WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: SALT AND PEPPER* ***AGREEMENT NO**: 30-103769*

AUCTION: June 11, 2024 starting at 10:00 a.m., Olympic Region Office,Forks, WA **COUNTY:** Clallam

SALE LOCATION: Sale located approximately 6 miles west of Port Angeles WA

PRODUCTS SOLD AND SALE AREA: All timber, except trees marked with a band of blue paint, bounded out by leave tree boundary tags, any downed red cedar or timber that has been on the ground for five or more years (five years is defined by more than 1.5 inches of sap rot); bounded by timber sale boundary tags, timber type change and take/removal boundary lines in Units 1 and 2; timber sale boundary tags and timber type changes in Units 3 and 4.

All timber bounded by right of way boundary tags.

All forest products above located on part(s) of Sections 10, 11, 12, 13, 14 and 15 all in Township 30 North, Range 8 West, Sections 18 all in Township 30 North, Range 7 West, W.M., containing 66 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	22	8	1,961				112		1,335	433	81	
Redcedar	17.4		278							233	45	
Hemlock	15.3	8	140						43	71	26	
Maple	17.2		26						6	12	2	5
Red alder	14.1		12							4	6	2
Sale Total			2,417									

MINIMUM BID: $0.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $0.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: October 31, 2026 **ALLOCATION:** Export Restricted

BID DEPOSIT: $0.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Forest Products sold under this contract shall be harvested and removed using cable, cable-tethered, and ground based equipment. Cable-tethered equipment is limited to sustained slopes of 75% and less. Non-tethered self-leveling tracked equipment is limited to sustained slopes that are 45 percent and less.

All units: Rubber tired skidders are restricted unless approved by the Contact Administrator. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

The portion of Unit 4 in the timing restriction area and Equipment Trail ET1: Rubber tired skidders are not allowed. All activities associated with the Equipment Trail ET1 and the portion of Unit 4 within the timing restriction area must completed in a single season between April 15th and October 15th. Upon completion, ET1 shall also be re-shaped and water-barred every 150' within the same season once activities are completed. This cannot be amended or waived.

Falling and Yarding will not be permitted from October 16 to April 14 unless authorized in writing by the Contract Administrator. No falling or yarding from 8:00pm to 6:00am.

ROADS: 24.20 stations of required construction. 7.40 stations of required reconstruction. 37.80 stations of optional construction. 229.70 stations of required prehaul maintenance. 63.25 stations of optional prehaul maintenance. Timber haul, rock haul, pre-haul maintenance, reconstruction or road construction will not be permitted from October 16 to April 14, unless authorized in writing by the Contract Administrator. All activities associated with the Equipment Trail ET1 and the portion of Unit 4 within the timing restriction area must be completed in a single season between April 15th and October 15th. Upon completion, ET1 shall also be re-shaped and water-barred every 150' within the same season once activities are completed. This cannot be amended or waived.

ACREAGE DETERMINATION

CRUISE METHOD: Sale acreage was 100% GPS'd. Sale units were cruised using a variable plot sample.

FEES: $41,089.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: There are locked gates on the PA-J-1000, PA-I-2050 and the PA-I-2600 (Place Pit) - contact the Olympic Region Dispatch Center at 360-374-2800 to obtain a AA-1 key.

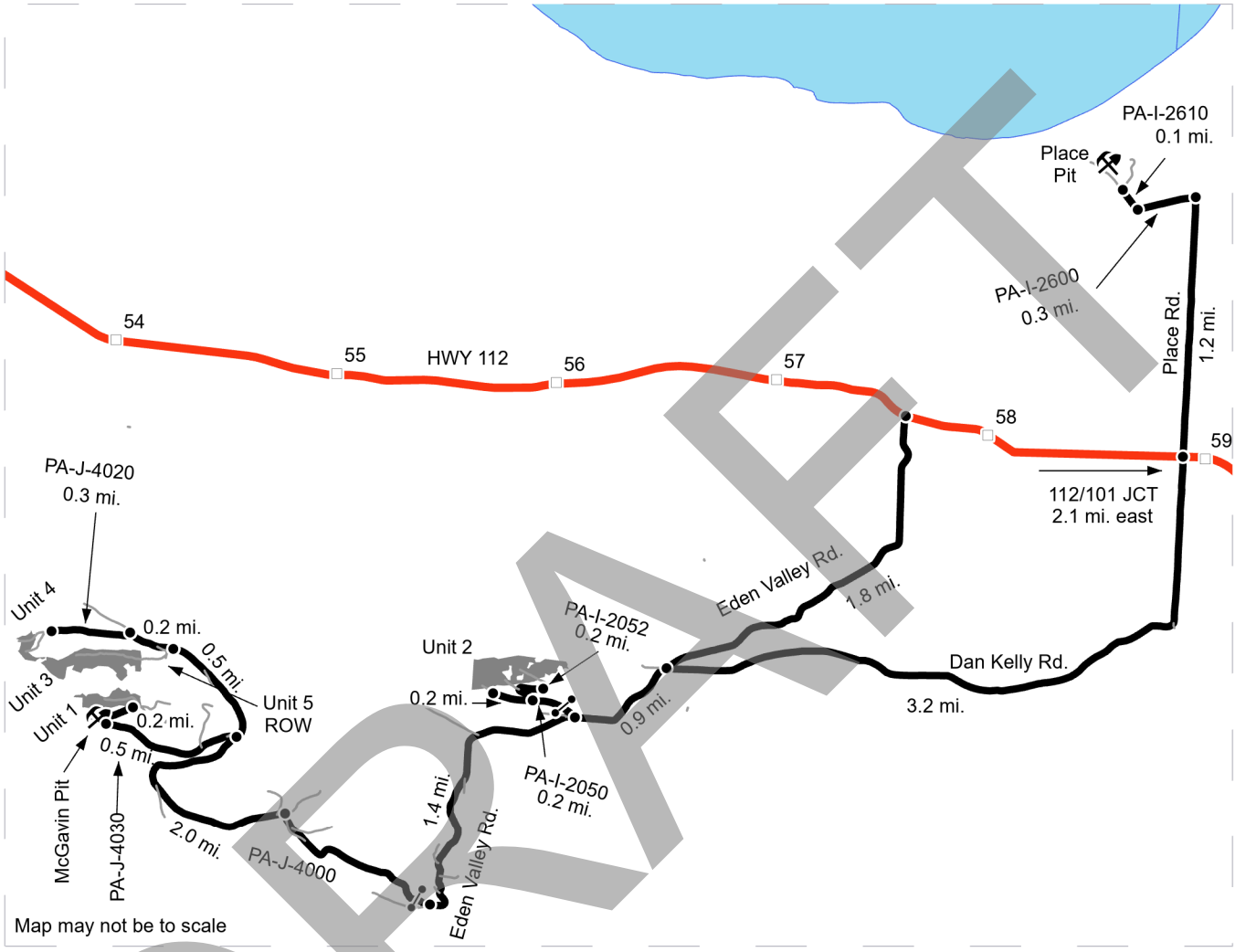
All trees 60 inches in Diameter at Breast Height (DBH) and greater shall not be felled unless for safety reasons, which must be approved by the Contract Administrator. If trees 60 in DBH or greater need to be felled for safety reasons, trees will be left where felled.

Rock identified to be used out of a State lands rock pit shall meet specifications as identified within the Road Plan, which will be determined by the Contract Administrator. If the rock does not meet the specifications, a commercial source shall be used that does and at the Purchaser's expense.

DRIVING MAP

SALE NAME: SALT AND PEPPER
AGREEMENT#: 30-103769
TOWNSHIP(S): T30R7W, T30R8W
TRUST(S): State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 900'-1605'



- Timber Sale Unit
- Highway
- Haul Route
- Other Road
- Milepost Markers
- Distance Indicator
- Rock Pit

Place Pit: From Hwy 112, turn right heading north on Place Rd. for 1.2 mi. Turning left onto the PA-I-2600 and drive for 0.3 mi. Turn right onto the PA-I-2610. Drive 0.1 mi. to arrive at Place Pit.

Unit 2: From Hwy 112, turn onto Eden Valley Rd. or Dan Kelly Rd. and drive 1.8 or 3.2 miles respectively. If driving on Dan Kelly Rd, turn left to connect with Eden Valley Rd. for 0.9 miles; otherwise, continue straight down Eden Valley Rd. for the same distance. Turn right onto the PA-I-2050 and through the access gate for 0.2 mi. Unit 2 can be accessed by continuing straight on the PA-I-2050 for 0.2 mi., or by turning right onto the PA-I-2052 for 0.2 mi.

McGavin Pit: from the PA-I-2050/Eden Valley Jct. drive west on Eden Valley Rd. for 1.4 mi. Turn right on the PA-J-4000, going through the access gate, and drive 2.0 miles. Turn left onto the PA-J-4030 for 0.5 mi. to arrive at McGavin Pit.

Unit 1: From McGavin Pit, proceed 0.2 mi. further on the PA-J-4030 to arrive at Unit 1.

Unit 5 ROW: From the PA-J-4000/4030 Jct., turn left back onto the PA-J-4030 traveling 0.5 mi. fo Unit 5 Right-Of-Way on the west side of the road.

Unit 3: Access to Unit 3 is attained through walking Unit 5 Right-Of-Way new haul route construction.

Unit 4: Continue 0.2 mi. on the PA-J-4000 past Unit 5 Right-Of-Way. Turn left onto the PA-J-4020. Drive 0.3 mi. to the end of drivable road. From there, you can walk into Unit 4, as well as the west end of Unit 3.

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Prepared By: dtre490
Accessed: 04/15/2024 14:24

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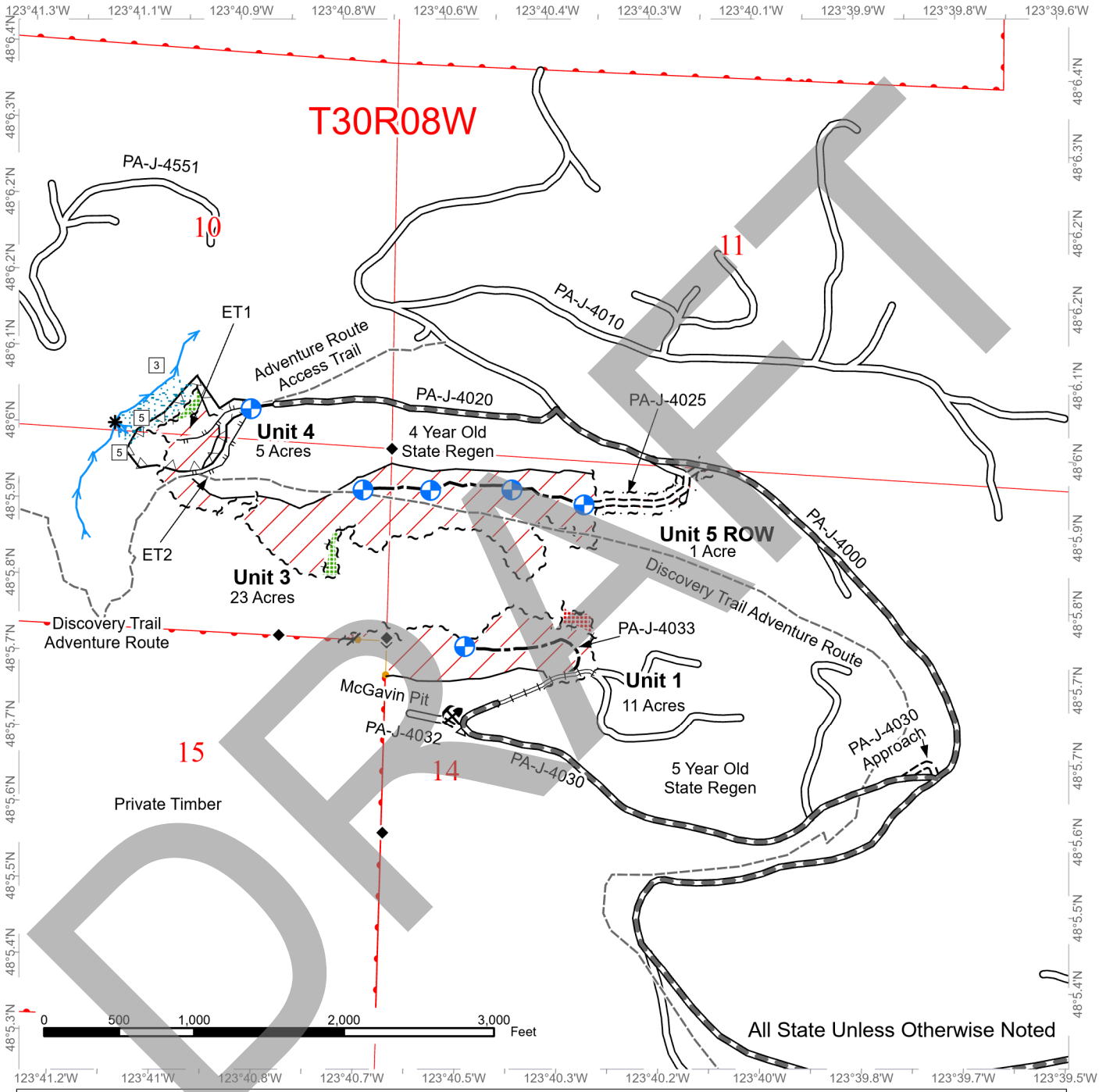

- DNR Managed Lands
- Public Land Survey Sections
- Non-Tradeable Leave Tree Area
- Timing Restriction
- Leave Tree Area
- Riparian Management Zone
- Variable Retention Harvest
- Streams
- Stream Type
- Sale Boundary Tags
- Leave Tree Tags
- Right of Way Tags
- Take / Removal Trees
- Flag Line
- Timber Type Change
- Existing Roads
- Required Pre-Haul Maintenance
- Required Construction
- Required Reconstruction
- Optional Pre-Haul Maintenance
- Optional Construction
- Trails
- Designated Skid Trail
- Landing - Proposed
- Rock Pit
- Survey Monument
- Stream Type Break

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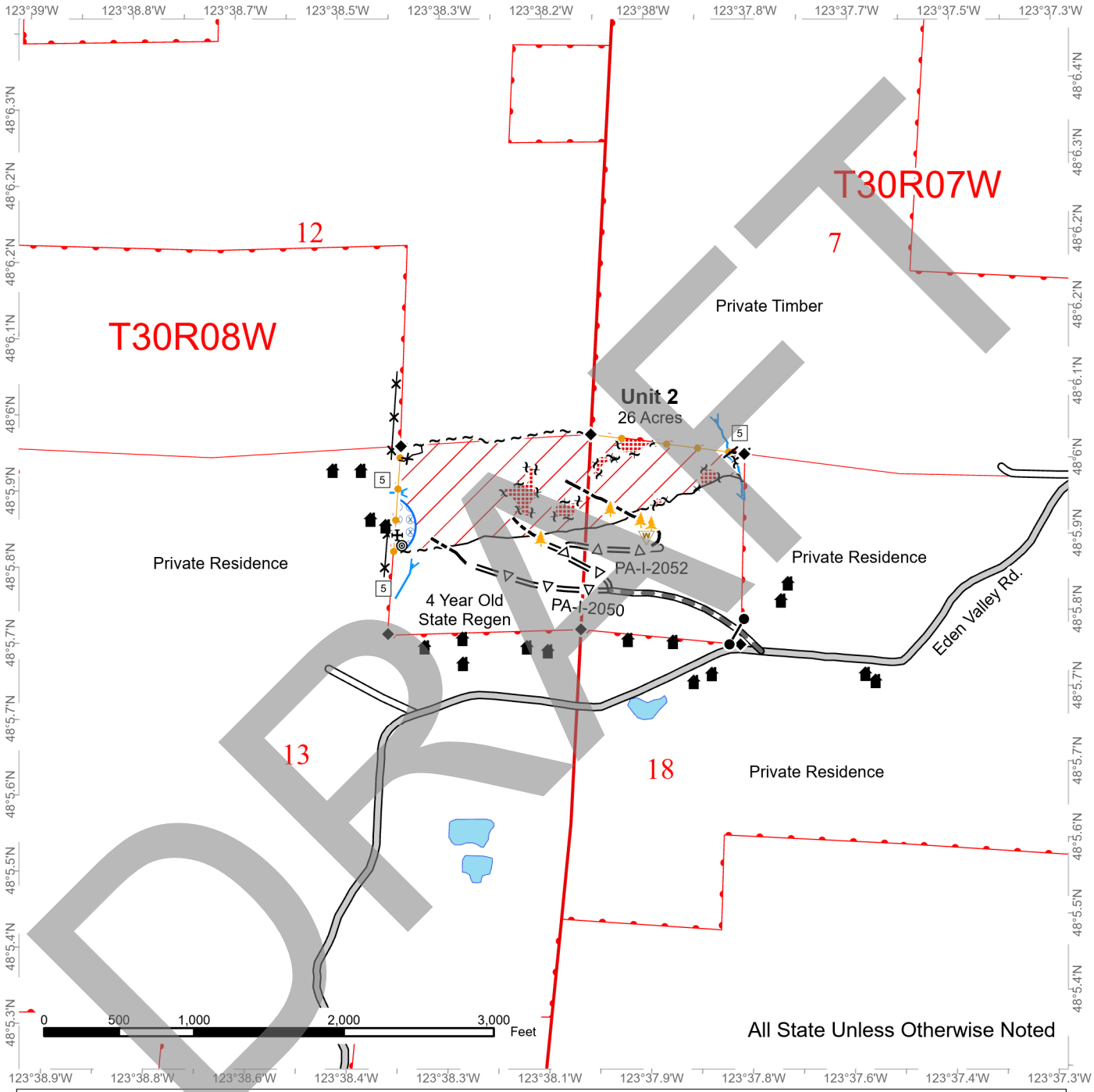

- DNR Managed Lands
- Public Land Survey Sections
- Non-Tradeable Leave Tree Area
- Hazard Abatement Area
- Variable Retention Harvest
- Fence
- Streams
- Stream Type
- Sale Boundary Tags
- Leave Tree Tags
- Take / Removal Trees
- Flag Line
- Timber Type Change
- County Road
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Pre-Haul Maintenance
- Optional Construction
- Cut and Leave Tree
- Structure
- Survey Monument
- Waste Area
- Water Spigot
- Dump Site

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Timber Sale Cruise Report
Salt and Pepper

Sale Name: SALT AND PEPPER

Sale Type: LUMP SUM

Region: OLYMPIC

District: STRAITS

Lead Cruiser: Kevin Peterson

Other Cruisers:

Cruise Narrative:
Location:
This sale is located up Eden Valley Rd. west of Port Angeles. An AA1 and OO1 key are needed to access this sale.

