blowdown on the western harvest edge.

### Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade						
				All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	22.4	9.0		566	35	49	330	127	25	
WH	20.2			348			239	103	7	
RC	22.7			283				260	23	
SS	31.9			22			21	2		
RA	19.3			22			13	3	3	3
BC	27.5			18			17			1
MA	23.0			3			2			1
ALL	19.5	9.0		1,262	35	49	622	495	57	5

### Timber Sale Notice Weight (tons)

Sp	Tons by Grade						
	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	3,650	180	286	2,009	975	200	
WH	2,637			1,677	891	69	
RC	2,171				1,971	200	
RA	182			101	22	28	32
SS	146			118	28		
BC	103			97			6
MA	17			11			5
ALL	8,905	180	286	4,012	3,887	497	43

### 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 (%)
216.2	6.2	160.4	3.0	34,774	6.8

### Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
PEPPER POTTS 1	FX: FR plots (20 tree / acre expansion)	2.7	2.8	2	2	0
PEPPER POTTS 2	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	14.3	15.3	21	21	0
PEPPER POTTS 3	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	19.3	20.4	30	30	0
All		36.3	38.5	53	53	0

### Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	15.8	34	489	477	2.5	97.1	17.3
BC	LIVE	CULL	Cull	22.3	14	82	0	100.0	0.0	0.0
BC	LIVE	UTILITY	Pulp	9.1	24	16	16	0.0	6.0	0.6
DF	LIVE	2 SAW	Domestic	15.5	40	7,242	7,220	0.3	1,584.9	262.1
DF	LIVE	2 SAW	HQ-A	13.2	40	633	633	0.0	157.4	23.0
DF	LIVE	2 SAW	HQ-B	16.6	40	1,129	1,129	0.0	237.9	41.0

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Pole	12.7	40	115	115	0.0	28.5	4.2
DF	LIVE	3 PEELER	HQ-A	25.8	38	952	952	0.0	179.9	34.6
DF	LIVE	3 SAW	Domestic	8.6	36	3,291	3,284	0.2	918.5	119.2
DF	LIVE	3 SAW	Pole	10.0	32	217	217	0.0	56.7	7.9
DF	LIVE	4 SAW	Domestic	5.8	26	696	688	1.2	200.0	25.0
DF	LIVE	CULL	Cull	16.3	6	35	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	20.3	40	1,381	1,357	1.7	285.9	49.3
MA	LIVE	2 SAW	Domestic	17.4	20	57	49	13.4	11.1	1.8
MA	LIVE	UTILITY	Pulp	11.2	20	20	20	0.0	5.4	0.7
RA	LIVE	2 SAW	Domestic	15.0	29	391	357	8.7	101.0	13.0
RA	LIVE	3 SAW	Domestic	11.5	40	81	81	0.0	21.6	2.9
RA	LIVE	4 SAW	Domestic	8.0	31	76	76	0.0	27.8	2.8
RA	LIVE	UTILITY	Pulp	6.5	30	96	96	0.0	31.9	3.5
RC	LIVE	3 SAW	Domestic	11.9	37	6,897	6,821	1.1	1,860.5	247.6
RC	LIVE	3 SAW	Pole	10.0	49	342	342	0.0	110.5	12.4
RC	LIVE	4 SAW	Domestic	5.9	29	650	631	3.0	199.6	22.9
RC	LIVE	CULL	Cull	19.1	18	237	0	100.0	0.0	0.0
SS	LIVE	2 SAW	Domestic	19.8	36	586	569	2.9	117.7	20.7
SS	LIVE	3 SAW	Domestic	8.7	36	58	48	16.6	27.9	1.7
SS	LIVE	CULL	Cull	25.2	14	125	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	15.7	39	6,692	6,584	1.6	1,676.6	239.0
WH	LIVE	3 SAW	Domestic	8.7	37	2,831	2,831	0.0	891.1	102.8
WH	LIVE	4 SAW	Domestic	7.0	21	186	181	2.9	69.2	6.6
WH	LIVE	CULL	Cull	12.3	24	88	0	100.0	0.0	0.0

### Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5+	LIVE	Pulp	9.1	24	16	0.0	6.0	0.6
BC	5+	LIVE	Domestic	15.8	34	477	2.5	97.1	17.3
BC	5+	LIVE	Cull	22.3	14	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Domestic	6.2	29	1,356	0.8	399.7	49.2
DF	5 - 7	LIVE	Pole	7.9	32	41	0.0	12.4	1.5
DF	8 - 11	LIVE	Domestic	9.4	35	2,615	0.2	718.8	94.9
DF	8 - 11	LIVE	Pole	11.1	33	176	0.0	44.4	6.4
DF	12 - 15	LIVE	Pole	12.7	40	115	0.0	28.5	4.2
DF	12 - 15	LIVE	HQ-A	12.9	40	497	0.0	135.4	18.0
DF	12 - 15	LIVE	Domestic	13.3	39	2,379	0.0	594.3	86.4

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	12 - 15	LIVE	HQ-B	14.4	40	513	0.0	121.5	18.6
DF	16 - 19	LIVE	Cull	16.3	6	0	100.0	0.0	0.0
DF	16 - 19	LIVE	HQ-A	17.0	40	169	0.0	36.8	6.1
DF	16 - 19	LIVE	Domestic	17.8	40	2,694	0.8	563.4	97.8
DF	16 - 19	LIVE	HQ-B	18.4	40	160	0.0	37.1	5.8
DF	20+	LIVE	Domestic	22.6	39	2,146	0.0	427.2	77.9
DF	20+	LIVE	HQ-A	22.8	39	2,276	1.0	451.1	82.6
DF	20+	LIVE	HQ-B	23.9	40	455	0.0	79.3	16.5
MA	5+	LIVE	Pulp	11.2	20	20	0.0	5.4	0.7
MA	5+	LIVE	Domestic	17.4	20	49	13.4	11.1	1.8
RA	5+	LIVE	Pulp	6.8	30	96	0.0	31.9	3.5
RA	5+	LIVE	Domestic	11.7	31	514	6.2	150.4	18.7
RC	5+	LIVE	Domestic	9.4	34	7,452	1.3	2,060.1	270.5
RC	5+	LIVE	Pole	10.1	48	342	0.0	110.5	12.4
RC	5+	LIVE	Cull	19.0	18	0	100.0	0.0	0.0
SS	5 - 7	LIVE	Domestic	6.8	40	10	0.0	9.7	0.4
SS	8 - 11	LIVE	Domestic	9.3	35	38	20.1	18.2	1.4
SS	12 - 15	LIVE	Domestic	12.8	32	18	24.8	8.7	0.6
SS	16 - 19	LIVE	Domestic	17.2	40	152	0.0	33.3	5.5
SS	20+	LIVE	Domestic	23.8	35	399	2.8	75.7	14.5
SS	20+	LIVE	Cull	25.2	14	0	100.0	0.0	0.0
WH	5 - 7	LIVE	Domestic	6.8	33	926	0.6	315.1	33.6
WH	8 - 11	LIVE	Domestic	10.0	36	2,086	0.0	645.2	75.7
WH	12 - 15	LIVE	Cull	12.3	24	0	100.0	0.0	0.0
WH	12 - 15	LIVE	Domestic	13.4	39	2,341	2.4	678.8	85.0
WH	16 - 19	LIVE	Domestic	17.7	39	2,146	0.9	535.9	77.9
WH	20+	LIVE	Domestic	22.9	39	2,097	1.4	461.9	76.1

