WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: SMALL FRY SWT* ***AGREEMENT NO**: 30-106450*

AUCTION: March 26, 2025 starting at 10:00 a.m., Northwest Region Office, Sedro-Woolley, WA **COUNTY:** Snohomish

SALE LOCATION: Sale located approximately 11 miles north of Sultan, WA.

PRODUCTS SOLD AND SALE AREA:

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the WL-ML Road in Unit #1.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags in Unit #2.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the Woods Lake Road in Unit #3.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, property lines, and the CWL-42 abandoned grade in Unit #4.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the LL-ML Road in Unit #5.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, adjacent young stands, and the LL-ML Road in Unit #6.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the LL-07 abandoned grade in Unit #7.

All timber within 30 feet of centerline of roads to be constructed, except that title to the timber within the right-of-way associated with areas of road construction that is not conveyed to the Purchaser unless the road segment is actually constructed, except for as described for removal in Schedule B.

All forest products above located on part(s) of Sections 18 all in Township 28 North, Range 8 East, Sections 2, 11, 12 and 13 all in Township 28 North, Range 7 East, W.M., containing 321 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	Total Tons	Price $/Ton	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	9.8	7	1,074	7,915	$13.20							421	635	18
Hemlock	9.5		354	2,812	$5.00							185	169	
Cottonwood	13.8		56	343	$2.00						48		8	
Red alder	12.3		23	240	$4.00								23	
Maple	12		16	139	$2.00								16	
Sale Total			1,523	11,449										

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

MINIMUM BID:	$13.20/ton (est. value $120,000.00)	**BID METHOD:**	Sealed Bids
PERFORMANCE SECURITY:	$24,000.00	**SALE TYPE:**	Tonnage Scale
EXPIRATION DATE:	March 31, 2027	**ALLOCATION:**	Export Restricted

BIDDABLE SPECIES: **Douglas fir**

BID DEPOSIT: $12,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable OR tethered equipment (See below for restrictions); shovel, forwarder, tracked equipment, "6-wheeled rubber-tired skidders with over-the-tire tracks spanning both sets of rear tires" and rubber-tired skidder in Units #3, #4 and #5 only (See below for restrictions) on sustained slopes 35% or less; self-leveling equipment on sustained slopes 50% or less (See below for restrictions).

Prior written approval of the Contract Administrator is required before tethered or self-leveling equipment may be used. If ground disturbance is causing excessive damage, as determined by the Contract Administrator, the use of this equipment will no longer be authorized.

Purchaser must obtain prior written approval from the Contract Administrator for areas as to where "6 wheeled rubber-tired skidders with over-the-tire tracks spanning both sets of rear tires" and rubber-tired skidders in Units #3, #4 and #5 only. If ground disturbance is causing excessive damage, as determined by the Contract Administrator, the equipment will no longer be authorized. 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.

Additional restrictions apply, see Remarks section below.

ROADS: 166.90 stations of optional construction. 453.00 stations of required prehaul maintenance. 166.90 stations of abandonment, if built.

Additional restrictions apply, see Remarks section below.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: TL-01 Hardrock Pit at station 5+30 of the TL-ML Road. WL-0705 Hardrock Pit at station 32+40 of the WL-07 Road.

Development of existing rock sources will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast rock.

An estimated total quantity of rock needed for this proposal: 404 cubic yards of riprap and 5,730 cubic yards of ballast 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 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. Cruise was conducted via variable plot sample type. 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: $25,891.00 is due on day of sale. $1.20 per ton is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: 1. Work timing restrictions stall be enforced for harvesting and hauling:

Units 1-4, no harvesting or hauling before 7:00 AM or after 7:00 PM. No harvesting or hauling on weekends or holidays. Equipment warming may be authorized starting at 6:00 AM with prior written permission from the Contract Administrator; this may be revoked at any time.

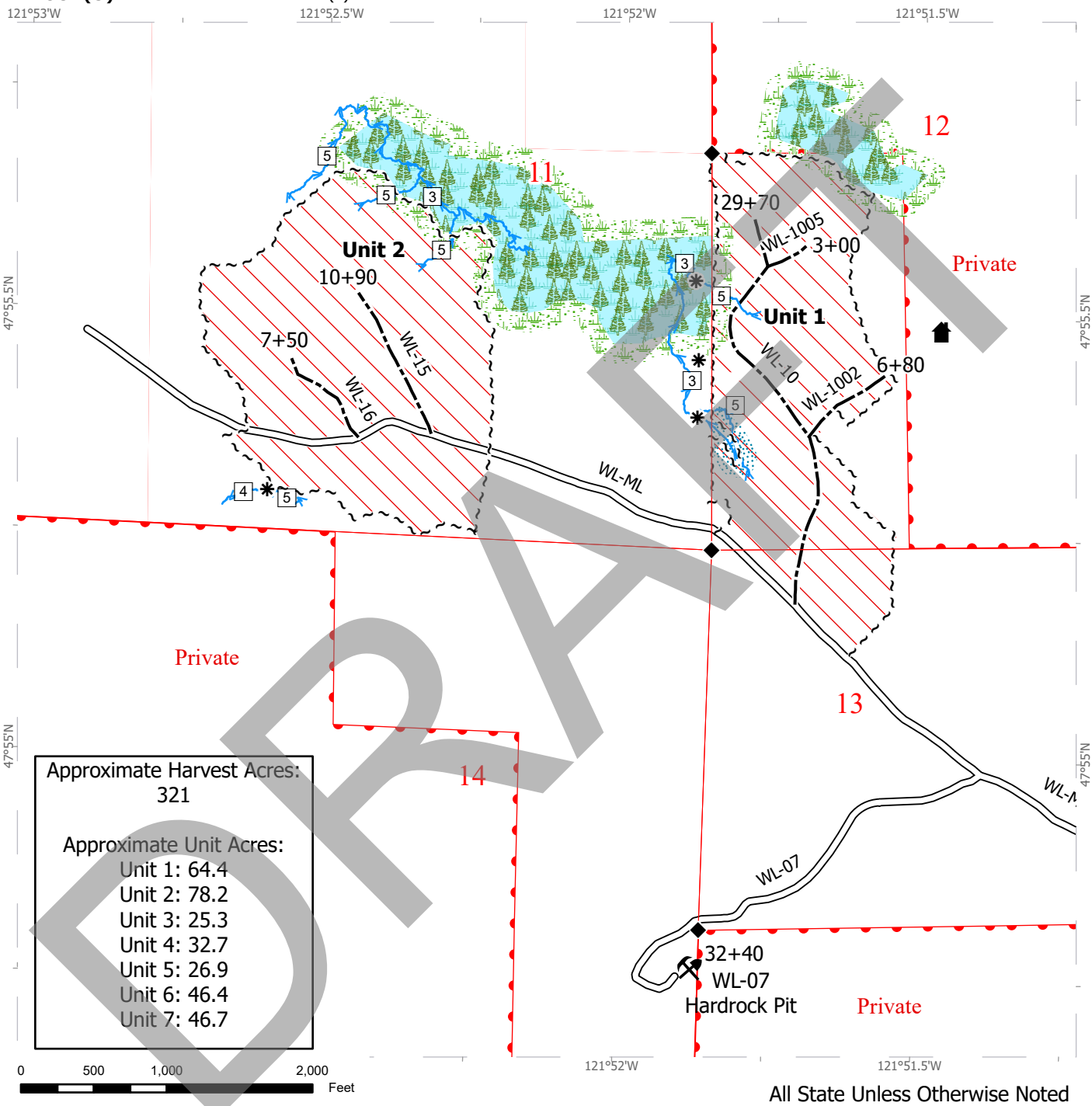
Units 5-7, no hauling before 7:00 AM or after 7:00 PM on the Lost Lake Mainline on weekdays. No hauling on weekends or holidays.

2. Falling and yarding shall not be permitted during the bark slippage season unless the Purchaser provides a written plan outlining mitigation measures and the plan is pre-authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15 but may vary depending on weather conditions.

TIMBER SALE MAP

SALE NAME: SMALL FRY SWT
AGREEMENT#: 30-106450
TOWNSHIP(S): T28R7E
TRUST(S): State Forest Transfer (1)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 640-960



All State Unless Otherwise Noted

- Variable Density Thinning
- Forested Wetland
- Wetland Mgt Zone
- Riparian Mgt Zone
- Sale Boundary Tags
- Streams
- Existing Roads
- Optional Construction
- Stream Type
- Stream Break
- Gate (F1-3)
- Rock Pit
- Structure
- Survey Monument

N

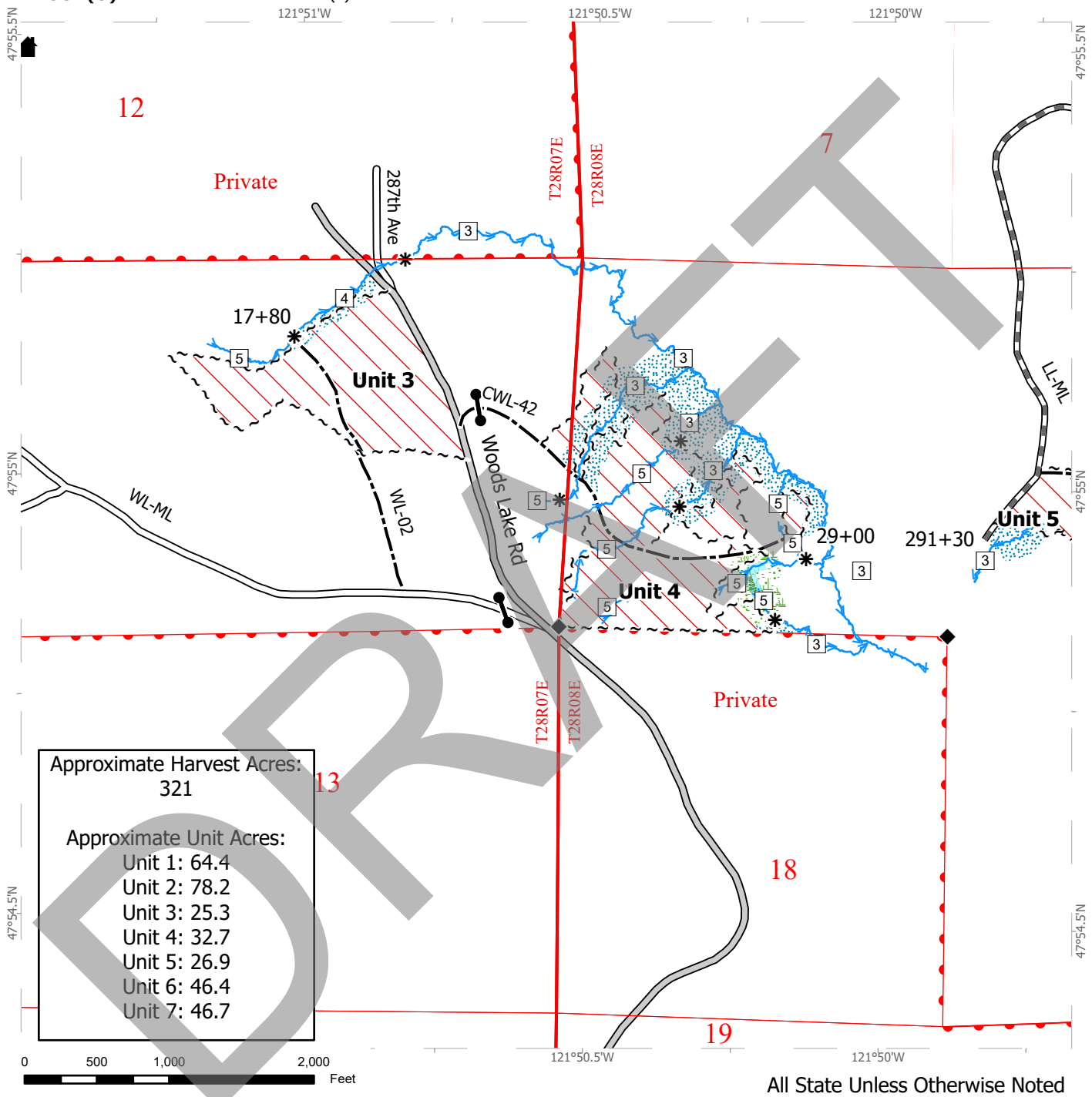
Prepared By: amon490
Accessed: 01/09/2025 13:27

