WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: HONEST ABE* ***AGREEMENT NO**: 30-107299*

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

SALE LOCATION: Sale located approximately 8 miles north of Arlington, WA.

PRODUCTS SOLD AND SALE AREA: All timber bounded by white timber sale boundary tags, property lines, adjacent young stands and the CN-1106-05 Road, except trees 60 inches or larger measured at diameter at breast height, forest products tagged out by yellow leave tree area tags, trees marked with blue paint on the bole and root collar, and cedar snags, preexisting dead and down cedar trees and cedar logs, in Unit #1.

All timber bounded by white timber sale boundary tags, adjacent young stands, and the ST-16 and ST-1626 roads, except trees 60 inches or larger measured at diameter at breast height, forest products tagged out by yellow leave tree area tags, trees marked with blue paint on the bole and root collar, and cedar snags, preexisting dead and down cedar trees and cedar logs, in Unit #2.

All timber bounded by white timber sale boundary tags, adjacent young stands and the ST-16 Road, except trees 60 inches or larger measured at diameter at breast height, forest products tagged out by yellow leave tree area tags, trees marked with blue paint on the bole and root collar, and cedar snags, preexisting dead and down cedar trees and cedar logs, in Unit #3.

All timber bounded by orange right-of-way tags and 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 (located outside of units) is not conveyed to the Purchaser unless the road segment is actually constructed.

All forest products above located on part(s) of Sections 35 and 36 all in Township 33 North, Range 5 East, W.M., containing 50 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:

	Avg	Ring	Total	MBF by Grade								
Species	DBH	Count	MBF	1P	2P	3P	SM	1S	2S	3S	4S	UT
Hemlock	17.8		1,195						632	465	98	
Douglas fir	23.7		745			15	20		530	154	24	2
Red alder	15.7		42							31	11	
Redcedar	21.4		39							34	5	
Cottonwood	16		9						9			
Sale Total			2,030									

MINIMUM BID: $544,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $100,000.00 **SALE TYPE:** Lump Sum

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

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EXPIRATION DATE: March 31, 2028 **ALLOCATION:** Export Restricted

BID DEPOSIT: $54,400.00 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, tracked skidder, "6-wheeled rubber-tired skidders with over-the-tire tracks spanning both sets of rear tires" (See below for restrictions) or rubber-tired skidder (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/or rubber-tired skidder. 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.

ROADS: 10.72 stations of required reconstruction. 3.53 stations of optional construction. 8.44 stations of optional reconstruction. 422.99 stations of required prehaul maintenance. 195.97 stations of optional prehaul maintenance.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: Stimson Crow Pit at station 131+88 of the ST-16 Road. Crane Creek Pit at station 12+25 of the CN-2006 Road.

Development of existing rock sources will involve clearing clearing benches of shotrock and oversize, breaking oversize and crushing to generate riprap, 2-inch-minus, and 3-inch-minus ballast rock.

An estimated total quantity of rock needed for this proposal: 44 cubic yards of riprap, 365 cubic yards 2-inch-minus and 575 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: $34,510.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

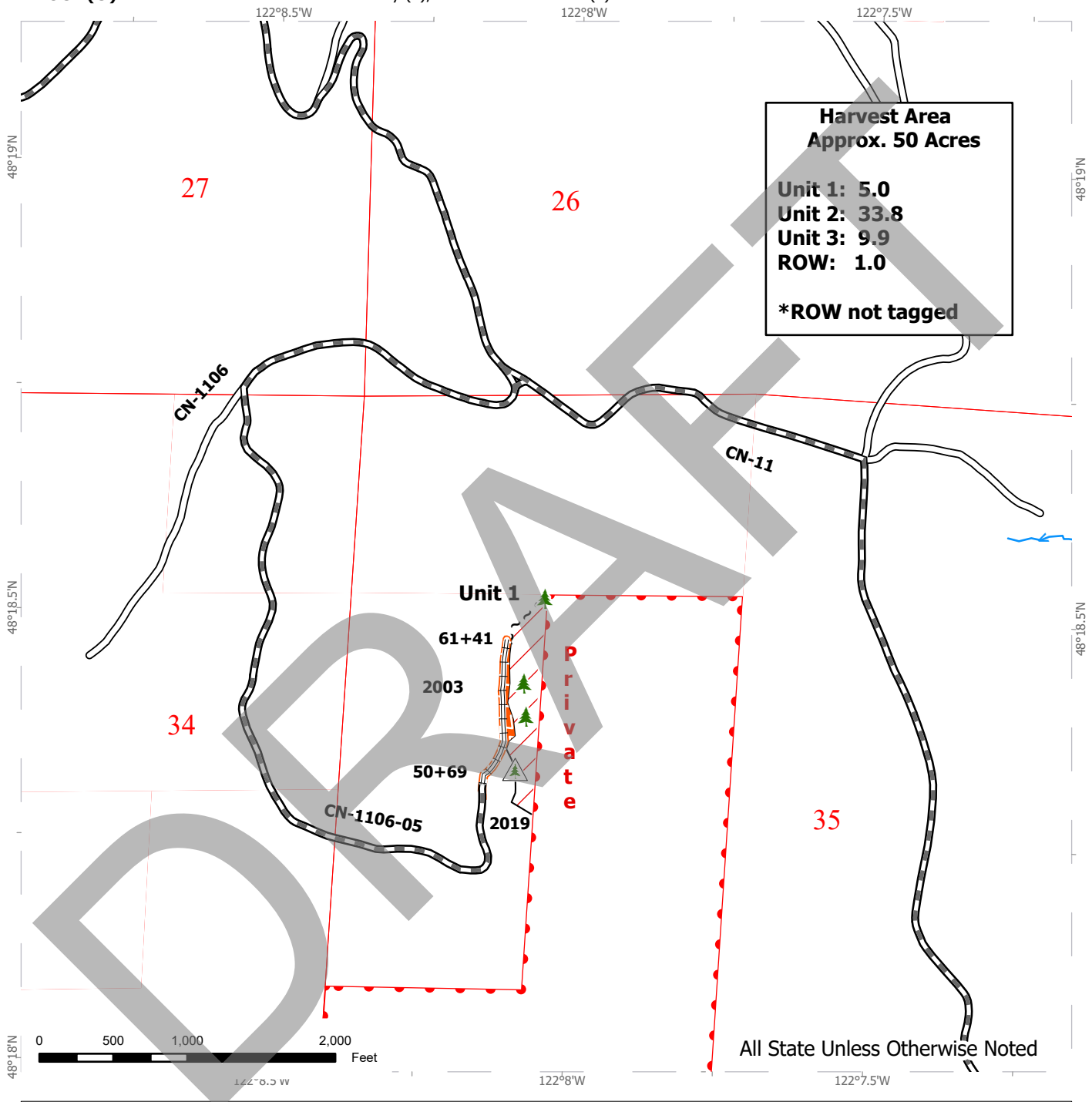
TIMBER NOTICE OF SALE

SPECIAL REMARKS: 1. Trees marked with pink "T" represent the last take tree along property line boundaries.
2. HQ DF noted within the sale area. See cruise for further details.

TIMBER SALE MAP

SALE NAME: HONEST ABE
AGREEMENT#: 30-107299
TOWNSHIP(S): T33R5E
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Northwest Region
COUNTY(S): Skagit
ELEV RGE (FT): 1000-2680



Variable Retention Harvest
ROW
Sale Boundary Tags
Timber Type Change
Existing Roads
Required Pre-Haul Maintenance
Required Reconstruction
Streams
Leave Tree Area <1/4-acre
Non-Tradeable Leave Trees
N

Prepared By: smky490
Accessed: 01/09/2025 13:17
Modification Date: smky490 10/2/2024