## Cruise Unit Report PEPPER POTTS 1

### Unit Sale Notice Volume (MBF): PEPPER POTTS 1

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	Spec Mill	2 Saw	3 Saw	4 Saw
DF	28.6			64	19	38	7	
WH	27.5			58		53	3	1
RC	19.4			13			12	1
ALL	24.7			134	19	92	22	2

### Unit Cruise Design: PEPPER POTTS 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	2.7	2.8	2	2	0

### Unit Cruise Summary: PEPPER POTTS 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	2	2	1.0	0
WH	2	2	1.0	0
RC	3	3	1.5	0
ALL	7	7	3.5	0

### Unit Cruise Statistics: PEPPER POTTS 1

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	89.2	141.4	100.0	265.5	0.1	0.1	23,690	141.4	100.0
WH	82.4	43.2	30.6	259.1	19.0	13.4	21,340	47.2	33.4
RC	61.8	99.9	70.6	75.1	5.5	3.2	4,640	100.0	70.7
ALL	233.4	12.4	8.8	212.9	47.1	17.8	49,670	48.7	19.9

### Unit Summary: PEPPER POTTS 1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	2	ALL	28.6	123	159	23,990	23,690	1.3	20.0	89.2	16.7	64.0
RC	LIVE	CUT	3	ALL	19.4	57	73	4,640	4,640	0.0	30.1	61.8	14.0	12.5
WH	LIVE	CUT	2	ALL	27.5	112	141	21,580	21,340	1.1	20.0	82.4	15.7	57.6
ALL	LIVE	CUT	7	ALL	24.7	91	117	50,210	49,670	1.1	70.1	233.4	46.4	134.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	ALL	ALL	7	ALL	24.7	91	117	50,210	49,670	1.1	70.1	233.4	46.4	134.1

DRAFT



## Cruise Unit Report PEPPER POTTS 2

### Unit Sale Notice Volume (MBF): PEPPER POTTS 2

Sp	DBH	Rings/In	Age	MBF Volume by Grade						
				All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	26.4	9.0		280	35	25	193	25	1	
RC	16.4			128				108	20	
WH	16.7			81			41	39	0	
BC	27.5			18			17			1
RA	22.4			15			13		1	2
ALL	19.1	9.0		523	35	25	265	173	23	2

### Unit Cruise Design: PEPPER POTTS 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	14.3	15.3	21	21	0

### Unit Cruise Summary: PEPPER POTTS 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	27	27	1.3	1
RC	51	51	2.4	0
WH	12	12	0.6	0
BC	3	3	0.1	0
RA	5	5	0.2	0
ALL	98	98	4.7	1

### Unit Cruise Statistics: PEPPER POTTS 2

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	80.4	92.5	20.2	243.8	24.0	4.6	19,589	95.5	20.7
RC	97.1	97.1	21.2	92.3	31.0	4.3	8,970	101.9	21.6
WH	35.7	141.9	31.0	158.6	24.4	7.1	5,665	143.9	31.7
BC	8.9	334.7	73.0	140.2	35.9	20.7	1,252	336.6	75.9
RA	9.5	262.4	57.3	112.5	11.5	5.1	1,071	262.7	57.5
ALL	231.7	39.4	8.6	157.8	48.3	4.9	36,548	62.4	9.9

**Unit Summary: PEPPER POTTS 2**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	CUT	3	ALL	27.5	82	98	1,490	1,252	16.0	2.2	8.9	1.7	17.9
DF	LIVE	CUT	27	ALL	26.4	105	135	19,629	19,589	0.2	21.1	80.4	15.6	280.1
RA	LIVE	CUT	5	ALL	22.4	70	90	1,158	1,071	7.5	3.5	9.5	2.0	15.3
RC	LIVE	CUT	51	ALL	16.4	59	85	9,567	8,970	6.2	66.2	97.1	24.0	128.3
WH	LIVE	CUT	12	ALL	16.7	77	103	5,686	5,665	0.4	23.5	35.7	8.7	81.0
ALL	LIVE	CUT	98	ALL	19.1	72	98	37,531	36,548	2.6	116.5	231.7	52.1	522.6
ALL	ALL	ALL	98	ALL	19.1	72	98	37,531	36,548	2.6	116.5	231.7	52.1	522.6

DRAFT

## Cruise Unit Report PEPPER POTTS 3

### Unit Sale Notice Volume (MBF): PEPPER POTTS 3

Sp	DBH	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	15.5			222	5	98	95	24	
WH	19.5			210		144	60	5	
RC	28.6			142			140	2	
SS	31.9			22		21	2		
RA	12.4			7			3	2	2
MA	23.0			3		2			1
ALL	18.7			606	5	265	300	33	2

### Unit Cruise Design: PEPPER POTTS 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	19.3	20.4	30	30	0

### Unit Cruise Summary: PEPPER POTTS 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	37	37	1.2	0
WH	28	28	0.9	0
RC	40	40	1.3	0
SS	4	4	0.1	0
RA	3	3	0.1	0
MA	1	1	0.0	0
ALL	113	113	3.8	0

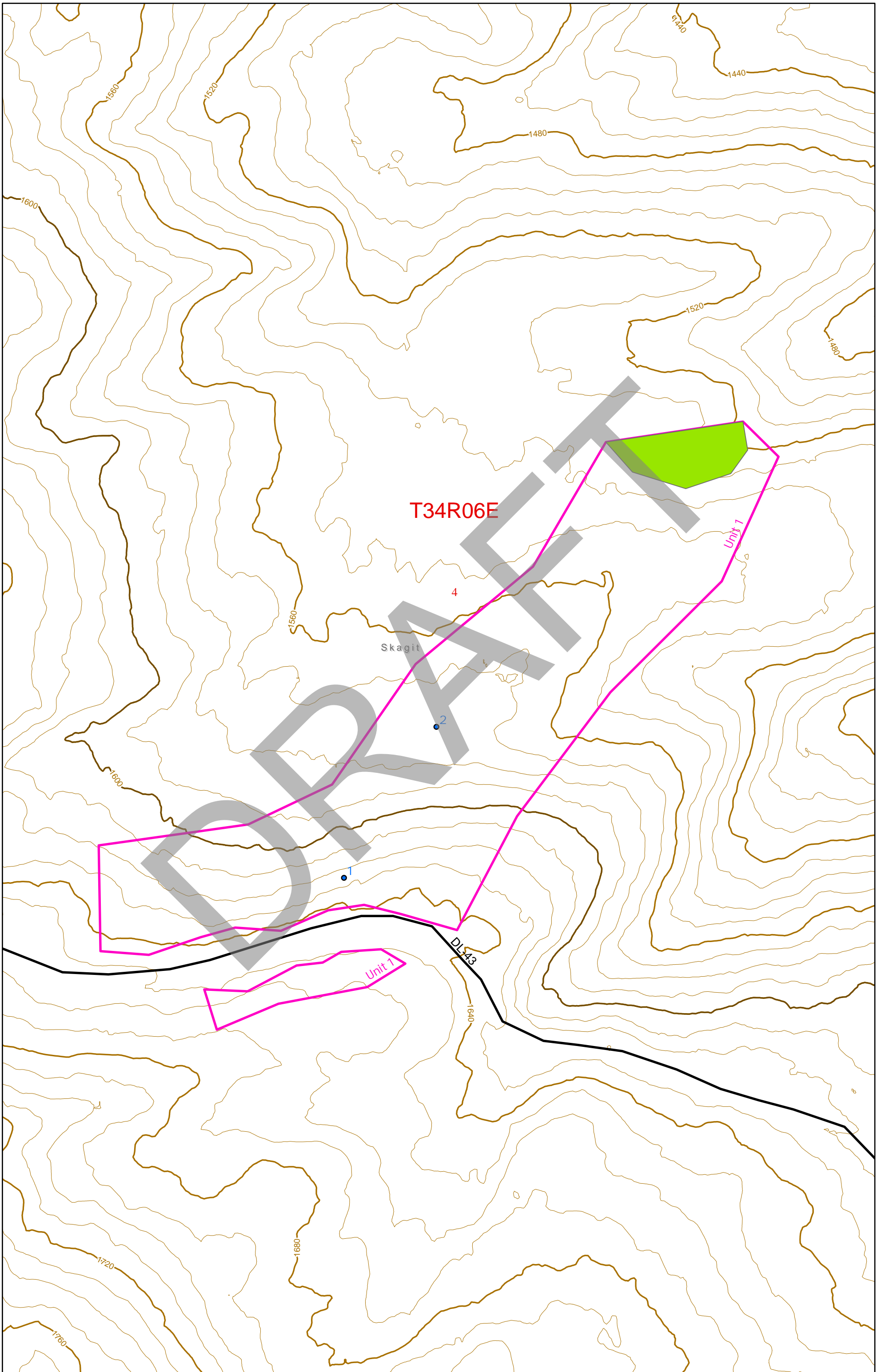
### Unit Cruise Statistics: PEPPER POTTS 3