Modification Date: amon490 8/28/2024

TIMBER SALE MAP

SALE NAME: SMALL FRY SWT
AGREEMENT#: 30-106450
TOWNSHIP(S): T28R7E, T28R8E
TRUST(S): State Forest Transfer (1)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 640-960



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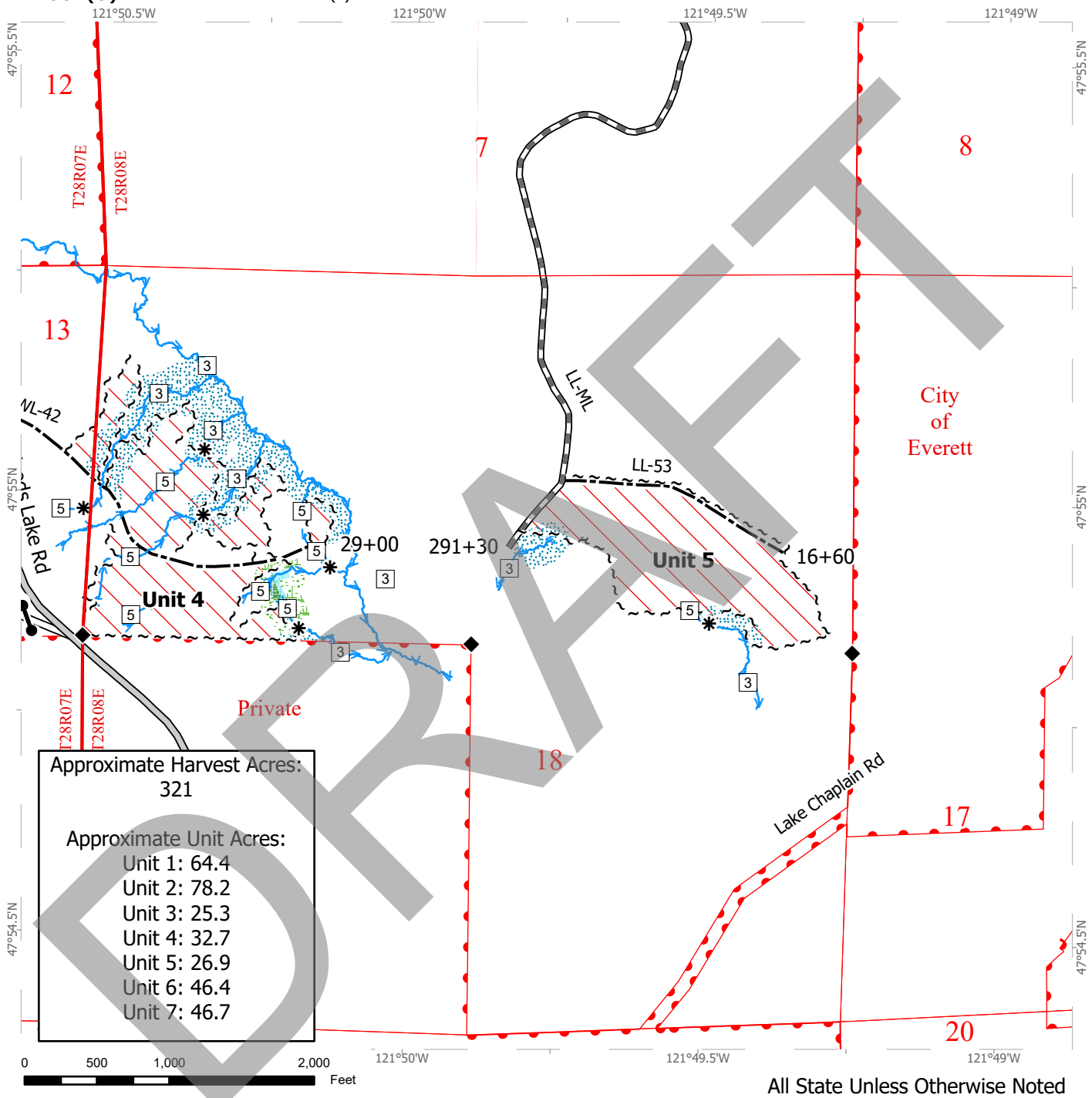

All State Unless Otherwise Noted

- Variable Density Thinning
- Forested Wetland
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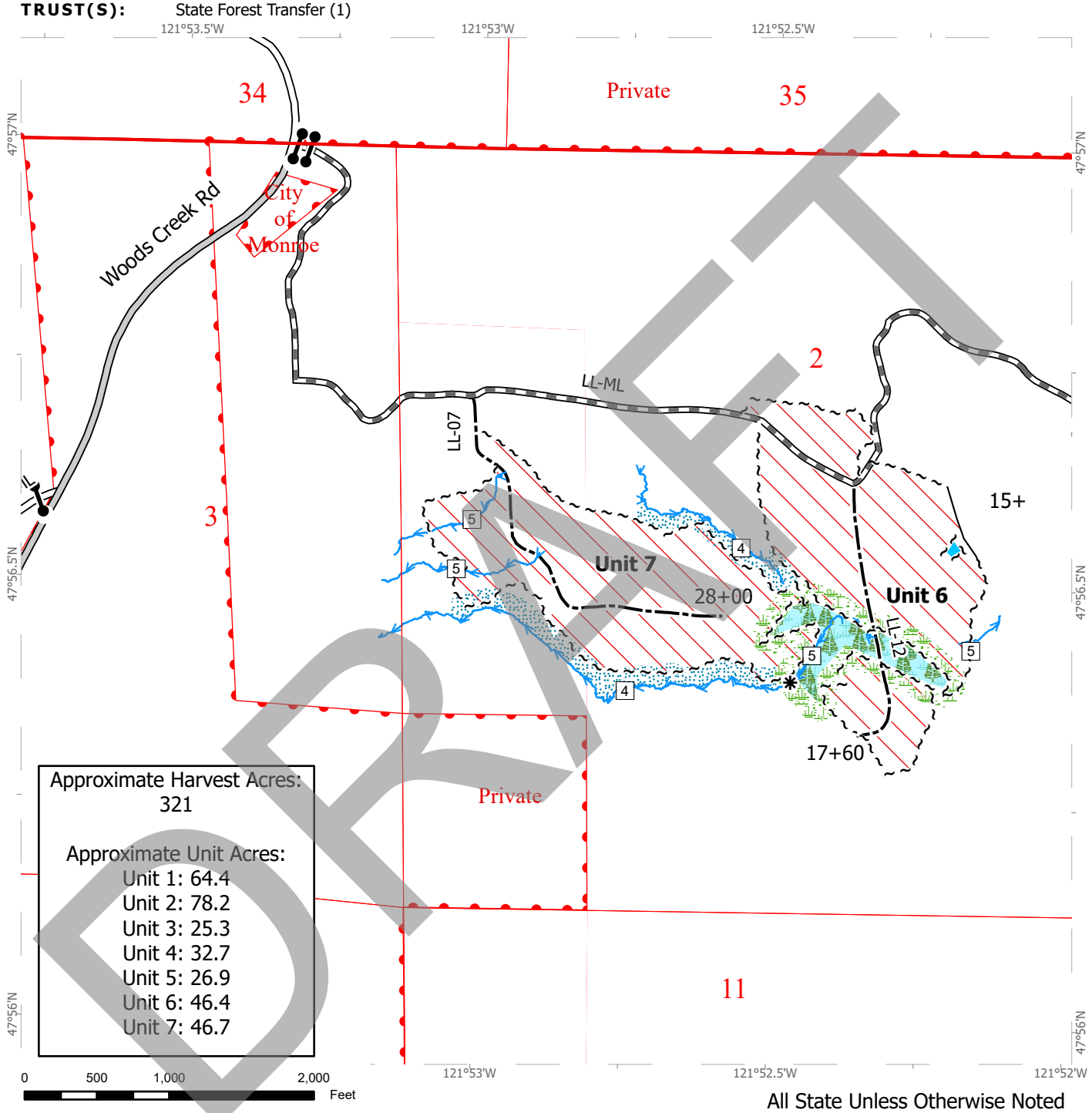
TIMBER SALE MAP

SALE NAME: SMALL FRY SWT
AGREEMENT#: 30-106450
TOWNSHIP(S): T28R7E, T28R8E, T29R07E
TRUST(S): State Forest Transfer (1)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 640-960



- Variable Density Thinning
- Forested Wetland
- Wetland Mgt Zone
- Riparian Mgt Zone
- Sale Boundary Tags
- Timber Type Change
- Streams
- County Road
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Stream Type
- Stream Break
- Gate (F1-3)
- Survey Monument

N

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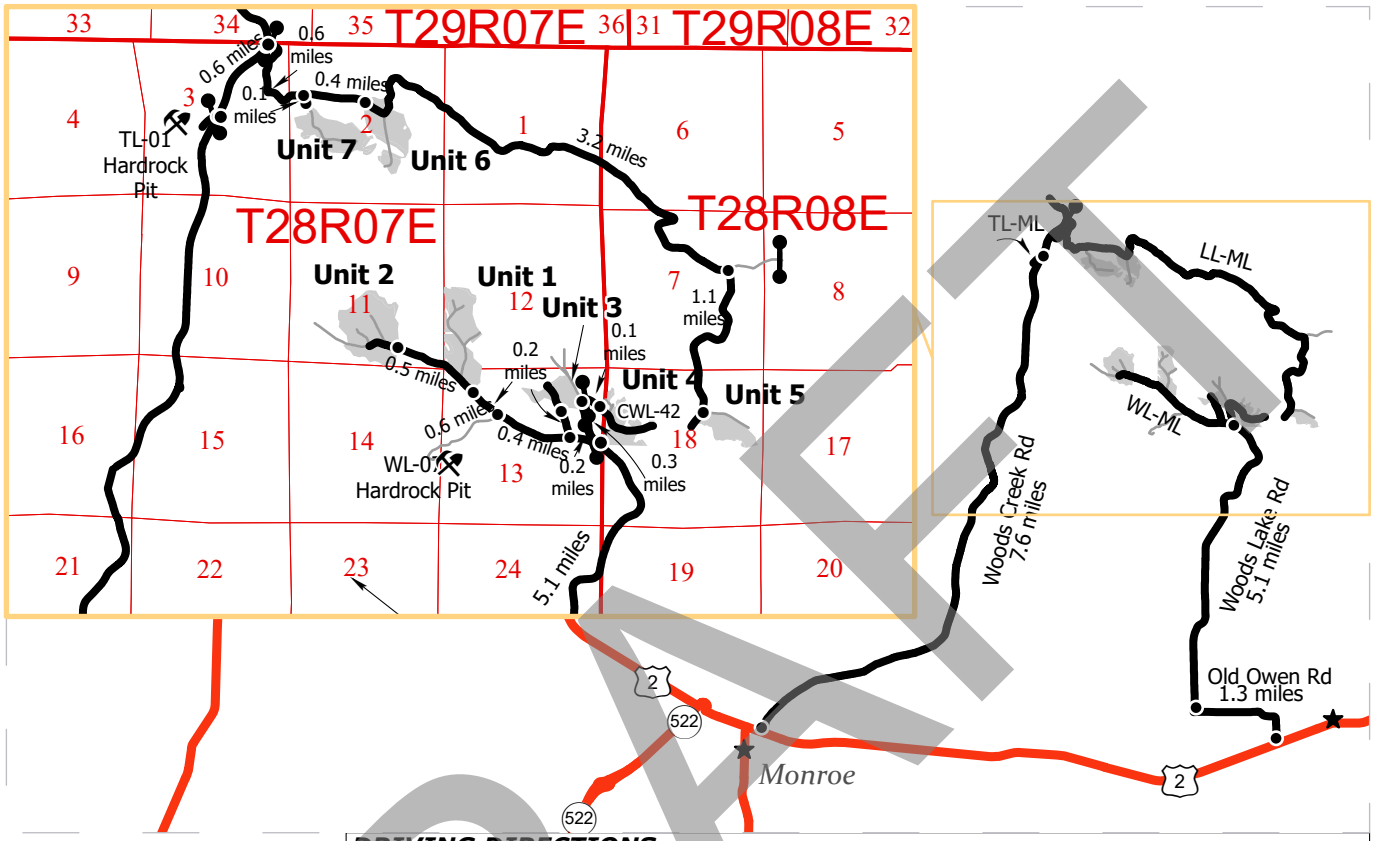
DRIVING MAP