Cruise Design:
Please refer to cruise design table for BAFs used. Merch height was determined at 40% of the diameter at 16'. DF was cruised in 40' and 34' lengths. RC was cruised at 36' lengths, all other species were cruised in 40' lengths.

Timber Quality:
This sale is mostly mature clean DF, with about a third of it being large sized high quality, I noticed some pole quality DF as well. Units 2 and 3 have a good component of RC and the are RC poles in unit 2. There is also some WH, RA and MA scattered thru out the sale. Common defects are sweep, spike knots, forked tops and butt rot.

Logging and Stand Conditions:
This sale is 80% ground based harvest and 20% downhill cable harvest. Most of the sale is pretty easy walking, unit 1 has lots of blowdown and is hard to move thru.

General Remarks:
lots of stinging insects on this sale, be careful.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	22.0	8.3		1,961	112	1,335	433	81	
RC	17.4			278			233	45	
WH	15.3	8.2		140		43	71	26	
MA	17.2			26		6	12	2	5
RA	14.1			12			4	6	2
ALL	19.4	8.3		2,417	112	1,384	753	160	7

Timber Sale Notice Weight (tons)

	Tons by Grade					
Sp	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility

	Tons by Grade					
Sp	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	14,452	691	9,336	3,730	694	
RC	2,275			1,902	373	
WH	1,396		402	743	251	
MA	204		39	91	25	49
RA	118			37	69	12
ALL	18,446	691	9,778	6,504	1,412	62

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 (%)
236.5	6.1	147.5	2.9	36,618	6.9

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
SALT AND PEPPER U1	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	11.0	11.9	9	9	2
SALT AND PEPPER U2	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	26.0	28.8	16	12	1
SALT AND PEPPER U3	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	23.0	24.1	16	12	0
SALT AND PEPPER U4	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 0 ft	5.0	5.8	4	4	0
SALT AND PEPPER U5ROW	B1: VR, 1 BAF (20) Measure All, Sighting Ht = 4.5 ft	1.0	1.2	1	1	0
All		66.0	71.8	46	38	3

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	15.2	40	11,791	10,867	7.8	4,916.3	717.2
DF	LIVE	2 SAW	HQ-B	17.6	34	9,425	8,812	6.5	4,158.1	581.6
DF	LIVE	2 SAW	Pole	15.7	40	545	545	0.0	261.9	36.0
DF	LIVE	3 SAW	Domestic	9.1	39	6,710	6,313	5.9	3,617.8	416.6
DF	LIVE	3 SAW	Pole	10.8	40	248	248	0.0	112.4	16.3
DF	LIVE	4 SAW	Domestic	5.8	26	1,201	1,179	1.8	666.2	77.8

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	4 SAW	Pole	7.2	25	43	43	0.0	28.2	2.8
DF	LIVE	SPECIAL MILL	HQ-A	20.5	32	1,728	1,700	1.6	691.1	112.2
MA	LIVE	2 SAW	Domestic	15.9	20	92	92	0.0	38.8	6.1
MA	LIVE	3 SAW	Domestic	10.3	35	188	188	0.0	91.3	12.4
MA	LIVE	4 SAW	Domestic	8.4	24	41	35	15.9	24.7	2.3
MA	LIVE	UTILITY	Pulp	6.2	23	78	78	0.0	49.4	5.2
RA	LIVE	3 SAW	Domestic	11.0	30	78	67	13.6	37.4	4.4
RA	LIVE	4 SAW	Domestic	6.2	39	94	90	5.1	68.7	5.9
RA	LIVE	UTILITY	Pulp	7.1	24	24	24	0.0	12.5	1.6
RC	LIVE	3 SAW	Domestic	11.1	36	3,142	2,759	12.2	1,545.4	182.1
RC	LIVE	3 SAW	Pole	12.5	35	768	768	0.0	356.7	50.7
RC	LIVE	4 SAW	Domestic	5.2	25	695	681	2.0	367.7	44.9
RC	LIVE	4 SAW	Pole	8.8	15	8	8	0.0	5.1	0.5
WH	LIVE	2 SAW	Domestic	14.0	40	672	656	2.3	402.5	43.3
WH	LIVE	3 SAW	Domestic	8.6	40	1,089	1,069	1.8	742.7	70.5
WH	LIVE	4 SAW	Domestic	5.2	32	397	397	0.0	251.2	26.2
WH	LIVE	CULL	Cull	7.6	39	83	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
DF	5 - 8	LIVE	Domestic	6.5	31	3,268	2.1	1,992.7	215.7
DF	5 - 8	LIVE	Pole	7.5	29	67	0.0	43.5	4.4
DF	9 - 11	LIVE	Domestic	10.1	39	3,979	7.5	2,161.8	262.6
DF	9 - 11	LIVE	Pole	11.3	40	223	0.0	97.1	14.7
DF	12 - 14	LIVE	HQ-B	13.6	34	893	2.3	471.5	59.0
DF	12 - 14	LIVE	Domestic	13.8	40	5,191	6.8	2,390.1	342.6
DF	12 - 14	LIVE	Pole	14.2	40	80	0.0	41.2	5.3
DF	15 - 19	LIVE	Pole	15.9	40	465	0.0	220.7	30.7
DF	15 - 19	LIVE	Domestic	16.7	40	5,692	8.5	2,545.9	375.6
DF	15 - 19	LIVE	HQ-B	18.0	34	6,749	7.7	3,199.0	445.4
DF	15 - 19	LIVE	HQ-A	19.1	30	663	0.0	261.3	43.8
DF	20+	LIVE	Domestic	20.1	40	229	15.0	109.9	15.1
DF	20+	LIVE	HQ-B	21.3	34	1,170	2.4	487.6	77.2
DF	20+	LIVE	HQ-A	21.8	32	1,037	2.6	429.8	68.4
MA	5 - 8	LIVE	Pulp	6.0	22	78	0.0	49.4	5.2
MA	5 - 8	LIVE	Domestic	8.4	24	35	15.9	24.7	2.3
MA	9 - 11	LIVE	Domestic	10.3	35	188	0.0	91.3	12.4

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
MA	15 - 19	LIVE	Domestic	15.9	20	92	0.0	38.8	6.1
RA	5 - 8	LIVE	Domestic	5.6	34	90	5.1	68.7	5.9
RA	5 - 8	LIVE	Pulp	7.1	24	24	0.0	12.5	1.6
RA	9 - 11	LIVE	Domestic	11.0	30	67	13.6	37.4	4.4
RC	5 - 8	LIVE	Domestic	5.7	28	1,299	3.6	750.9	85.7
RC	5 - 8	LIVE	Pole	7.8	29	67	0.0	43.5	4.4
RC	9 - 11	LIVE	Pole	9.1	36	43	0.0	21.8	2.8
RC	9 - 11	LIVE	Domestic	10.6	35	311	3.9	163.8	20.5
RC	12 - 14	LIVE	Domestic	13.3	36	402	16.0	248.0	26.5
RC	12 - 14	LIVE	Pole	13.9	36	183	0.0	93.4	12.1
RC	15 - 19	LIVE	Domestic	16.4	36	1,160	14.4	612.6	76.6
RC	15 - 19	LIVE	Pole	16.6	36	483	0.0	203.2	31.9
RC	20+	LIVE	Domestic	22.7	36	267	19.5	137.9	17.6
WH	5 - 8	LIVE	Domestic	6.0	33	861	1.6	611.7	56.8
WH	5 - 8	LIVE	Cull	6.2	38	0	100.0	0.0	0.0
WH	9 - 11	LIVE	Cull	9.7	40	0	100.0	0.0	0.0
WH	9 - 11	LIVE	Domestic	9.9	40	606	1.0	382.2	40.0
WH	12 - 14	LIVE	Domestic	13.2	40	388	0.0	245.8	25.6
WH	15 - 19	LIVE	Domestic	16.1	40	268	5.5	156.7	17.7

Cruise Unit Report
SALT AND PEPPER U1

Unit Sale Notice Volume (MBF): SALT AND PEPPER U1

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	2 Saw	3 Saw	4 Saw	Utility
DF	15.4	8.0		65	30	27	8	
WH	11.0	9.0		14		8	6	
RC	9.1			5			5	
MA	12.0			4			2	1
RA	13.0			3			3	
ALL	12.9	8.5		91	30	35	25	1

Unit Cruise Design: SALT AND PEPPER 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	11.0	11.9	9	9	2

Unit Cruise Summary: SALT AND PEPPER U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	11	11	1.2	1
WH	3	3	0.3	1
RC	2	2	0.2	0
MA	1	1	0.1	0
RA	1	1	0.1	0
ALL	18	18	2.0	2

Unit Cruise Statistics: SALT AND PEPPER 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	48.9	79.5	26.5	120.6	22.6	6.8	5,894	82.7	27.4
WH	13.3	150.0	50.0	94.5	14.1	8.2	1,260	150.7	50.7
RC	8.9	300.0	100.0	55.8	18.4	13.0	496	300.6	100.8
MA	4.4	300.0	100.0	72.6	0.0	0.0	323	300.0	100.0
RA	4.4	300.0	100.0	61.8	0.0	0.0	275	300.0	100.0
ALL	80.0	66.1	22.0	103.1	32.1	7.6	8,247	73.5	23.3

Unit Summary: SALT AND PEPPER U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	11	ALL	15.4	64	79	5,975	5,894	1.4	37.8	48.9	12.5	64.8
MA	LIVE	CUT	1	ALL	12.0	50	61	362	323	10.9	5.7	4.4	1.3	3.5
RA	LIVE	CUT	1	ALL	13.0	50	60	304	275	9.5	4.8	4.4	1.2	3.0
RC	LIVE	CUT	2	ALL	9.1	33	39	496	496	0.0	19.7	8.9	2.9	5.5
WH	LIVE	CUT	3	ALL	11.0	51	62	1,298	1,260	2.9	20.2	13.3	4.0	13.9
ALL	LIVE	CUT	18	ALL	12.9	52	64	8,435	8,247	2.2	88.2	80.0	21.9	90.7
ALL	ALL	ALL	18	ALL	12.9	52	64	8,435	8,247	2.2	88.2	80.0	21.9	90.7

Cruise Unit Report
SALT AND PEPPER U2

Unit Sale Notice Volume (MBF): SALT AND PEPPER U2

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	23.7			780	47	594	118	21	
RC	18.4			227			208	19	
MA	16.0			15			12		2
WH	25.0			9		9			
ALL	21.3			1,031	47	604	338	40	2

Unit Cruise Design: SALT AND PEPPER U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	26.0	28.8	16	12	1

Unit Cruise Summary: SALT AND PEPPER U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	24	47	2.9	0
RC	22	34	2.1	0
MA	2	2	0.1	0
WH	1	1	0.1	0
ALL	49	84	5.3	0

Unit Cruise Statistics: SALT AND PEPPER U2

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	158.1	74.5	18.6	189.8	20.3	4.1	30,010	77.2	19.1
RC	85.0	85.7	21.4	102.5	23.6	5.0	8,716	88.9	22.0
MA	5.0	273.3	68.3	114.2	3.1	2.2	571	273.3	68.3
WH	3.4	400.0	100.0	105.6	0.0	0.0	359	400.0	100.0
ALL	251.5	47.6	11.9	157.7	32.5	4.6	39,656	57.6	12.8

Unit Summary: SALT AND PEPPER U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	24	ALL	23.7	104	132	32,082	30,010	6.5	51.6	158.1	32.5	780.2
MA	LIVE	CUT	2	ALL	16.0	64	78	571	571	0.0	3.6	5.0	1.3	14.9
RC	LIVE	CUT	22	ALL	18.4	56	69	9,599	8,716	9.2	46.0	85.0	19.8	226.6
WH	LIVE	CUT	1	ALL	25.0	90	113	515	359	30.2	1.0	3.4	0.7	9.3
ALL	LIVE	CUT	49	ALL	21.2	81	102	42,766	39,656	7.3	102.2	251.5	54.2	1,031.1
ALL	ALL	ALL	49	ALL	21.2	81	102	42,766	39,656	7.3	102.2	251.5	54.2	1,031.1

Cruise Unit Report
SALT AND PEPPER U3

Unit Sale Notice Volume (MBF): SALT AND PEPPER U3

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	21.8	8.3		996	59	654	247	36	
WH	14.2	8.0		70		18	37	14	
RC	13.0			36			17	19	
MA	22.0			8		6			1
RA	16.0			6			4		2
ALL	18.8	8.3		1,115	59	678	306	69	3

Unit Cruise Design: SALT AND PEPPER U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	23.0	24.1	16	12	0

Unit Cruise Summary: SALT AND PEPPER U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	38	61	3.8	3
WH	7	7	0.4	1
RC	8	10	0.6	0
MA	1	1	0.1	0
RA	1	1	0.1	0
ALL	55	80	5.0	4

Unit Cruise Statistics: SALT AND PEPPER U3

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	238.3	42.0	10.5	181.7	22.8	3.7	43,300	47.8	11.1
WH	27.3	186.0	46.5	110.6	28.3	10.7	3,023	188.2	47.7
RC	25.0	141.6	35.4	63.2	37.4	13.2	1,581	146.5	37.8
MA	3.9	400.0	100.0	84.1	0.0	0.0	329	400.0	100.0
RA	2.5	400.0	100.0	105.3	0.0	0.0	263	400.0	100.0
ALL	297.0	27.9	7.0	163.3	36.0	4.8	48,496	45.5	8.5

Unit Summary: SALT AND PEPPER U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	38	ALL	21.8	100	127	46,465	43,300	6.8	91.9	238.3	51.0	995.9
MA	LIVE	CUT	1	ALL	22.0	50	60	329	329	0.0	1.5	3.9	0.8	7.6
RA	LIVE	CUT	1	ALL	16.0	65	80	294	263	10.4	1.8	2.5	0.6	6.1
RC	LIVE	CUT	8	ALL	13.0	42	50	1,701	1,581	7.0	27.1	25.0	6.9	36.4
WH	LIVE	CUT	7	ALL	14.2	68	84	3,160	3,023	4.3	24.9	27.3	7.3	69.5
ALL	LIVE	CUT	55	ALL	19.2	83	105	51,948	48,496	6.6	147.2	297.0	66.7	1,115.4
ALL	ALL	ALL	55	ALL	19.2	83	105	51,948	48,496	6.6	147.2	297.0	66.7	1,115.4

Cruise Unit Report
SALT AND PEPPER U4

Unit Sale Notice Volume (MBF): SALT AND PEPPER U4

				MBF Volume by Grade				
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw
DF	15.5			120	6	56	41	16
WH	16.4			46		16	24	6
RC	14.3			9			8	1
ALL	15.6			175	6	72	73	23

Unit Cruise Design: SALT AND PEPPER U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 0 ft	5.0	5.8	4	4	0

Unit Cruise Summary: SALT AND PEPPER U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	12	12	3.0	0
WH	5	5	1.3	0
RC	2	2	0.5	0
ALL	19	19	4.8	0

Unit Cruise Statistics: SALT AND PEPPER U4

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	163.3	47.1	23.6	146.5	29.8	8.6	23,921	55.8	25.1
WH	68.1	40.0	20.0	135.1	24.9	11.1	9,195	47.1	22.9
RC	20.0	115.5	57.7	89.3	29.8	21.1	1,787	119.2	61.5
ALL	251.4	33.3	16.6	138.8	30.3	7.0	34,902	45.0	18.0

Unit Summary: SALT AND PEPPER U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	12	ALL	15.5	74	92	24,601	23,921	2.8	124.6	163.3	41.5	119.6
RC	LIVE	CUT	2	ALL	14.3	55	69	1,894	1,787	5.7	17.9	20.0	5.3	8.9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	5	ALL	16.4	77	97	9,239	9,195	0.5	46.4	68.0	16.8	46.0
ALL	LIVE	CUT	19	ALL	15.6	73	91	35,733	34,902	2.3	188.9	251.4	63.6	174.5
ALL	ALL	ALL	19	ALL	15.6	73	91	35,733	34,902	2.3	188.9	251.4	63.6	174.5

Cruise Unit Report
SALT AND PEPPER U5ROW

Unit Sale Notice Volume (MBF): SALT AND PEPPER U5ROW

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
RA	11.2			3		3
WH	13.0			1	1	
RC	13.0			1		1
ALL	11.8			5	1	4

Unit Cruise Design: SALT AND PEPPER U5ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (20) Measure All, Sighting Ht = 4.5 ft	1.0	1.2	1	1	0

Unit Cruise Summary: SALT AND PEPPER U5ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA	3	3	3.0	0
WH	1	1	1.0	0
RC	1	1	1.0	0
ALL	5	5	5.0	0

Unit Cruise Statistics: SALT AND PEPPER U5ROW

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	60.0	0.0	0.0	48.1	6.0	3.5	2,886	6.0	3.5
WH	20.0	0.0	0.0	68.4	0.0	0.0	1,367	0.0	0.0
RC	20.0	0.0	0.0	42.3	0.0	0.0	846	0.0	0.0
ALL	100.0	0.0	0.0	51.0	20.1	9.0	5,099	20.1	9.0

Unit Summary: SALT AND PEPPER U5ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	3	ALL	11.2	36	42	2,886	2,886	0.0	87.7	60.0	17.9	2.9
RC	LIVE	CUT	1	ALL	13.0	40	48	846	846	0.0	21.7	20.0	5.5	0.8
WH	LIVE	CUT	1	ALL	13.0	50	60	1,367	1,367	0.0	21.7	20.0	5.5	1.4