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	77.1	101.4	18.5	149.2	27.5	4.5	11,502	105.1	19.1
WH	58.3	112.3	20.5	186.2	26.1	4.9	10,864	115.3	21.1
RC	53.3	173.2	31.6	138.1	34.5	5.5	7,364	176.6	32.1
SS	8.3	380.6	69.5	139.3	16.5	8.2	1,161	380.9	70.0
RA	4.0	305.1	55.7	88.8	45.9	26.5	355	308.6	61.7

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 (%)
MA	1.3	547.7	100.0	98.1	0.0	0.0	131	547.7	100.0
ALL	202.4	54.7	10.0	155.0	31.9	3.0	31,376	63.4	10.4

## Unit Summary: PEPPER POTTS 3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	37	ALL	15.5	76	100	11,612	11,502	1.0	58.8	77.1	19.6	222.0
MA	LIVE	CUT	1	ALL	23.0	50	60	145	131	9.9	0.5	1.3	0.3	2.5
RA	LIVE	CUT	3	ALL	12.4	52	62	355	355	0.0	4.8	4.0	1.1	6.9
RC	LIVE	CUT	40	ALL	28.6	73	94	7,546	7,364	2.4	12.0	53.3	10.0	142.1
SS	LIVE	CUT	4	ALL	31.9	83	108	1,447	1,161	19.8	1.5	8.3	1.5	22.4
WH	LIVE	CUT	28	ALL	19.5	84	106	11,194	10,864	2.9	28.1	58.3	13.2	209.7
ALL	LIVE	CUT	113	ALL	18.7	76	99	32,299	31,376	2.9	105.7	202.4	45.7	605.6
ALL	ALL	ALL	113	ALL	18.7	76	99	32,299	31,376	2.9	105.7	202.4	45.7	605.6