TIMBER SALE MAP

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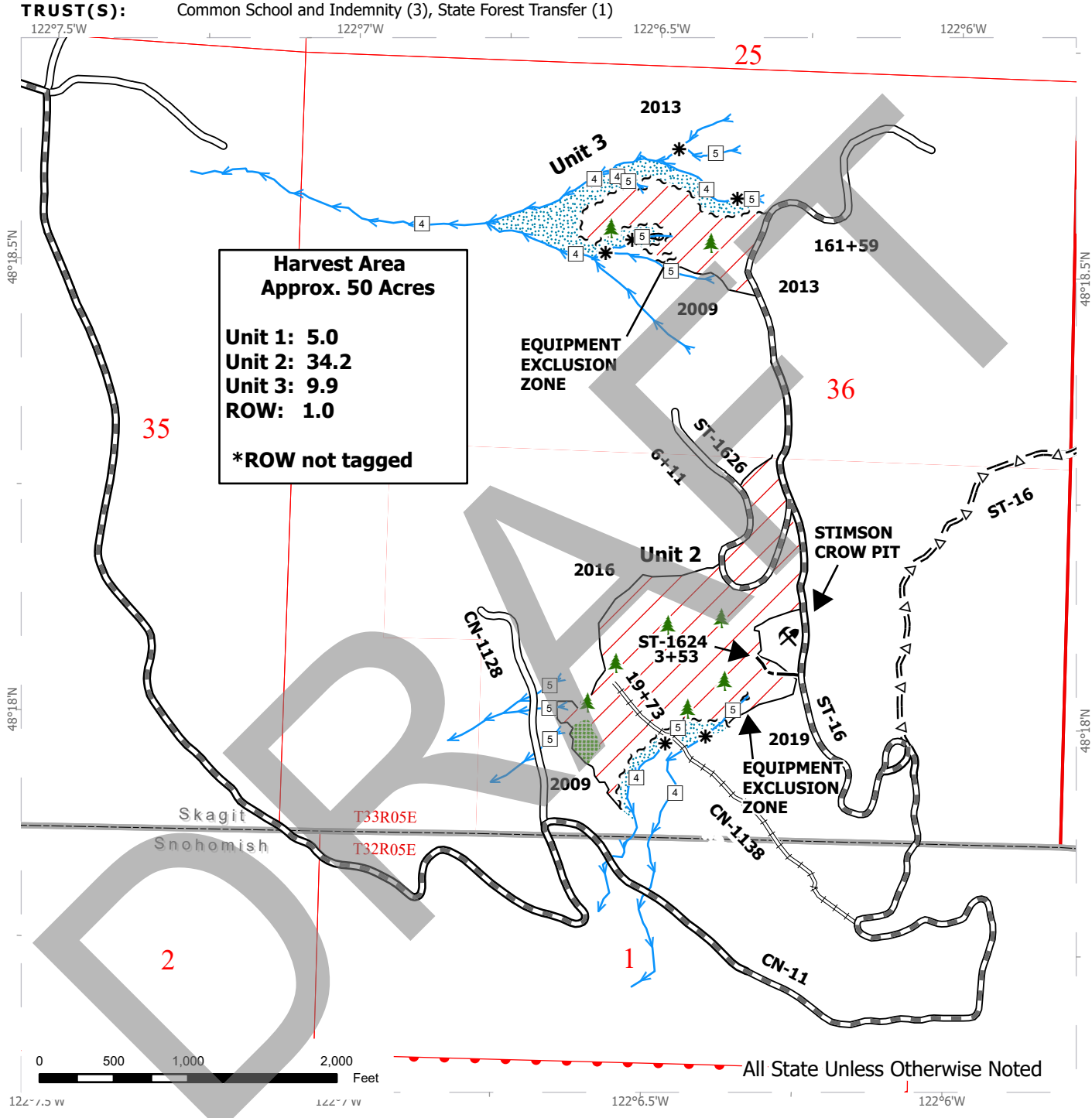

- Variable Retention Harvest
- Sale Boundary Tags
- Timber Type Change
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Optional Reconstruction
- Optional Pre-Haul Maintenance
- Leave Tree Area
- Riparian Mgt Zone
- Equipment Exclusion Zone
- Streams
- Stream Type
- Stream Break
- Leave Tree Area <1/4-acre
- Rock Pit

N

Prepared By: smky490
Accessed: 01/09/2025 13:17

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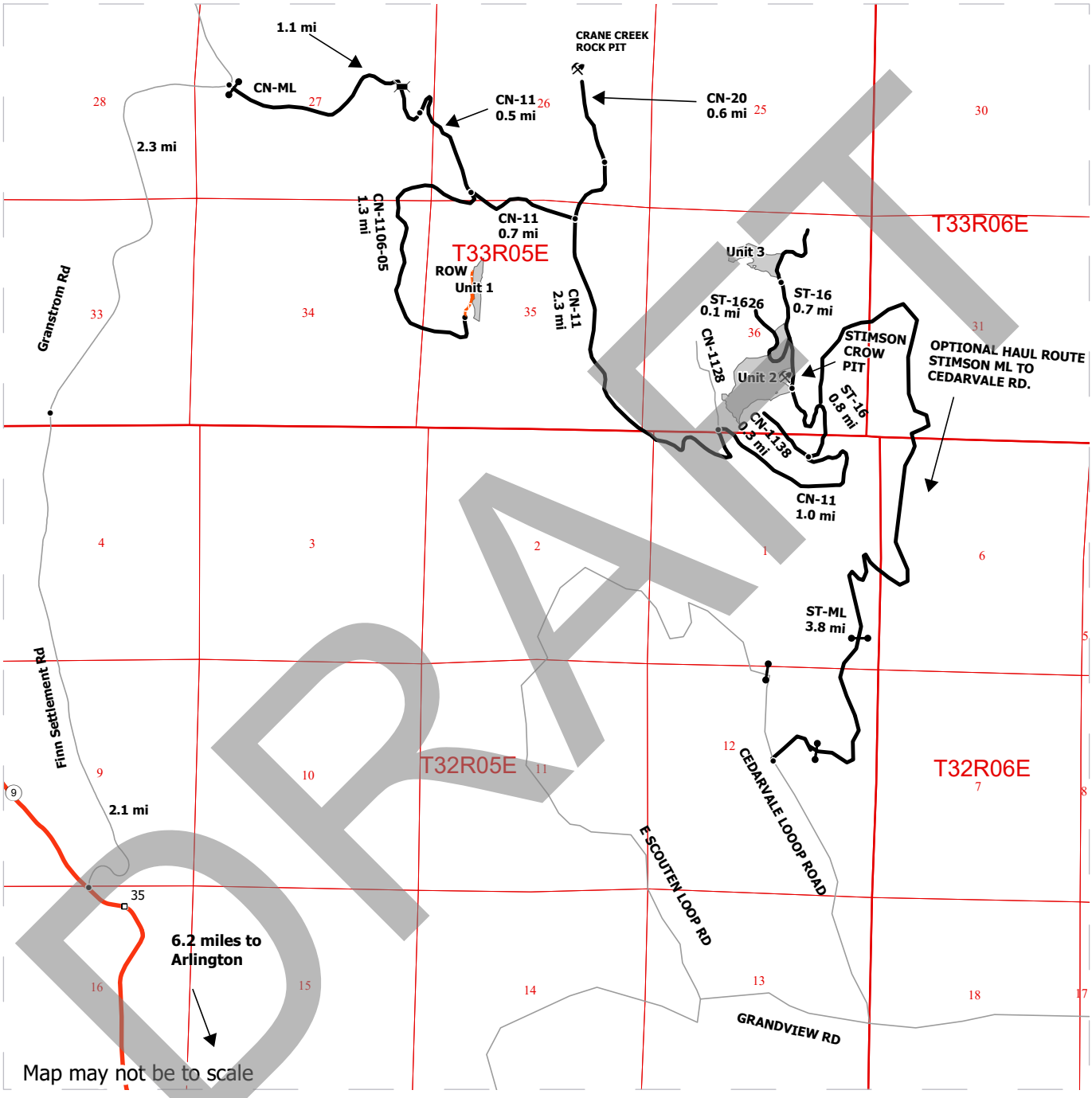
DRIVING MAP

SALE NAME: HONEST ABE
AGREEMENT#: 30-107299
TOWNSHIP(S): T33R5E
TRUST(S): State Forest Transfer (01), Common School (03)

REGION: Northwest Region
COUNTY(S): Skagit
ELEVATION RGE: 1000-2680



- Harvest Units
- Highway
- Haul Route
- Other Route
- Milepost Marker
- Distance Indicator
- Bridge
- Gate (F1-3 Key)
- Rock Pit

DRIVING DIRECTIONS:

From Arlington, travel 6.2 miles north along Highway 9. Turn right onto Finn Settlement Rd. Travel for 2.1 miles, where it will turn into Granstrom Rd. Stay on Granstrom Rd for 2.3 miles and turn right into CN-ML. Stay along CN-ML for 1.1 miles. Stay to the right and head 0.5 miles along CN-11. F1-3 Key Required for both haul routes.

Unit 1 and ROW: Turn right on CN-1106-05 for 1.3 miles to access ROW Unit and Unit 1.

Unit 2: Stay along CN-11 for 0.7 miles. Turn right onto CN-11 and travel southeast for 2.3 miles. Turn right and continue on CN-11 for 1.0 miles. Turn right and travel 0.8 miles along ST-16 to access Unit 2.

Unit 3: From Unit 2, travel 0.7 miles along ST-16 to reach Unit 3.

N

Prepared By: smky490
Accessed: 01/09/2025 13:17

Modification Date: smky490 10/2/2024

Timber Sale Cruise Report
Honest Abe

Sale Name: HONEST ABE

Sale Type: LUMP SUM

Region: NORTHWEST

District: CLEAR LAKE

Lead Cruiser: Bailey Vos

Other Cruisers:

Cruise Narrative:
Legal: Sections 35 and 36 of Township 33 Range 05E

Cruise Design: For this cruise basal area factors were selected based on stocking levels, tree size and unit acreage. Unit 1 was sampled using 1/20th acre fixed radius plots. Units 2 and 3 were sampled using a 62.5 BAF. 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" or 6" 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 .8 acres was installed and a cruise-all sample was applied.