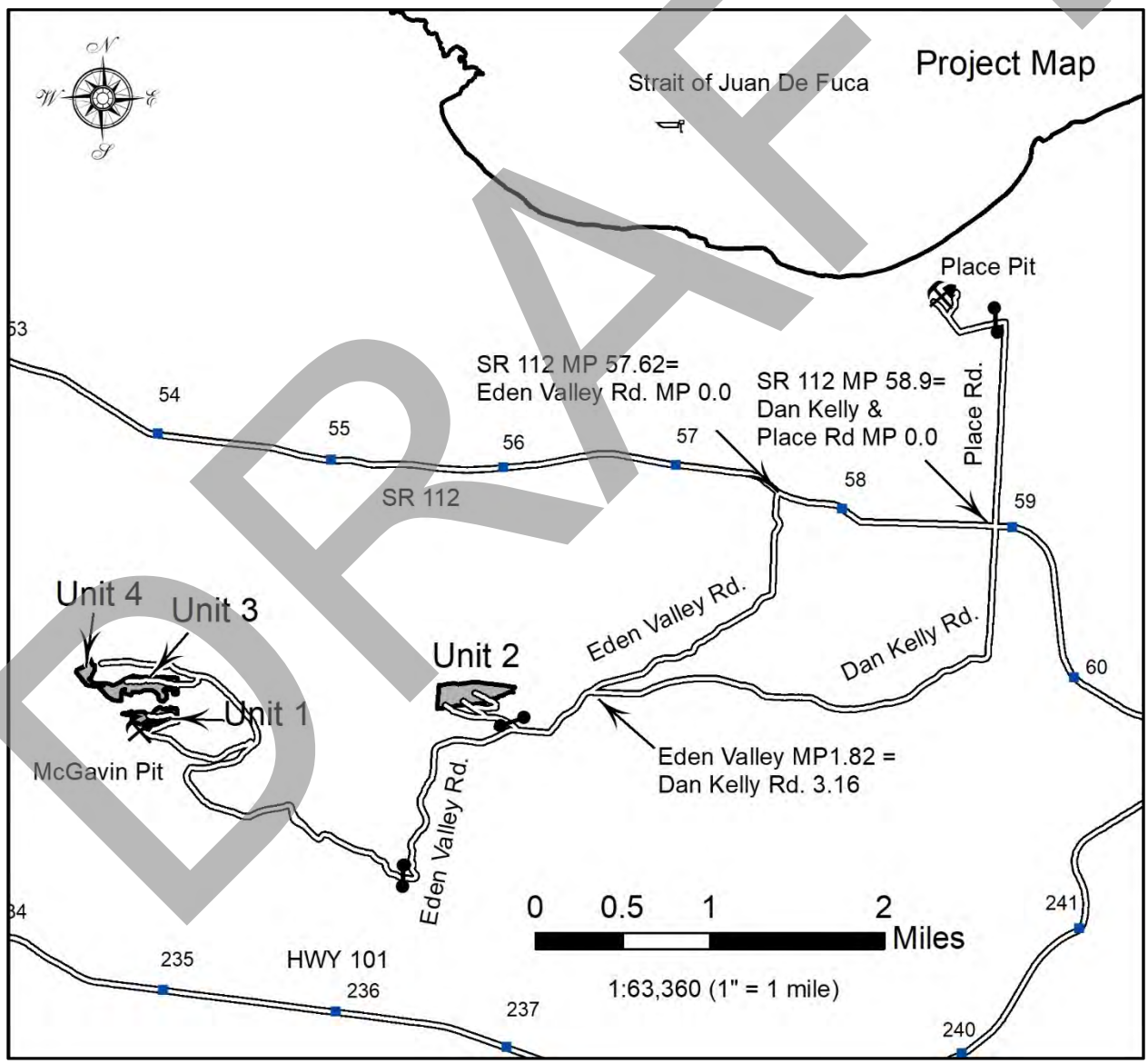
Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	5	ALL	11.8	39	46	5,099	5,099	0.0	131.1	100.0	29.0	5.1
ALL	ALL	ALL	5	ALL	11.8	39	46	5,099	5,099	0.0	131.1	100.0	29.0	5.1

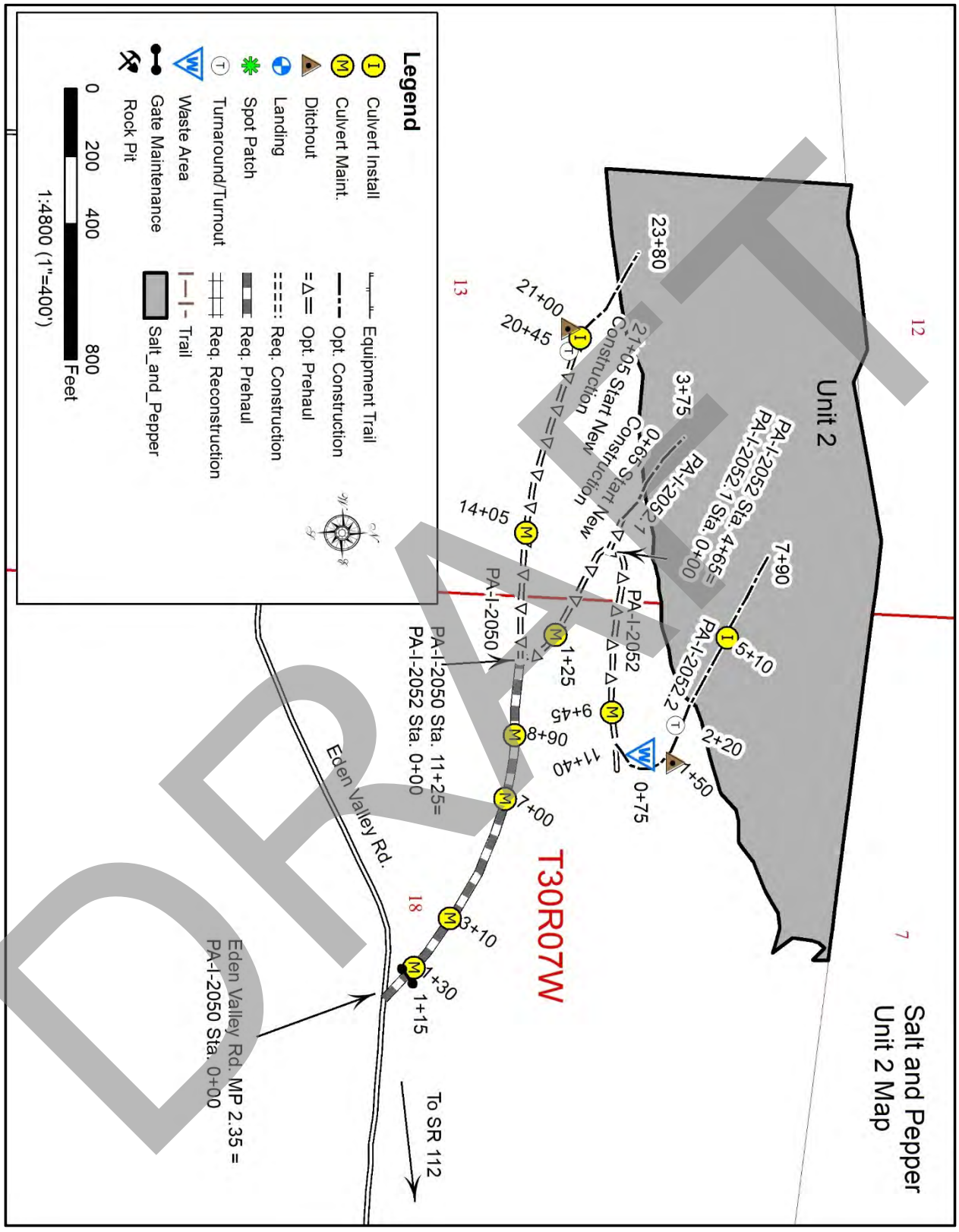
STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

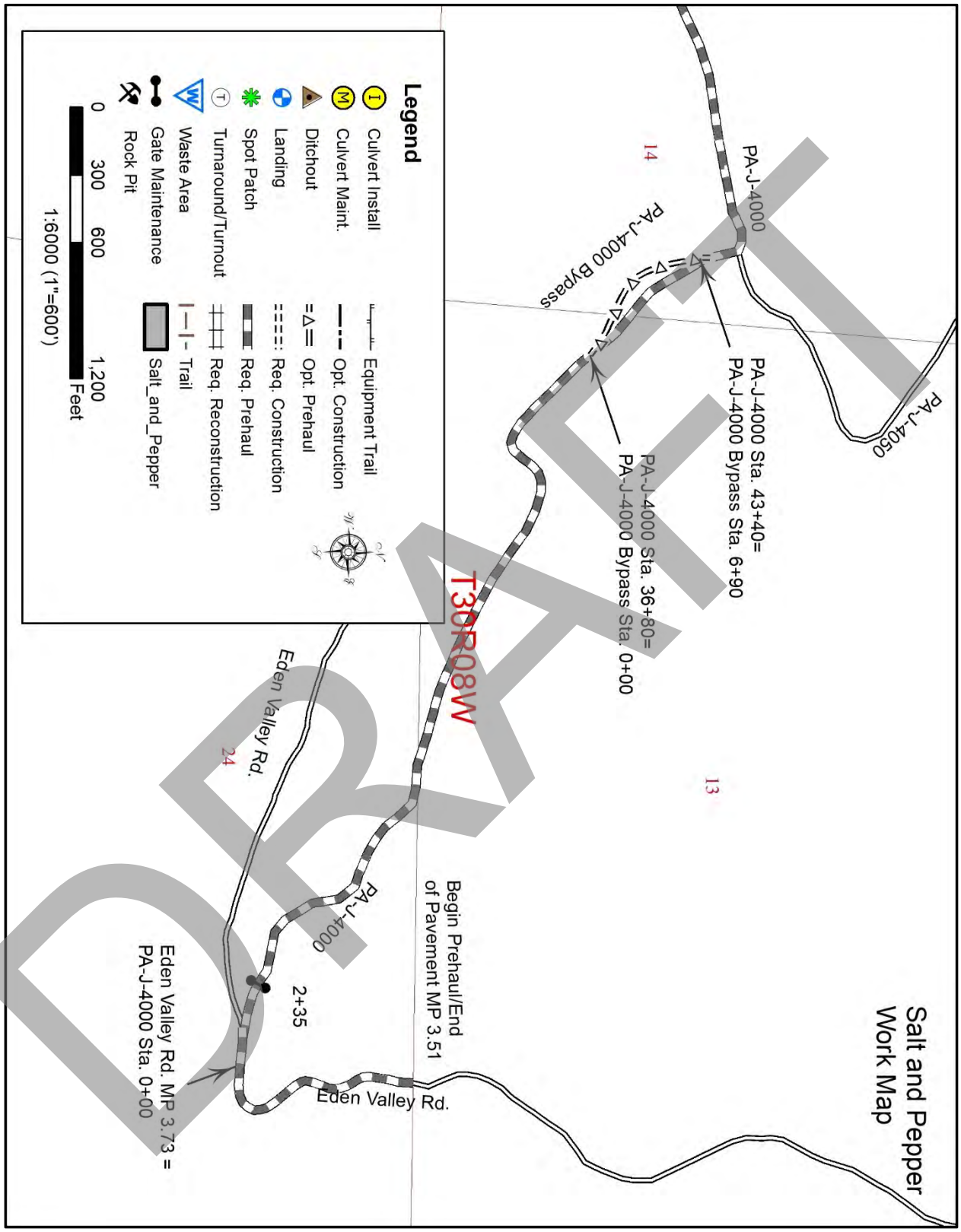
SALT AND PEPPER TIMBER SALE ROAD PLAN
CLALLAM COUNTY
STRAITS DISTRICT
OLYMPIC REGION

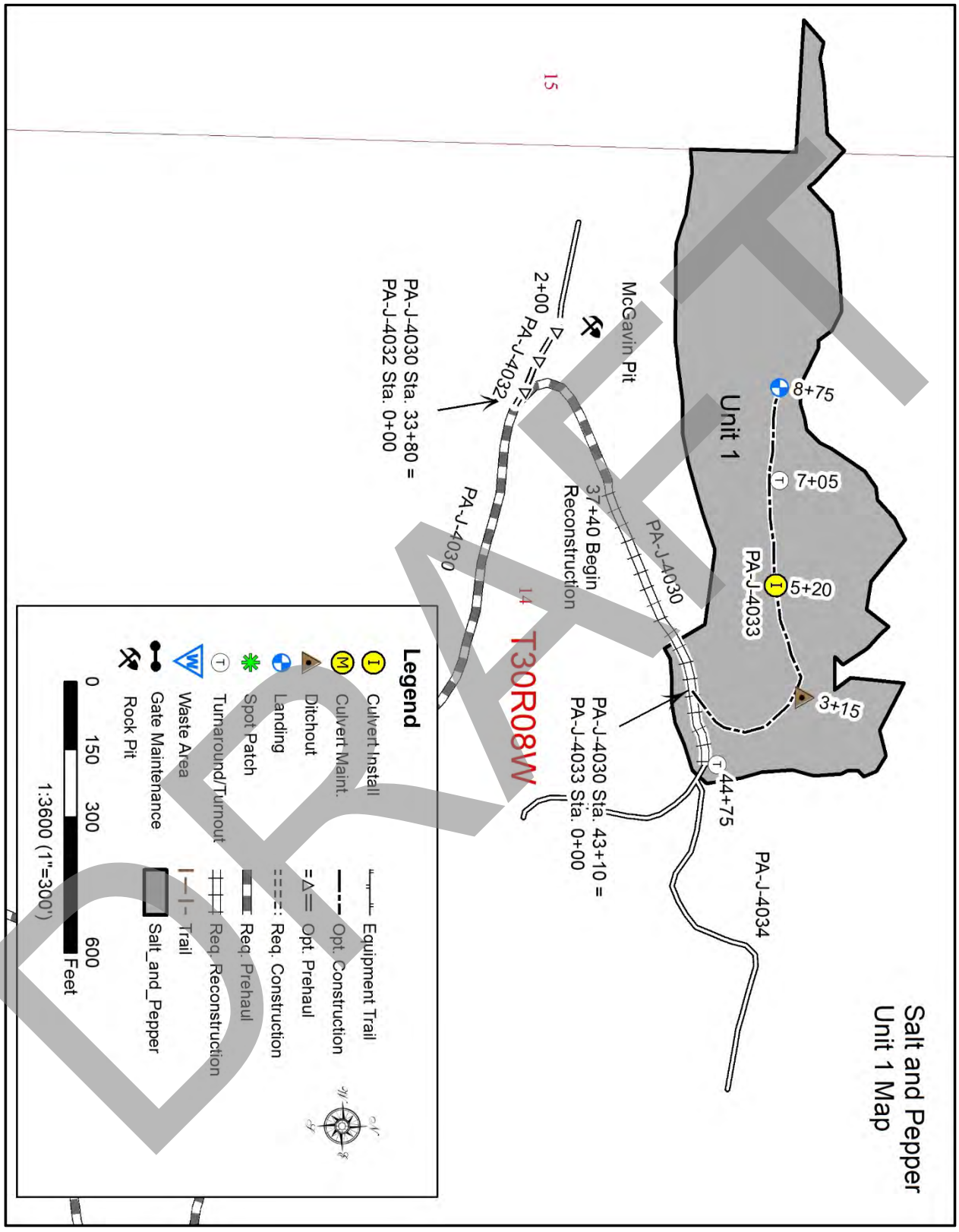
AGREEMENT NO.: 30-103769 DISTRICT ENGINEER: GREG ELLIS

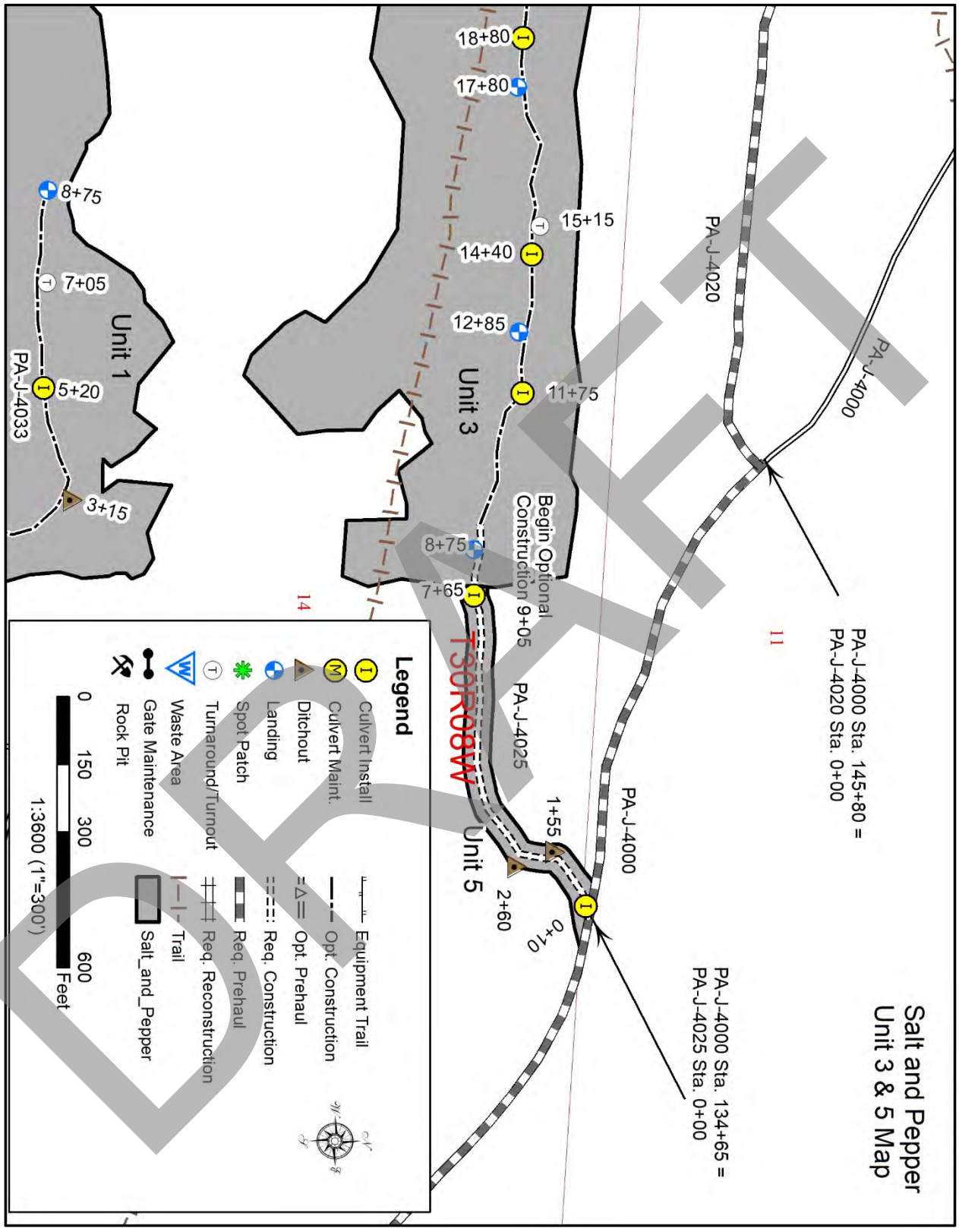
DATE: JULY 26, 2023 DRAWN & COMPILED BY: GREG ELLIS