SALE NAME: SMALL FRY SWT
AGREEMENT#: 30-106450
TOWNSHIP(S): T28R7E, T28R8E
TRUST(S): State Forest Transfer (1)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 640-960



Map may not be to scale

- Harvest Unit
- Highway
- Haul Route
- Other Road
- Gate (F1-3)
- Rock Pit
- Distance Indicator

DRIVING DIRECTIONS:

To units 1-4 (Woods Lake Mainline, WL-ML)
Unit 3: From Old Owen Rd and Highway 2 junction located on the west side of Sultan WA, drive north on Old Owen Road for 1.3 miles to Woods Lake Road. Turn right, and drive 5.1 miles on Woods Lake Road to WL-ML gate on left side. Continue on the WL-ML for 0.2 miles then take a right on WL-02 continue for 0.2 miles to reach Unit 3.
Unit 1: At the WL-ML and WL-07 junction continue straight on the ML-ML for 0.2 miles to reach unit 1.
Unit 2: From unit 1 continue straight for 0.5 miles to reach Unit 2
Unit 4: At the WL-ML and Woods Lake Road junction continue straight on Woods Lake Rd for 0.3 miles to reach the CWL-42 and take a left, travel for 0.1 miles to reach Unit 4.

To units 5-7 (Lost Lake Mainline, LL-ML)
Unit 7: From TL-ML and Woods Creek Road JCT continue for 0.6 miles and turn right (east) onto the LL-ML gates. Continue on LL-ML for 0.6 miles to reach LL-07 take a right and continue for 0.1 miles to reach Unit 7.
Unit 6: From the LL-ML and LL-07 continue straight for 0.4 mile to reach Unit 6.
Unit 5: From unit 6 continue on the LL-ML for 3.2 miles to reach the LL-ML and HB-ML junction take a right to continue on the LL-ML for 1.1 miles to reach Unit 5.

WL-07 Hardrock Pit: At the WL-ML and WL-02 junction continue straight on WL-ML for 0.4 miles to reach the WL-ML and WL-07 junction turn left onto WL-07 and continue for 0.6 miles to reach the WL-07 pit.

TL-01 Hardrock Pit :From Monroe on US Highway 2 turn left onto Woods Creek Road and follow for 7.6 miles to reach the TL-01 Rock Pit.

N

Prepared By: amon490
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Modification Date: amon490 8/28/2024

Timber Sale Cruise Report
Small Fry

Sale Name: SMALL FRY SWT

Sale Type: WEIGHT SCALE

Region: NORTHWEST

District: CASCADE

Lead Cruiser: Bailey Vos

Other Cruisers:

Cruise Narrative:
Location: Small fry is comprised of 7 harvest units with RMZ and WMZ subunits. The sale area is located in sections 11, 12, and 13 of township 28 range 07 east and sections 2 and 18 of township 28 range 08 east. Primary access is via the LL-ML off of Woods Creek Road and the WL-ML off of Woods Lake Road.

Cruise Design: All units besides Unit 41 were cruised using a 40 BAF. Unit 41 was cruised with a 1/20th acre fixed radius plot. A plot intensity of 1 plot per 4.25 acres was implemented over the entire sale, with a cruise all sample. Bole heights were measured with a relaskop and laser, all trees were taken to 5" tops. Trees were segmented into common west-side log lengths and defect was observed at each cruise plot.

Timber Quality: Timber quality can best be described as fast growing, third rotation, plantation DF and WH. Common defect found throughout the sale: Spike Knot, Sinuosity, Broken Tops, Bear Damage, and Standing Dead.

Logging and Stand Conditions: All units will be easily ground based. The sale is placed on slightly sloped and mellow ground. few streams and a lack of steep slopes will make for fast harvesting.

General Remarks: Units 1 and 5 will have lower removal per acre than the rest of the units in the sale. Overall, the sale has good removal per acre for a SWT.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	9.8	7.0		1,074		421	635	18
WH	9.5			354		185	169	
BC	13.8			56	48		8	
RA	12.3			23			23	
MA	12.0			16			16	
ALL	9.8	7.0		1,523	48	606	851	18

Timber Sale Notice Weight (tons)

	Tons by Grade				
Sp	All	2 Saw	3 Saw	4 Saw	Utility
DF	7,915		3,062	4,694	160
WH	2,812		1,425	1,387	

	Tons by Grade				
Sp	All	2 Saw	3 Saw	4 Saw	Utility
BC	343	307		36	
RA	240			240	
MA	139			139	
ALL	11,449	307	4,487	6,496	160

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 (%)
170.2	5.0	98.6	2.5	16,851	5.7

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
SMALL FRY U1	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	59.5	59.5	12	12	0
SMALL FRY U2	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	74.5	74.5	14	14	0
SMALL FRY U3	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	24.5	24.5	5	5	0
SMALL FRY U4	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	26.3	26.3	8	8	0
SMALL FRY U41	FX: FR plots (20 tree / acre expansion)	0.7	0.8	1	1	0
SMALL FRY U5	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	25.8	25.8	5	5	0
SMALL FRY U6	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	41.2	41.2	8	8	0
SMALL FRY U7	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	41.6	41.6	12	12	1
SMALL FRY RMZ	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	11.2	11.2	6	6	0
SMALL FRY WMZ	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	16.0	15.5	4	4	0
All		321.3	321.0	75	75	1

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	8.8	32	149	149	0.0	306.9	48.0
BC	LIVE	4 SAW	Domestic	5.0	24	24	24	0.0	36.4	7.7
DF	LIVE	3 SAW	Domestic	7.6	33	1,310	1,310	0.0	3,062.3	420.8
DF	LIVE	4 SAW	Domestic	5.4	29	1,977	1,975	0.1	4,693.5	634.7
DF	LIVE	UTILITY	Pulp	5.0	30	56	56	0.0	159.6	18.1
MA	LIVE	4 SAW	Domestic	7.8	20	51	51	0.0	139.0	16.3
RA	LIVE	4 SAW	Domestic	6.0	33	71	71	0.0	239.5	22.9
WH	LIVE	3 SAW	Domestic	6.9	33	576	576	0.0	1,424.8	185.2
WH	LIVE	4 SAW	Domestic	5.4	30	527	527	0.0	1,387.2	169.2

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	Domestic	6.5	29	105	0.0	212.6	33.8
BC	8 - 11	LIVE	Domestic	11.2	32	68	0.0	130.7	22.0
DF	5 - 7	LIVE	Pulp	5.0	27	56	0.0	159.6	18.1
DF	5 - 7	LIVE	Domestic	5.7	29	2,605	0.1	6,136.3	837.0
DF	8 - 11	LIVE	Domestic	8.2	32	680	0.0	1,619.5	218.4
MA	5 - 7	LIVE	Domestic	6.7	20	20	0.0	48.7	6.6
MA	8 - 11	LIVE	Domestic	8.8	20	30	0.0	90.4	9.7
RA	5 - 7	LIVE	Domestic	6.0	33	71	0.0	239.5	22.9
WH	5 - 7	LIVE	Domestic	5.7	30	871	0.0	2,190.5	279.7
WH	8 - 11	LIVE	Domestic	8.5	32	232	0.0	621.5	74.6

Cruise Unit Report
SMALL FRY U1

Unit Sale Notice Volume (MBF): SMALL FRY U1

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	10.8	7.0		134	88	47
WH	9.0			22	22	
RA	10.3			11		11
ALL	10.5	7.0		168	110	58

Unit Cruise Design: SMALL FRY U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	59.5	59.5	12	12	0

Unit Cruise Summary: SMALL FRY U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	6	39	3.3	1
WH	1	9	0.8	0
RA	1	1	0.1	0
ALL	8	49	4.1	1

Unit Cruise Statistics: SMALL FRY 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	130.0	68.3	19.7	113.0	18.6	7.6	14,687	70.8	21.1
WH	30.0	213.7	61.7	113.2	0.0	0.0	3,395	213.7	61.7
RA	3.3	346.4	100.0	55.3	0.0	0.0	184	346.4	100.0
ALL	163.3	59.5	17.2	111.8	24.2	8.6	18,266	64.2	19.2

Unit Summary: SMALL FRY U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	10.8	52	78	2,259	2,259	0.0	31.4	20.0	6.1	134.4
DF	LIVE	LEA	33	ALL	14.4	66	86	12,427	12,427	0.0	97.3	110.0	29.0	739.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	1	ALL	10.3	34	46	184	184	0.0	5.8	3.3	1.0	11.0
WH	LIVE	CUT	1	ALL	9.0	40	61	377	377	0.0	7.5	3.3	1.1	22.4
WH	LIVE	LEA	8	ALL	14.7	69	86	3,018	3,018	0.0	22.6	26.7	7.0	179.6
ALL	LIVE	LEA	41	ALL	14.5	67	86	15,445	15,445	0.0	119.9	136.7	35.9	919.0
ALL	LIVE	CUT	8	ALL	10.5	48	71	2,821	2,821	0.0	44.7	26.7	8.2	167.9
ALL	ALL	CUT +LEAVE	49	ALL	13.5	61	82	18,266	18,266	0.0	164.6	163.3	44.2	1,086.8

Cruise Unit Report
SMALL FRY U2

Unit Sale Notice Volume (MBF): SMALL FRY U2

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	9.1			250		38	199	14
WH	9.1			63		25	38	
BC	16.0			31	31			
ALL	9.3			344	31	63	237	14

Unit Cruise Design: SMALL FRY U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	74.5	74.5	14	14	0

Unit Cruise Summary: SMALL FRY U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		1	0.1	0
DF	13	45	3.2	0
WH	3	9	0.6	0
BC	1	1	0.1	0
ALL	17	56	4.0	0

Unit Cruise Statistics: SMALL FRY 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 (%)
RC	2.9	374.2	100.0						
DF	128.6	49.1	13.1	90.5	20.1	5.6	11,637	53.1	14.3
WH	25.7	179.0	47.8	98.3	17.0	9.8	2,529	179.8	48.8
BC	2.9	374.2	100.0	144.7	0.0	0.0	413	374.2	100.0
ALL	160.0	43.9	11.7	92.8	23.0	5.6	14,844	49.5	13.0

Unit Summary: SMALL FRY U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	CUT	1	ALL	16.0	80	100	413	413	0.0	2.0	2.9	0.7	30.8
DF	LIVE	CUT	13	ALL	9.1	39	64	3,362	3,362	0.0	82.2	37.1	12.3	250.5
DF	LIVE	LEA	32	ALL	13.0	60	81	8,275	8,275	0.0	99.2	91.4	25.4	616.5
RC	LIVE	LEA	1	ALL	12.0	46	65				3.6	2.9	0.8	
WH	LIVE	CUT	3	ALL	9.1	41	62	843	843	0.0	19.0	8.6	2.8	62.8
WH	LIVE	LEA	6	ALL	13.1	62	80	1,686	1,686	0.0	18.3	17.1	4.7	125.6
ALL	LIVE	CUT	17	ALL	9.3	40	64	4,618	4,618	0.0	103.2	48.6	15.9	344.0
ALL	LIVE	LEA	39	ALL	13.0	60	81	9,961	9,961	0.0	121.1	111.4	30.9	742.1
ALL	ALL	CUT +LEAVE	56	ALL	11.4	51	73	14,579	14,579	0.0	224.3	160.0	46.8	1,086.1