The total net cruise volume for Honest Abe is 2,030 MBF. The timber type throughout the sale showed a dominant western hemlock and Douglas fir overstory, with a minor component of western red cedar and hardwoods. The majority of the sale volume comes from domestic 2 Saw WH and DF grade. Douglas fir HQ logs were cruised through out unit 1.

Harvesting conditions in unit 1 will be straightforward and productive shovel ground. Units 2 and 3 are on steep planar slopes and will require cable harvesting.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
WH	17.8			1,196			632	466	98	
DF	23.7			745	15	20	530	154	24	2
RA	15.7			42				31	11	
RC	21.4			39				34	5	
BC	16.0			9			9			
ALL	19.3			2,030	15	20	1,172	684	138	2

Timber Sale Notice Weight (tons)

	Tons by Grade						
Sp	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
WH	10,557			5,006	4,534	1,017	
DF	5,157	78	108	3,369	1,367	200	35
RA	318				222	96	

	Tons by Grade						
Sp	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
RC	307				251	55	
BC	62			62			
ALL	16,401	78	108	8,437	6,374	1,368	35

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 (%)
311.9	5.5	130.8	2.0	40,850	5.5

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
HONEST ABE 1	FX: FR plots (20 tree / acre expansion)	5.0	5.4	10	10	0
HONEST ABE 2	B1: VR, 1 BAF (62.5) Measure All, Sighting Ht = 4.5 ft	33.8	36.7	35	35	0
HONEST ABE 3	B1: VR, 1 BAF (62.5) Measure All, Sighting Ht = 4.5 ft	9.9	10.3	10	10	0
HONEST ABE ROW	FX: FR plots (20 tree / acre expansion)	1.0	1.8	3	3	1
All		49.7	54.2	58	58	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	8.7	36	181	181	0.0	61.9	9.0
DF	LIVE	2 SAW	Domestic	15.6	38	8,267	8,183	1.0	2,726.6	406.7
DF	LIVE	2 SAW	HQ-A	20.7	40	734	734	0.0	197.5	36.5
DF	LIVE	2 SAW	HQ-B	22.1	40	1,754	1,754	0.0	445.2	87.2
DF	LIVE	3 PEELER	Domestic	28.9	40	293	293	0.0	78.1	14.6
DF	LIVE	3 SAW	Domestic	9.2	38	3,129	3,100	0.9	1,366.8	154.1
DF	LIVE	4 SAW	Domestic	6.6	21	478	476	0.4	199.7	23.7
DF	LIVE	CULL	Cull	18.6	6	356	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	24.3	40	406	406	0.0	108.3	20.2
DF	LIVE	UTILITY	Pulp	5.0	37	40	40	0.0	35.0	2.0
RA	LIVE	3 SAW	Domestic	10.8	34	631	617	2.3	221.8	30.6
RA	LIVE	4 SAW	Domestic	7.6	24	230	230	0.2	95.9	11.4
RC	LIVE	3 SAW	Domestic	10.9	38	727	681	6.4	251.2	33.8

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
RC	LIVE	4 SAW	Domestic	5.7	23	101	101	0.0	55.4	5.0
RC	LIVE	CULL	Cull	15.7	5	34	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	14.8	40	13,005	12,720	2.2	5,005.6	632.2
WH	LIVE	3 SAW	Domestic	9.2	38	9,480	9,366	1.2	4,534.3	465.5
WH	LIVE	4 SAW	Domestic	6.4	22	1,979	1,970	0.5	1,017.4	97.9
WH	LIVE	CULL	Cull	19.9	11	969	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	Domestic	8.7	36	181	0.0	61.9	9.0
DF	5 - 7	LIVE	Pulp	5.0	37	40	0.0	35.0	2.0
DF	5 - 7	LIVE	Domestic	6.6	25	798	0.2	350.0	39.7
DF	8 - 11	LIVE	Domestic	9.6	36	2,722	0.2	1,186.7	135.3
DF	12 - 15	LIVE	Cull	13.4	4	0	100.0	0.0	0.0
DF	12 - 15	LIVE	Domestic	13.9	37	3,412	1.7	1,292.0	169.6
DF	12 - 15	LIVE	HQ-B	14.8	40	58	0.0	20.2	2.9
DF	16 - 19	LIVE	Cull	16.9	6	0	100.0	0.0	0.0
DF	16 - 19	LIVE	Domestic	17.5	39	2,876	0.6	925.0	142.9
DF	16 - 19	LIVE	HQ-B	17.6	40	93	0.0	28.2	4.6
DF	16 - 19	LIVE	HQ-A	17.7	40	201	0.0	51.0	10.0
DF	20+	LIVE	HQ-A	23.3	40	939	0.0	254.8	46.7
DF	20+	LIVE	Domestic	23.4	40	2,244	1.5	617.5	111.5
DF	20+	LIVE	HQ-B	23.6	40	1,603	0.0	396.7	79.7
DF	20+	LIVE	Cull	27.8	7	0	100.0	0.0	0.0
RA	5+	LIVE	Domestic	8.6	28	846	1.7	317.7	42.1
RC	5+	LIVE	Domestic	9.1	32	781	5.6	306.6	38.8
RC	5+	LIVE	Cull	15.7	5	0	100.0	0.0	0.0
WH	5 - 7	LIVE	Domestic	6.4	27	3,127	0.6	1,624.7	155.4
WH	8 - 11	LIVE	Domestic	9.7	36	8,183	1.1	3,911.4	406.7
WH	12 - 15	LIVE	Domestic	13.8	40	6,470	1.7	2,778.5	321.6
WH	12 - 15	LIVE	Cull	14.5	24	0	100.0	0.0	0.0
WH	16 - 19	LIVE	Cull	17.6	8	0	100.0	0.0	0.0
WH	16 - 19	LIVE	Domestic	17.8	40	5,227	3.1	1,911.2	259.8
WH	20+	LIVE	Domestic	22.1	38	1,049	1.8	331.4	52.1
WH	20+	LIVE	Cull	24.2	10	0	100.0	0.0	0.0

Cruise Unit Report
HONEST ABE 1

Unit Sale Notice Volume (MBF): HONEST ABE 1

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw
DF	31.6			257	15	20	206	15	1
WH	21.8			58			47	11	0
RC	18.3			8				8	0
RA	10.7			1					1
ALL	26.2			323	15	20	254	33	2

Unit Cruise Design: HONEST ABE 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	5.0	5.3	10	10	0

Unit Cruise Summary: HONEST ABE 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	18	18	1.8	0
WH	13	13	1.3	0
RC	5	5	0.5	0
RA	2	2	0.2	0
ALL	38	38	3.8	0

Unit Cruise Statistics: HONEST ABE 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	195.7	71.5	22.6	262.4	18.8	4.4	51,340	73.9	23.0
WH	67.2	87.2	27.6	172.6	28.1	7.8	11,594	91.6	28.6
RC	18.2	124.2	39.3	89.1	34.5	15.4	1,620	128.9	42.2
RA	2.5	234.8	74.2	51.5	98.6	69.7	128	254.6	101.8
ALL	283.5	34.4	10.9	228.2	35.8	5.8	64,682	49.6	12.3

Unit Summary: HONEST ABE 1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	18	ALL	31.6	116	148	51,818	51,340	0.9	35.9	195.7	34.8	256.7
RA	LIVE	CUT	2	ALL	10.7	32	51	132	128	3.0	4.0	2.5	0.8	0.6
RC	LIVE	CUT	5	ALL	18.3	62	76	1,664	1,620	2.6	9.9	18.2	4.2	8.1
WH	LIVE	CUT	13	ALL	21.8	88	112	12,338	11,594	6.0	25.9	67.2	14.4	58.0
ALL	LIVE	CUT	38	ALL	26.2	95	121	65,952	64,682	1.9	75.7	283.5	54.2	323.4
ALL	ALL	CUT	38	ALL	26.2	95	121	65,952	64,682	1.9	75.7	283.5	54.2	323.4

Cruise Unit Report
HONEST ABE 2

Unit Sale Notice Volume (MBF): HONEST ABE 2

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
WH	16.9			855	374	397	84	
DF	19.1			414	261	128	23	2
RC	16.5			7		5	2	
ALL	17.5			1,276	635	530	108	2

Unit Cruise Design: HONEST ABE 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (62.5) Measure All, Sighting Ht = 4.5 ft	33.8	36.7	35	35	0

Unit Cruise Summary: HONEST ABE 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	124	124	3.5	0
DF	56	56	1.6	0
RC	2	2	0.1	0
ALL	182	182	5.2	0

Unit Cruise Statistics: HONEST ABE 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 (%)
WH	221.4	78.5	13.3	114.2	27.5	2.5	25,297	83.1	13.5
DF	100.0	127.9	21.6	122.4	36.1	4.8	12,242	132.9	22.2
RC	3.6	412.1	69.7	56.6	100.2	70.9	202	424.1	99.4
ALL	325.0	41.1	7.0	116.1	31.5	2.3	37,741	51.8	7.3