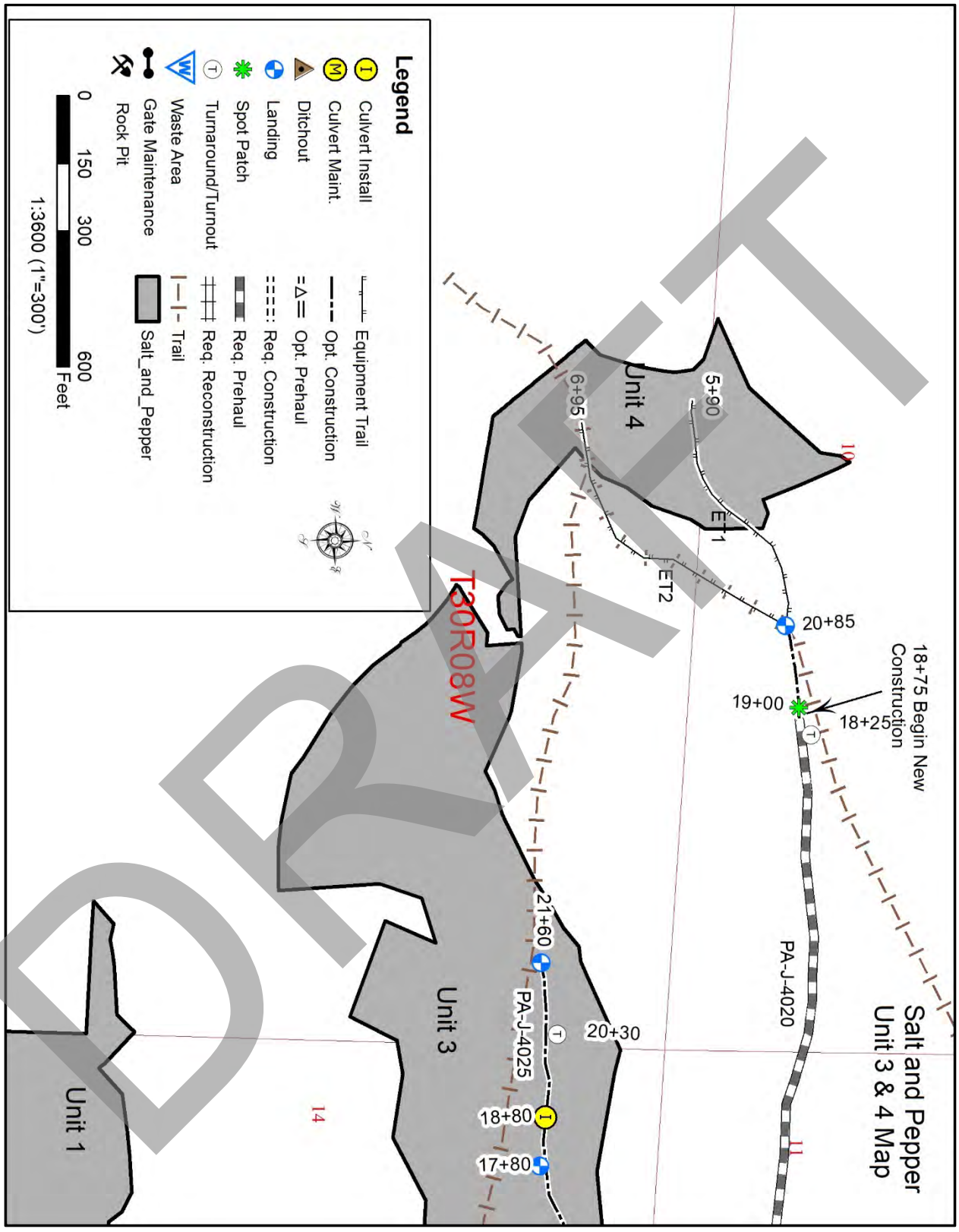


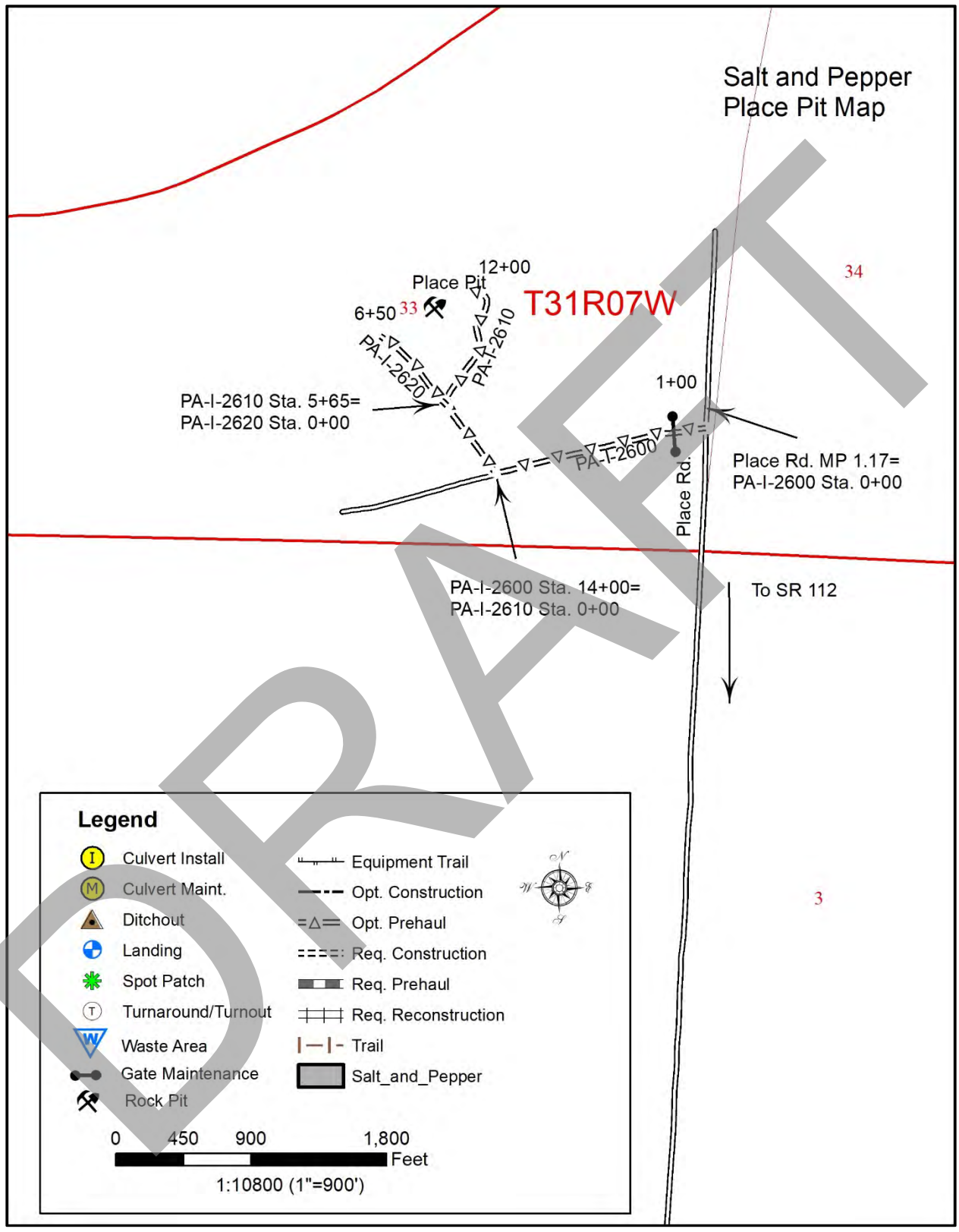












SECTION 0 – SCOPE OF PROJECT

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
PA-I-2050	0+00 – 11+25	Pre-Haul Maintenance
Eden Valley Rd.	MP 3.51 – MP 3.73 (185+45 – 196+95)	Pre-Haul Maintenance
PA-J-4000	0+00 – 145+80	Pre-Haul Maintenance
PA-J-4030	0+00 – 37+40	Pre-Haul Maintenance
PA-J-4030	37+40 – 44+75	Reconstruction
PA-J-4030 Approach	0+00 – 2+30	Construction
PA-J-4025	0+00 – 9+05	Construction
PA-J-4020	0+00 – 18+75	Pre-Haul Maintenance
ET1	0+00 – 5+90	Construction
ET2	0+00 – 6+95	Construction

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
PA-I-2050	11+25 – 21+05	Pre-Haul Maintenance9.8
PA-I-2050	21+05 – 23+80	Construction
PA-I-2052	0+00 – 11+40	Pre-Haul Maintenance11.4
PA-I-2052.1	0+00 – 0+65	Pre-Haul Maintenance.65
PA-I-2052.1	0+65 – 3+75	Construction
PA-I-2052.2	0+00 – 7+90	Construction
PA-J-4000 Bypass	0+00 – 6+90	Pre-Haul Maintenance6.9
PA-J-4032	0+00 – 2+00	Pre-Haul Maintenance2
PA-J-4033	0+00 – 8+75	Construction
PA-J-4025	9+05 – 21+60	Construction
PA-J-4020	18+75 – 20+85	Construction
PA-I-2600	0+00 – 14+00	Pre-Haul Maintenance14
PA-I-2610	0+00 – 12+00	Pre-Haul Maintenance12
PA-I-2620	0+00 – 6+50	Pre-Haul Maintenance6.5

0-4 CONSTRUCTION

This project includes, but is not limited to the following construction requirements:

Road	Stations	Requirements
PA-I-2050	21+05 – 23+80	See Below
PA-I-2052.1*	0+65 – 3+75	
PA-I-2052.2*	0+00 – 7+90	
PA-J-4030 Approach	0+00 – 2+30	
PA-J-4033	0+00 – 8+75	
PA-J-4025	0+00 – 21+60	
PA-J-4020	18+75 – 20+85	
ET1	0+00 – 5+90	Equipment Trail Construction includes, but not limited to: Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, equipment compaction for trail surfaces
ET2	0+00 – 6+95	
Road Total Stations	48.50 Stations	
Equipment Trail Total Stations	12.85 Stations	

Construction includes, but is not limited to: Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, spreading grass seed and hay. *Roads contain double orange ringed trees within right of way limits. Trees shall be cut and left onsite. In the event of road is not constructed, trees shall not be cut.

0-5 RECONSTRUCTION

This project includes, but is not limited to the following reconstruction requirements:

Road	Stations	Requirements
PA-J-4030	37+40 – 44+75	See Below
Total Stations	7.35 Stations	

Reconstruction includes, but is not limited to: Removal of all vegetative material with minimum loss of rock and dispose of in accordance with Clause 2-9 and Clause 3-23. Cleaning ditches and constructing ditches, constructing headwalls, cleaning culvert inlets and outlets in accordance with Clause 2-6 and Clause 2-7. Installing additional culverts and replacing culverts in accordance with the culvert list. Grading, shaping and compacting existing road surface, turnouts and turnaround in accordance with Clause 2-5, realigning road segments, spreading grass seed and hay, and the application of rock in accordance with the Rock List.

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
PA-I-2050	0+00 – 11+25	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, perform culvert maintenance in accordance with Clause 2-6, clean/construct ditch lines in accordance with Clause 2-7, Brush road in accordance with Clause 3-1 and perform gate maintenance in accordance with Clause 7-75.
PA-I-2050	11+25 – 21+05	Grade, shape and compact existing running surface in accordance to Clause 2-5, Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 2-9, apply rock in accordance with Rock list, perform culvert maintenance in accordance with Clause 2-6, clean/construct ditch lines in accordance with Clause 2-7 and Brush road in accordance with Clause 3-1.

PA-I-2052	0+00 – 11+40	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, perform culvert maintenance in accordance with Clause 2-6, clean/construct ditch lines in accordance with Clause 2-7 and Brush road in accordance with Clause 3-1.
PA-I-2052.1	0+00 – 0+65	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list and Brush road in accordance with Clause 3-1.
Eden Valley Rd.	MP 3.51 – MP 3.73 (185+45 – 196+95)	Grade, shape and compact existing running surface in accordance to Clause 2-5 and apply rock in accordance with Rock list.
PA-J-4000	0+00 – 145+80	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator, apply rock in accordance with Rock list, Brush road in accordance with Clause 3-1 and perform gate maintenance in accordance with Clause 7-75.
PA-J-4000 Bypass	0+00 – 6+90	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and Brush road in accordance with Clause 3-1.
PA-J-4030	0+00 – 37+40	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, clean/construct ditch lines in accordance with Clause 2-7 and Brush road in accordance with Clause 3-1.
PA-J-4032	0+00 – 2+00	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and Brush road in accordance with Clause 3-1.

PA-J-4020	0+00 – 18+75	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list and Brush road in accordance with Clause 3-1.
PA-I-2600	0+00 – 14+00	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator, Brush road in accordance with Clause 3-1 and perform gate maintenance in accordance with Clause 7-75.
PA-I-2610	0+00 – 12+00	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and Brush road in accordance with Clause 3-1.
PA-I-2620	0+00 – 6+50	Grade, shape and compact existing running surface in accordance to Clause 2-5 as directed by contract administrator and Brush road in accordance with Clause 3-1.
Total Stations	287.95 Stations	

Pre-haul maintenance includes, but is not limited to: Brushing right-of-way, right-of-way debris disposal, cleaning ditches, constructing ditches, installing additional culverts, widening road segments, constructing headwalls, cleaning culvert inlets and outlets, cross drain culvert replacements, installing erosion control materials and sediment removal structures, spot rocking, grading and shaping existing road surface and turnouts, constructing additional turnouts, compaction of road surface, application of rock, acquisition and application of grass seed and hay.

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 called McGavin Pit. Rock source development will involve stripping approximately 0.5 acres, drilling and shooting to obtain a minimum of 4800 yds^3 of Clean Rock Shot Ballast, 20 yds^3 of Light loose rip rap and the manufacture of a minimum of 2010 yds^3 of 4” Jaw run rock in accordance with Clause 6-20.

Purchaser may develop an existing rock source called Place Pit. Rock source development will involve digging and loading out of a stockpile to obtain 500 yds^3 of 1 ¼" minus crushed rock and 890 yds^3 of 2" minus crushed rock.

All rock manufactured out of rock sources listed above shall meet specifications as listed in Section 6 ROCK AND SURFACING.

In the event that, the rock pit(s) listed above cannot meet rock specifications in accordance with specifications listed in Section 6, subsection rock gradations and in the opinion of the Contract Administrator, purchaser shall obtain rock meeting rock specification from a commercial source at their own expense.

0-13 STRUCTURES

Purchaser shall provide and install all structures. Requirements for these structures are listed in Section 7 STRUCTURES.

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, unless controlled by construction stakes or design data (plan, profile, and cross-sections).

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. 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 Work 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.

1-12 SURVEY MONUMENTS

At no time during construction, reconstruction, or maintenance shall survey monuments, witness trees, or bearing trees be disturbed or damaged. If damaged or disturbed, Purchaser shall hire a licensed land surveyor to repair, replace, and/or reset them.

SUBSECTION ROAD MARKING

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 ribbon and paint for construction centerlines.
- Construction stakes for everything else.

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.

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete reconstruction, construction and pre-haul road work the start of timber haul.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 14 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
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

On the following road(s), are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

Road	Stations	Activity	Closure Period
All	All	All	Weekends and State Recognized Holidays
All	All	All roadwork activities including Timber Haul and rock pit development.	October 16th – April 14th

ET1	All	All equipment trail building activities	October 16th – April 14th Contract Administrator approval does not apply

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION or Contract Clause H-130 HAULING SCHEDULE, 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 6 inches on jaw run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 4 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- 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.

1-32 ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on asphalt 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 asphalt surface(s) and have surface(s) 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. Purchaser shall request a SNOW PLOWING AGREEMENT each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

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.

The following county roads and state highways are affected by this sale:

Road Name
Eden Valley Rd.
Dan Kelly Rd.
Place Rd.
SR 112

1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES

Requirements for all paved road approaches associated with this sale:
Purchaser shall build up approaches to allow a smooth grade transition between the DNR roads and all paved roads associated with this sale. The top of the DNR road surfacing must be kept level with the surface of all paved roads associated with this sale at all times. The surface of the DNR road approaches must slope from the edge of the paved roads at the rate of 2%, unless otherwise directed by the Contract Administrator.

1-43 ROAD WORK AROUND UTILITIES

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser's responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including "call before you dig", and liabilities associated with the utilities and their rights-of-way.