T34R06E

Unit 1

Skagit

4

2

1

Unit 1

DL 143

1720

1680

1640

1600

1560

1520

1480

1520

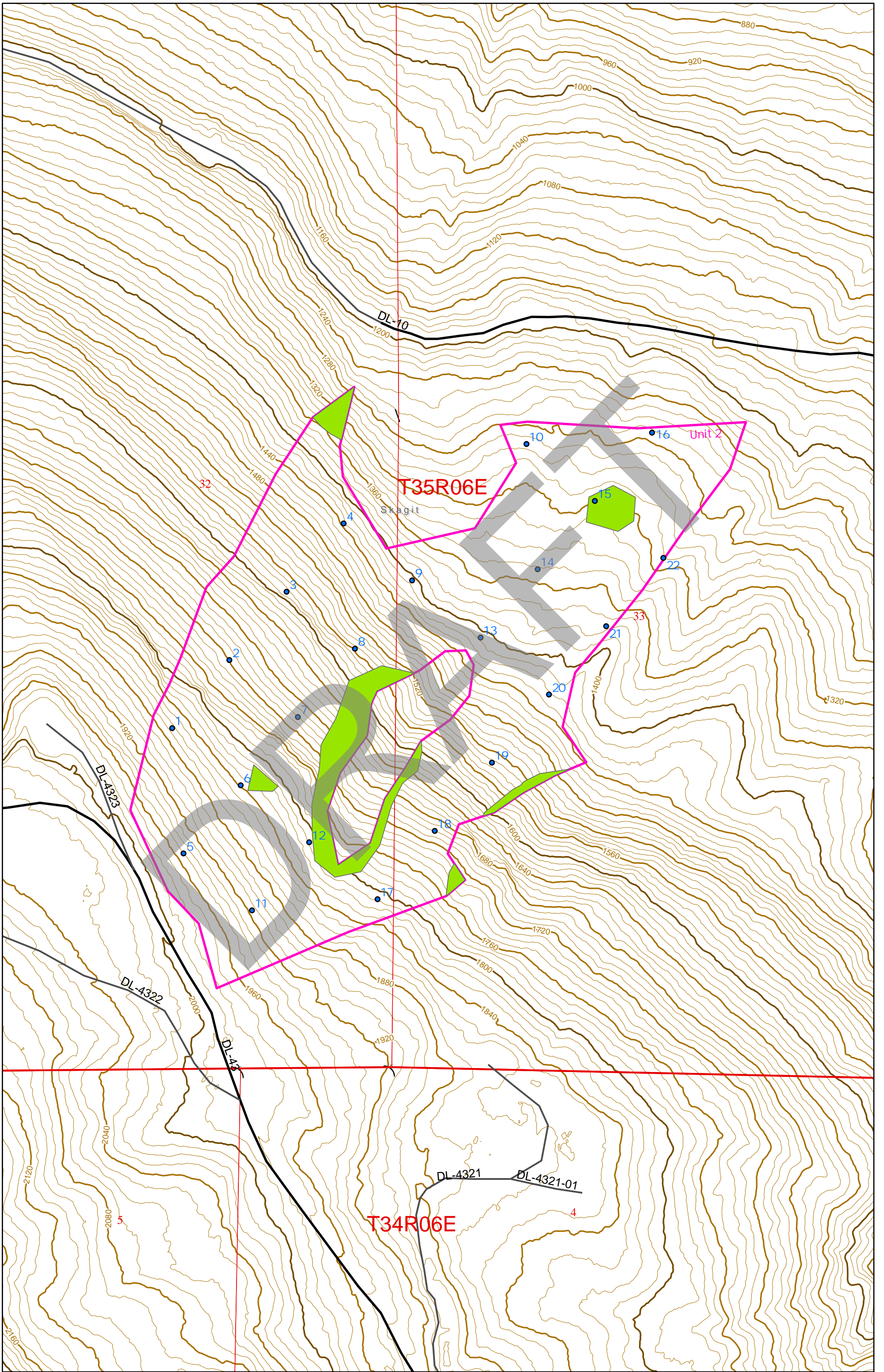
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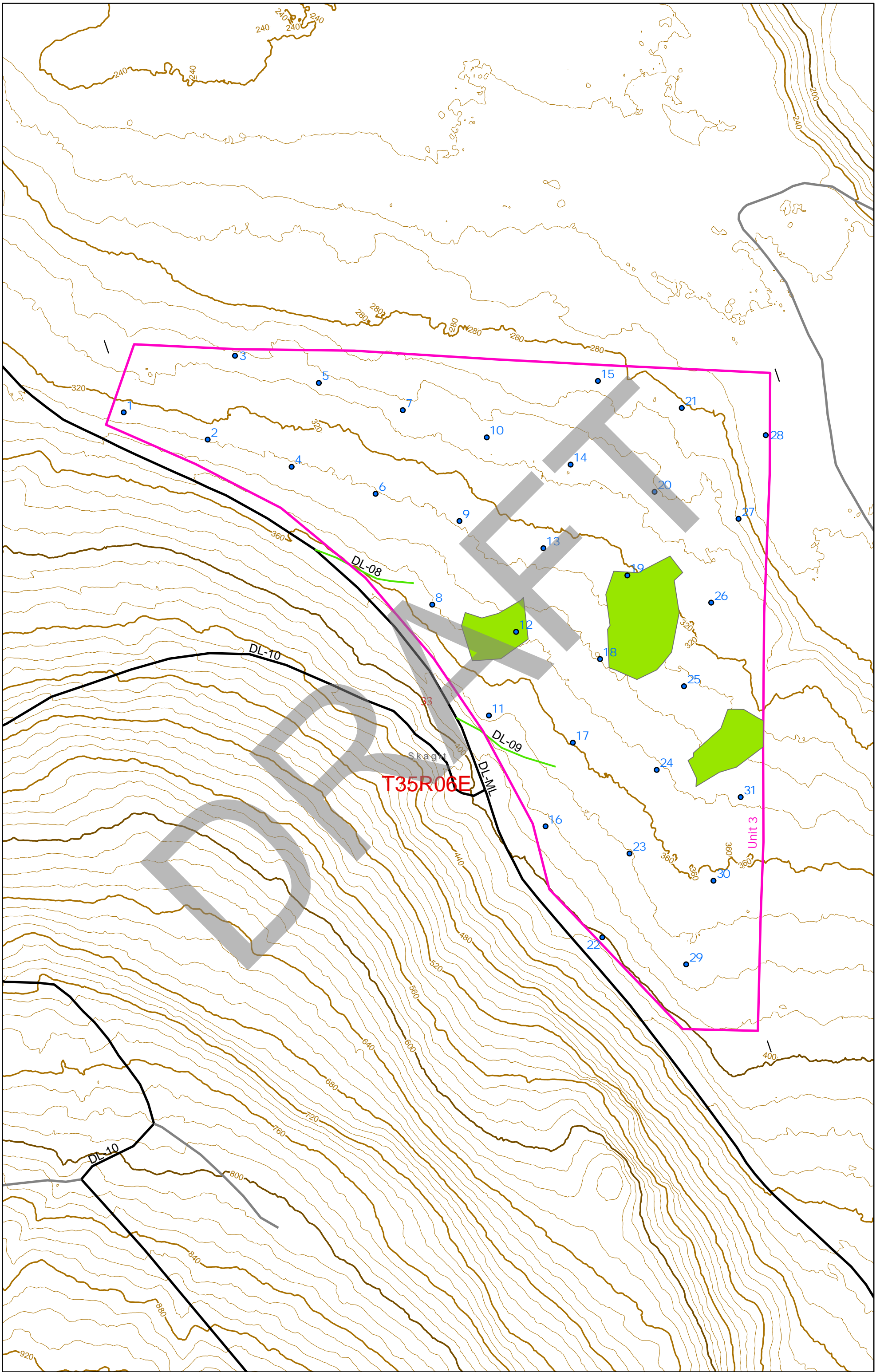
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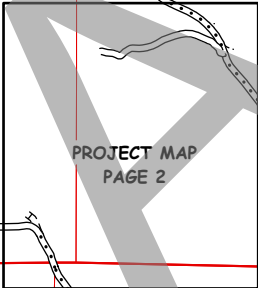
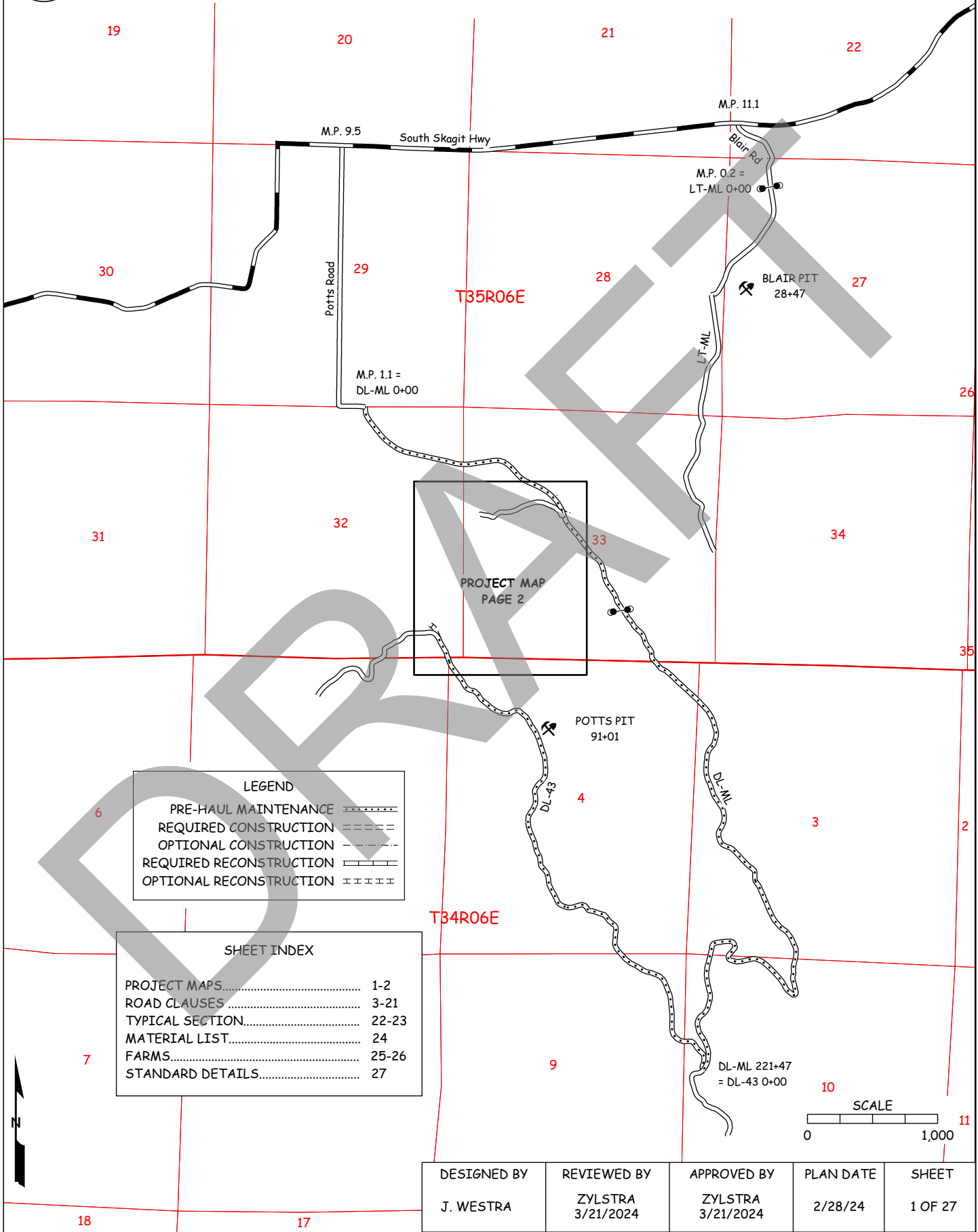