Unit Summary: HONEST ABE 2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	56	ALL	19.1	63	82	12,630	12,242	3.1	50.3	100.0	22.9	413.8
RC	LIVE	CUT	2	ALL	16.5	48	59	252	202	19.8	2.4	3.6	0.9	6.8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	124	ALL	16.9	60	78	26,545	25,297	4.7	142.1	221.4	53.9	855.0
ALL	LIVE	CUT	182	ALL	17.5	61	79	39,428	37,741	4.3	194.8	325.0	77.6	1,275.6
ALL	ALL	CUT	182	ALL	17.5	61	79	39,428	37,741	4.3	194.8	325.0	77.6	1,275.6

Cruise Unit Report
HONEST ABE 3

Unit Sale Notice Volume (MBF): HONEST ABE 3

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw
WH	19.8			283	211	58	14
DF	22.4			74	63	12	
RA	15.9			41		31	10
RC	23.9			24		21	3
BC	16.0			9	9		
ALL	19.6			431	283	121	27

Unit Cruise Design: HONEST ABE 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (62.5) Measure All, Sighting Ht = 4.5 ft	9.9	10.3	10	10	0

Unit Cruise Summary: HONEST ABE 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	32	32	3.2	0
DF	7	7	0.7	0
RA	6	6	0.6	0
RC	4	4	0.4	0
BC	1	1	0.1	0
ALL	50	50	5.0	0

Unit Cruise Statistics: HONEST ABE 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 (%)
WH	200.0	48.4	15.3	142.7	27.4	4.9	28,541	55.7	16.1
DF	43.8	117.6	37.2	171.6	34.4	13.0	7,508	122.5	39.4
RA	37.5	140.5	44.4	110.5	22.3	9.1	4,145	142.3	45.4
RC	25.0	174.8	55.3	96.6	37.2	18.6	2,414	178.7	58.3
BC	6.3	316.2	100.0	145.4	0.0	0.0	909	316.2	100.0
ALL	312.5	32.7	10.3	139.3	31.7	4.5	43,517	45.5	11.3

Unit Summary: HONEST ABE 3

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	79	105	909	909	0.0	4.5	6.3	1.6	9.0
DF	LIVE	CUT	7	ALL	22.4	73	99	8,305	7,508	9.6	16.0	43.8	9.2	74.3
RA	LIVE	CUT	6	ALL	15.9	60	75	4,216	4,145	1.7	27.2	37.5	9.4	41.0
RC	LIVE	CUT	4	ALL	23.9	52	63	2,624	2,414	8.0	8.0	25.0	5.1	23.9
WH	LIVE	CUT	32	ALL	19.8	62	81	30,817	28,541	7.4	93.5	200.0	44.9	282.6
ALL	LIVE	CUT	50	ALL	19.6	63	82	46,871	43,517	7.2	149.2	312.5	70.3	430.8
ALL	ALL	CUT	50	ALL	19.6	63	82	46,871	43,517	7.2	149.2	312.5	70.3	430.8

Cruise Unit Report
HONEST ABE ROW

Unit Sale Notice Volume (MBF): HONEST ABE ROW

				MBF Volume by Grade	
Sp	DBH	Rings/In	Age	All	4 Saw
RA	8.0			0	0
ALL	8.0			0	0

Unit Cruise Design: HONEST ABE ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	1.0	1.8	3	3	1

Unit Cruise Summary: HONEST ABE ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA	3	3	1.0	0
ALL	3	3	1.0	0

Unit Cruise Statistics: HONEST ABE ROW

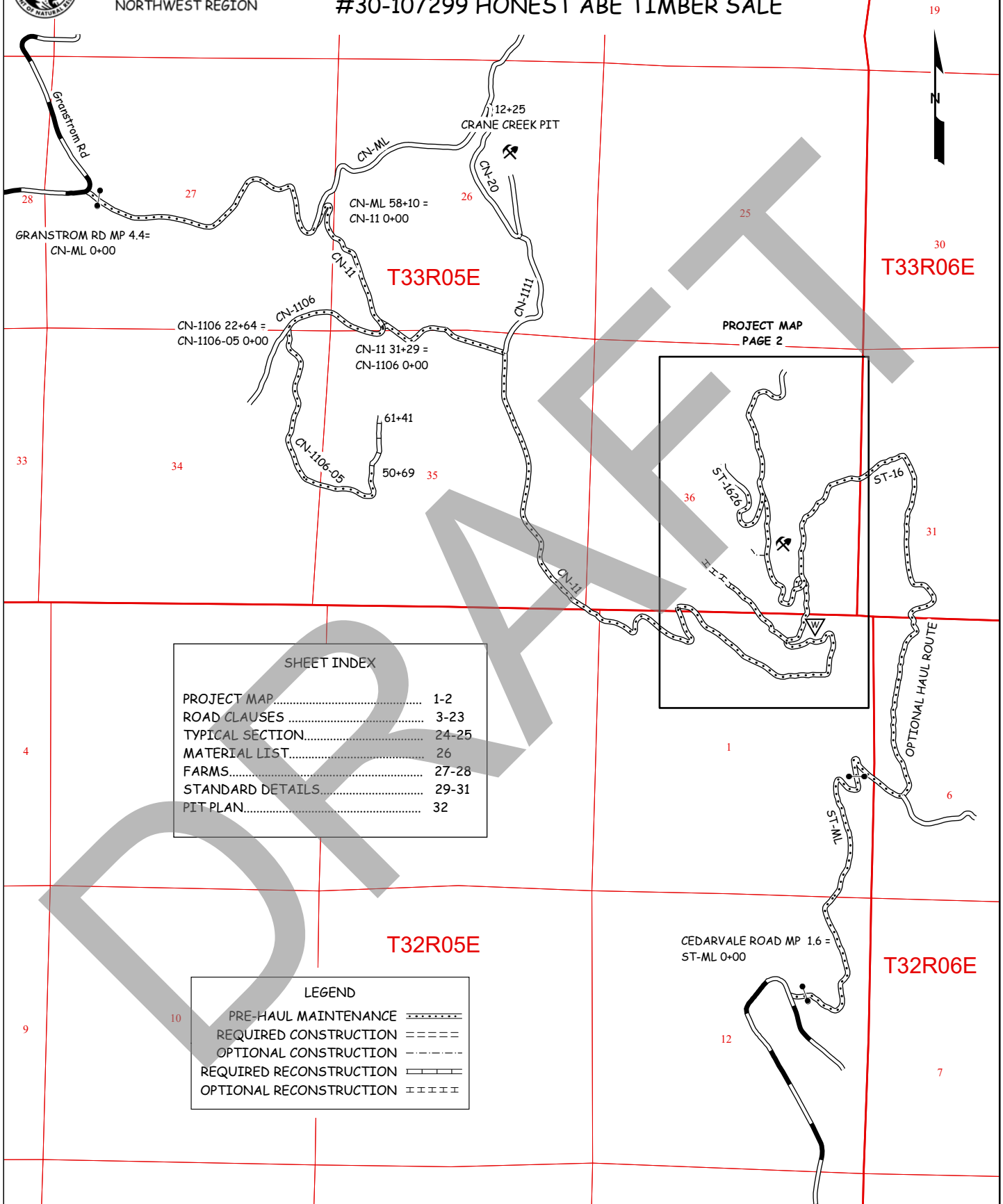
Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RA	7.0	100.0	57.7	56.4	5.9	3.4	393	100.2	57.8
ALL	7.0	100.0	57.7	56.4	5.9	3.4	393	100.2	57.8

Unit Summary: HONEST ABE ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	3	ALL	8.0	20	26	393	393	0.0	20.0	7.0	2.5	0.4
ALL	LIVE	CUT	3	ALL	8.0	20	26	393	393	0.0	20.0	7.0	2.5	0.4
ALL	ALL	CUT	3	ALL	8.0	20	26	393	393	0.0	20.0	7.0	2.5	0.4

WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

ROAD PLAN AND SPECIFICATIONS
#30-107299 HONEST ABE TIMBER SALE



SHEET INDEX

LEGEND

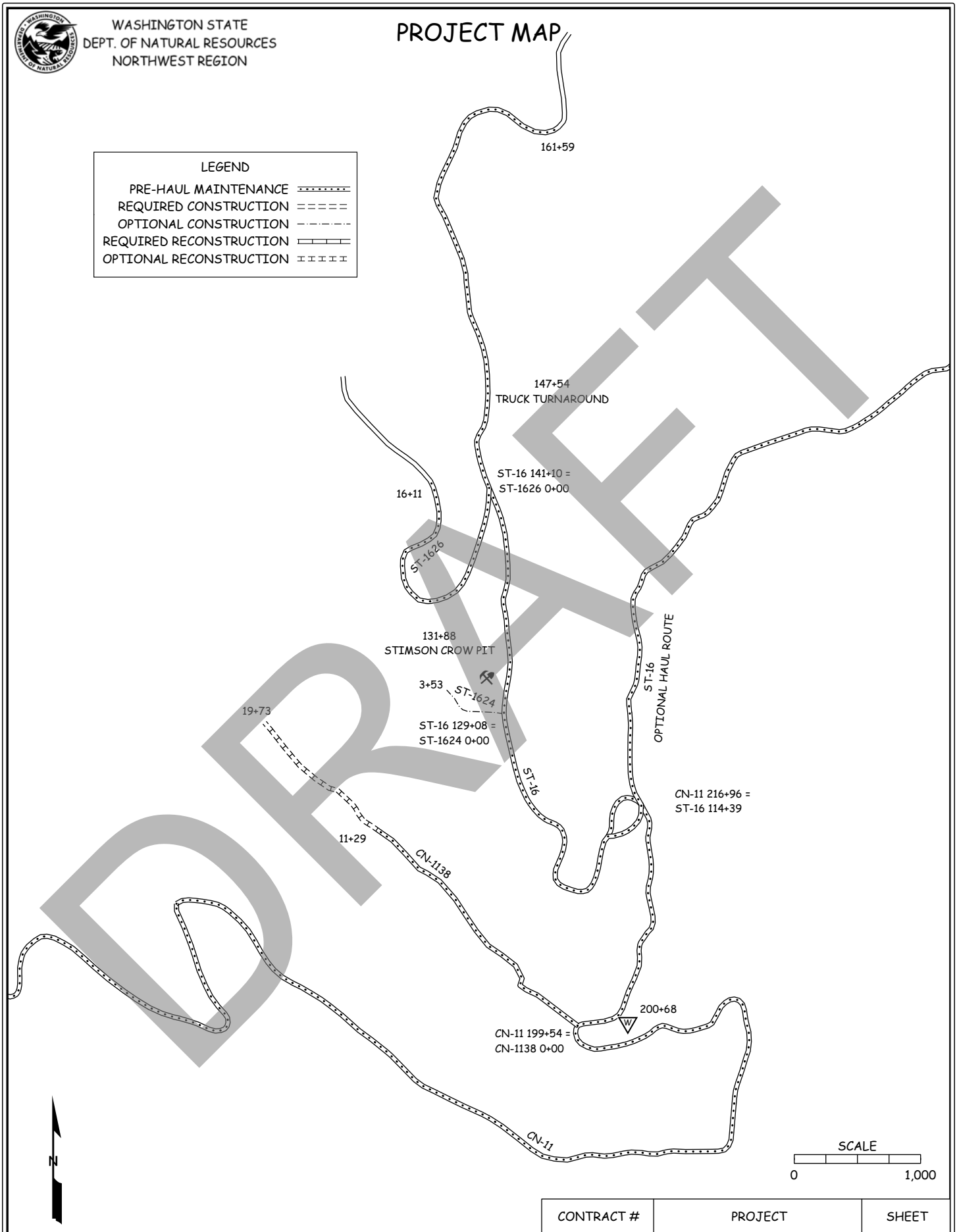
- PRE-HAUL MAINTENANCE
- REQUIRED CONSTRUCTION
- OPTIONAL CONSTRUCTION
- REQUIRED RECONSTRUCTION
- OPTIONAL RECONSTRUCTION

SCALE
0 1,000

DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
J. WESTRA	ZYLSTRA 8/29/2024	ZYLSTRA 8/29/2024	7/30/2024	1 OF 32

WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

PROJECT MAP



CONTRACT #	PROJECT	SHEET
30-107299	HONEST ABE	2 OF 32

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

HONEST ABE TIMBER SALE ROAD PLAN
SKAGIT AND SNOHOMISH COUNTIES
CLEAR LAKE DISTRICT
NORTHWEST REGION

AGREEMENT NO.: 30-107299 STAFF ENGINEER: J. WESTRA

DATE: JULY 30, 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
CN-ML	0+00 to 58+10	PREHAUL MAINTENANCE
CN-11	0+00 to 216+96	PREHAUL MAINTENANCE
CN-1106	0+00 to 22+64	PREHAUL MAINTENANCE
CN-1106-05	0+00 to 50+69	PREHAUL MAINTENANCE
CN-1106-05	50+69 to 61+41	RECONSTRUCTION*
CN-1138	0+00 to 11+29	PREHAUL MAINTENANCE
ST-16	114+39 to 161+59	PREHAUL MAINTENANCE
ST-1626	0+00 to 16+11	PREHAUL MAINTENANCE

*Reconstruction is on an abandoned road grade.

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
CN-1138	11+29 to 19+73	RECONSTRUCTION*
ST-ML	0+00 to 81+58	PREHAUL MAINTENANCE**
ST-16	0+00 to 114+39	PREHAUL MAINTENANCE**
ST-1624	0+00 to 3+53	CONSTRUCTION

*Reconstruction is on an abandoned road grade.

**Prehaul Maintenance is required if the Purchaser chooses to use these as haul roads.

0-4 CONSTRUCTION

Construction may include, but is not limited to clearing, grubbing, excavation and embankment to subgrade, landing and turnout construction, culvert installation and application of 3-inch-minus ballast.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to clearing, grubbing, landing and turnout construction, culvert installation and application of 3-inch-minus ballast.

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
CN-ML	0+00 to 58+10	Brushing, Grading
CN-11	0+00 to 216+96	Brushing, Grading
CN-1106	0+00 to 22+64	Brushing, Grading
CN-1106-05	0+00 to 50+69	Brushing, Grading
CN-1138	0+00 to 11+29	Brushing, Grading, Ditch Reconstruction Clear slump and endhaul waste
ST-ML	0+00 to 81+58	Brushing, Grading
ST-16	0+00 to 161+59	Brushing, Grading, 3” Rock lift at truck turnaround
ST-1626	0+00 to 16+11	Brushing, Grading

0-7 POST-HAUL MAINTENANCE

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

0-12 DEVELOP ROCK SOURCE

Purchaser may develop an existing rock source. Rock source development may involve clearing benches of shotrock and oversize, breaking oversize and crushing. 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.

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

1-6 ORDER OF PRECEDENCE

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

1. Addenda.
2. 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
- Rock pit conditions upon completion of construction

1-25 ACTIVITY TIMING RESTRICTION

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

Road	Activity	Closure Period
ALL ROADS	ALL ACTIVITIES	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.

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 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.

1-32 BRIDGE SURFACE RESTRICTION

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

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

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request. 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.

2-3 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.

2-4 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 prehaul maintenance roads, Purchaser shall use a grader to shape the existing surface before timber haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On prehaul maintenance roads, 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.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below.

Road	Disposal Location	Requirements
CN-11	200+68	Use for slump cleanup on CN-1138

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:

Material Type	Excavation Slope Ratio	Excavation Slope Percent
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:

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.

4-22 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.

4-37 WASTE AREA LOCATION

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

Road	Waste Area Location	Comments
CN-11	200+68	Use for slump cleanup on CN-1138

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 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 MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and must meet the specifications in Clauses 10-15 through 10-24.

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.

5-15 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".

5-17 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. 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 stream crossing culverts, Purchaser shall place riprap 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 or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

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.

Source	Location	Rock Type
STIMSON CROW PIT	131+88 of the ST-16	3-Inch Minus Ballast, Riprap
CRANE CREEK PIT	12+25 of the CN-2006	2-Inch Minus

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.

Source	Rock Type	Quantity
STIMSON CROW PIT	3-Inch Minus, Shotrock, Oversize	All Available
CRANE CREEK PIT	2-Inch Minus	365 Cubic Yards

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.

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

Source	Rock Type
STIMSON CROW PIT	3-Inch Minus Ballast, Riprap

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.

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.

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”)

6-55 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.

6-81 CHEMICAL TREATMENT FOR DUST ABATEMENT

Purchaser shall treat the following roads with Lignin Sulfonate for dust abatement. No other chemical may be used for dust abatement. The Lignin Sulfonate may not be used for any other purposes.

Road	Stations
ST-ML	0+00 to 46+09

6-82 CHEMICAL RESTRICTION

Purchaser shall not allow chemicals used for dust abatement to enter any streams.

6-83 LIGNIN SULFONATE APPLICATION RATE

The “as supplied” liquid Lignin Sulfonate must be diluted with an adequate amount of water to obtain a 25% solids content for application. Purchaser shall apply Lignin Sulfonate to the surface at a rate not less than 0.5 gallons per square yard (approximately 77.8 gallons per station).

6-85 CHEMICAL DUST ABATEMENT EQUIPMENT

Application equipment used to spread dust abatement chemicals must be capable of uniform application. A tanker truck with a “slash pan” or “plate” is not acceptable. Field dilution must be accomplished within the application vehicle.

6-86 TIMING FOR CHEMICAL APPLICATION

Purchaser shall obtain prior written approval from the Contract Administrator for the timing of application for dust abatement chemicals. It is intended that dust abatement chemicals be applied during the summer season.

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.

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

8-27 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

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.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

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.