Road	Stations	Utility	Utility Contact
Eden Valley Rd.	MP 2.35 – MP 3.73	Overhead and Buried Utilities	**811**

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 road(s) in a condition that will allow the passage of light administrative vehicles.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface.

Road	Stations	Requirements
PA-I-2050	0+00 – 21+05	Grade, shape, compact and remove shoulder vegetation and berms.
PA-I-2052	0+00 – 11+40	Grade, shape, compact and remove shoulder vegetation and berms.
PA-I-2052.1	0+00 – 0+65	Grade, shape, compact and remove shoulder vegetation and berms.
Eden Valley Rd.	MP 3.51 – MP 3.73 (185+45 – 196+95)	Grade, shape, compact and remove shoulder vegetation and berms.
PA-J-4000	0+00 – 145+80	Grade, shape, compact and remove shoulder vegetation and berms as required by contract administrator.

PA-J-4000 Bypass	0+00 – 6+90	Grade, shape, compact and remove shoulder vegetation and berms as required by contract administrator.
PA-J-4030	0+00 – 44+75	Grade, shape, compact and remove shoulder vegetation and berms.
PA-J-4032	0+00 – 2+00	Grade, shape, compact and remove shoulder vegetation and berms as required by contract administrator.
PA-J-4020	0+00 – 18+75	Grade, shape, compact and remove shoulder vegetation and berms.
PA-I-2600	0+00 – 14+00	Grade, shape, compact and remove shoulder vegetation and berms as required by contract administrator.
PA-I-2610	0+00 – 12+00	Grade, shape, compact and remove shoulder vegetation and berms as required by contract administrator.
PA-I-2620	0+00 – 6+50	Grade, shape, compact and remove shoulder vegetation and berms as required by contract administrator.

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before start of timber haul.

Road	Stations
PA-I-2050	1+30, 3+10, 7+00, 8+90, 14+05
PA-I-2052	1+25, 9+45

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean and/or construct ditches, headwalls, and catchbasins. Work must be completed before the start of timber haul and must be done in accordance with the Typical Section Sheet. Pulling ditch material across the road or mixing in with the road surface is not allowed. Ditchlines, headwalls, and catch basins shall not encroach into the existing road.

Road	Stations	Left and/or Right	Comments
PA-I-2050	0+00 – 21+05	Right	Ditching
PA-I-2052	0+00 – 4+65	Right	Ditching
PA-I-2052	4+65 – 11+40	Left	Ditching
PA-J-4030	0+00 – 33+80	Right	Ditching
PA-J-4030	33+80 – 37+40	Left	Ditching
PA-J-4030	37+40 – 44+75	Right	Ditching

2-9 REMOVING VEGETATIVE MATERIAL

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud and other debris on the existing road surface with a minimum loss of rock. Material must disposed of as specified in Clauses 4-35 through 4-38.

Road	Stations
PA-I-2050	20+45 – 21+05
PA-J-4030	37+40 – 44+75

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 5 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
PA-I-2050	0+00 – 21+05
PA-I-2052	0+00 – 11+40
PA-I-2052.1	0+00 – 0+65
PA-J-4000	0+00 – 145+80
PA-J-4000 Bypass	0+00 – 6+90
PA-J-4030	0+00 – 44+75
PA-J-4032	0+00 – 2+00
PA-J-4020	0+00 – 18+75
PA-I-2600	0+00 – 14+00
PA-I-2610	0+00 – 12+00
PA-I-2620	0+00 – 6+50

3-2 BRUSHING RESTRICTION

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing. Excavator buckets, log loaders and similar equipment may not be used for brushing unless otherwise approved in writing by the Contract Administrator.

3-3 BRUSH REMOVAL

Remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets. Brush should be disposed of so that it will not fall back onto the road prism.

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 5 inches DBH or over 15 feet high between the marked right-of-way boundaries, or as approved by Contract Administrator. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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.

SUBSECTION GRUBBING

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. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator. Grubbing must be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumps outside of the clearing limits**,** as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps must be positioned upright, with root wads in contact with the forest floor and on stable locations.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

In the following waste area(s), Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

Road	Waste Area
PA-I-2052.2	Waste Area Location PA-I-2052.2 Sta. 0+75

SUBSECTION ORGANIC DEBRIS

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 grubbing limits as shown on the TYPICAL SECTION SHEET.

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below.

Road	Stations	Disposal Location	Requirements
PA-I-2052.2	3+00 – 7+90	Waste Area Location PA-I-2052.2 Sta. 0+75	Deposit organic waste from road building into waste area between stations 3+00 – 7+90

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 45%.
- 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 grubbing limits in accordance with Clause 3-23 unless otherwise detailed in this road plan and as directed by the Contract Administrator**.**

SUBSECTION PILE

3-31 PILING

Purchaser shall pile organic debris no closer than 20 feet from standing timber and no higher than 20 feet in areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS. Piles must be free of rock and soil.

3-32 END HAULING ORGANIC DEBRIS

On the following road(s), and on slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS, or to a waste area located by the Contract Administrator.

Road	Stations
PA-I-2052.2	3+00 – 7+90

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

Purchaser shall use a track mounted hydraulic excavator for construction, reconstruction and maintenance work unless stated otherwise within this Road Plan or authorized in writing by the Contract Administrator.

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 1000 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.

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 16 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, 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.

4-12 FULL BENCH CONSTRUCTION

On the following road(s), where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width. If designated, Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

Road	Full Bench Location
PA-I-2052.2	3+00 – 7+90

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

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 changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

Turnarounds must be no larger than 50 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

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.

4-27 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 in the table below and as needed to fit as built conditions. 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. L or R denotes ditchout left or ditchout right.

Road	Stations	L or R
PA-I-2050	21+00 (approx. 20')	L
PA-I-2052.2	1+50 (approx. 20')	R
PA-J-4033	3+15 (approx. 20')	R
PA-J-4025	1+55 (approx. 20')	R
PA-J-4025	2+60 (approx. 20')	L

SUBSECTION WASTE MATERIAL (DIRT)

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 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, 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 the listed designated areas. The amount of material allowed in a waste area is at the discretion of the Contract Administrator. Note: All amount values are estimated bank yards.

Waste Area Location	Waste Generated From Road	Waste Generated at Stations	Estimated Volume
PA-I-2052.2 Sta. 0+75	PA-I-2052.2	3+00 – 7+90	2000 yds^3

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 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

4-39 WASTE AREA COMPACTION

Excavated material may be deposited adjacent to the road prism on side slopes up to 45% if the waste material is compacted and free of debris. On side slopes of 45% or more, all excavation shall be end hauled or pushed to designated waste areas. All waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts, with the exception of side hill embankments too narrow to accommodate excavation equipment which may be placed by end-dumping or sidecasting until sufficiently wide to support the equipment.

SUBSECTION BORROW

4-46 COMMON BORROW

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

SUBSECTION SHAPING

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.

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction and for embankment segments too narrow to accommodate equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width, except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before placement of rock.

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

Purchaser shall compact maintained road surfaces in accordance with the COMPACTION LIST by routing equipment over the entire width.

4-64 WASTE MATERIAL COMPACTION

All waste material shall be compacted by running equipment over it or bucket tamping.

4-65 CULVERT BACKILL COMPACTION

Culvert backfills shall be accomplished by using a jumping jack compactor, performing at least 2 passes per lift, in lifts not to exceed 8 inches.

4-66 COMPACTION BY METHOD

Compaction shall consist of three complete passes over the entire width of each lift with a vibratory drum roller weighing a minimum of 6,000 pounds at a maximum operating speed of 3 mph. For embankment segments too narrow to accommodate a drum roller, a plate compactor shall be used.

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Purchaser shall remove berms from road shoulders. The construction of ditchouts is required where ponding could result from the effects of sidecast debris.

5-4 PUNCHEON RESTRICTED

At no time shall puncheon be used in the subgrade, unless approved by the Contract Administrator.

SUBSECTION CULVERTS

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 CULVERT 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 meet the specifications in Clauses 10-15 through 10-24.

5-6 CULVERT TYPE

Purchaser may install culverts made of steel and/or plastic in accordance with Clauses 10-15 through 10-24.

5-12 UNUSED MATERIALS STATE PROPERTY

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

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL SHEET, TYPICAL TYPE NS NP CULVERT INSTALLATION DETAIL SHEET, the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations. Culverts over 15 inches diameter shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet**.** Shorter section of banded culvert shall be installed at the inlet end.

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 18 inches of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover specified in the Engineer's design, TYPICAL TYPE NS NP DETAIL SHEET, or recommended by the culvert manufacturer for the type and size of the pipe, whichever is greater.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Purchaser shall construct catch basins to resist erosion. Minimum dimensions of catch basins are 1-2 feet wide, 1-2 feet deep and 2-4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL at all cross drain culverts that specify the placement of rock. Rock used for headwalls must consist of oversize or quarry spall material. 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.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(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. Purchaser shall notify the Contract Administrator a minimum of 5 business days before starting any operations in the listed locations.

Source	Location	Rock Type
McGavin Pit	T30N R08W Sec14	Clean Shot Rock Ballast, 4” Jaw Run Rock, Light Loose Rip Rap
Place Pit	T30N R07W Sec33	2” minus crushed rock, 1 ¼” minus crushed rock

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall not remove more than cubic yards of specified rock sorts listed in the table below. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator. Other stockpiles may not be used without prior written approval from the Contract Administrator.

Source	Location	Rock Type	Quantity
Place Pit	T30N R07W Sec33	2” minus crushed rock	890 yd^3
Place Pit	T30N R07W Sec33	1 ¼” minus crushed rock	500 yd^3

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. Prior to approval, purchaser shall submit a passing sieve test performed by procedure described in WSDOT FOP for WAQTC T 27/11.

SUBSECTION ROCK SOURCE DEVELOPMENT

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. Purchaser shall notify the Contract Administrator a minimum of 5 business days before starting any operations in the rock source.

Source	Rock Type
McGavin Pit	Clean Shot Rock Ballast, 4" Jaw Run Rock, Light Loose Rip Rap
Place Pit	2" minus crushed rock, 1 ¼" minus crushed rock

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT PLAN:

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than five feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be shot or broken up.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 10 working days before any drilling (Form #M-126PAC).
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser is required to inform Clallam County Dispatch (PenCom) of a day and approximate time of the pit blasting.
- Purchaser shall block access roads and trails before blasting operations.

6-16 DRILL AND SHOOT TECHNICAL SPECIFICATIONS

DRILLING

The Purchaser shall drill in accordance to an approved Shot Plan. Drill depth shall not extend more than 5 feet below existing pit floor. The District Engineer or their designee and Purchaser shall jointly measure and determine drill depths, hole spacing and pattern and must be approved prior to loading explosives. During drilling operation, drill operator shall keep a bore log which includes the depth and location of each hole drilled. The District Engineer or their designee may ask to see the bore log during and after the drilling process has completed.

BLASTING

The Purchaser shall furnish and load appropriate explosives, detonators, and ignition sources in accordance to all State and Federal laws and in accordance to an approved Shot Plan.

DRILLING AND SHOOTING PLAN "SHOT PLAN"

The Purchaser shall submit a written drilling and shooting plan, including drawings, to the District Engineer or their designee, which must meet the approval of the District Engineer or their designee prior to the start of the drilling operation. The plan and drawing(s) shall include the following proposals: drill hole diameter, drill hole spacing, drill hole pattern, drill hole depth, any stemming depths, type and depth of explosive including amount per drill hole, detonator and ignition type, and proposed delay pattern. Any adjustment or modifications to the proposals during operations must be noted and resubmitted prior to loading of explosives.

WEATHER LIMITATIONS

When, in the opinion of the District Engineer or their designee, the weather is such that satisfactory results cannot be obtained in any phase of operation, Purchaser shall suspend operations until the weather is favorable. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- The crushing operation must be concluded within 45 working days from the time it begins.
- All testing and operations must be performed in accordance with the attached ROCK CRUSHING COMPLIANCE PROCEDURE.
- Purchaser may use a commercial testing lab to produce sieve analyses.
- Sieve analysis for acceptance of aggregate shall be performed by procedure described in WSDOT FOP for WAQTC T 27/11.

6-23 ROCK GRADATION TYPES

Purchaser may manufacture rock in accordance with the types and amounts listed in the Manufacturing list below. Rock must meet the following specifications for gradation and uniform quality during manufacture and placement into a stockpile. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

Rock Type	Amount
4" Jaw Run Rock	2010 yds^3

6-24 ROCK CRUSHING COMPLIANCE PROCEDURE

Phase I. Equipment Adjustment

Step 1:
At start up of crushing operations, the Purchaser will notify the Contract Administrator when the rock meets the gradation specifications in the contract. None of the rock crushed during this calibration period will be counted toward the amount required to be crushed, and this rock must be kept separate from accepted rock crushed later.

Step 2:
The Purchaser will test the rock. Two samples will be taken. If the rock meets specifications, crushing may begin. If the rock does not meet specifications, return to Step 1.

Phase II. Production

Step 3:
The Purchaser will continue periodic testing to ensure that rock stays in spec. Testing will take place according to the following schedule:

- After the first 500 yards
- After every 2,000 yards thereafter.

a) Any time a sample is out of spec, but is within 5%*, the Purchaser will be notified and a second sample will be taken later in the day. If the second sample meets specifications, the rock crushed during that day will be accepted. If the second sample also fails to meet spec, none of the rock crushed since the last acceptable test will be counted toward the amount to be crushed.

b) Any time a sample is out of spec and is more than 5% off in any category, none of the rock crushed since the last acceptable test will be accepted and that rock must be kept separate from the stockpile. Return to Step 1.

c) Purchaser is strongly encouraged to take their own samples regularly and keep their operations in spec to avoid unnecessary expenses.

- The 5% will be applied only to sieve specs for 2" to ¼"; rock that is out of spec in larger sizes must be kept separate from the acceptable rock. Periodic visual inspection required for all rock gradations larger than 2". If in the opinion of the Contract Administrator that gradations are not meeting specifications, Contract Administrator my require testing of material 2" or larger.

6-28 1 ¼-INCH MINUS CRUSHED ROCK

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

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

6-30 2-INCH MINUS CRUSHED ROCK

% Passing 2" square sieve	100%
% Passing 1" square sieve	50 - 85%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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

6-37 4-INCH JAW RUN ROCK

% Passing 4" square sieve	95%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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

6-42 CLEAN ROCK, SHOT BALLAST

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

6-50 LIGHT LOOSE RIP RAP

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

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”)

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade drainage installation included grading and compaction before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. 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 COMPACTION LIST by routing equipment over the entire width and in lifts not to exceed 6 inches.

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Purchaser shall apply rock in accordance with the quantities shown on the ROCK LIST and listed below.

Road	Stations	Rock Type	Amount
PA-I-2050	0+00 – 21+05	2" minus crushed rock	100 yd^3
Eden Valley Rd.	MP 3.51 – MP 3.73 (185+45 – 196+95)	1 ¼" minus crushed rock	100 yd^3
PA-J-4000	0+00 – 145+80	2" minus crushed rock	200 yd^3
PA-J-4030	0+00 – 37+40	2" minus crushed rock	100 yd^3
PA-J-4020	0+00 – 18+75	2" minus crushed rock	100 yd^3

6-73 ROCK FOR WIDENED PORTIONS

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

6-76 DRY WEATHER ROCK COMPACTION

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

6-78 ROCK FOR SPOT PATCHING

Rock for spot patching shall be applied before any grading is done and before any rock lifts are applied. Once applied, spot patches shall be graded into the existing running surface.

SUBSECTION DUST ABATEMENT

6-80 WATERING FOR DUST ABATEMENT

Purchaser shall use water for dust abatement on the following roads as directed by the Contract Administrator.

Road	Stations
Eden Valley Rd.	MP 3.51 – MP 3.73 (185+45 – 196+95)

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

7-2 SIGN INSTALLATION (NON-HIGHWAY)

The Purchaser shall be responsible for the purchase, installation, and maintenance of the following road signs. Signs shall be installed a minimum of 7 days before hauling logs and/or rock. Signs shall be at least 2 feet in any direction, and shall be orange with black lettering.

Road	Station	Sign
Eden Valley Rd.	Junction of PA-I-2050 and Eden Valley Rd. MP 2.35	2 Truck Crossing Signs inbound and outbound
Eden Valley Rd.	Junction of PA-J-4000 and Eden Valley Rd. MP 3.73	2 Truck Crossing Signs inbound and outbound

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed at termination of use.

Road	Station
PA-I-2050	1+15
PA-J-4000	2+35
PA-I-2600	1+00

SUBSECTION GATES AND FENCES

7-75 GATE MAINTENANCE

Purchaser shall conduct gate maintenance as listed. Purchaser shall remove all old gate material from state land before the termination of the contract.

Road	Station	Requirements
PA-I-2050	1+15	Gate shall be painted Safety Yellow color using high gloss alkyd enamel paint. Prior to painting, surfaces shall be prepared by cleaning, sanding and removing all loose rust and paint. All surfaces shall be dry at the time of painting. Two coats of paint shall be applied, using the

		procedures described in the product instructions, with a minimum of eight hours drying time between coats. Grease lubrication points. 10 yds^3 placed at gate go around to prevent passenger vehicles from using go around as per contract administrator.
PA-J-4000	2+35	Gate shall be painted Safety Yellow color using high gloss alkyd enamel paint. Prior to painting, surfaces shall be prepared by cleaning, sanding and removing all loose rust and paint. All surfaces shall be dry at the time of painting. Two coats of paint shall be applied, using the procedures described in the product instructions, with a minimum of eight hours drying time between coats. Grease lubrication points. 10 yds^3 placed at gate go around to prevent passenger vehicles from using go around as per contract administrator.
PA-I-2600	1+00	Gate shall be painted Safety Yellow color using high gloss alkyd enamel paint. Prior to painting, surfaces shall be prepared by cleaning, sanding and removing all loose rust and paint. All surfaces shall be dry at the time of painting. Two coats of paint shall be applied, using the procedures described in the product instructions, with a minimum of eight hours drying time between coats. Grease lubrication points. Fix gate and tongue alignment.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

Purchaser shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS and as specified below.

