WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: PARCHED* ***AGREEMENT NO**: 30-102017*

AUCTION: December 18, 2024 starting at 10:00 a.m., Olympic Region Office, Forks, WA **COUNTY:** Clallam

SALE LOCATION: Sale located approximately 8 miles southwest of Port Angeles

PRODUCTS SOLD AND SALE AREA: All timber except trees marked with a band of blue paint, or bounded out by Leave Tree Area tags, no downed red cedar, or timber that has been on the ground for five years or more (five years is defined by more than 1.5 inches of sap rot); bounded by Timber Sale Boundary tags, painted property lines, and a timber type change in Unit 1; Timber Sale Boundary tags, Timber Type Change, and the PA-H-3071 road in Unit 3; Timber Sale Boundary tags and a Timber Type Change in Units 4 and 6; Timber Sale Boundary tags, Take/ Removal trees and the Walkbout Way road in Unit 5.

All timber bounded by right-of-way tags.

All forest products above located on part(s) of Sections 13, 23, 25 and 26 all in Township 30 North, Range 7 West, W.M., containing 193 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	18.8	23	6,499				627		3,576	1,752	401	64
Redcedar	15.8		414							308	106	
Hemlock	15.1		277						135	104	22	16
Silver fir	17.5		84						53	28	3	
Maple	15.2		62						12	10	24	16
Red alder	12.1		55						3	10	29	14
Sale Total			7,391									

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

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

EXPIRATION DATE: October 31, 2025 **ALLOCATION:** Export Restricted

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

HARVEST METHOD: Approximately 31% Cable, 69% Ground Based.

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 percent and less. Non-tethered self-leveling tracked equipment is limited to sustained slopes of 65 percent and less. Other ground based equipment is limited to tracked equipment on sustained slopes that are 45 percent and less. Rubber

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

A 30' equipment limitation zone applies to all typed waters unless approved by the Contract Administrator.

Skylines, guylines, tailholds, or other harvest activities occurring beyond the timber sale boundary in the Timing Restriction area shown on the Timber Sale Map adjacent to Unit 3 are subject to daily timing restrictions from April 1 to September 23 during which harvest activities are permitted from two hours after sunrise to two hours before sunset. Road maintenance activities on the PA-H-3200 between stations 34+65 and 45+34 are also subject to this daily timing restriction. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator except for hand falling and cable yarding. All harvest activities will be restricted on weekends, holidays and from 8:00 pm to 6:00 am.

ROADS: 63.14 stations of required construction. 40.07 stations of required reconstruction. 61.84 stations of optional construction. 463.12 stations of required pre-haul maintenance. 40.65 stations of optional pre-haul maintenance. 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 specifications, a commercial source shall be used that does and will be at the Purchaser's expense. Road construction will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator. No activities, including haul will be permitted from November 1 to March 31 unless the purchaser provides a written plan to mitigate winter hauling impacts that is approved in writing by the contract administrator.

No operations on weekends, State recognized holidays, or between 8:00 pm - 6:00 am unless approved in writing by the Contract Administrator.

Skylines, guylines, tailholds, or other harvest activities occurring beyond the timber sale boundary in the timing restriction area shown on the timber sale map adjacent to Unit 3 are subject to daily restrictions from April 1 to September 23 during which harvest activities are permitted from two hours after sunrise to two hours before sunset. Road maintenance activities on the PA-H-3200 between stations 34+65 and 45+34 are also subject to this daily timing restriction. The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator. All harvest and haul activities will be restricted on weekends, holidays and between 8:00 pm - 6:00 am daily unless otherwise approved in writing by the contract administrator.

ACREAGE DETERMINATION

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

FEES: $125,647.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: No Unit 2 and Unit 8 associated with the timber sale.

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 inches DBH or greater needs to be felled for safety reasons, trees will be left where felled.