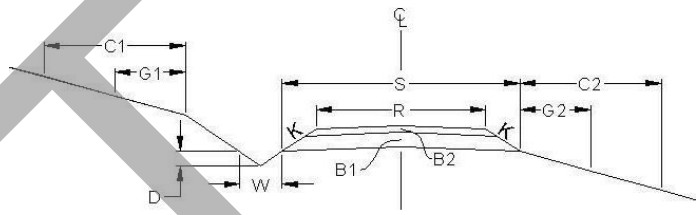
10-24 GAUGE AND CORRUGATION

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

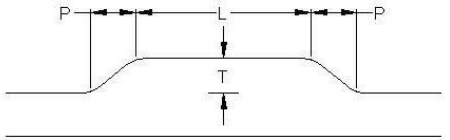
Diameter	Gage	Corrugation
18"	16 (0.064”)	$2\ ^{2}/_{3}$" X $^{1}/_{2}$"
24" to 48"	14 (0.079”)	$2\ ^{2}/_{3}$" X $^{1}/_{2}$"
54" to 96"	14 (0.079”)	3" X 1"

ROAD #		CN-ML	CN-11	CN-1106	CN-1106-05
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		PREHAUL	PREHAUL	PREHAUL	PREHAUL
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00
STATION / MP		58+10	216+96	22+64	50+69
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	--	--	--	--
TURNOUT WIDTH	T	--	--	--	--
TURNOUT TAPER	P	--	--	--	--
GRUBBING	G1	--	--	--	--
	G2	--	--	--	--
CLEARING	C1	--	--	--	--
	C2	--	--	--	--
ROCK FILLSLOPE	K:1	--	--	--	--
❖ BALLAST DEPTH	B1	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➢ TOTAL CY BALLAST		--	--	--	--
❖ SURFACING DEPTH	B2	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➢ TOTAL CY SURFACING		--	--	--	--
➢ TOTAL CUBIC YARDS		--	--	--	--
SUBGRADE WIDTH	S	--	--	--	--
BRUSHCUT (Y/N)		Y	Y	Y	Y
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	Y	Y

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: 2-Inch Minus	365
B: 3-Inch Minus Ballast	575
Rip Rap	44

ROAD #		CN-1106-05	CN-1138	CN-1138	ST-ML	ST-16	ST-16	ST-1624	ST-1626
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL	REQUIRED	OPTIONAL	REQUIRED
CONSTRUCT / RECONSTRUCT		RECONSTRUCT	PREHAUL	RECONSTRUCT	PREHAUL	PREHAUL	PREHAUL	CONSTRUCT	PREHAUL
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C	C
STATION / MP TO		50+69	0+00	11+29	0+00	0+00	114+39	0+00	0+00
STATION / MP		61+41	11+29	19+73	81+58	114+39	161+59	3+53	16+11
ROAD WIDTH	**R**	12	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3	3
DITCH WIDTH	**W**	3	3	3	3	3	3	3	3
DITCH DEPTH	**D**	1	1	1	1	1	1	1	1
TURNOUT LENGTH	**L**	50	--	--	--	--	--	--	--
TURNOUT WIDTH	**T**	10	--	--	--	--	--	--	--
TURNOUT TAPER	**P**	25	--	--	--	--	--	--	--
GRUBBING	**G1**	5	--	5	--	--	--	--	--
	G2	5	--	5	--	--	--	--	--
CLEARING	**C1**	10	--	10	--	--	--	--	--
	C2	10	--	10	--	--	--	--	--
ROCK FILLSLOPE	**K:1**	1 ½ : 1	--	1 ½ : 1	--	--	--	1 ½ : 1	--
❖ **BALLAST DEPTH**	**B1**	6	--	3	--	--	--	114	--
CUBIC YARDS / STATION		34	--	17	--	--	--	400	--
➢ **TOTAL CY BALLAST**		365	--	145	--	--	--	--	--
❖ **SURFACING DEPTH**	**B2**	--	--	--	--	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--	--	--	--	--
➢ **TOTAL CY SURFACING**		--	--	--	--	--	--	--	--
➢ **TOTAL CUBIC YARDS**		365[A]	--	145[B]	--	--	30[B]	400[B]	--
SUBGRADE WIDTH	**S**	13	--	12.5	--	--	--	--	--
BRUSHCUT (Y/N)		N	Y	N	Y	Y	Y	Y	Y
BLADE, SHAPE, & DITCH (Y/N)		N	Y	N	Y	Y	Y	Y	Y

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"**
CN-1106-05	51+23	18	30	PD	--	--	2	3	L	NT	C	
CN-1106-05	53+65	18	30	PD	--	--	2	3	L	NT	C	
CN-1106-05	56+66	18	30	PD	--	--	2	3	L	NT	C	
CN-1106-05	59+15	18	30	PD	--	--	2	3	L	NT	C	
CN-1138	4+82	--	--	--	--	--	--	--	--	--	--	Prehaul Maintenance: Reconstruct ditch for 100 feet
CN-1138	10+61	--	--	--	--	--	--	--	--	--	--	Prehaul Maintenance: Clear cutslope slump
CN-1138	13+24	30	30	PD	--	--	3	4	L	NT	C	TYPE 4 STREAM
CN-1138	14+43	24	30	PD	--	--	3	4	L	NT	C	TYPE 5 STREAM
CN-1138	24+54	18	30	PD	--	--	2	3	L	NT	C	
ST-16	147+54	--	--	--	--	--	--	--	--	--	--	Prehaul Maintenance: 30 Yards rock at truck turnaround
ST-1624	0+72	18	30	PD	--	--	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

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

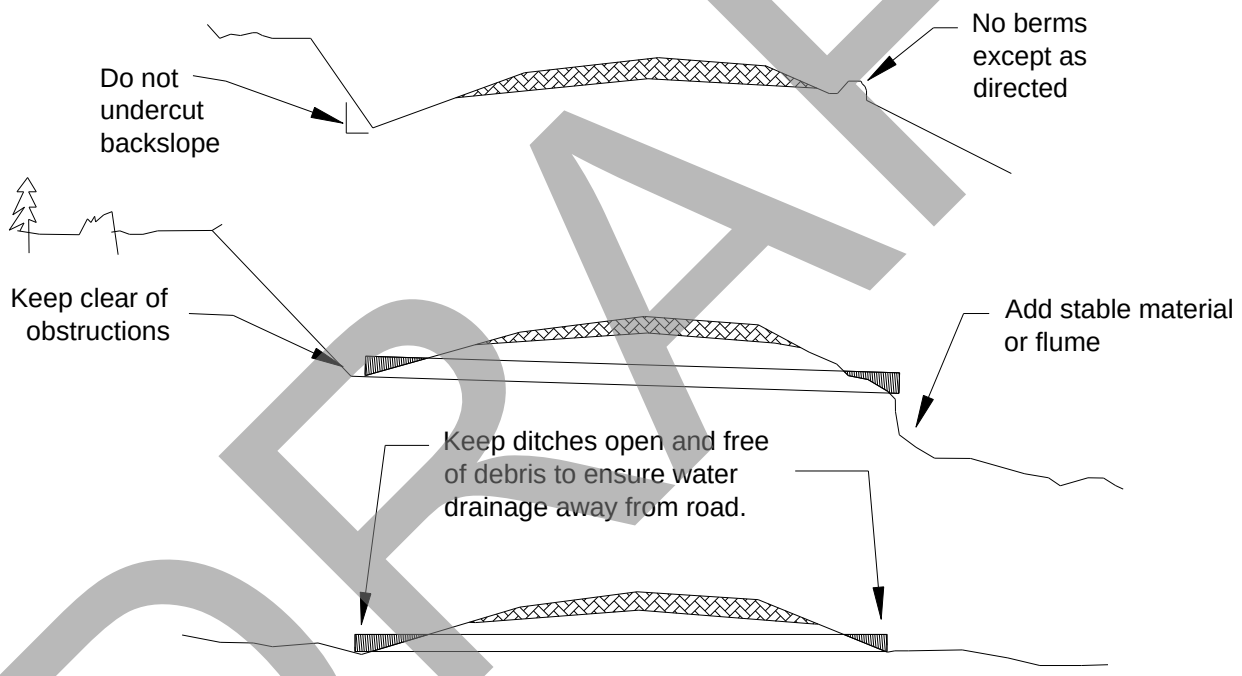
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

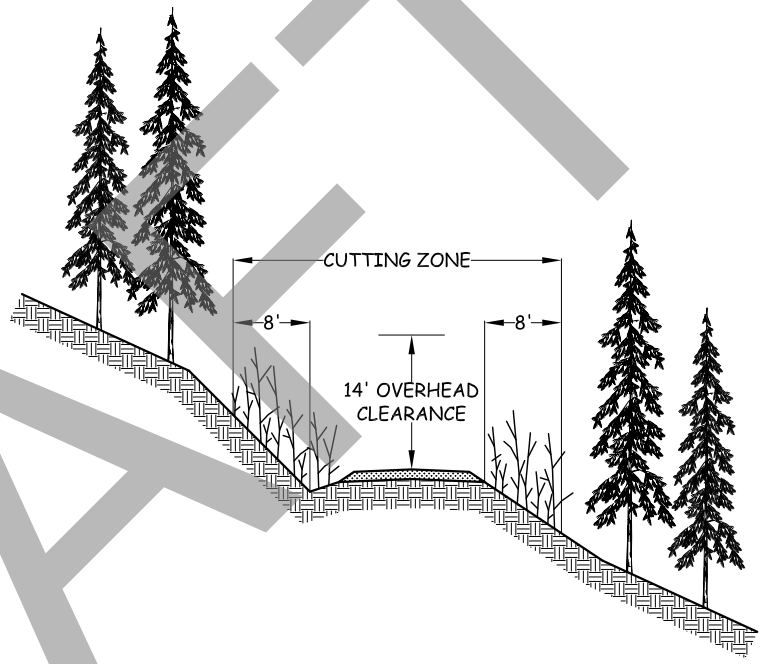
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

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.