Road	Stations	Additional Requirements
All	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator.
PA-I-2050	0+00 – 21+05	Apply post haul rock per Clause 6-72.
Eden Valley Rd.	MP 3.51 – MP 3.73 (185+45 – 196+95)	
PA-J-4000	0+00 – 145+80	
PA-J-4030	0+00 – 37+40	
PA-J-4020	0+00 – 18+75	

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

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

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be aluminized (aluminum type 2 coated meeting AASHTO M-274).

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. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe joint.

10-23 RUBBER CULVERT GASKETS

Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAUGE AND CORRUGATION

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

Diameter	Gauge	Corrugation
18"	16 (0.064")	2 $^{2}/_{3}$" X $^{1}/_{2}$"
24" to 48"	14 (0.079")	2 $^{2}/_{3}$" X $^{1}/_{2}$"
54" to 96"	12 (0.109")	3" X 1" or 5" x 1"

SECTION 11 SPECIAL NOTES

11-5 INSLOPED/OUTSLOPED ROAD SEGMENTS

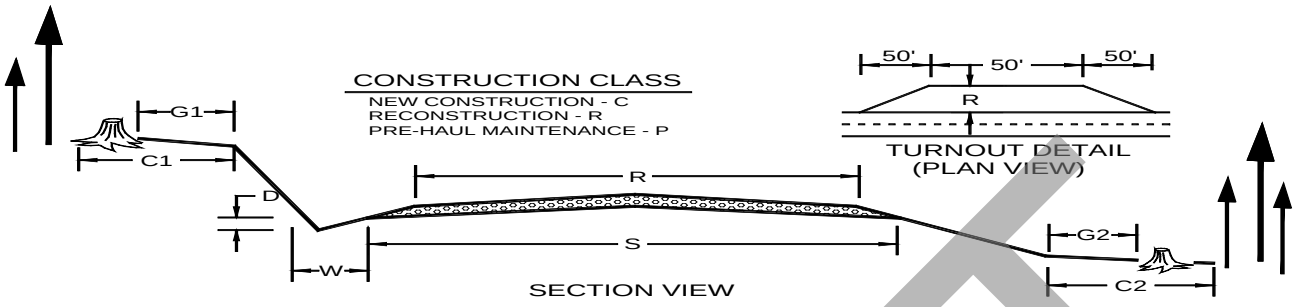
Purchaser shall inslope/outslope road segments as listed in table below. Inslope/outslope grade shall be in accordance with TYPICAL SECTION SHEET and Typical Outslope Detail Sheet.

Road	Stations	Inslope/Outslope
ET1	2+45 – 5+90	Outslope

11-10 ET1/ET2 (EQUIPMENT TRAIL) CONSTRUCTION

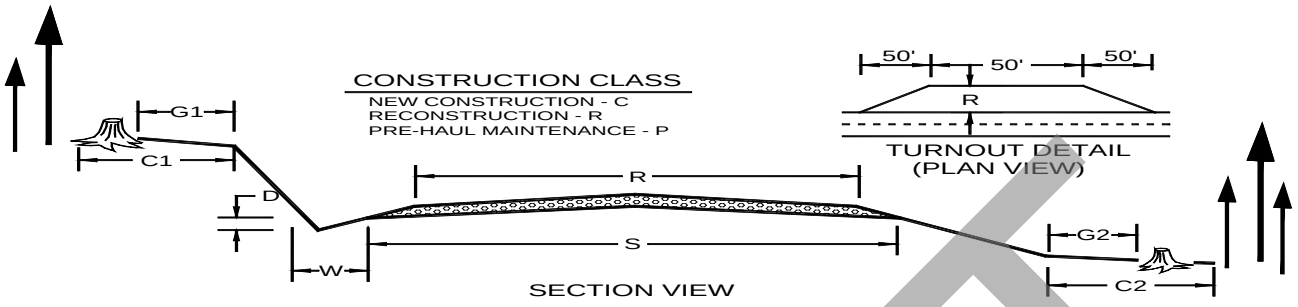
Purchaser shall construct equipment trail. Equipment Trail Construction includes, but not limited to: Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, equipment compaction for trail surfaces. Construction dimensions/crown slope shall be in accordance with TYPICAL SECTION SHEET and Contractor Administrator.

TYPICAL SECTION SHEET



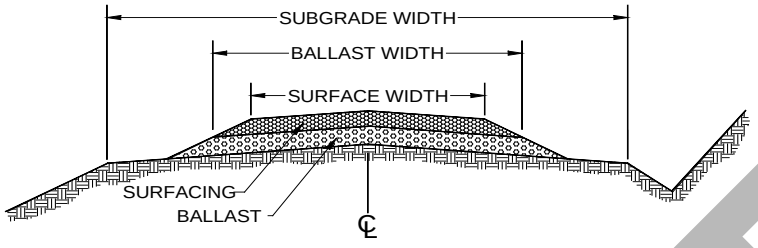
ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	TOLERANCE CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
PA-I-2050	0+00	11+25	P			12’	3”	3’	1’				
PA-I-2050	11+25	21+05	P			12’	3”	3’	1’				
PA-I-2050	21+05	23+80	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-I-2052	0+00	11+40	P			12’	3”	3’	1’				
PA-I-2052.1	0+00	0+65	P			12’	3”	3’	1’				
PA-I-2052.1	0+65	3+75	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-I-2052.2	0+00	7+90	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
Eden Valley Rd.	185+45	196+95	P			18’	3”	3’	1’				
PA-J-4000	0+00	145+80	P			12’	3”	3’	1’				
PA-J-4000 Bypass	0+00	6+90	P			12’	3”	3’	1’				
PA-J-4030	0+00	37+40	P			12’	3”	3’	1’				
PA-J-4030	37+40	44+80	R	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-J-4030 Approach	0+00	2+30	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-J-4032	0+00	2+00	P			12’	3”	3’	1’				
PA-J-4033	0+00	8+75	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-J-4025	0+00	9+05	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-J-4025	9+05	21+60	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-J-4020	0+00	18+75	P			12’	3”	3’	1’				
PA-J-4020	18+75	20+85	C	C	17’	12’	3”	3’	1’	5’	5’	10’	5’
PA-I-2600	0+00	14+00	P			12’	3”	3’	1’				
PA-I-2610	0+00	12+00	P			12’	3”	3’	1’				

TYPICAL SECTION SHEET CONTINUED



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	TOLERANCE CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
PA-I-2620	0+00	6+50	P			12’	3”	3’	1’				
ET1	0+00	2+45	C	C	12	N/A	3”			5’	5’	5’	5’
ET1	2+45	5+90	C	C	12	N/A	-3”/3”			5’	5’	5’	5’
ET2	0+00	6+95	C	C	12	N/A	3”			5’	5’	5’	5’

ROCK LIST SHEET

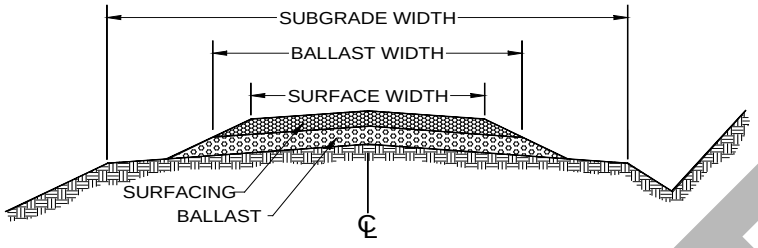


SECTION VIEW

1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources= 1: McGavin SR Ballast, 2: McGavin 4" Jaw Run, 3: Place 2" minus, 4: Place 1 ¼" minus, 5: McGavin Light Loose Rip Rap. All Rock Sources may be obtained from a commercial source meeting specifications in Section 6.

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd^3/sta)	Pitrun SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-I-2050															
Misc.	0+00	11+25							3				50		
Gate Maint.	1+15													5	10
Misc.	11+25	21+05							3				50		
Turnaround	20+45			1				50							
Culvert Install	21+00								3				20		
Lift	21+05	23+80	17	1	13	12	70	190	2	12	6	35	100		
Post Haul	0+00	21+05							3				100		
PA-I-2052															
Misc.	0+00	11+40							3				50		
PA-I-2052.1															
Lift	0+65	3+75	17	1	13	12	70	220	2	12	6	35	110		
PA-I-2052.2															
Lift	0+00	7+90	17	1	13	12	70	550	2	12	6	35	280		
Turnaround	2+20			1				50							
Culvert Install	5+10								2				20		
Eden Valley Rd.															
Lift	185+45	196+95							4				350		
Curve Widening	185+45	196+95							4				50		
Post Haul	185+45	196+95							4				100		
Totals (CY):								1:1060				2:510, 3:270, 4:500			5:10

ROCK LIST SHEET CONTINUED



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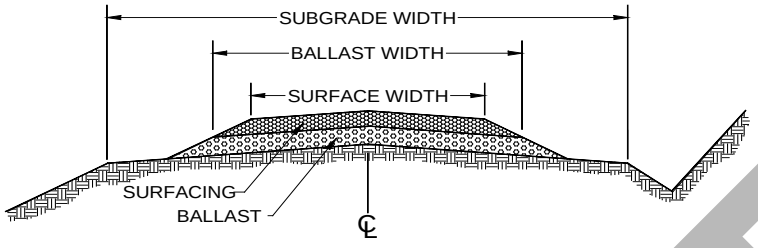
ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd^3/sta)	Pitrun SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-4000															
Misc.	0+00	145+80							3				100		
Gate Maint.	2+35													5	10
Post Haul	0+00	145+80							3				200		
PA-J-4030															
Misc.	0+00	37+40							3				100		
Culvert Install	2+60								3				20		
Lift	37+40	44+75	17	1	13	12	70	500	2	12	6	35	260		
Turnaround	44+75							50							
Post Haul	0+00	37+40							3				100		
PA-J-4030 Approach															
Lift	0+00	2+30	17	1	13	12	70	160	2	12	6	35	80		
PA-J-4033															
Lift	0+00	8+75	17	1	13	12	70	610	2	12	6	35	310		
Culvert Install	5+20								2				20		
Turnaround	7+05			1				50							
Landing	8+75							50							
Totals (CY):								1:1420				2:670, 3:520			5:10

ROCK LIST SHEET CONTINUED



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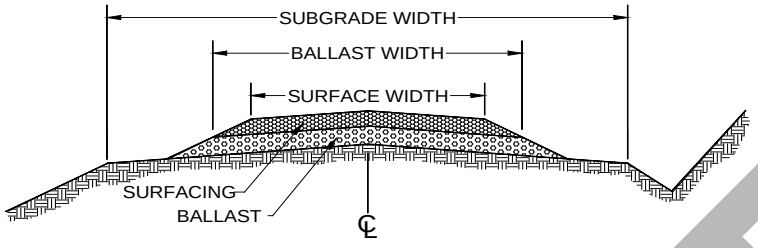
6. Rock sources= 1: McGavin SR Ballast, 2: McGavin 4" Jaw Run, 3: Place 2" minus, 4: Place 1 ¼" minus, 5: McGavin Light Loose Rip Rap. All Rock Sources may be obtained from a commercial source meeting specifications in Section 6.

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd^3/sta)	Pitrun SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-4025															
Lift	0+00	9+05	17	1	13	12	70	630	2	12	6	35	320		
Culvert Install	0+10								2				20		
Culvert Install	7+65								2				20		
Landing	8+75			1				100							
Lift	9+05	21+60	17	1	13	12	70	880	2	12	6	35	440		
Culvert Install	11+75								2				20		
Landing	12+85			1				100							
Culvert Install	14+40								2				20		
Turnout	15+15			1				40							
Landing	17+80			1				100							
Culvert Install	18+80								2				20		
Turnaround	20+30			1				50							
Landing	21+60			1				100							
PA-J-4020															
Misc.	0+00	18+75							3				50		
Turnaround	18+25			1				100							
Lift	18+75	20+85	17	1	13	12	70	150	2	12	6	35	70		
Spot Patch	19+00			1				20							
Totals (CY):								1:2270					2:930, 3:50		

ROCK LIST SHEET CONTINUED



SECTION VIEW

1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources= 1: McGavin SR Ballast, 2: McGavin 4" Jaw Run, 3: Place 2" minus, 4: Place 1 ¼" minus, 5: McGavin Light Loose Rip Rap. All Rock Sources may be obtained from a commercial source meeting specifications in Section 6.

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd^3/sta)	Pitrun SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-4020 Cont.															
Landing	20+85			1				50							
Post Haul	0+00	18+75							3				50		
Totals (CY):								1:50					3:50		
Grand Totals:								1:4800					2:2110, 3:890, 4:500		5:20

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-I-2050	1+30	18							Clean Inlet and Outlet
PA-I-2050	3+10	18							Clean Inlet and Outlet
PA-I-2050	7+00	18							Clean Inlet and Outlet
PA-I-2050	8+90	18							Clean Inlet and Outlet
PA-I-2050	14+05	18							Clean Inlet and Outlet
PA-I-2050	21+00	18	30					CR	Culvert Install
PA-I-2052	1+25	18							Clean Inlet and Outlet
PA-I-2052	9+45	18							Clean Inlet and Outlet
PA-I-2052.2	5+10	18	30					CR	Culvert Install
PA-J-4030	2+60	18	30					CR	Culvert Install
PA-J-4033	5+20	18	30					CR	Culvert Install
PA-J-4025	0+10	18	50					CR	Culvert Install
PA-J-4025	7+65	18	30					CR	Culvert Install
PA-J-4025	11+75	18	30					CR	Culvert Install
PA-J-4025	14+40	18	30					CR	Culvert Install
PA-J-4025	18+80	18	30					CR	Culvert Install

All rip rap shall be Oversize unless specified in the Rock List, or in the field.

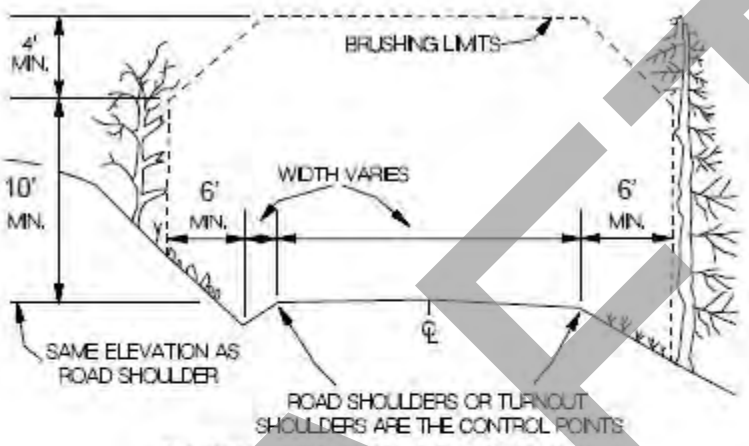
All backfill shall be native material (NT) unless specified otherwise. CR= size listed in rock list crushed rock, PR= Pit Run Rock

COMPACTION LIST

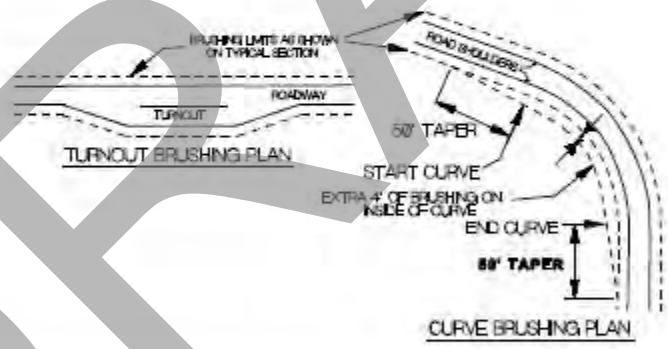
Alternate forms/methods to using vibratory smooth drum compactor to compact the road classes listed in the table below shall be approved per District Engineer.

Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Pre-haul	All	Culvert Backfill	8”	Jumping Jack		3	
Pre-haul	All	Rock Lifts	6”	Vibratory Smooth Drum	6,000	3	3
Pre-haul	All	Pre-haul Surface		Vibratory Smooth Drum	6,000	3	3
Construction	All	Subgrade (Except Puncheon)	6”	Vibratory Smooth Drum	6,000	2	3
Construction	All	Culvert Backfill	8”	Jumping Jack		3	
Construction	All	Rock Placement	6”	Vibratory Smooth Drum	6,000	2	3
Reconstruction	All	Subgrade (Except Puncheon)	6”	Vibratory Smooth Drum	6,000	2	3
Reconstruction	All	Culvert Backfill	8”	Jumping Jack		3	
Reconstruction	All	Rock Placement	6”	Vibratory Smooth Drum	6,000	2	3
Post-haul Maintenance	All	Rock Placement	6”	Vibratory Smooth Drum	6,000	2	3

BRUSHING DETAIL



TYPICAL BRUSHING LIMITS SECTION

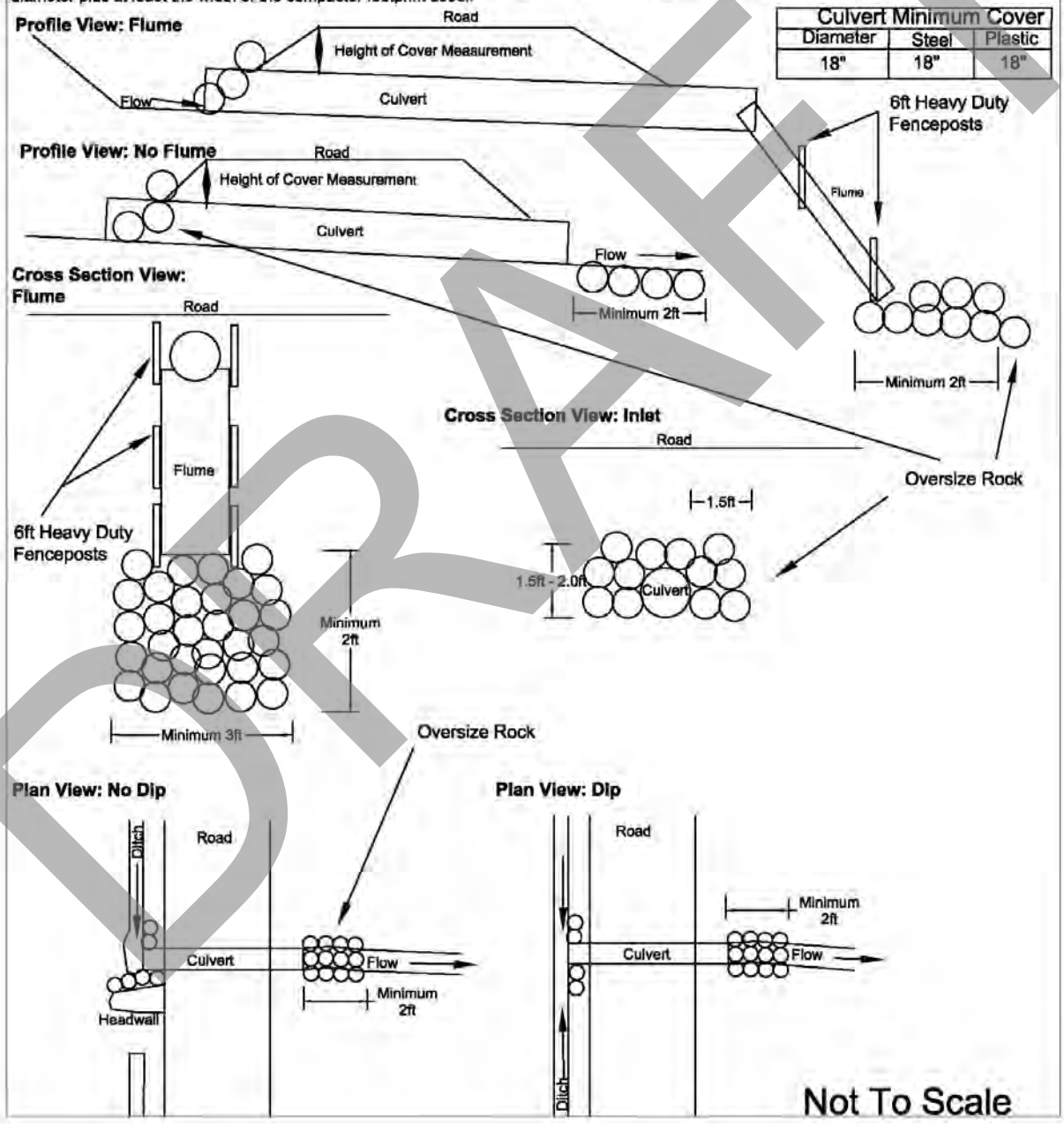


1. All vegetation within the brushing limits shall be cut to within 3 inches of the ground, unless otherwise directed by the Contract Administrator
2. All brush, trees, limbs, etc. shall be removed from the road surface, cut banks, culvert inlets/outlets, and ditch lines
3. All debris that may roll or move into the ditch line shall be removed and placed in a stable location

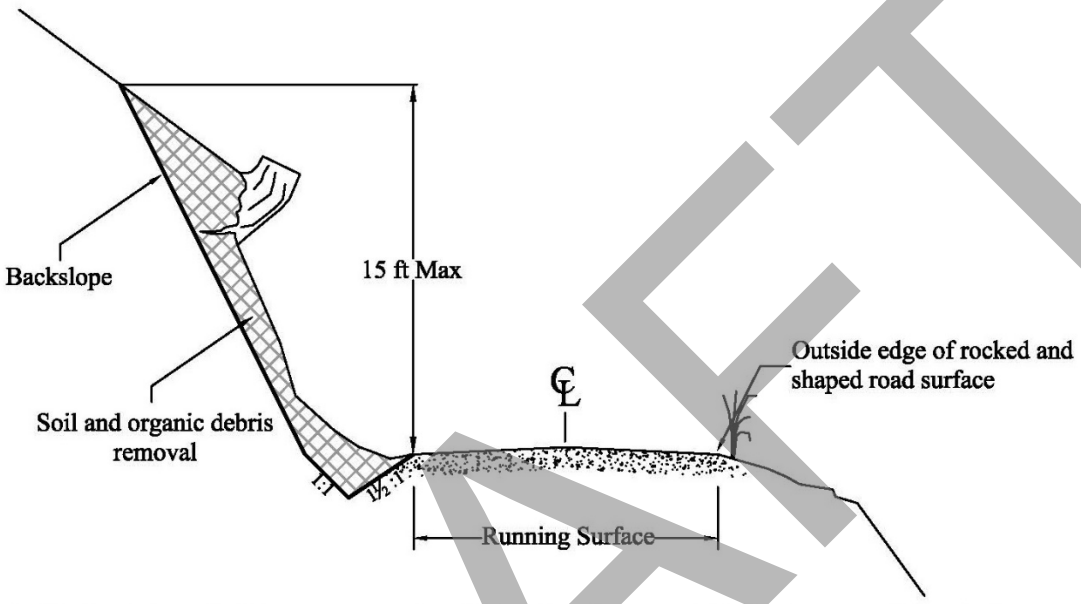
Typical Cross Drain Culvert Installation Detail Sheet

-Culvert lay shall not exceed 10%.
-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
-Oversize shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
-Oversize shall be placed at headwalls, along the fill at the inlet, and at the end off flumes in accordance with this Detail. On culverts with no flume oversize shall be placed at the outlet as an energy dissipater as specified in this Detail. All oversize distance to be determined by the Contract Administrator.
-Backfill compaction for installations on existing roads shall be achieved using a jumping jack, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus at least the width of the compactor footprint used..

Culvert Minimum Cover		
Diameter	Steel	Plastic
18"	18"	18"



Ditch Cleaning Detail



1. The backslope shall be no steeper than ½:1, unless the material is hardpan or solid rock, in which case it may be ¼:1.

2. If there is sufficient width for the ditch without affecting the cut bank, than removing bank material is not required.

3. Bank material above the ditch shall be removed to a maximum height of 15 feet, if needed to meet the requirements of this detail.

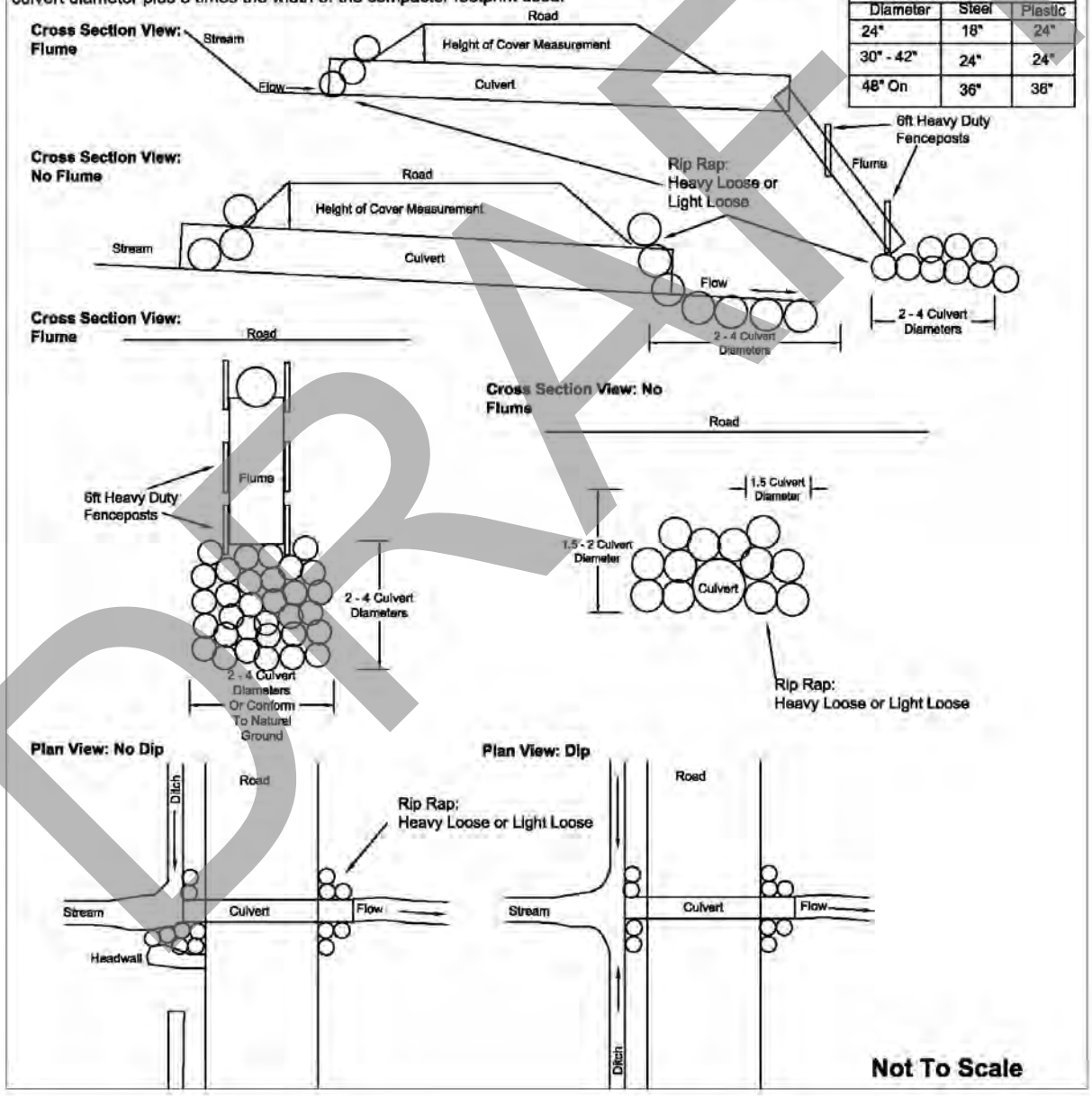
4. If there is insufficient width to clean or construct a ditch without disturbing more than 15 vertical feet of bank, the Contract Administrator may authorize changes to this plan in order to still meet the intent of having a ditch, while staying within the excavation limits already set.

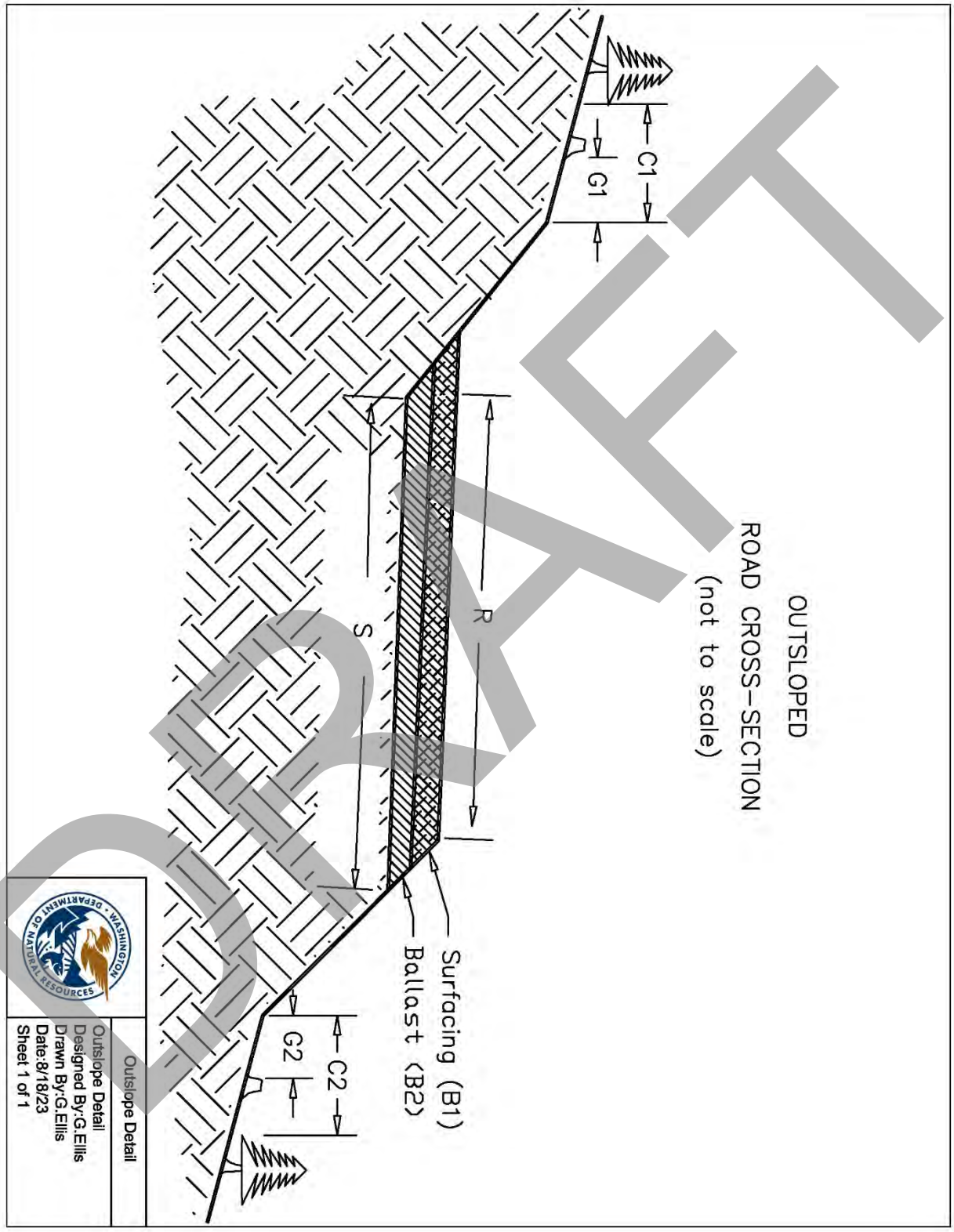
5. Ditch cleaning or construction shall not shrink the running surface of the road.

Typical Type Ns, Np Culvert Installation Detail Sheet.

-Water shall be diverted away from the work site before any "in stream" work begins, and shall continue until culvert installation is complete.
-Culvert lay shall match stream gradient up to 5%.
-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
-Rip rap shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
-Rip rap shall be placed at headwalls, along the fill at the inlet, and at the end off flumes in accordance with this Detail. On culverts with no flume rip rap shall be placed along the fill at the outlet, unless there is stream drop or it is called for in the Road Plan, at which point it will be installed as an energy dissipater at the end of the culvert as specified in this Detail. All rip rap distance to be determined by the Contract Administrator or the District Engineer.
-Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation french width shall be at least culvert diameter plus 3 times the width of the compactor footprint used.

Culvert Minimum Cover		
Diameter	Steel	Plastic
24"	18"	24"
30" - 42"	24"	24"
48" On	36"	36"





STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
OLYMPIC REGION

INFORMATIONAL BLASTING PLAN

Timber Sale/Project Name: _____ App./Project No.: _____

1. Blaster-in-Charge: Name: _____
   Company: _____
   Address: _____
   _____
   Telephone: _____
2. Quarry Name/Location: _____
3. Total Estimated Cubic Yards in Blast (loose): _____
4. Hole Spacing: _____
5. Burden: _____
6. Hole Diameter: _____
7. Hole Depth: _____
8. Sub Drill: _____
9. Number of Holes: _____
10. Stemming Depth: _____
11. Explosive (mfg., name, density, %, V.O.D.): _____
    _____
12. Type and Size of Primer (if applicable): _____
13. Total Weight of Primers for Shot: _____
14. Calculated Powder Factor/Cubic Yard: _____
15. Number of Delays (in M.S.): _____
    _____
16. Number of Holes Fired on Each Delay: _____
    _____
17. Total Amount of Explosives Fired on Each Delay: _____
    _____
18. Type of Blasting Machine: _____
    _____
19. Date, Start Drilling: _____
20. Date and Time, Start Loading: _____
21. Date and Time of Blast (approx.): _____

INFORMATIONAL BLASTING PLAN
M-126PAC (03/04)

22. Detail drawing of delay system (show hole pattern and delays in milliseconds). Attach additional sheets if required:

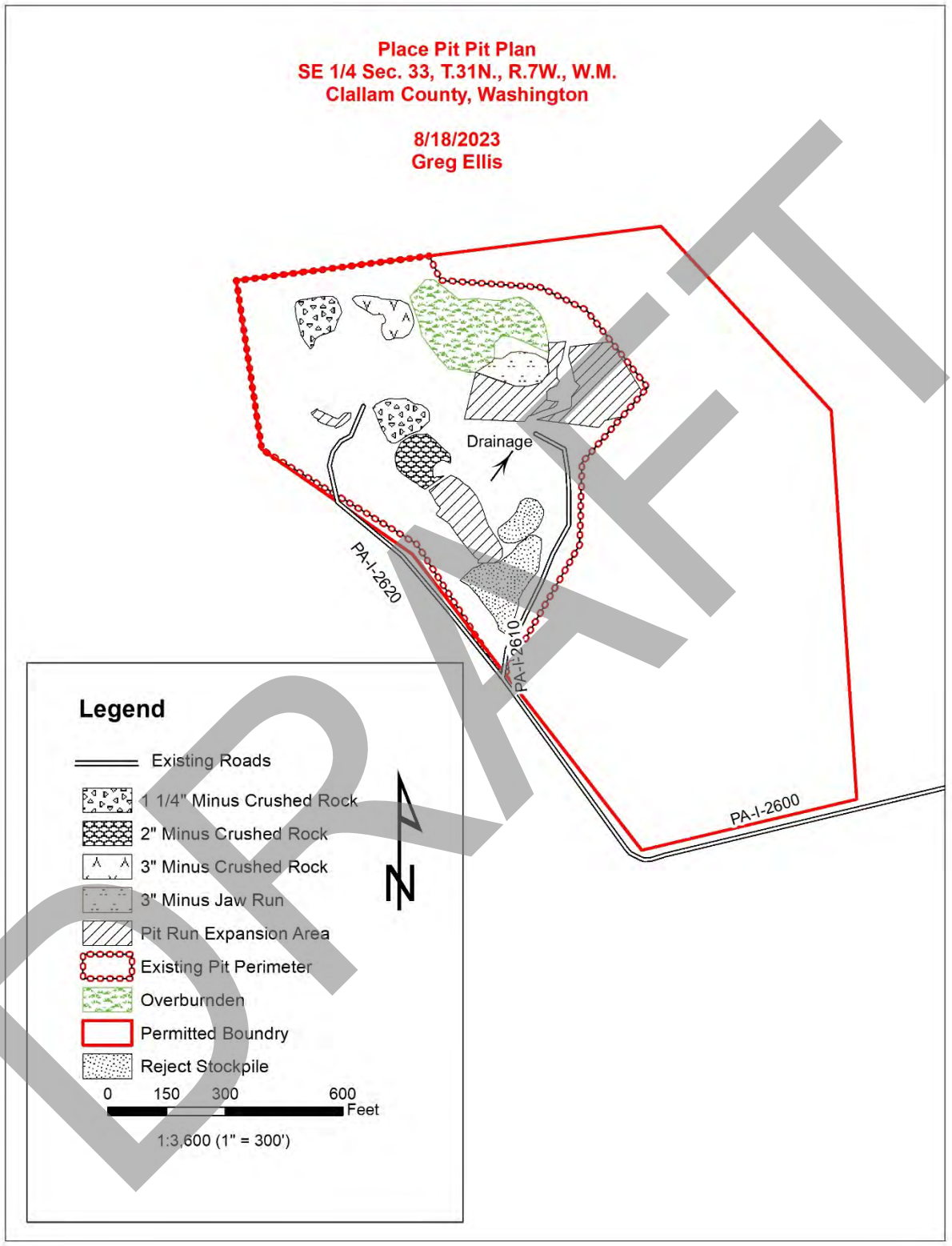
23. Typical cross-section of hole (show primer, main charge, sub drill, and stemming):

23. Submitted by: _____ Date: _____

24. Received by: _____ Date: _____

Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.