Cruise Unit Report
SMALL FRY U3

Unit Sale Notice Volume (MBF): SMALL FRY U3

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
DF	9.3			89		17	71
BC	11.0			25	17		8
WH	10.6			14			14
ALL	9.7			127	17	17	93

Unit Cruise Design: SMALL FRY U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	24.5	24.5	5	5	0

Unit Cruise Summary: SMALL FRY U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		1	0.2	0
DF	5	15	3.0	0
WH	1	3	0.6	0
BC	1	1	0.2	0
ALL	7	20	4.0	0

Unit Cruise Statistics: SMALL FRY 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 (%)
RC	8.0	223.6	100.0						
DF	120.0	23.6	10.5	90.3	17.4	7.8	10,840	29.3	13.1
WH	24.0	91.3	40.8	70.2	0.0	0.0	1,684	91.3	40.8
BC	8.0	223.6	100.0	127.3	0.0	0.0	1,018	223.6	100.0
ALL	160.0	25.0	11.2	89.1	23.9	9.0	14,255	34.6	14.4

Unit Summary: SMALL FRY U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	CUT	1	ALL	11.0	58	84	1,018	1,018	0.0	12.1	8.0	2.4	24.9
DF	LIVE	CUT	5	ALL	9.3	42	64	3,613	3,613	0.0	84.8	40.0	13.1	88.5
DF	LIVE	LEA	10	ALL	11.7	50	71	7,226	7,226	0.0	107.2	80.0	23.4	177.0
RC	LIVE	LEA	1	ALL	36.0	106	116				1.1	8.0	1.3	
WH	LIVE	CUT	1	ALL	10.6	43	59	561	561	0.0	13.1	8.0	2.5	13.8
WH	LIVE	LEA	2	ALL	14.6	62	77	1,123	1,123	0.0	13.8	16.0	4.2	27.5
ALL	LIVE	CUT	7	ALL	9.7	44	65	5,193	5,193	0.0	110.0	56.0	18.0	127.2
ALL	LIVE	LEA	13	ALL	12.5	52	72	8,349	8,349	0.0	122.1	104.0	28.9	204.6
ALL	ALL	CUT +LEAVE	20	ALL	11.2	48	69	13,542	13,542	0.0	232.1	160.0	46.9	331.8

Cruise Unit Report
SMALL FRY U4

Unit Sale Notice Volume (MBF): SMALL FRY U4

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	9.8			129	61	68
ALL	9.8			129	61	68

Unit Cruise Design: SMALL FRY U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	26.3	26.3	8	8	0

Unit Cruise Summary: SMALL FRY U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH		4	0.5	0
DF	9	29	3.6	0
ALL	9	33	4.1	0

Unit Cruise Statistics: SMALL FRY U4

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	20.0	151.2	53.5						
DF	145.0	44.1	15.6	109.3	17.5	5.8	15,847	47.4	16.6
ALL	165.0	27.3	9.7	109.3	17.5	5.8	18,032	32.4	11.3

Unit Summary: SMALL FRY U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	9	ALL	9.8	48	79	4,935	4,918	0.3	85.9	45.0	14.4	129.3
DF	LIVE	LEA	20	ALL	13.1	66	89	10,966	10,929	0.3	106.8	100.0	27.6	287.4
WH	LIVE	LEA	4	ALL	15.1	65	80				16.1	20.0	5.1	
ALL	LIVE	CUT	9	ALL	9.8	48	79	4,935	4,918	0.3	85.9	45.0	14.4	129.3
ALL	LIVE	LEA	24	ALL	13.4	66	88	10,966	10,929	0.3	122.9	120.0	32.8	287.4
ALL	ALL	CUT	33	ALL	12.0	59	84	15,900	15,847	0.3	208.8	165.0	47.2	416.8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
		+LEAVE												

Cruise Unit Report
SMALL FRY U41

Unit Sale Notice Volume (MBF): SMALL FRY U41

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	9.8			3	2	1
ALL	9.8			3	2	1

Unit Cruise Design: SMALL FRY U41

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.7	0.8	1	1	0

Unit Cruise Summary: SMALL FRY U41

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	4	10	10.0	0
ALL	4	10	10.0	0

Unit Cruise Statistics: SMALL FRY U41

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	141.2	0.0	0.0	88.1	13.0	6.5	12,439	13.0	6.5
ALL	141.2	0.0	0.0	88.1	13.0	6.5	12,439	13.0	6.5

Unit Summary: SMALL FRY U41

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	9.8	41	63	3,720	3,720	0.0	80.6	42.2	13.5	2.6
DF	LIVE	LEA	6	ALL	12.3	57	78	8,719	8,719	0.0	119.9	99.0	28.2	6.1
ALL	LIVE	CUT	4	ALL	9.8	41	63	3,720	3,720	0.0	80.6	42.2	13.5	2.6
ALL	LIVE	LEA	6	ALL	12.3	57	78	8,719	8,719	0.0	119.9	99.0	28.2	6.1
ALL	ALL	CUT +LEAVE	10	ALL	11.4	50	72	12,439	12,439	0.0	200.5	141.2	41.7	8.7

Cruise Unit Report
SMALL FRY U5

Unit Sale Notice Volume (MBF): SMALL FRY U5

				MBF Volume by Grade	
Sp	DBH	Rings/In	Age	All	4 Saw
DF	9.0			47	47
ALL	9.0			47	47

Unit Cruise Design: SMALL FRY U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	25.8	25.8	5	5	0

Unit Cruise Summary: SMALL FRY U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	3	18	3.6	0
ALL	3	18	3.6	0

Unit Cruise Statistics: SMALL FRY U5

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	144.0	24.8	11.1	75.3	2.0	1.1	10,836	24.9	11.2
ALL	144.0	24.8	11.1	75.3	2.0	1.1	10,836	24.9	11.2

Unit Summary: SMALL FRY U5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	9.0	36	58	1,806	1,806	0.0	54.3	24.0	8.0	46.6
DF	LIVE	LEA	15	ALL	13.3	65	88	9,030	9,030	0.0	124.4	120.0	32.9	233.0
ALL	LIVE	LEA	15	ALL	13.3	65	88	9,030	9,030	0.0	124.4	120.0	32.9	233.0
ALL	LIVE	CUT	3	ALL	9.0	36	58	1,806	1,806	0.0	54.3	24.0	8.0	46.6
ALL	ALL	CUT +LEAVE	18	ALL	12.2	56	79	10,836	10,836	0.0	178.7	144.0	40.9	279.6

Cruise Unit Report
SMALL FRY U6

Unit Sale Notice Volume (MBF): SMALL FRY U6

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	9.8			92	37	56
WH	9.7			58	18	40
MA	12.0			16		16
RA	14.1			12		12
ALL	10.2			179	55	124

Unit Cruise Design: SMALL FRY U6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	41.2	41.2	8	8	0

Unit Cruise Summary: SMALL FRY U6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	5	28	3.5	0
WH	3	6	0.8	0
MA	1	1	0.1	0
RA	1	1	0.1	0
ALL	10	36	4.5	0

Unit Cruise Statistics: SMALL FRY 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	140.0	43.2	15.3	89.7	22.1	9.9	12,555	48.5	18.2
WH	30.0	155.3	54.9	93.9	21.3	12.3	2,818	156.8	56.3
MA	5.0	282.8	100.0	78.9	0.0	0.0	395	282.8	100.0
RA	5.0	282.8	100.0	58.1	0.0	0.0	291	282.8	100.0
ALL	180.0	29.1	10.3	89.2	21.9	6.9	16,058	36.4	12.4

Unit Summary: SMALL FRY U6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	5	ALL	9.8	43	65	2,242	2,242	0.0	47.7	25.0	8.0	92.4
DF	LIVE	LEA	23	ALL	14.0	65	86	10,313	10,313	0.0	107.6	115.0	30.7	424.9
MA	LIVE	CUT	1	ALL	12.0	54	75	395	395	0.0	6.4	5.0	1.4	16.3
RA	LIVE	CUT	1	ALL	14.1	45	55	291	291	0.0	4.6	5.0	1.3	12.0
WH	LIVE	CUT	3	ALL	9.7	44	65	1,409	1,409	0.0	29.2	15.0	4.8	58.1
WH	LIVE	LEA	3	ALL	13.4	69	89	1,409	1,409	0.0	15.3	15.0	4.1	58.1
ALL	LIVE	CUT	10	ALL	10.2	44	65	4,336	4,336	0.0	87.9	50.0	15.6	178.6
ALL	LIVE	LEA	26	ALL	13.9	66	86	11,722	11,722	0.0	122.9	130.0	34.8	482.9
ALL	ALL	CUT +LEAVE	36	ALL	12.5	57	78	16,058	16,058	0.0	210.8	180.0	50.4	661.6

Cruise Unit Report
SMALL FRY U7

Unit Sale Notice Volume (MBF): SMALL FRY U7

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw	Utility
DF	10.5			219	152	62	5
WH	9.5			109	70	40	
ALL	10.2			328	222	102	5

Unit Cruise Design: SMALL FRY U7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	41.6	41.6	12	12	1

Unit Cruise Summary: SMALL FRY U7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	14	37	3.1	0
WH	7	22	1.8	0
ALL	21	59	4.9	0

Unit Cruise Statistics: SMALL FRY 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	123.3	72.5	20.9	112.8	12.8	3.4	13,916	73.6	21.2
WH	73.3	103.6	29.9	112.7	10.0	3.8	8,266	104.1	30.1
ALL	196.7	43.8	12.6	112.8	11.7	2.6	22,181	45.3	12.9

Unit Summary: SMALL FRY U7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	14	ALL	10.5	49	74	5,265	5,265	0.0	77.6	46.7	14.4	219.0
DF	LIVE	LEA	23	ALL	14.5	69	89	8,650	8,650	0.0	66.9	76.7	20.1	359.8
WH	LIVE	CUT	7	ALL	9.5	44	66	2,630	2,630	0.0	47.4	23.3	7.6	109.4
WH	LIVE	LEA	15	ALL	13.3	61	79	5,636	5,636	0.0	51.8	50.0	13.7	234.5
ALL	LIVE	LEA	38	ALL	14.0	65	85	14,286	14,286	0.0	118.7	126.7	33.8	594.3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	21	ALL	10.1	47	71	7,895	7,895	0.0	125.0	70.0	22.0	328.4
ALL	ALL	CUT +LEAVE	59	ALL	12.2	56	78	22,181	22,181	0.0	243.7	196.7	55.8	922.7

Cruise Unit Report
SMALL FRY RMZ

Unit Sale Notice Volume (MBF): SMALL FRY RMZ

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	10.3			47	26	20
WH	9.4			16	7	10
ALL	10.1			63	33	30

Unit Cruise Design: SMALL FRY RMZ

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	11.2	11.2	6	6	0

Unit Cruise Summary: SMALL FRY RMZ

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	6	23	3.8	0
WH	2	4	0.7	0
ALL	8	27	4.5	0

Unit Cruise Statistics: SMALL FRY RMZ

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	153.3	38.4	15.7	104.6	23.2	9.5	16,034	44.9	18.3
WH	26.7	122.5	50.0	109.8	16.0	11.3	2,928	123.5	51.3
ALL	180.0	23.3	9.5	105.3	20.6	7.3	18,962	31.1	12.0

Unit Summary: SMALL FRY RMZ

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	10.3	45	68	4,183	4,183	0.0	69.1	40.0	12.5	46.8
DF	LIVE	LEA	17	ALL	13.8	66	87	11,851	11,851	0.0	109.1	113.3	30.5	132.5
WH	LIVE	CUT	2	ALL	9.4	43	66	1,464	1,464	0.0	27.7	13.3	4.3	16.4
WH	LIVE	LEA	2	ALL	12.9	59	76	1,464	1,464	0.0	14.7	13.3	3.7	16.4
ALL	LIVE	CUT	8	ALL	10.1	45	67	5,647	5,647	0.0	96.8	53.3	16.8	63.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	19	ALL	13.7	65	86	13,315	13,315	0.0	123.8	126.7	34.2	148.9
ALL	ALL	CUT +LEAVE	27	ALL	12.2	56	78	18,962	18,962	0.0	220.6	180.0	51.0	212.0