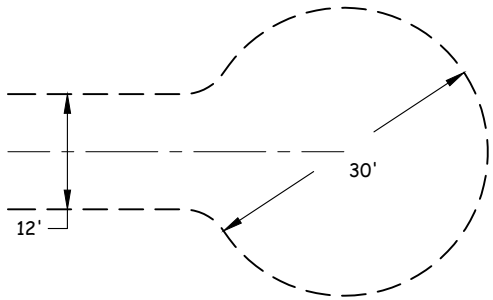
SLASH SHALL BE REMOVED FROM CUT SLOPES ABOVE THE ROAD AND SCATTERED ON EMBANKMENT SLOPES.

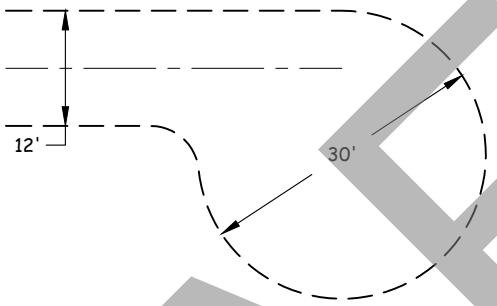
DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

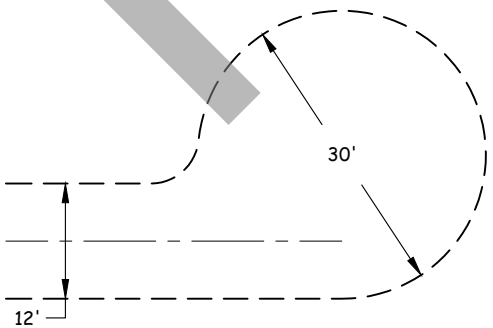
CULVERT INLETS AND OUTLETS SHALL BE CLEANED A MINIMUM DISTANCE OF TWO PIPE DIAMETERS AWAY.

CONTRACT #	PROJECT	SHEET
30-107299	HONEST ABE	29 OF 32

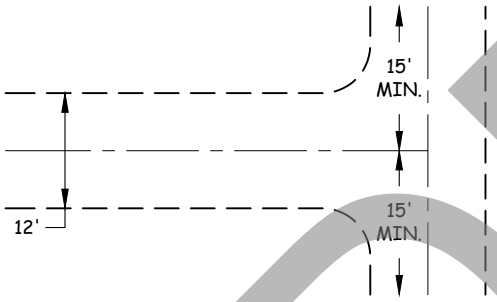
TURNAROUND DETAILS



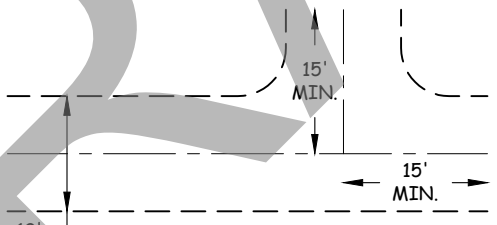




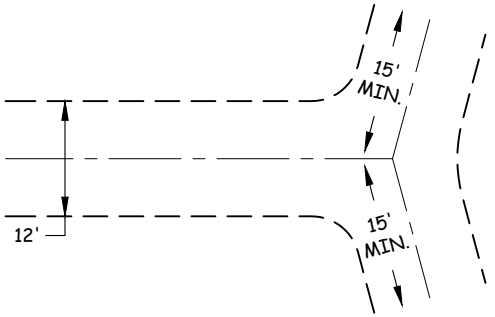
CUL-DE-SAC



HAMMERHEAD



3-POINT SIDE



3-POINT WYE

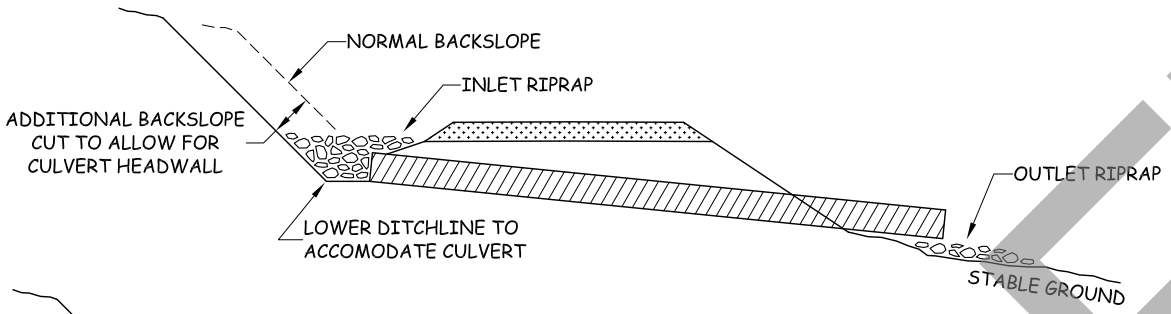
TURNAROUND TYPE AND TURNAROUND LOCATION ARE SUBJECT TO THE APPROVAL OF THE CONTRACT ADMINISTRATOR.

ROCK SHALL BE APPLIED THROUGHOUT THE TURNAROUND TO THE SAME DEPTH AND SPECIFICATIONS AS LISTED IN THE TYPICAL SECTION.

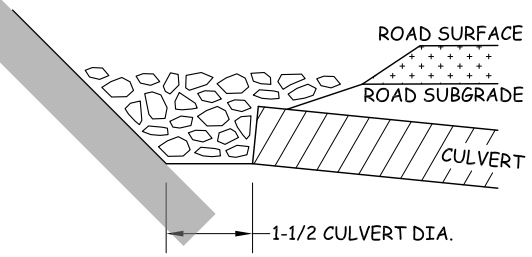
CONTRACT #	PROJECT	SHEET
30-107299	HONEST ABE	30 OF 32

CULVERT AND DRAINAGE SPECIFICATIONS

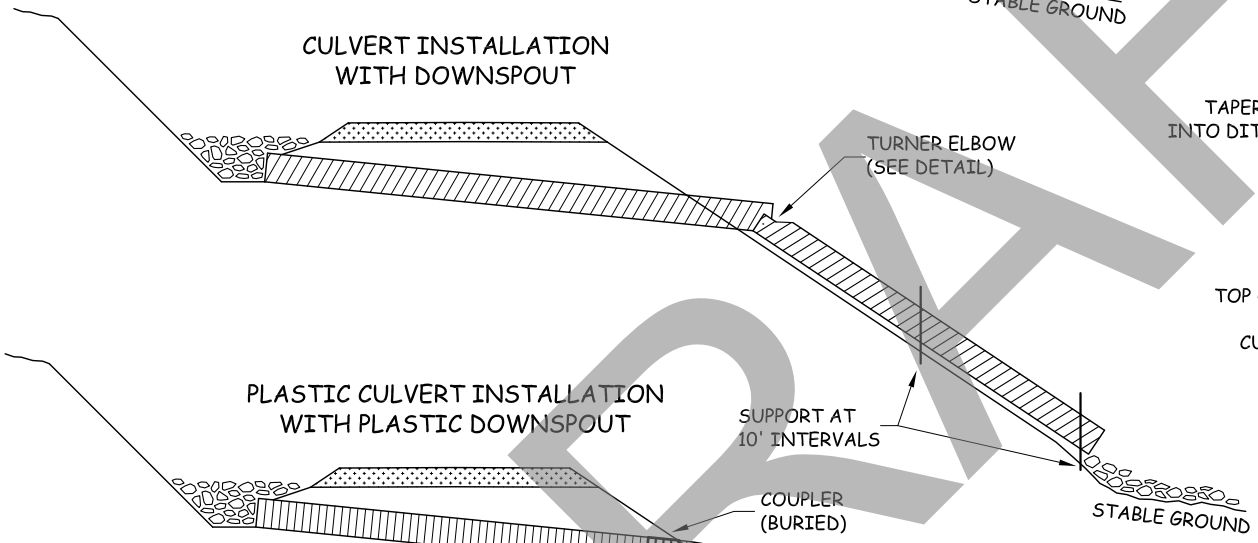
CULVERT INSTALLATION (TYPICAL)