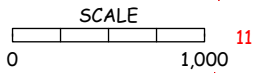
# ROAD PLAN AND SPECIFICATIONS

## #30-106703 PEPPER POTTS TIMBER SALE



LEGEND	
PRE-HAUL MAINTENANCE	-----
REQUIRED CONSTRUCTION	-----
OPTIONAL CONSTRUCTION	-----
REQUIRED RECONSTRUCTION	-----
OPTIONAL RECONSTRUCTION	-----

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ROAD CLAUSES.....	3-21
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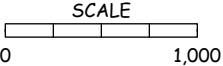
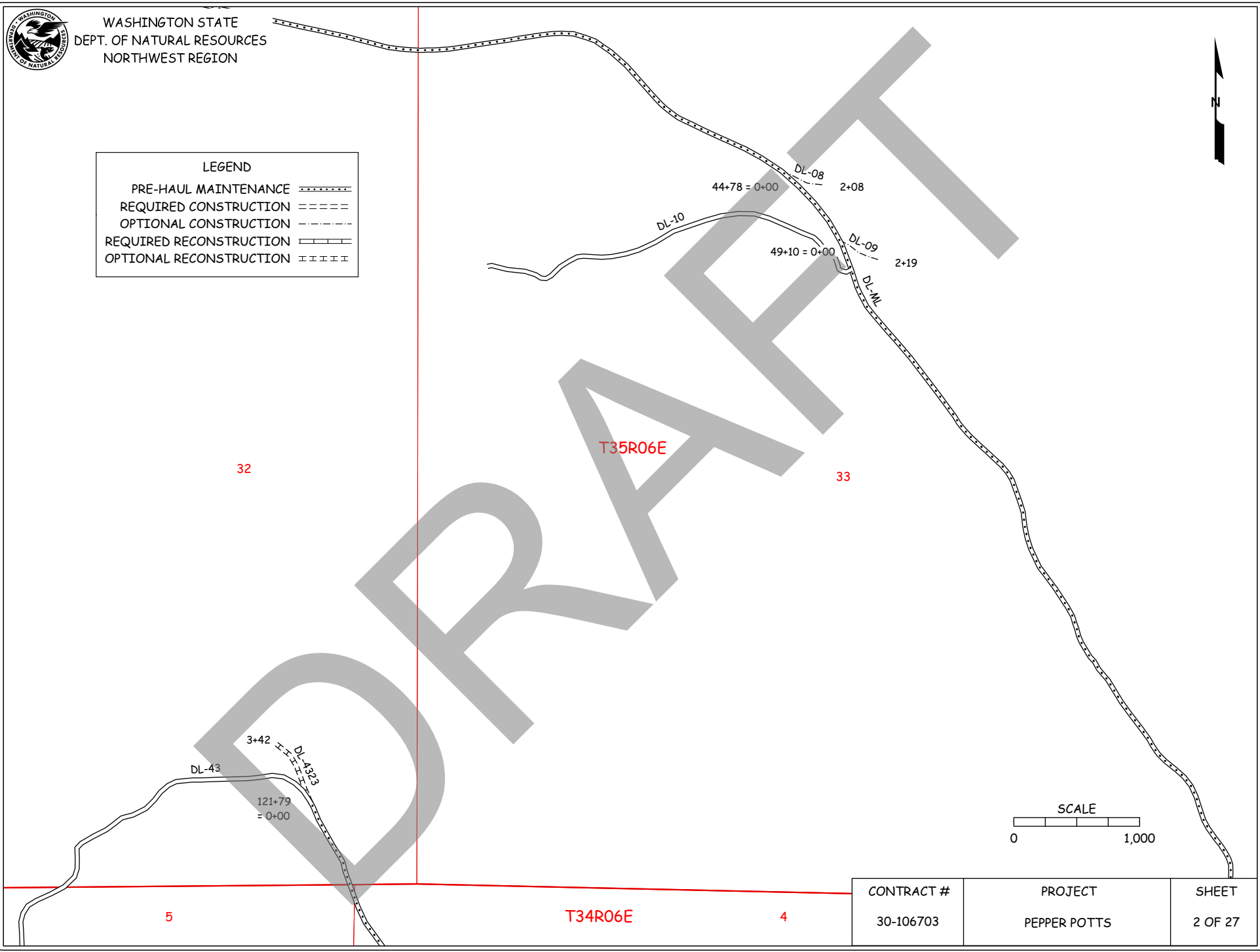
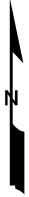
DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
J. WESTRA	ZYLSTRA 3/21/2024	ZYLSTRA 3/21/2024	2/28/24	1 OF 27





WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

LEGEND	
PRE-HAUL MAINTENANCE	-----
REQUIRED CONSTRUCTION	=====
OPTIONAL CONSTRUCTION	- - - - -
REQUIRED RECONSTRUCTION	=====
OPTIONAL RECONSTRUCTION	-----



CONTRACT #	PROJECT	SHEET
30-106703	PEPPER POTTS	2 OF 27

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

PEPPER POTTS TIMBER SALE ROAD PLAN  
SKAGIT COUNTY  
CLEAR LAKE DISTRICT  
NORTHWEST REGION

AGREEMENT NO.: 30-106703

STAFF ENGINEER: J. WESTRA

DATE: FEBRUARY 28, 2024

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>
DL-ML	0+00 to 221+47	PREHAUL MAINTENANCE
DL-43	0+00 to 121+79	PREHAUL MAINTENANCE

**0-3 OPTIONAL ROADS**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
DL-08	0+00 to 2+08	CONSTRUCTION
DL-09	0+00 to 2+19	CONSTRUCTION
DL-4323	0+00 to 3+42	RECONSTRUCTION

**0-4 CONSTRUCTION**

Construction may include, but is not limited to clearing, grubbing, excavation and embankment to subgrade, landing and turnout construction and application of shotrock ballast and pitrun surfacing.

Where new construction departs from existing roads, Purchaser shall construct roads with fill only. Fill shall be oversized rock and riprap from the Potts Pit with shotrock ballast and pitrun surfacing.

**0-5 RECONSTRUCTION**

Reconstruction includes, but is not limited to clearing, grubbing, excavation and embankment to subgrade, landing and turnout construction and application of shotrock ballast.

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
DL-ML	0+00 to 221+47	Grade
DL-43	0+00 to 121+79	Brush, Grade, Spot Patch

**0-7 POST-HAUL MAINTENANCE**

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

**0-10 ABANDONMENT**

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

**0-12 DEVELOP ROCK SOURCE**

Purchaser may develop an existing rock source. Rock source development will involve clearing and sorting pitrun in-bank rock. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

If the Purchaser desires a change from this road plan including, but not limited to, relocation, extension, change in design, or adding roads; a revised road plan must be submitted in writing to the Contract Administrator for consideration. Before work begins, Purchaser shall obtain approval from the State for the submitted plan.