Cruise Unit Report
SMALL FRY WMZ

Unit Sale Notice Volume (MBF): SMALL FRY WMZ

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
WH	9.9			72	44	28
DF	9.1			63		63
ALL	9.4			135	44	91

Unit Cruise Design: SMALL FRY WMZ

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	16.0	15.5	4	4	0

Unit Cruise Summary: SMALL FRY WMZ

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	4	9	2.3	0
DF	5	12	3.0	0
ALL	9	21	5.3	0

Unit Cruise Statistics: SMALL FRY WMZ

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	90.0	91.6	45.8	111.8	16.3	8.2	10,059	93.1	46.5
DF	120.0	98.1	49.1	79.3	22.2	9.9	9,513	100.6	50.1
ALL	210.0	39.3	19.6	93.2	25.7	8.6	19,572	46.9	21.4

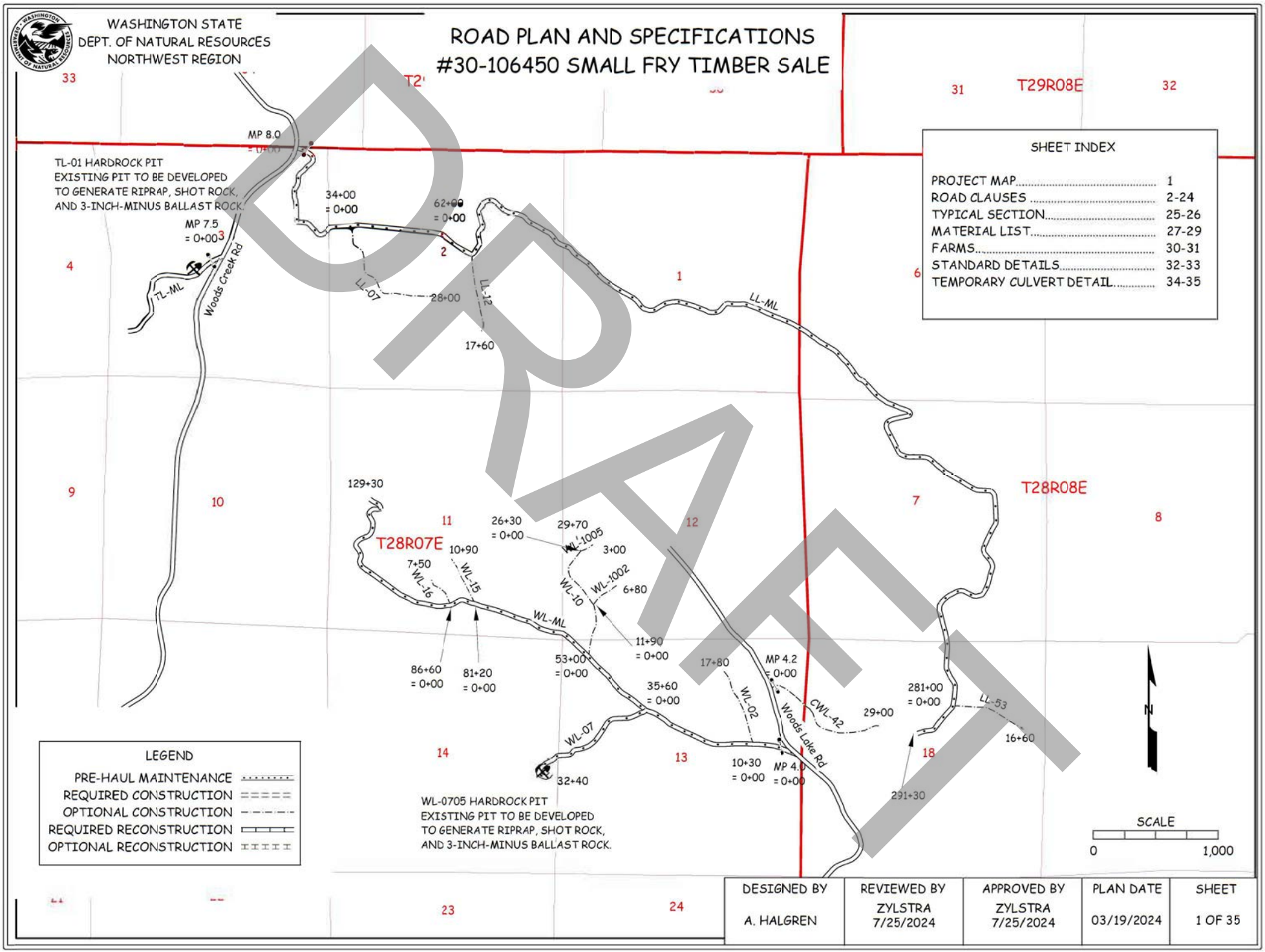
Unit Summary: SMALL FRY WMZ

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	5	ALL	9.1	39	65	3,964	3,964	0.0	110.7	50.0	16.6	63.4
DF	LIVE	LEA	7	ALL	13.1	63	84	5,549	5,549	0.0	74.8	70.0	19.3	88.8
WH	LIVE	CUT	4	ALL	9.9	44	65	4,471	4,471	0.0	74.8	40.0	12.7	71.5
WH	LIVE	LEA	5	ALL	13.8	64	82	5,588	5,588	0.0	48.1	50.0	13.5	89.4
ALL	LIVE	CUT	9	ALL	9.4	41	65	8,434	8,434	0.0	185.5	90.0	29.3	134.9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	12	ALL	13.4	63	83	11,137	11,137	0.0	122.9	120.0	32.8	178.2
ALL	ALL	CUT +LEAVE	21	ALL	11.2	50	72	19,572	19,572	0.0	308.4	210.0	62.1	313.1

WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

ROAD PLAN AND SPECIFICATIONS
#30-106450 SMALL FRY TIMBER SALE



SHEET INDEX

LEGEND

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

DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
A. HALGREN	ZYLSTRA 7/25/2024	ZYLSTRA 7/25/2024	03/19/2024	1 OF 35

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

SMALL FRY TIMBER SALE ROAD PLAN
SNOHOMISH COUNTY
CASCADE DISTRICT
NORTHWEST REGION

AGREEMENT NO.: 30-106450 STAFF ENGINEER: A. HALGREN

DATE: MARCH 19, 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.

Road	Stations	Type
LL-ML	0+00 TO 291+30	MAINTENANCE
WL-ML	0+00 TO 129+30	MAINTENANCE
WL-07	0+00 TO 32+40	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.

Road	Stations	Type
LL-07	0+00 TO 28+00	CONSTRUCTION
LL-12	0+00 TO 17+60	CONSTRUCTION
LL-53	0+00 TO 16+60	CONSTRUCTION
WL-02	0+00 TO 17+80	CONSTRUCTION
WL-10	0+00 TO 29+70	CONSTRUCTION
WL-1002	0+00 TO 6+80	CONSTRUCTION
WL-1005	0+00 TO 3+00	CONSTRUCTION
WL-15	0+00 TO 10+90	CONSTRUCTION
WL-16	0+00 TO 7+50	CONSTRUCTION
CWL-42	0+00 TO 29+00	CONSTRUCTION

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, landing and turnout construction, culvert installation, and application of 3-inch-minus ballast rock.

0-6 PRE-HAUL MAINTENANCE

Pre-haul maintenance includes, but is not limited to blading, shaping, and ditching the road surface, brushing, and application of 3-inch-minus ballast rock.

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 existing rock source(s). Rock source development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast. 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 any submitted plan that changes the scope of work or environmental condition from the original road 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.

Tolerance Class	A	B	C
Road and Subgrade Width (feet)	+1.5	+1.5	+2.0
Subgrade Elevation (feet +/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0
Bridge Elevation (feet)	±0.25	-	-

1-6 ORDER OF PRECEDENCE

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

1. Addenda.
2. Designs or Plans. On designs and plans, figured dimensions shall take precedence over scaled dimensions.
3. Road Plan Clauses.
4. Typical Section Sheet.
5. Standard Lists.
6. Standard Details.
7. Road Plan maps.

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

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.

1-18 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

On the following road(s), Purchaser shall notify the Contract Administrator a minimum of 14 calendar days and a maximum of 30 calendar days, before work begins.

Road	Stations
CWL-42	0+00 TO 29+00

1-25 ACTIVITY TIMING RESTRICTION

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

Road	Stations	Activity	Closure Period
ALL		Rock hauling, construction, reconstruction, or abandonment	November 1 to March 31

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.

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

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

1-33 SNOW PLOWING RESTRICTION

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On prehaul maintenance roads, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before contract termination.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

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

Road	Stations
WL-ML	0+00 TO 129+30
WL-07	0+00 TO 32+40
LL-ML	0+00 to 291+30

3-5 CLEARING

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

3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING

At the following stream crossing location(s), Purchaser shall place a log, with length equal to two (2) times the width of the ordinary high water, from the largest diameter class conifer tree cut from within the Inner Zone (25 feet either side of the stream) in the stream in accordance with the Riparian Forest Restoration Strategy.

Road	Stations
CWL-42	10+60

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 40%.
- Against standing trees.

3-10 GRUBBING

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

3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING

At the following stream crossing location(s), Purchaser shall retain all grubbed stumps (root wads) within the Inner Zone (25 feet either side of the stream) for placement in accordance with the RIPARIAN FOREST RESTORATION STRATEGY. Three root wads must be placed in or adjacent to the stream channel. The remaining stumps grubbed from the Inner Zone must be placed at least 50 feet from the roadway in the Middle (25 feet to 100 feet from the stream) or the Outer Zones (remaining portion of RMZ).

Road	Stations
CWL-42	10+60

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris before 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 ,unless used to comply with the specifications detailed in the Riparian Strategy, Clause 3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING, and Clause 3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING>.
- 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.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

Purchaser shall construct turnouts 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.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified on the MATERIALS LIST 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 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in areas identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of 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.
- Within a riparian management zone.
- On side slopes steeper than 50%.
- 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 5 – DRAINAGE

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used material and must meet the specifications in Clauses 10-15 through 10-24.

5-7 USED CULVERT MATERIAL

Purchaser may install used culverts. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-24.

5-8 TEMPORARY STREAM CULVERT INSTALLATION

Purchaser shall install temporary culverts as shown in the MATERIALS LIST and TEMPORARY CULVERT DETAIL. Temporary stream culverts must be located in the natural channel of the stream. Temporary culverts must be removed according to the requirements of the Forest Practices Hydraulic Permit (FPHP) and 9-21 ROAD ABANDONMENT.

Road	Stations	Notes
CWL-42	10+60	Lay culvert on geotextile fabric and backfill. Remove all fill and fabric with culvert removal. Place logs and grubbed stumps in compliance with RIPARIAN FOREST RESTORATION STRATEGY as described in clause 3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING and clause 3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING.

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the MATERIALS LIST that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

5-13 CONTINGENCY CULVERTS

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

Road	Size	Quantity
On any portion of road used for timber or rock haul.	18" x 36' culvert	8
	24"x36'	2

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings".

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 36 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover recommended by the culvert manufacturer for the type and size of the pipe.

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-25 CATCH BASINS

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must weigh at least 50 pounds. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the stream crossing culverts Purchaser shall place rip rap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST and CULVERT AND DRAINAGE SPECIFICATIONS or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rip rap must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP and 6-50 HEAVY LOOSE RIP RAP

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 source(s) on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan.

Source	Location	Rock Type
TL-01 HARDROCK PIT	STA 5+30 of the TL-ML	3-inch-minus-ballast, riprap
WL-0705 HARDROCK PIT	STA 32+40 of the WL-07	3-inch-minus-ballast, riprap

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. Rock sources are subject to written approval by the Contract Administrator before their use.