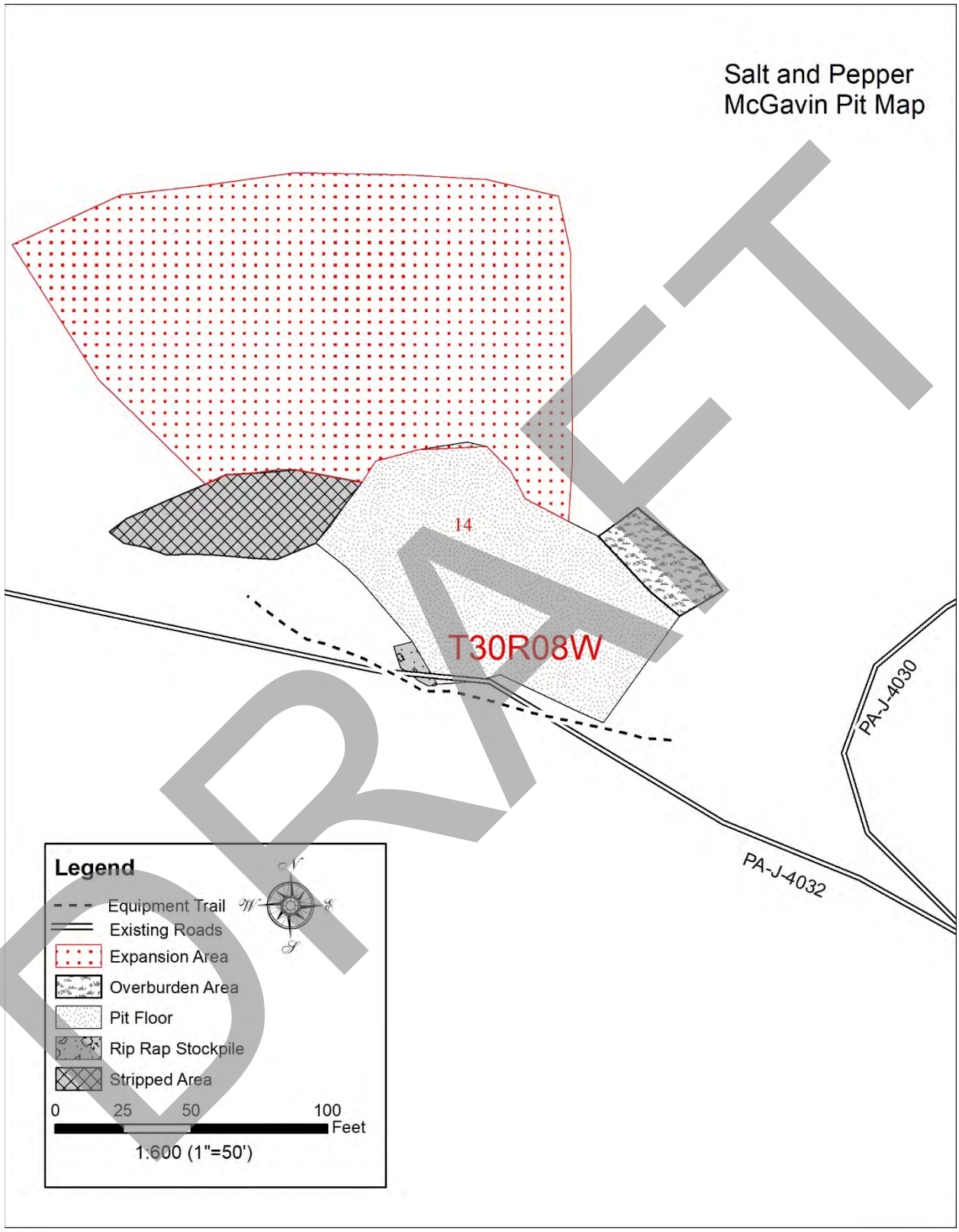
INFORMATIONAL BLASTING PLAN
M-126PAC (03/04)



Place Pit
ROCK SOURCE DEVELOPMENT PLAN
Sec. 33, T.31N., R.07W.
PIT USE REQUIREMENTS

PIT USE REQUIREMENTS include but are not limited to the following:

1. Activity and Marbled Murrelet restrictions per **Clause 1-25** and **Clause 1-27**
2. Purchaser shall give the Contract Administrator a minimum of 7 days' notice prior to commencing any operations, and prepare an approved ROCK SOURCE DEVELOPMENT PLAN as per **Clause 6-10**.
3. Only the quantities and sorts specified in this road plan for this sale may be used or manufactured, unless otherwise approved by the Contract Administrator in writing.
4. If Purchaser elects to use rock from a stockpile or from a pit face, Purchaser shall remove no more than the following volume of material (cubic yards truck measure) from the existing stockpile or pit face as shown on the PLAN VIEW and PROFILE VIEW, unless otherwise approved by the Contract Administrator in writing.
5. Maintain drainage of the pit floor and all drainage structures within the pit boundaries at all times to the designated settling ponds.
6. Excavated face height shall not exceed 15 feet.
7. All excavated slopes shall have a 1 1/2:1 backslope or less at the completion of operations.
8. A minimum 4 foot high berm shall be constructed and constantly maintained along the upper edge of excavated pit faces. No pit faces shall be left unblocked at any time.
9. All operations shall be completed prior to the end of each operating season, including but not limited to: drainage maintenance, sloping of the excavated face, and construction of berms, unless otherwise approved in writing by the Contract Administrator.
10. The quality and quantity of rock and materials are not guaranteed.
11. All material shall remain the property of the State.
12. At the conclusion of operations, Purchaser shall ask the Contract Administrator for written approval of the final rock source condition and compliance with the terms of this plan.
13. All operations shall be carried out in compliance with the regulation of:
    a. Regulations and Standards Applicable to "Metal and Nonmetal Mining and Milling Operations" (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration
14. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.



McGavin Pit
ROCK SOURCE DEVELOPMENT PLAN
Sec. 14, T.30N., R.08W.
PIT USE REQUIREMENTS

1. Pit expansion shall commence in the following order until the desired quantity of rock is achieved; Expansion area; then Stripped Areas.
2. Activity restrictions per Clause 1-25.
3. Only the quantities and sorts specified in this road plan for this sale may be used or manufactured, unless otherwise approved by the Contract Administrator in writing.
4. Maintain drainage of the pit floor and all drainage structures within the pit boundaries. The pit floor shall have continuity of slope be left in a smooth and neat condition, providing drainage to the southwest at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques.
5. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
6. Excavated slopes shall have a 1 1/2:1 backslope or less at the completion of operations.
7. A minimum 4 foot high berm shall be constructed and constantly maintained along the upper edge of excavated pit faces. No pit faces shall be left unblocked at any time.
8. All operations shall be completed prior to the end of each operating season, including but not limited to: drainage maintenance, sloping of the excavated face, and construction of berms, unless otherwise approved in writing by the Contract Administrator.
9. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed or access blocked to highway vehicles. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The Purchaser shall use Light Loose Rip Rap to block the drill trail.
10. All material shall remain the property of the State.
11. At the conclusion of operations, Purchaser shall ask the Contract Administrator for written approval of the final rock source condition and compliance with the terms of this plan.
12. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.
13. All operations shall be carried out in compliance with the regulation of:
    a. Regulations and Standards Applicable to “Metal and Nonmetal Mining and Milling Operations” (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration
14. Purchaser shall give the Contract Administrator a minimum of 7 days notice prior to commencing any operations.
15. Purchaser is require to inform Clallam County Dispatch (PenCom) of a day and approximate time of the pit blasting.

SUMMARY - Road Development Costs

SALE NAME:	Salt and Pepper	CONTRACT#:	30-103769		REGION:	Olympic		DISTRICT:	Straits						
	LEGAL DESCRIPTION:	0												TOTAL	
ROAD NAME:		I-2050	I-2052.1	I-2052.2	J-4030 App	J-4033	J-4025 R	J-4025 O	J-4020	ET1	ET2	J-4030	TOTAL:	SHEET #2-4	
ROAD TYPE:		Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Recon.			
NUMBER OF STATIONS:		2.75	3.10	7.90	2.30	8.75	9.05	12.55	2.10	6.90	6.95	7.35	69.70	631.75	
SIDESLOPE:		30.00%	40.00%	50.00%	15.00%	25.00%	25.00%	30.00%	15.00%	40.00%	20.00%	35.00%	325%	0%	
CLEARING AND GRUBBING:		$746	$841	$2,143	$337	$1,409	$1,326	$3,404	$173	$1,211	$803	$1,615	$14,009	$0	
ROAD BRUSHING:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,976	
EXCAVATION AND FILL:		$901	$1,726	$22,150	$527	$2,579	$2,667	$4,110	$481	$3,842	$1,821	$2,889	$43,693	$0	
ROAD GRADING:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$62	$62	$5,338	
DITCH CLEANING/CONSTRUCTION:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$287	$287	$2,724	
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:															
Ballast:	4798	4,800	190	220	600	160	710	730	1,270	220	0	550	4648	150	
			$3,384	$3,868	$10,770	$2,139	$8,769	$11,125	$19,830	$3,564	$0	$6,534	$69,983	$2,388	
Surface:	3499	3,500	100	110	300	80	330	360	500	70	0	260	2109	1390	
			$2,567	$2,774	$7,697	$1,679	$6,641	$7,825	$11,066	$1,578	$0	$5,387	$47,213	$20,778	
Oversize:	20	20	0	0	0	0	0	0	0	0	0	0	0	20	
			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$336	
CULVERTS AND FLUMES:			$0	$0	$924	$0	$924	$2,464	$2,772	$0	$0	$0	$7,084	$1,848	
STRUCTURES:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
MISC. EXPENSES:			$22	$24	$82	$18	$89	$111	$99	$17	$55	$55	$773	$1,346	$5,682
OVERHEAD:			$610	$739	$3,501	$376	$1,633	$2,041	$3,302	$465	$409	$214	$1,755	$15,045	$4,097
TOTAL COSTS:			$8,230	$9,971	$47,268	$5,077	$22,045	$27,560	$44,583	$6,278	$5,516	$2,893	$19,302	$198,722	$48,168
COST PER STATION:			$2,993	$3,217	$5,983	$2,207	$2,519	$3,045	$3,552	$2,989	$799	$416	$2,626	$2,851	76.24492778
MOBILIZATION:					$17,800										
ROAD DEACTIVATION AND ABANDONMENT COSTS:					$0										
Pit Work		$20,000													

	Road Standard	Const.	Reconst.	Prehaul	Posthaul	TOTAL (All Roads) =	$286,290
	Total Costs =	205,471	23,752	38,279	18,789	SALE VOLUME MBF =	2,417
	Total Sta. =	62	7	288	344	TOTAL COST PER MBF =	$118.45
	Cost per Sta. =	3,295	3,232	133	55	TOTAL COST PER STATION=	$408.14
	Compiled by:	Greg Ellis				Date:	8/17/23

NOTE: This appraisal has no allowance for profit and risk.

Sheet 1 of 4

Plans to be furnished by: Greg Ellis

SUMMARY - Road Development Costs

SALE NAME:	Salt and Pepper	CONTRACT#:	30-103769		REGION:	Olympic			DISTRICT:	Straits								
	LEGAL DESCRIPTION:	0																
ROAD NAME:		I-2050 R	I-2050 O	I-2052	I-2052.1	Eden V Rd	J-4000	4000 Bypa	J-4030	J-4032	J-4020	I-2600	I-2610	I-2620				
ROAD TYPE:		Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul				
NUMBER OF STATIONS:		11.25	9.80	11.40	0.65	11.50	145.80	6.90	37.40	2.00	18.75	14.00	12.00	6.50				
SIDESLOPE:		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
CLEARING AND GRUBBING:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0				
ROAD BRUSHING:		$203	$176	$205	$12	$0	$2,624	$124	$673	$36	$338	$252	$216	$117				
EXCAVATION AND FILL:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0				
ROAD GRADING:		$95	$83	$96	$5	$97	$1,232	$58	$316	$17	$158	$118	$101	$55				
DITCH CLEANING/CONSTRUCTION:		$439	$382	$445	$0	$0	$0	$0	$1,459	$0	$0	$0	$0	$0				
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:																		
Ballast:		0	50	0	0	0	0	0	0	0	100	0	0	0				
		$0	$893	$0	$0	$0	$0	$0	$0	$0	$1,495	$0	$0	$0				
Surface:		50	70	50	0	400	100	0	120	0	50	0	0	0				
		$1,187	$1,662	$1,759	$0	$4,872	$1,469	$0	$1,688	$0	$727	$0	$0	$0				
Oversize:		10	0	0	0	0	10	0	0	0	0	0	0	0				
		$154	$0	$0	$0	$0	$182	$0	$0	$0	$0	$0	$0	$0				
CULVERTS AND FLUMES:		$0	$924	$0	$0	$0	$0	$0	$924	$0	$0	$0	$0	$0				
STRUCTURES:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0				
MISC. EXPENSES:		$189	$220	$140	$5	$91	$1,152	$55	$295	$16	$547	$111	$95	$51				
OVERHEAD:		$204	$391	$238	$2	$455	$599	$21	$482	$6	$294	$43	$37	$20				
TOTAL COSTS:		$2,470	$4,731	$2,883	$24	$5,515	$7,259	$258	$5,838	$75	$3,559	$524	$449	$243				
COST PER STATION:		$220	$483	$253	$37	$480	$50	$37	$156	$37	$190	$37	$37	$37				

SUMMARY - Road Development

SALE NAME:	Salt and Pepper	CONTRACT#:	30-103769		REGION:	Olympic		DISTRICT:	Straits				
	LEGAL DESCRIPTION:	0											
ROAD NAME:		I-2050	I-2052	I-2052.1	I-2052.2	Eden V Rd.	J-4000	000 Bypa	J-4030	-4030 Ap	J-4032	J-4033	J-4025	J-4020
ROAD TYPE:		Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul
NUMBER OF STATIONS:		23.80	11.40	3.75	7.90	11.50	145.80	6.90	44.75	2.30	2.00	8.75	21.60	20.85
SIDESLOPE:		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROAD BRUSHING:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EXCAVATION AND FILL:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROAD GRADING:		$201	$96	$32	$67	$97	$1,232	$58	$378	$19	$17	$74	$183	$176
DITCHING:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:														
Ballast:		0	0	0	0	0	0	0	0	0	0	0	0	0
		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Surface:		100	0	0	0	100	200	0	100	0	0	0	0	50
		$1,124	$0	$0	$0	$1,218	$2,938	$0	$1,407	$0	$0	$0	$0	$727
Oversize:		0	0	0	0	0	0	0	0	0	0	0	0	0
		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CULVERTS AND FLUMES:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
STRUCTURES:		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISC. EXPENSES:		$188	$90	$30	$62	$91	$1,152	$55	$354	$18	$16	$69	$171	$165
OVERHEAD:		$151	$19	$6	$13	$141	$532	$11	$214	$4	$3	$14	$35	$107
TOTAL COSTS:		$1,664	$205	$67	$142	$1,547	$5,854	$124	$2,353	$41	$36	$157	$388	$1,175
COST PER STATION:		$70	$18	$18	$18	$134	$40	$18	$53	$18	$18	$18	$18	$56

SUMMARY - Road Development Costs

SALE NAME: Salt and Pepper CONTRACT#: 30-103769 REGION: Olympic DISTRICT: Straits

LEGAL DESCRIPTION: 0

ROAD NAME:	I-2600	I-2610	I-2620	0	0	0	0	0	0	0	0	0	0
ROAD TYPE:	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul
NUMBER OF STATIONS:	14.00	12.00	6.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIDESLOPE:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROAD BRUSHING:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EXCAVATION AND FILL:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROAD GRADING:	$118	$101	$55	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DITCHing:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:													
Ballast:	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Surface:	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Oversize:	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CULVERTS AND FLUMES:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
STRUCTURES:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISC. EXPENSES:	$111	$95	$51	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OVERHEAD:	$23	$20	$11	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL COSTS:	$252	$216	$117	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
COST PER STATION:	$18	$18	$18	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Forest Access Road Maintenance Specifications

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. 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, shape and compact the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET 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.