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

**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.

<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. Road Plan Clauses.
3. Typical Section Sheet.
4. Standard Lists.
5. 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.

**1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS**

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer's recommendation.

**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:

- Orange flagging and/or stakes for road centerline

**1-18 REFERENCE POINT DAMAGE**

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

**1-21 HAUL APPROVAL**

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

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 3 business days before work begins.

**1-23 ROAD WORK PHASE APPROVAL**

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

- Subgrade construction and compaction
- Drainage installation
- Rock application and compaction

**1-25 ACTIVITY TIMING RESTRICTION**

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

<u>Road</u>	<u>Activity</u>	<u>Closure Period</u>
*DL-43	*LOG HAUL	*November 1 to March 31
ALL ROADS	ALL OTHER ACTIVITIES	November 1 to March 31

\*Not waivable by Contract Administrator

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

Purchaser’s maintenance plan must include a total volume of rock that will be provided at the Purchaser’s expense in addition to what is specified in this road plan. This rock shall be available before permission is granted to operate during the closure period and will be used as necessary along the haul route. The Contract Administrator may direct the Purchaser where to apply this maintenance rock.

Rock from stockpiles may not be used for out of season maintenance.

**1-29 SEDIMENT RESTRICTION**

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

**1-30 CLOSURE TO PREVENT DAMAGE**

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

- Wheel track rutting exceeds 4 inches on pit run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

**1-33 SNOW PLOWING RESTRICTION**

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contract 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.

### 2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

### 2-4 PASSAGE OF LIGHT VEHICLES

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

### 2-5 MAINTENANCE GRADING – EXISTING ROAD

On the maintenance roads, Purchaser shall use a grader to shape the existing surface before timber haul.

## SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

### 3-1 BRUSHING

On the DL-43 road, Purchaser shall cut vegetative material up to 6 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

### 3-5 CLEARING

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

### **3-8 PROHIBITED DECKING AREAS**

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

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

### **3-10 GRUBBING**

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

### **3-20 ORGANIC DEBRIS DEFINITION**

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

### **3-21 DISPOSAL COMPLETION**

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

### **3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

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

### **3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

### **3-25 SCATTERING ORGANIC DEBRIS**

Purchaser shall scatter organic debris outside of the clearing limits in natural openings unless otherwise detailed in this road plan.



## SECTION 4 – EXCAVATION

### 4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 500 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

### 4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 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.

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must 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 (on side slopes 56-70%)	¾:1	150
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

**4-6 EMBANKMENT SLOPE RATIO**

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

<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.

**4-11 KEYED EMBANKMENT**

On the following roads, Purchaser shall key embankments into the native slope.

<u>Road</u>	<u>Stations</u>
DL-08	0+00 to 0+50
DL-09	0+00 to 0+50

**4-21 TURNOUTS**

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

**4-22 TURNAROUNDS**

Purchaser shall construct turnarounds in accordance with the TURNAROUND DETAIL on all roads. Turnarounds must be no larger than 30 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

#### **4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

Purchaser shall construct or reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Ditches must be constructed concurrently with construction of the subgrade.

#### **4-27 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 end hauled to the location specified in Clauses 4-36 through 4-38.

#### **4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

#### **4-29 DITCHOUTS**

Purchaser shall construct ditchouts as identified on the MATERIALS LIST and as needed and as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

#### **4-35 WASTE MATERIAL DEFINITION**

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

#### **4-36 DISPOSAL OF WASTE MATERIAL**

Purchaser may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, all waste material must be end hauled or pushed to the designated embankment sites identified by the Contract administrator.

#### **4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

#### **4-55 ROAD SHAPING**

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

**4-60 FILL COMPACTION**

Purchaser shall compact all embankment and waste material by routing equipment over the entire width of each lift.

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed and reconstructed subgrades by routing equipment over the entire width.

**SECTION 6 – ROCK AND SURFACING**

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

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following sources on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock sources, a joint operating plan must be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
BLAIR PIT	28+47 of the LT-ML	Pitrun gravel surfacing
POTTS PIT	91+01 of the DL-43	Shotrock, Riprap, Oversize

**6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE**

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpiles on state land at no charge to the Purchaser. Purchaser shall not remove additional yardage.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
POTTS PIT	91+01 of the DL-43	Shotrock, Riprap, Oversize

**6-5 ROCK FROM COMMERCIAL SOURCE**

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from any commercial source at the Purchaser's expense.

**6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER**

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator.

<u>Source</u>	<u>Rock Type</u>
BLAIR PIT	Pitrun gravel surfacing
POTTS PIT	Shotrock, Riprap, Oversize

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

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

**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.

**6-23 ROCK GRADATION TYPES**

Purchaser shall provide rock in accordance with the types and amounts listed in the TYPICAL SECTION and MATERIALS LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles or during manufacture and placement into a stockpile. The exact point of evaluation

**6-41 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. Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

**6-42 SHOTROCK BALLAST**

No more than 10 percent of the rock by visual inspection may exceed 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Shot ballast rock may not contain more than 5 percent by weight of organic debris, dirt, and trash.

**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 depths using the compaction methods required in this road plan. Estimated quantities specified in the TYPICAL SECTION are loose yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements, and are not subject to reduction.

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for culvert installation, ditch construction, ditch reconstruction, headwall construction, and headwall reconstruction before rock application.

**6-71 ROCK APPLICATION**

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

**6-73 ROCK FOR WIDENED PORTIONS**

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

## SECTION 8 – EROSION CONTROL

### **8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 3-inch layer of straw to all exposed soils at culvert installations. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

### **8-15 REVEGETATION**

Purchaser shall spread seed and fertilizer on all exposed soils within the grubbing limits resulting from road work activities. Cover all exposed soils using manual dispersal of grass seed and fertilizer. Other methods of covering must be approved in writing by the Contract Administrator.

### **8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the seed and fertilizer.

### **8-17 REVEGETATION TIMING**

Purchaser shall revegetate during the first available opportunity after road work is completed. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator.

### **8-18 PROTECTION FOR SEED**

Purchaser shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover may consist of dispersed straw, jute matting, or clear plastic sheets. The protective cover requirement may be waived in writing by the Contract Administrator if Purchaser is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31.

### **8-19 ASSURANCE FOR SEEDED AREA**

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. Purchaser shall reapply the grass seed and fertilizer in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and fertilizer at no addition cost to the state.



**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
  - a. Common name of seed
  - b. Net weight
  - c. Percent of purity
  - d. Percentage of germination
  - e. Percentage of weed seed and inert material
5. Seed must conform to the following mixture.

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>
Creeping Red Fescue	50
Elf Perennial Rye Grass	25
Highland Colonial Bentgrass	15
White Clover	10
Inert and Other Crop	0.5

**8-27 FERTILIZER**

Purchaser shall evenly spread the fertilizer listed below on all exposed soil inside the grubbing limits at a rate of 200 pounds per acre of exposed soil. Fertilizer must meet the following specifications:

<u>Chemical Component</u>	<u>% by Weight</u>
Nitrogen	16
Phosphorous	16
Potassium	16
Sulphur	3
Inerts	49

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 and as specified below.