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.

Source	Rock Type
TL-01 HARDROCK PIT STA 5+30 of the TL-ML	3-inch-minus-ballast, riprap
WL-0705 HARDROCK PIT STA 32+40 of the WL-07	3-inch-minus-ballast, riprap

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.

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.

6-22 FRACTURE REQUIREMENT FOR ROCK

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

6-23 ROCK GRADATION TYPES

Purchaser shall 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 for conformance to specifications will be determined by the Contract Administrator.

6-34 3-INCH MINUS BALLAST ROCK

Ballast rock must be 100% equal to, or smaller than, 3 inches in at least one dimension.

Rock may contain no more than 5 percent organic debris, dirt, 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:

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

6-51 HEAVY LOOSE RIP RAP

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

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the 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 4-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.

8-5 CHECK DAM

On the following road(s), Purchaser shall construct rock check dams every 4 vertical feet in the ditch. Check dams must be built with 3-inch minus crushed rock to a depth of 8 inches and a length of 4 feet.

Road	Stations	Minimum Count
CWL-42	10+00 to 10+60	2

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.

On the following road(s), Purchaser shall spread WETLAND MANAGEMENT SEED MIX according to clause 8-26 on all exposed soils resulting from road work activities using manual dispersal. Other methods of covering must be approved in writing by the Contract Administrator.

Road	Location	Qty (lbs)*
LL-12	10+20 to 12+70	5

*Quantities are estimates only. Actual quantities may vary and are the responsibility of the Purchaser.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the grass seed and fertilizer as directed in clauses 8-25 GRASS SEED, 8-26 8-26 GRASS SEED: WETLAND MANAGEMENT MIX, and 8-27 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 unless a comparable mix is approved in writing by the Contract Administrator.

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

8-26 GRASS SEED: WETLAND MANAGEMENT MIX

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 one of the following mixtures.

Kind and Variety of Seed in Mixture	% by Weight
Annual Rye Grass	100

Kind and Variety of Seed in Mixture	% by Weight
Annual Rye Grass	50
Oats (Avina sativa)	30
Perennial Rye Grass	10
Austrian winter pea (inoculated)	10

Kind and Variety of Seed in Mixture	% by Weight
ReGreen™ wheatgrass hybrid	100

Do not use seed sources that have the label "other seeds"- these can contain invasive species.

Mulch with straw to achieve no more than 70% cover, evenly distributed, at a rate of 1.5 to 2 tons per acre.

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:

Chemical Component	% by Weight
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.

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-21 ROAD ABANDONMENT

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

Road	Stations	Type
LL-07	0+00 TO 28+00	ABANDONMENT
LL-12	0+00 TO 10+20	ABANDONMENT
LL-12	10+20 TO 12+70	HEAVY ABANDONMENT
LL-12	12+70 TO 17+60	ABANDONMENT
LL-53	0+00 TO 16+60	ABANDONMENT
WL-02	0+00 TO 17+80	ABANDONMENT
WL-10	0+00 TO 29+70	ABANDONMENT
WL-1002	0+00 TO 6+80	ABANDONMENT
WL-1005	0+00 TO 3+00	ABANDONMENT
WL-15	0+00 TO 10+90	ABANDONMENT
WL-16	0+00 TO 7+50	ABANDONMENT
CWL-42	0+00 TO 29+00	ABANDONMENT*

*See also clause 11-1 SPECIAL ABANDONMENT REQUIREMENTS ADJACENT TO COUNTY ROAD

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.

9-24 HEAVY ABANDONMENT

Complete the following work in addition to the requirements listed in 9-22 ABANDONMENT.

- Fill in ditches.
- Rip the surface to a minimum depth of 12 inches and revegetate exposed soils with WETLAND MANAGEMENT seed mix.
- Scatter woody debris onto abandoned road surfaces.
- Construct woody barriers as described in 9-22 at the start of abandonment, and at the end of abandonment

10-3 GEOTEXTILE FOR STABILIZATION

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

	ASTM Test	Requirements
Type	--	Woven
Apparent opening size	D 4751	No. 40 max
Water permittivity	D 4491	0.10 sec^{-1}
Grab tensile strength	D 4632	315 lb
Grab tensile elongation	D 4632	50%
Puncture strength	D 6241	620 lb
Tear strength	D 4533	112 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

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

Unless otherwise stated in the road plan, metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

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

SECTION 11 SPECIAL NOTES

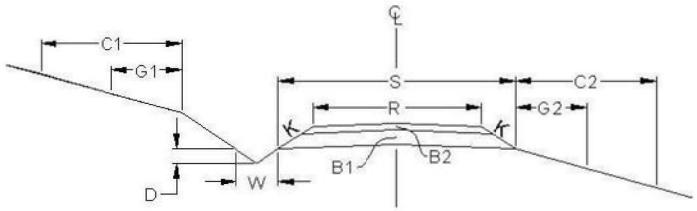
11-1 SPECIAL ABANDONMENT REQUIREMENTS ADJACENT TO COUNTY ROAD

Abandonment of the CWL-42 road shall meet the following requirements in addition to those listed in clause 9-22 ABANDONMENT:

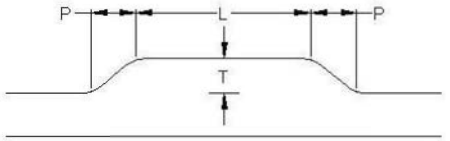
- No flammable material shall be placed within 100' of the county road. Construct the required woody debris barrier 100' from the county road.
- Place 12 inverted ecology blocks to block the abandoned road AND the adjacent user-built trail to highway vehicles. Placement shall be approved in writing by the Contract Administrator.

ROAD #		LL-ML	LL-07*	LL-12*	LL-53*
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		MAINTAIN	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00
STATION / MP		291+30	28+00	17+60	16+60
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	2	2	2
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	50	25	25	25
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	5	5	5	5
	G2	5	5	5	5
CLEARING	C1	10	10	10	10
	C2	10	10	10	10
ROCK FILLSLOPE	K:1	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	6	6	6
CUBIC YARDS / STATION		-	34	34	34
➢ TOTAL CY BALLAST		-	960	600	570
❖ SURFACING DEPTH	B2	-			
CUBIC YARDS / STATION		-			
➢ TOTAL CY SURFACING		-			
➢ TOTAL CUBIC YARDS		-	960	600	570
SUBGRADE WIDTH	S	-	13.5	13.5	13.5
BRUSHCUT (Y/N)		Y	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N	N/A	N/A	N/A

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)
Ballast	5730
Rip Rap	404

***Proposed construction is located on previously abandoned road grades**

ROAD #		WL-ML	WL-02*	WL-07*	WL-10*	WL-1002*	WL-1005*	WL-15*	WL-16*	CWL-42*
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		MAINTAIN	CONSTRUCT	MAINTAIN	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00
STATION / MP		129+30	17+80	32+40	29+70	6+80	3+00	10+90	7+50	29+00
ROAD WIDTH	R	12	12	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3	3	3
DITCH WIDTH	W	3	2	3	2	2	2	2	2	2
DITCH DEPTH	D	1	1	1	1	1	1	1	1	1
TURNOUT LENGTH	L	50	25	50	25	25	25	25	25	25
TURNOUT WIDTH	T	10	10	10	10	10	10	10	10	10
TURNOUT TAPER	P	25	25	25	25	25	25	25	25	25
GRUBBING	G1	5	5	5	5	5	5	5	5	5
	G2	5	5	5	5	5	5	5	5	5
CLEARING	C1	10	10	10	10	10	10	10	10	10
	C2	10	10	10	10	10	10	10	10	10
ROCK FILLSLOPE	K:1	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	6	-	6	6	6	6	6	6
CUBIC YARDS / STATION		-	34	-	34	34	34	34	34	34
➢ TOTAL CY BALLAST		-	610	-	1010	240	110	380	260	990
❖ SURFACING DEPTH	B2	-		-						
CUBIC YARDS / STATION		-		-						
➢ TOTAL CY SURFACING		-		-						
➢ TOTAL CUBIC YARDS		-	610	-	1010	240	110	380	260	990
SUBGRADE WIDTH	S	-	13.5	-	13.5	13.5	13.5	13.5	13.5	13.5
BRUSHCUT (Y/N)		Y	N/A	Y	N/A	N/A	N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		Y	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter: 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"
Contingency Culverts	8x	18	36	XX	-	-	2	3	L	NT	C	
	2x	24	36	XX	-	-	3	5	H/L	NT	C	
LL-07	1+90	18	36	XX	-	-	2	3	L	NT	C	
	4+00	18	36	XX	-	-	2	3	L	NT	C	
	5+80	24	36	XX	-	-	2	3	L	NT	C	Type 5 Stream
	7+70	18	36	XX	-	-	2	3	L	NT	C	
	9+60	18	36	XX	-	-	2	3	L	NT	C	
	13+00	24	50	XX	-	-	3	5	H/L	NT	C	Type 5 Stream
	13+40	18	36	XX	-	-	2	3	L	NT	C	
	16+00	24	40	XX	-	-	3	5	H/L	NT	C	
	17+60	18	36	XX	-	-	2	3	L	NT	C	
	20+00	18	36	XX	-	-	2	3	L	NT	C	
	23+30	18	40	XX	-	-	2	3	L	NT	C	
	27+50	18	36	XX	-	-	2	3	L	NT	C	
LL-12	2+80	18	32	XX	-	-	2	3	L	NT	C	
	6+40	18	32	XX	-	-	2	3	L	NT	C	
	9+10	18	36	XX	-	-	2	3	L	NT	C	
	11+00	30	36	XX	-	-	5	7	H/L	NT	C	Type 5 Stream
	17+60	-	-	-	-	-	-	-	-	-	-	Ditchout

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

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter: 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"
LL-53	1+40	18	32	XX	-	-	2	3	L	NT	C	
	3+00	18	36	XX	-	-	2	3	L	NT	C	
	7+00	18	32	XX	-	-	2	3	L	NT	C	
	9+40	18	32	XX	-	-	2	3	L	NT	C	
	12+80	18	32	XX	-	-	2	3	L	NT	C	
	16+60	-	-	-	-	-	-	-	-	-	-	Ditchout
WL-10	0+00	18	40	XX	-	-	2	3	L	NT	C	
	2+60	24	36	XX	-	-	3	5	H/L	NT	C	
	3+60	24	36	XX	-	-	3	5	H/L	NT	C	
	6+00	24	40	XX	-	-	3	5	H/L	NT	C	
	7+20	24	36	XX	-	-	3	5	H/L	NT	C	
	8+70	18	36									
	11+60	24	36	XX	-	-	3	5	H/L	NT	C	
	18+50	-	-	-	-	-	-	-	-	-	-	Ditchout
	20+60	18	36	XX	-	-	2	3	L	NT	C	
	21+00	24	36	XX	-	-	3	5	H/L	NT	C	
	22+70	18	36	XX	-	-	2	3	L	NT	C	
	23+10	24	40	XX	-	-	3	5	H/L	NT	C	Type 5 Stream
	25+70	18	36	XX	-	-	2	3	L	NT	C	

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

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter: 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"
WL-15	2+40	24	36	XX	-	-	3	5	H/L	NT	C	
	3+20	18	36	XX	-	-	2	3	L	NT	C	
	4+80	24	36	XX	-	-	3	5	H/L	NT	C	
	6+40	24	36	XX	-	-	3	5	H/L	NT	C	
	7+00	18	36	XX	-	-	2	3	L	NT	C	
	8+40	24	36	XX	-	-	3	5	H/L	NT	C	
	9+30	18	36	XX	-	-	2	3	L	NT	C	
CWL-42	0+00	-	-	-	-	-	-	-	-	-	-	12 ecology blocks required, see clause 11-1
	5+20	18	36	XX	-	-	2	3	L	NT	C	
	7+70	18	36	XX	-	-	2	3	L	NT	C	
	10+00	18	36	XX	-	-	2	3	L	NT	C	Start checkdams
	10+60	48	42	GM	-	-	8	12	H/L	NT	C	Type 3 Stream, end checkdams
	13+00	24	32	XX	-	-	3	5	H/L	NT	C	Type 5 Stream
	16+70	24	40	XX	-	-	3	5	H/L	NT	C	Type 5 Stream
	17+30	24	32	XX	-	-	3	5	H/L	NT	C	
	17+90	24	32	XX	-	-	3	5	H/L	NT	C	
	19+30	24	36	XX	-	-	3	5	H/L	NT	C	
	20+30	24	36	XX	-	-	3	5	H/L	NT	C	
	25+30	24	32	XX	-	-	3	5	H/L	NT	C	
	26+30	24	32	XX	-	-	3	5	H/L	NT	C	
	28+10	30	36	XX	-	-	3	5	H/L	NT	C	Type 5 Stream

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.