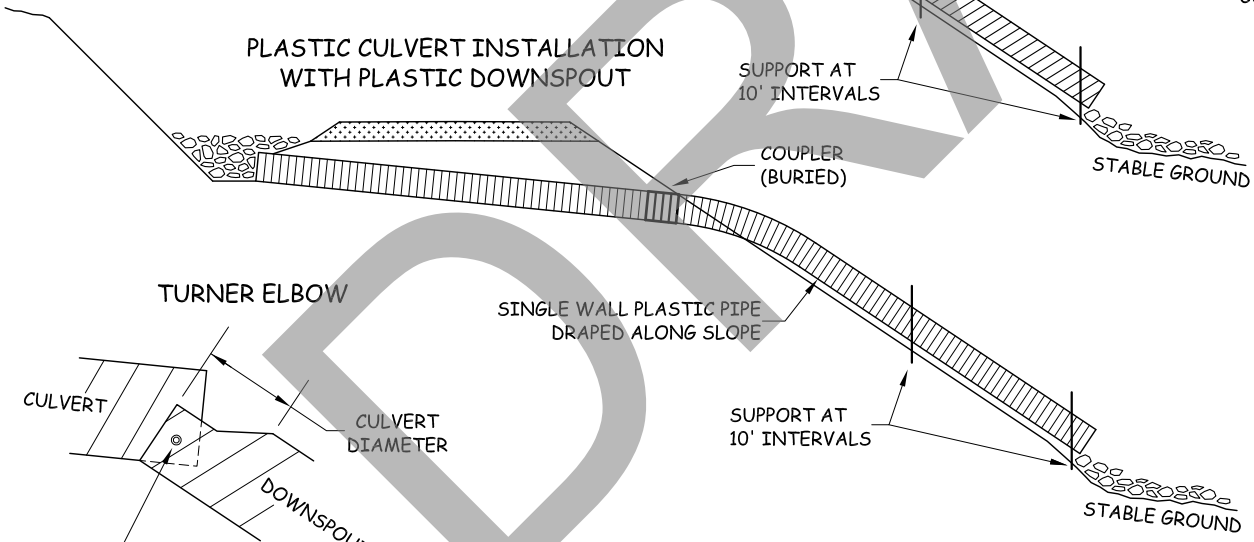
CULVERT HEADWALL - SECTION VIEW



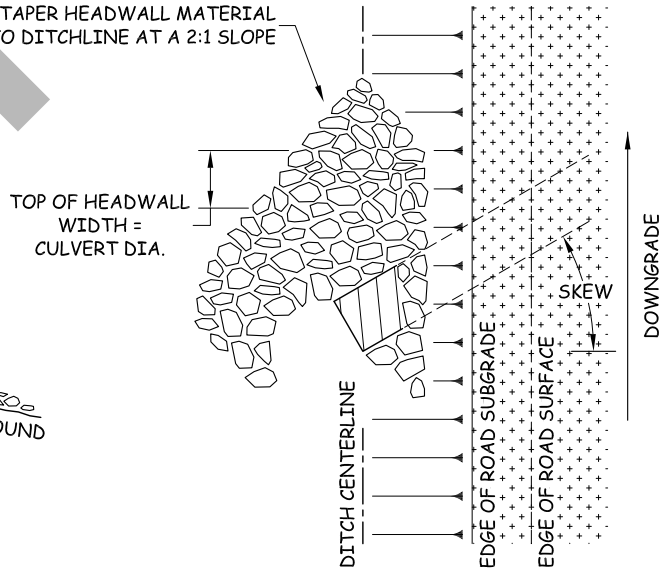
CULVERT INSTALLATION WITH DOWNSPOUT



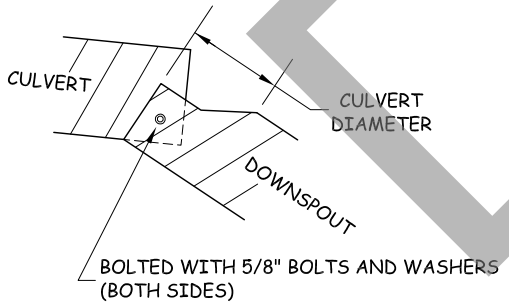
PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



CULVERT HEADWALL - PLAN VIEW



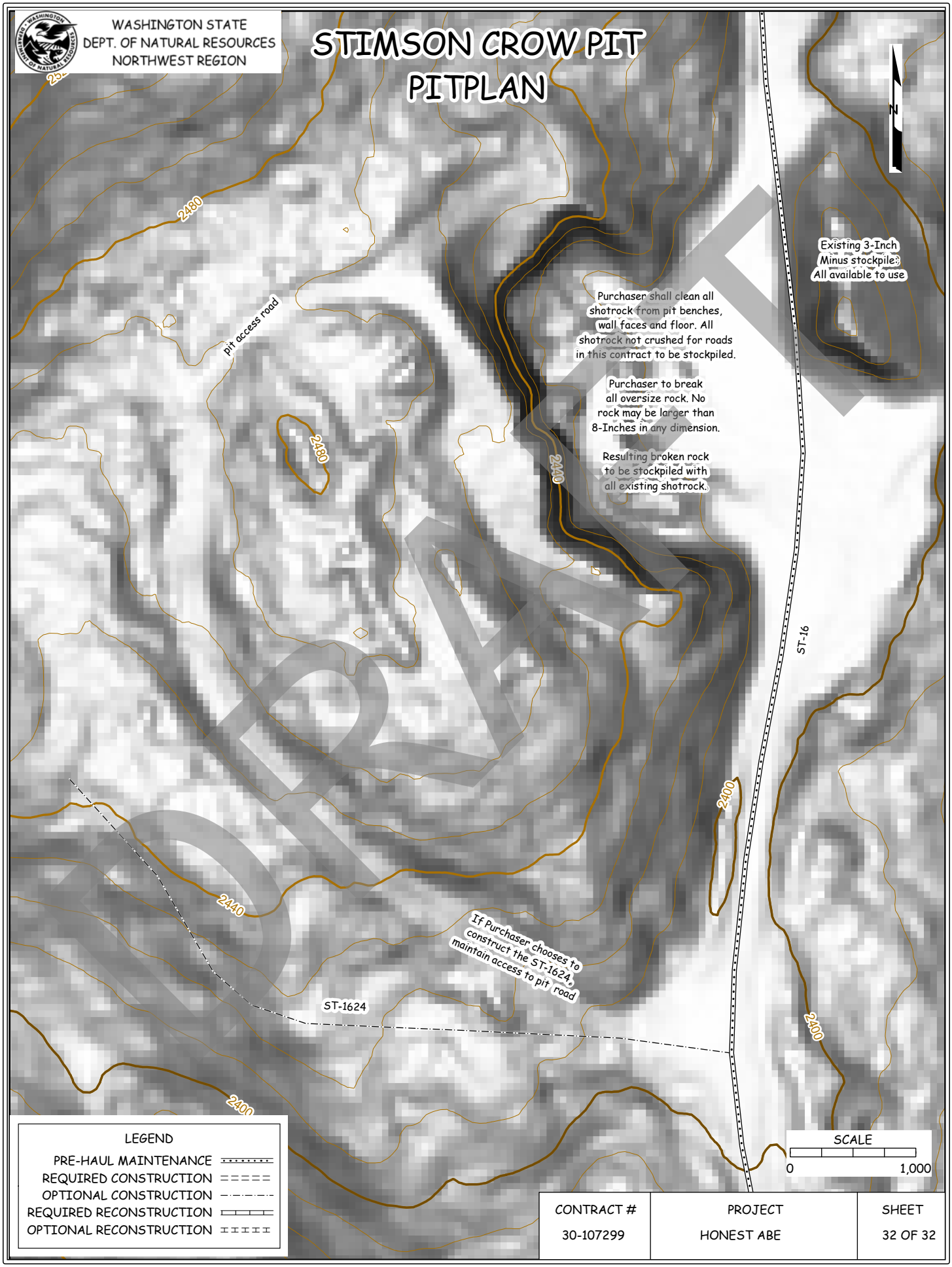
TURNER ELBOW



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
30-107299	HONEST ABE	31 OF 32



SUMMARY - Road Development Costs

REGION: NW

DISTRICT: Clear Lake

SALE/PROJECT NAME: Honest Abe CONTRACT #: 30-107299

ROAD NUMBERS:	ST-1624	ST-1106-05, ST-1138	CN-ML, CN-11, CN-1106, CN-1106-05, CN-1138, ST-ML, ST-16, ST-1626
ROAD STANDARD:	Construction	Reconstruction	Pre-Haul Maintenance
NUMBER OF STATIONS:	3.53	19.16	1794.78
CLEARING & GRUBBING:	$2,276	$8,234	$0
EXCAVATION & FILL:	$3,971	$4,311	$0
MISC. MAINTENANCE:	$0	$0	$28,885
ROAD ROCK:	$4,445	$5,235	$347
ROCK STOCKPILE PROD:	$0	$0	$0
CULVERTS & FABRIC:	$640	$5,249	$0
STRUCTURES:	$0	$0	$0
TOTAL COSTS:	$11,332	$23,029	$29,231
COST PER STATION:	$3,210	$1,202	$16

ROAD DEACTIVATION & ABANDONMENT COSTS: $0

MOBILIZATION: $5,033

TOTAL (All Roads) = $63,593

SALE VOLUME MBF = 1600

TOTAL $/MBF = $39.75

Compiled by: J. Westra Date: 7/30/2024