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>
DL-08	0+00 to 2+08
DL-09	0+00 to 2+19
DL-4323	0+00 to 3+42

## 9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1.5:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Purchaser.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

## SECTION 10 MATERIALS

### 10-15 CORRUGATED STEEL CULVERT

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

### 10-17 CORRUGATED PLASTIC CULVERT

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

### 10-21 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.

### 10-22 PLASTIC BAND

Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used.

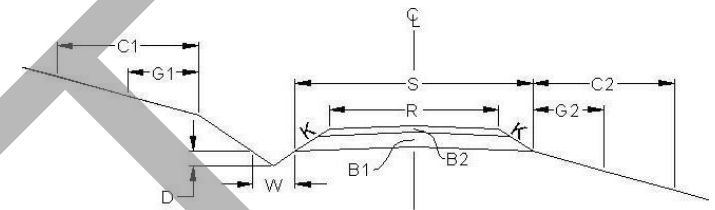
### 10-24 GAUGE AND CORRUGATION

Metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

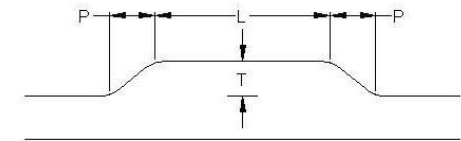
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
24" to 48"	14 (0.079")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		DL-ML	DL-08	DL-09
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		PREHAUL	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C
STATION / MP TO		0+00	0+00	0+00
STATION / MP		221+47	2+08	2+19
ROAD WIDTH	R	12	12	12
CROWN (INCHES @ C/L)		3	3	3
DITCH WIDTH	W	--	2	2
DITCH DEPTH	D	--	1	1
TURNOUT LENGTH	L	--	--	--
TURNOUT WIDTH	T	--	--	--
TURNOUT TAPER	P	--	--	--
GRUBBING	G1	--	5	5
	G2	--	5	5
CLEARING	C1	--	10	10
	C2	--	10	10
ROCK FILLSLOPE	K:1	--	1 ½ : 1	1 ½ : 1
❖ BALLAST DEPTH	B1	--	12	12
CUBIC YARDS / STATION		--	72	72
➤ TOTAL CY BALLAST		--	150 <sup>A</sup>	160 <sup>A</sup>
❖ SURFACING DEPTH	B2	--	6	6
CUBIC YARDS / STATION		--	34	34
➤ TOTAL CY SURFACING		--	70 <sup>B</sup>	75 <sup>B</sup>
➤ TOTAL CUBIC YARDS		--	220	235
SUBGRADE WIDTH	S	--	16.5	16.5
BRUSHCUT (Y/N)		N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	N	N

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



**SYMBOL NOTES**

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.

Rock Totals Summary

Type	Quantity (Cubic Yards)
A: Shotrock	425
B: Pitrun	295
Rip Rap / Oversize	240

ROAD #		DL-43	DL-4323						
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL						
CONSTRUCT / RECONSTRUCT		PREHAUL	RECONSTRUCT						
TOLERANCE CLASS (A/B/C)		C	C						
STATION / MP TO		0+00	0+00						
STATION / MP		121+79	3+42						
ROAD WIDTH	R	12	12						
CROWN (INCHES @ C/L)		3	3						
DITCH WIDTH	W	--	2						
DITCH DEPTH	D	--	1						
TURNOUT LENGTH	L	--	--						
TURNOUT WIDTH	T	--	--						
TURNOUT TAPER	P	--	--						
GRUBBING	G1	--	5						
	G2	--	5						
CLEARING	C1	--	10						
	C2	--	10						
ROCK FILLSLOPE	K:1	--	1 1/2 : 1						
❖ BALLAST DEPTH	B1	--	6						
CUBIC YARDS / STATION		--	34						
➤ TOTAL CY BALLAST		--	115 <sup>A</sup>						
❖ SURFACING DEPTH	B2	--	--						
CUBIC YARDS / STATION		--	--						
➤ TOTAL CY SURFACING		--	--						
➤ TOTAL CUBIC YARDS		150 <sup>B</sup>	115						
SUBGRADE WIDTH	S	--	13						
BRUSHCUT (Y/N)		Y	N						
BLADE, SHAPE, & DITCH (Y/N)		Y	N						

## MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS											
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE														
											<b>Note:</b> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:												
											<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Diameter</th> <th style="text-align: center;">Gage</th> <th style="text-align: center;">Corrugation</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">18"</td> <td style="text-align: center;">16</td> <td style="text-align: center;">2 2/3" x 1/2"</td> </tr> <tr> <td style="text-align: center;">24" – 48"</td> <td style="text-align: center;">14</td> <td style="text-align: center;">2 2/3" x 1/2"</td> </tr> <tr> <td style="text-align: center;">54" – 96"</td> <td style="text-align: center;">14</td> <td style="text-align: center;">3" x 1"</td> </tr> </tbody> </table>	Diameter	Gage	Corrugation	18"	16	2 2/3" x 1/2"	24" – 48"	14	2 2/3" x 1/2"	54" – 96"	14	3" x 1"
Diameter	Gage	Corrugation																					
18"	16	2 2/3" x 1/2"																					
24" – 48"	14	2 2/3" x 1/2"																					
54" – 96"	14	3" x 1"																					
DL-08	0+00 – 0+50											Approx. 100 yards riprap/oversize for junction with DL-ML											
DL-09	0+00 – 0+50											Approx. 140 yards riprap/oversize for junction with DL-ML											
DL-43	32+43											Spot Patch 20 Yds											
DL-43	45+91											Spot Patch 10 Yds											
DL-43	49+02											Spot Patch 10 Yds											
DL-43	52+53											Spot Patch 10 Yds											
DL-43	56+69											Spot Patch 10 Yds											
DL-43	60+73											Spot Patch 20 Yds											
DL-43	66+39											Spot Patch 10 Yds											
DL-43	67+63											Spot Patch 10 Yds											
DL-43	70+09											Spot Patch 20 Yds											
DL-43	73+69											Spot Patch 10 Yds											
DL-43	78+11											Spot Patch 10 Yds											
DL-43	102+78											Spot Patch 10 Yds											

GM – Galvanized Metal    PS – Polyethylene Pipe Single Wall    PD – Polyethylene Pipe Dual Wall    AM – Aluminized Metal    C – Concrete    XX – PD or GM  
 H – Heavy Loose Riprap    L – Light Loose Riprap    SR – Shot Rock    NT – Native (Bank Run)    QS – Quarry Spalls

## 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 TYPICAL SECTION SHEET. Inslope or outslope as directed to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, 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.



## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Preventative Maintenance

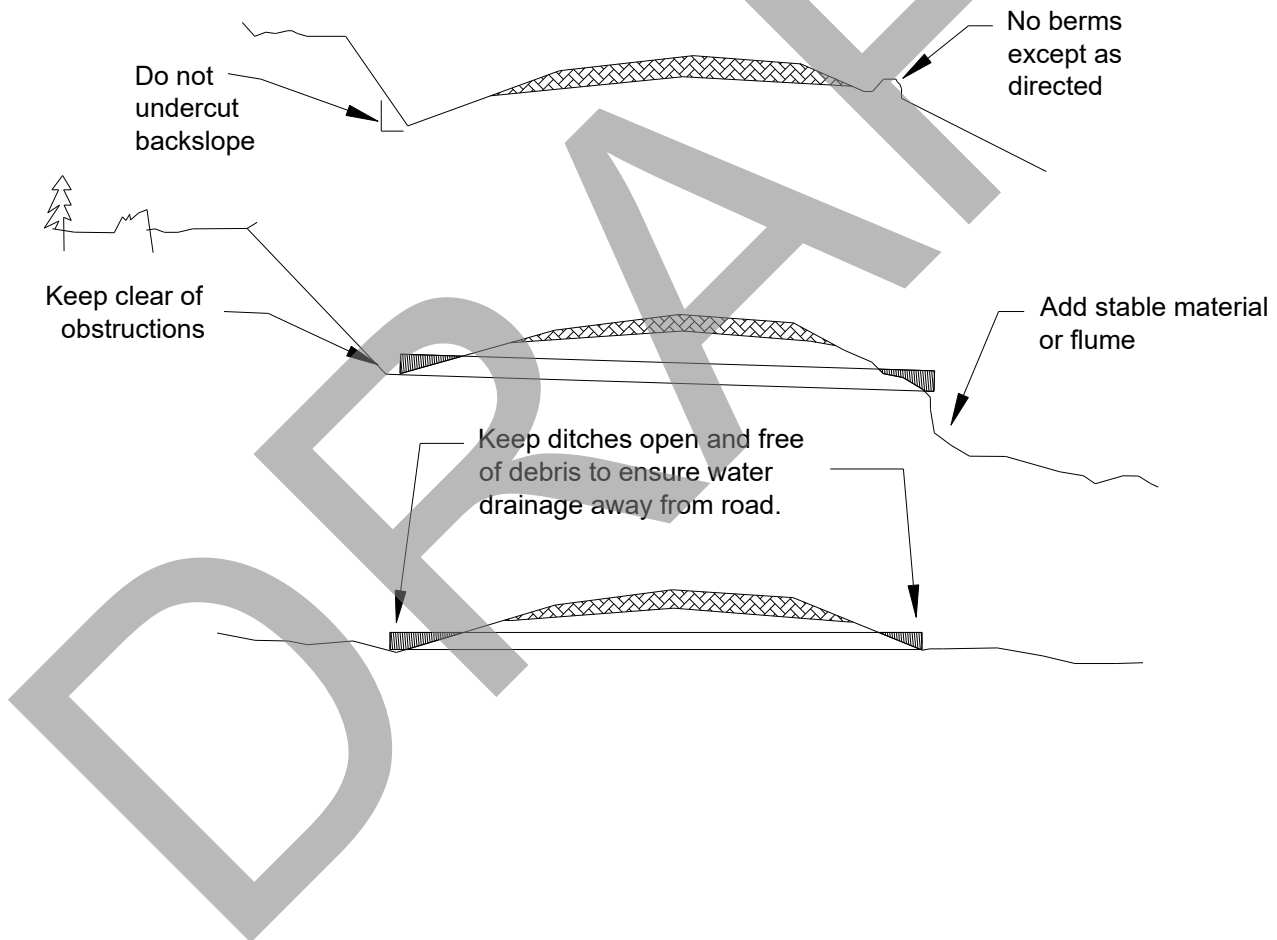
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

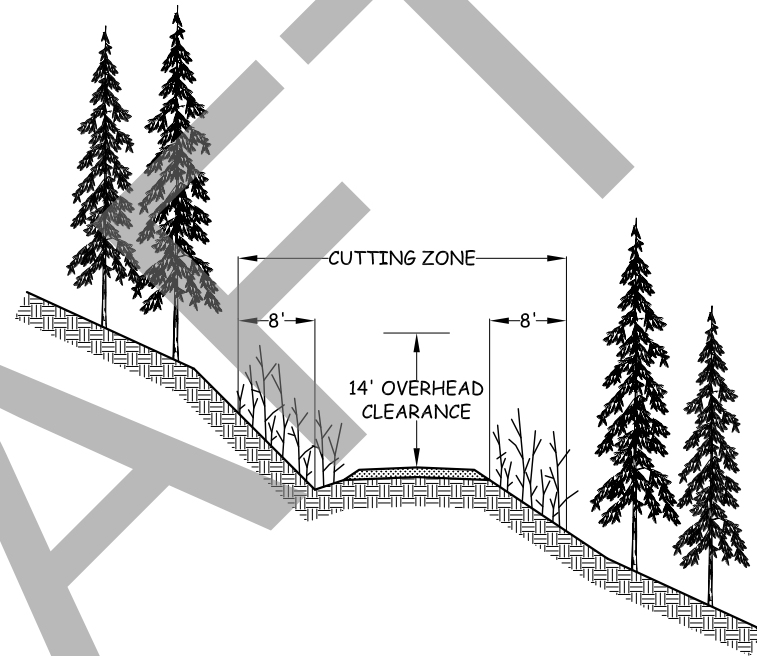
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

### Debris

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



## ROAD BRUSHING DETAILS



### SPECIFICATIONS

BRUSH SHALL BE CUT ON THE ROAD SURFACE AND 8 ft. BACK FROM ROAD DITCH AND OUTSIDE EDGE OF RUNNING SURFACE.

ON THE INSIDE OF SWITCHBACKS AND TIGHT CURVES, BRUSH SHALL BE CUT BACK 16 ft. FOR VISIBILITY.

ON TRUCK TURNOUTS, BRUSH SHALL BE CUT 8 ft. BACK FROM OUTSIDE EDGE.

BRUSH SHALL BE CUT TO PROVIDE AN OVERHEAD CLEARANCE OF 14 ft. ABOVE THE ROAD RUNNING SURFACE.

BRUSH SHALL BE CUT TO WITHIN 6 in. OF THE GROUND.

SLASH SHALL BE REMOVED FROM CUT SLOPES ABOVE THE ROAD AND SCATTERED ON EMBANKMENT SLOPES.

DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

CULVERT INLETS AND OUTLETS SHALL BE CLEANED A MINIMUM DISTANCE OF TWO PIPE DIAMETERS AWAY.

CONTRACT # 30-106703	PROJECT PEPPER POTTS	SHEET 27 OF 27
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# SUMMARY - Road Development Costs

REGION: NW

DISTRICT: Clear Lake

SALE/PROJECT NAME: Pepper Potts

CONTRACT #: 30-106703

ROAD NUMBERS:	DL-08, DL-09	DL-4323	DL-ML, DL-43
ROAD STANDARD:	Construction	Reconstruction	Pre-Haul Maintenance
NUMBER OF STATIONS:	4.27	3.42	343.26
CLEARING & GRUBBING:	\$1,766	\$472	\$0
EXCAVATION & FILL:	\$12,733	\$1,700	\$0
MISC. MAINTENANCE:	\$0	\$0	\$8,678
ROAD ROCK:	\$10,410	\$825	\$0
ROCK STOCKPILE PROD:	\$0	\$0	\$0
CULVERTS & FABRIC:	\$0	\$0	\$0
STRUCTURES:	\$0	\$0	\$0
MOBILIZATION:	\$1,704	\$1,704	\$1,126
TOTAL COSTS:	\$26,614	\$4,700	\$9,804
COST PER STATION:	\$6,233	\$1,374	\$29
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$501	

**TOTAL (All Roads) = \$41,619**  
**ESTIMATED PRECRUISE SALE VOLUME MBF = 2500**  
**ESTIMATED TOTAL \$/MBF = \$16.65**

Compiled by: J. Westra

Date: 2/28/2024