Preventative Maintenance

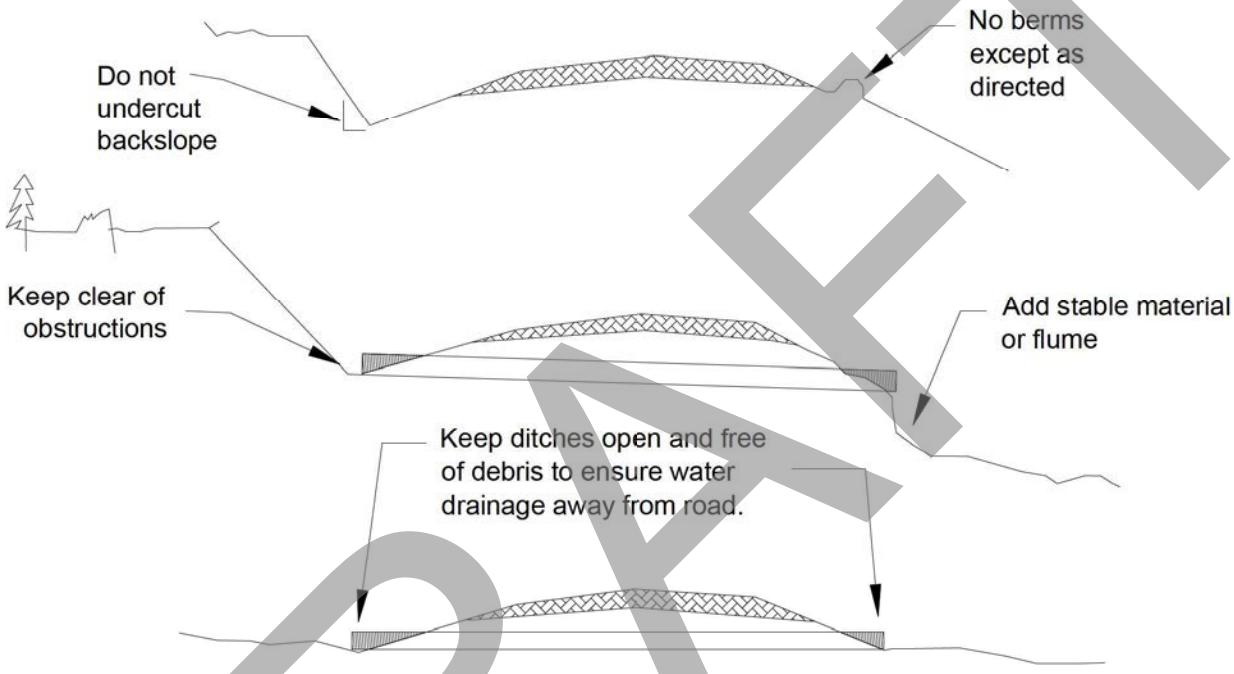
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

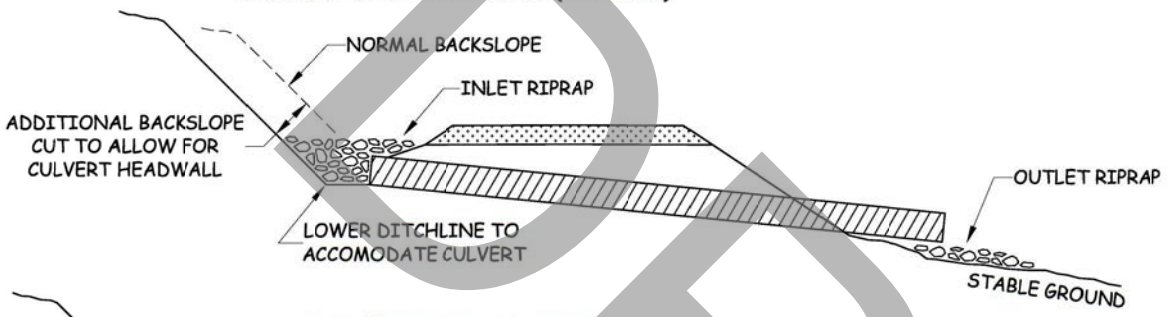
Debris

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

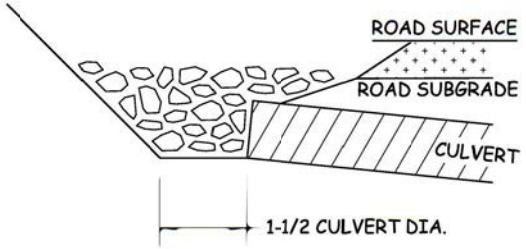


CULVERT AND DRAINAGE SPECIFICATIONS

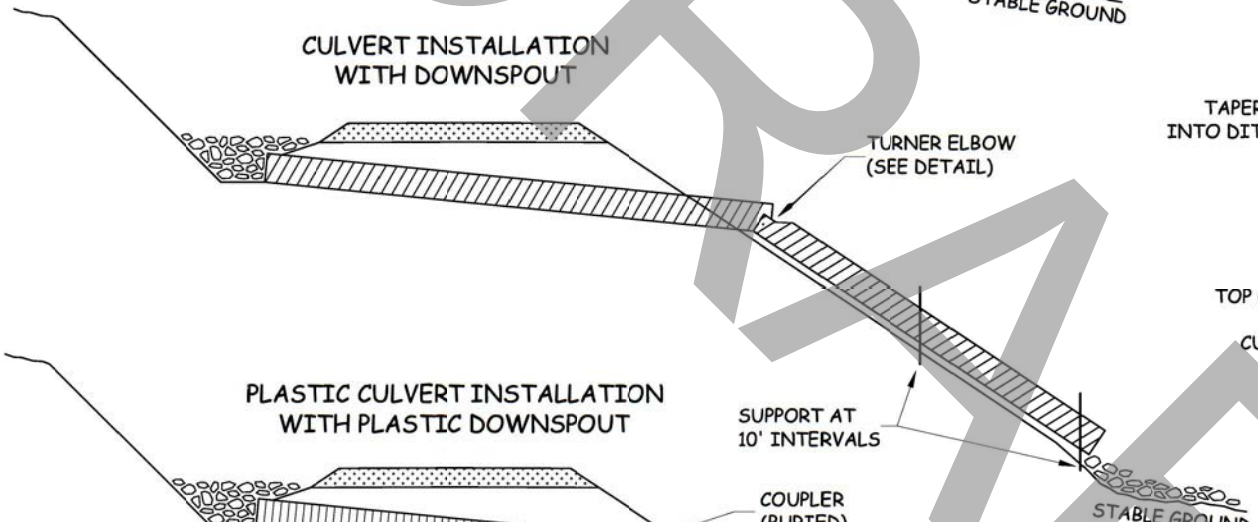
CULVERT INSTALLATION (TYPICAL)



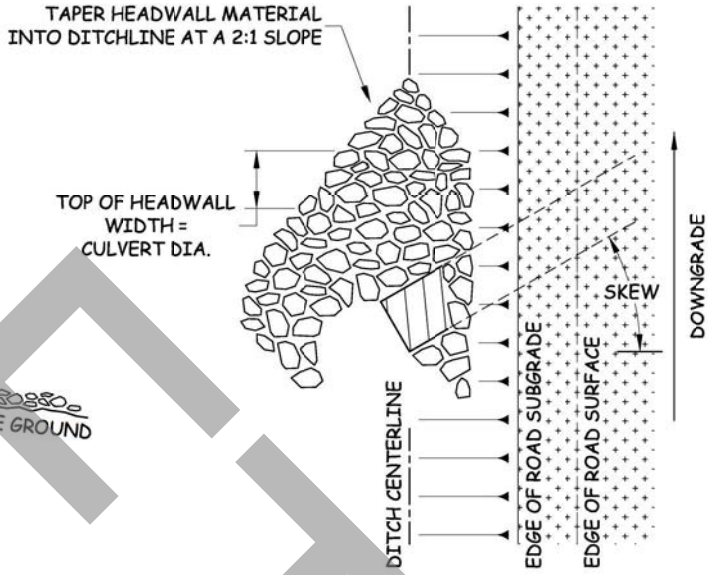
CULVERT HEADWALL - SECTION VIEW



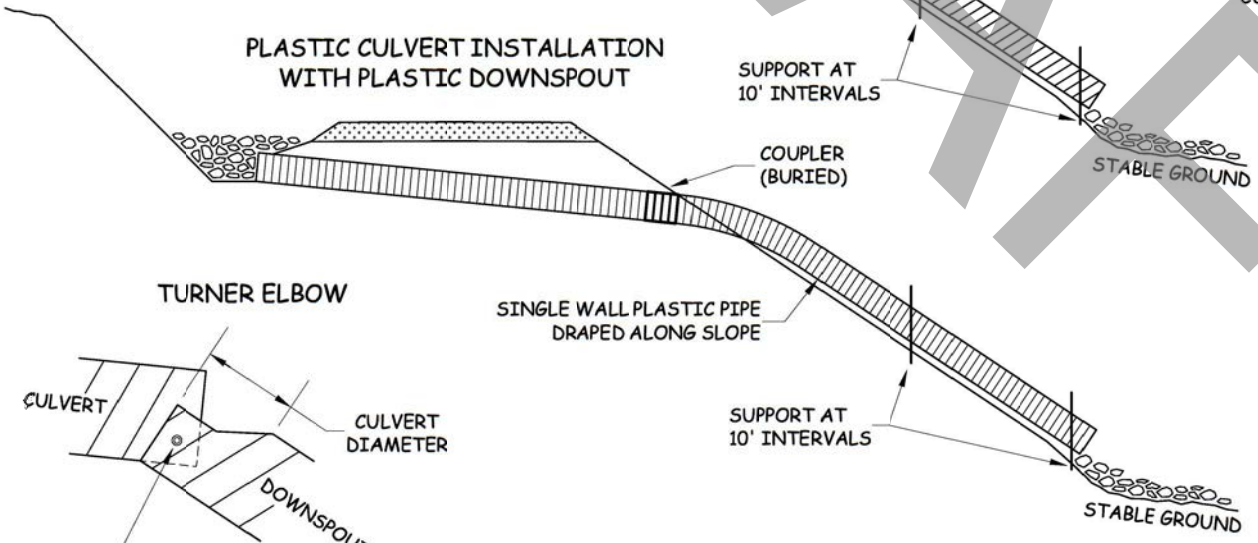
CULVERT INSTALLATION WITH DOWNSPOUT



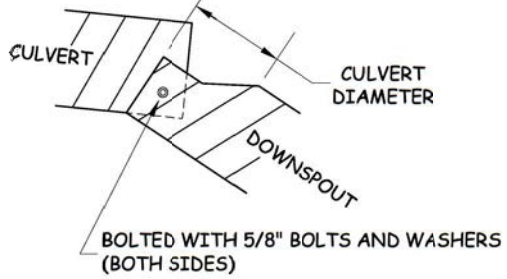
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW

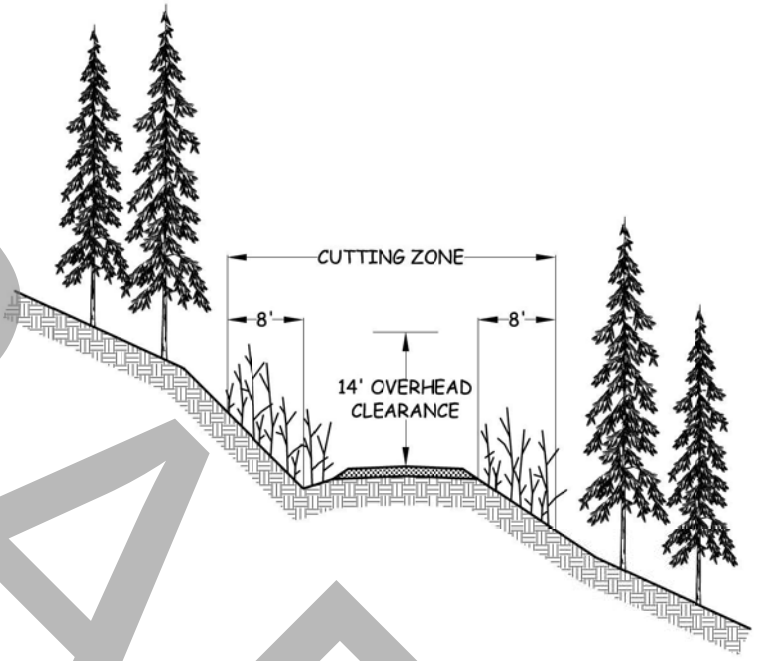


HEADWALL NOTE:

HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

CONTRACT #	PROJECT	SHEET
30-106450	SMALL FRY	32 OF 35

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.

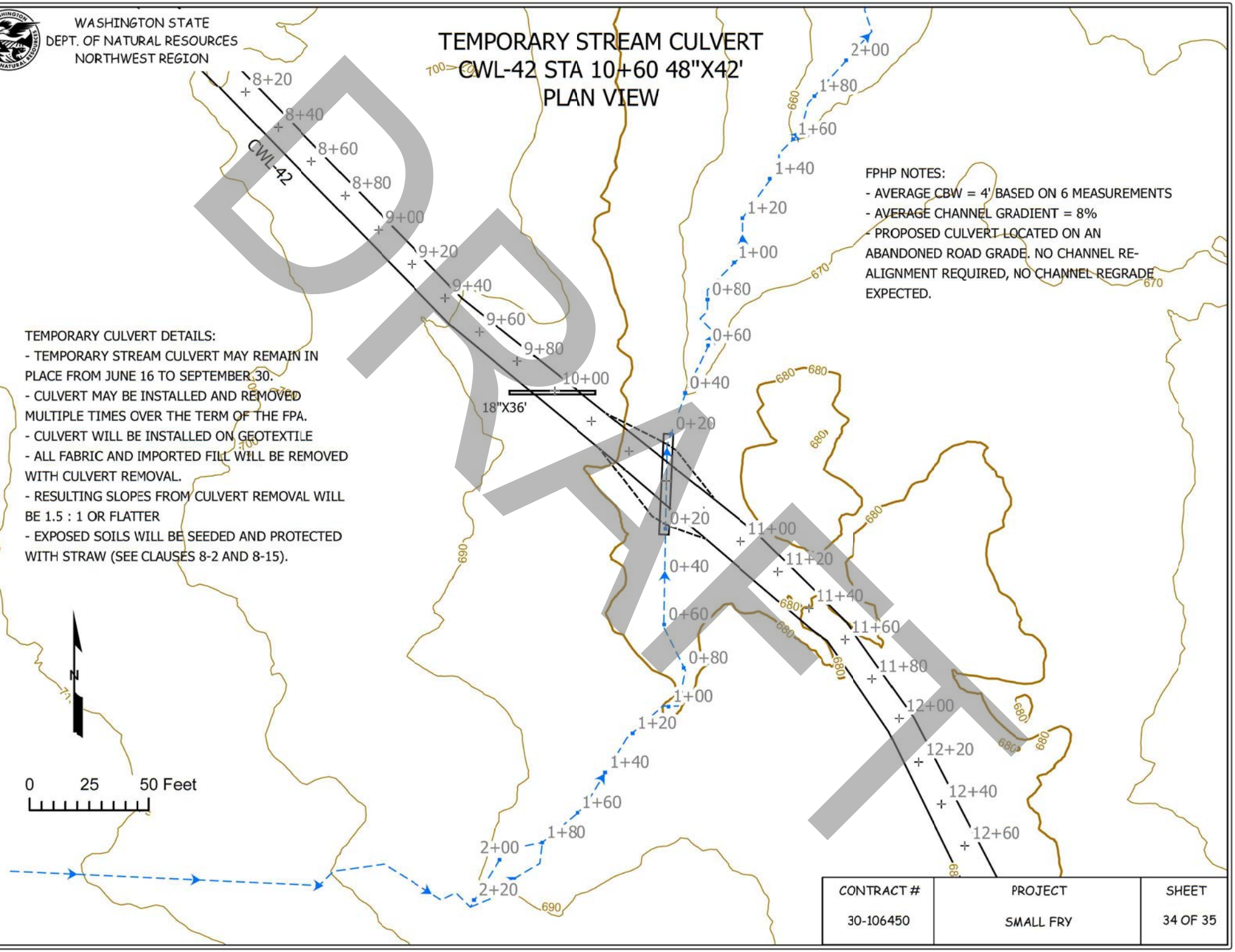
DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

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

CONTRACT #	PROJECT	SHEET
30-106450	SMALL FRY	33 OF 35

WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

TEMPORARY STREAM CULVERT
CWL-42 STA 10+60 48"X42'
PLAN VIEW



TEMPORARY CULVERT DETAILS:
- TEMPORARY STREAM CULVERT MAY REMAIN IN PLACE FROM JUNE 16 TO SEPTEMBER 30.
- CULVERT MAY BE INSTALLED AND REMOVED MULTIPLE TIMES OVER THE TERM OF THE FPA.
- CULVERT WILL BE INSTALLED ON GEOTEXTILE
- ALL FABRIC AND IMPORTED FILL WILL BE REMOVED WITH CULVERT REMOVAL.
- RESULTING SLOPES FROM CULVERT REMOVAL WILL BE 1.5 : 1 OR FLATTER
- EXPOSED SOILS WILL BE SEEDED AND PROTECTED WITH STRAW (SEE CLAUSES 8-2 AND 8-15).

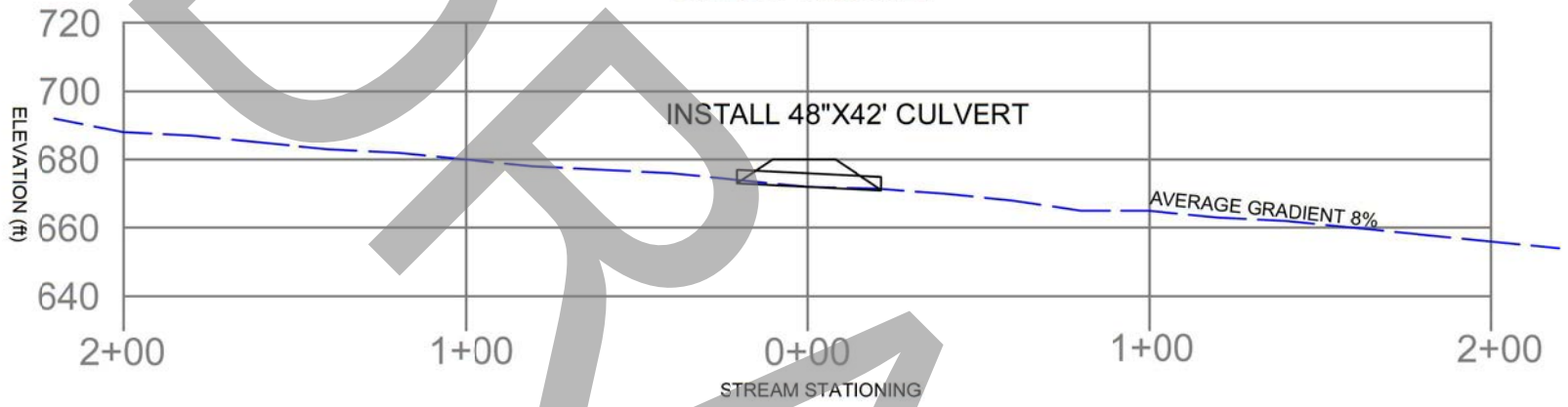
FPHP NOTES:
- AVERAGE CBW = 4' BASED ON 6 MEASUREMENTS
- AVERAGE CHANNEL GRADIENT = 8%
- PROPOSED CULVERT LOCATED ON AN ABANDONED ROAD GRADE. NO CHANNEL RE-ALIGNMENT REQUIRED, NO CHANNEL REGRADE EXPECTED.

CONTRACT #	PROJECT	SHEET
30-106450	SMALL FRY	34 OF 35

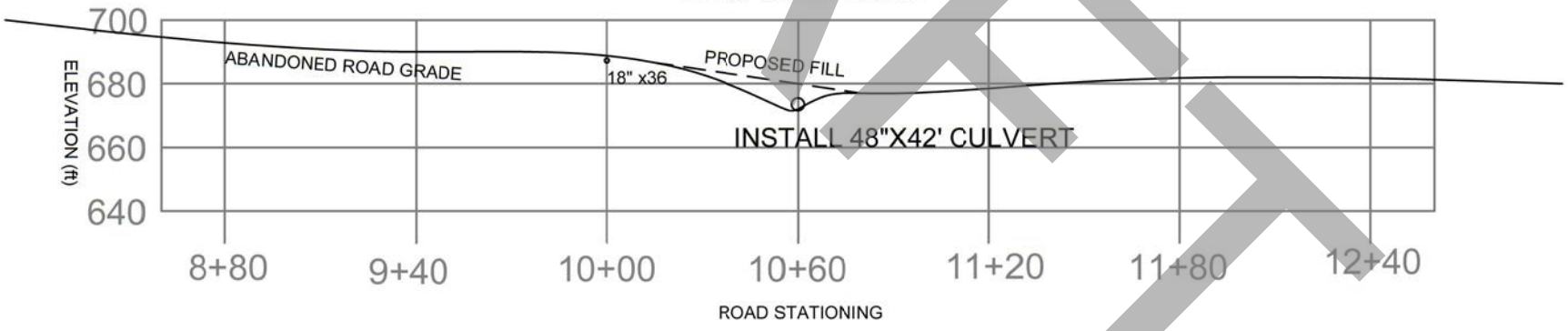
WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

TEMPORARY STREAM CULVERT
CWL-42 STA 10+60 48"X42'
PROFILES

STREAM CHANNEL



PROPOSED ROAD



DRAWING DATE	CONTRACT #	PROJECT	SHEET
7/1/2024	30-106450	SMALL FRY	35 OF 35

SUMMARY - Road Development Costs

REGION: Northwest
DISTRICT: Cascade

SALE/PROJECT NAME: SMALL FRY CONTRACT #: 30-106450

ROAD NUMBERS:	LL-07, LL-12, LL-53, WL-02, WL-10, WL-1002, WL-1005, WL-	-	LL-ML, WL-ML, WL-07
ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	166.90	0.00	453.00
CLEARING & GRUBBING:	$4,006	$0	$0
EXCAVATION AND FILL:	$7,511	$0	$0
MISC. MAINTENANCE:	$0	-	$21,508
ROAD ROCK:	$76,374	$0	$0
ROCK STOCKPILE PROD:	-	-	-
CULVERTS AND FLUMES:	$50,770	$0	$0
STRUCTURES:	$0	$0	$0
MOBILIZATION:	$7,730	$0	$1,010
TOTAL COSTS:	$146,390	$0	$22,518
COST PER STATION:	$877	N/A	$50

ROAD DEACTIVATION & ABANDONMENT COSTS: $16,235

TOTAL (All Roads) = $185,142
SALE VOLUME MBF = 1545 Precruise E
TOTAL $/MBF = $120

Compiled by: A. HALGREN Date: 12/20/2024

Estimate