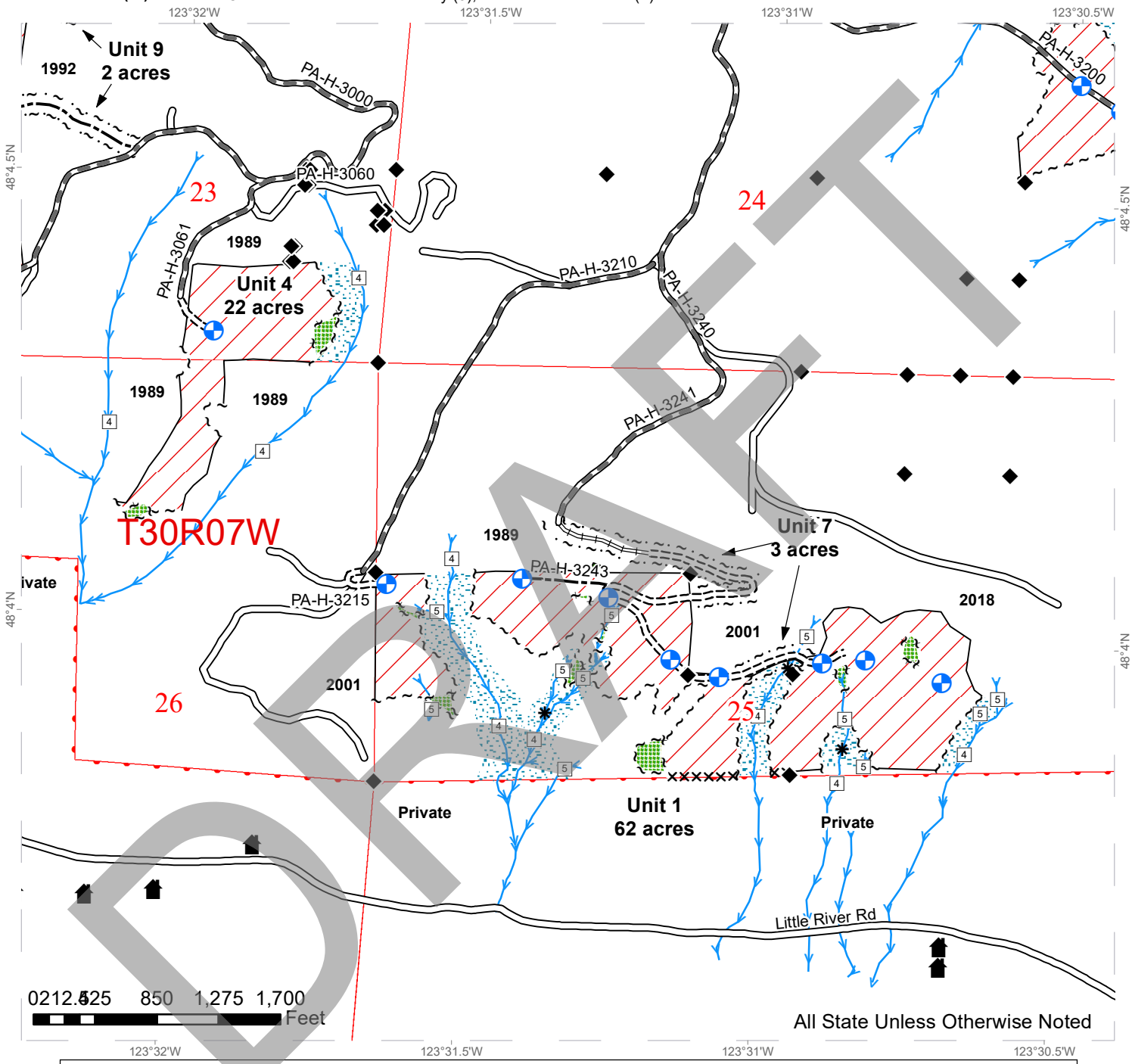
Timber and rock haul will be prohibited during sanctioned mountain bike events. Purchaser will be provided with written notice two weeks prior to event.

Locked gates located PA-H-3000, and PA-H-3050. Contact Olympic Region Dispatch Center at (360) 374-2800 to obtain an AA1 key.

TIMBER SALE MAP

SALE NAME: PARCHED
AGREEMENT #: 30-102017
TOWNSHIP(S): T30R6W, T30R7W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 1120-2120



- Variable Retention Harvest
- DNR Managed Lands
- Leave Tree Area
- Riparian Mgt Zone
- Streams
- Existing Roads
- Required Pre-Haul Maintenance
- Required Construction
- Required Reconstruction
- Optional Pre-Haul Maintenance
- Optional Construction
- Old Grades/Trails
- Sale Boundary Tags
- Leave Tree Tags
- Right of Way Tags
- Painted Property Line
- Timber Type Change
- Survey Monument
- Landing
- Existing Gate
- Rock Pit
- Structure
- Stream Type
- Stream Type Break

N

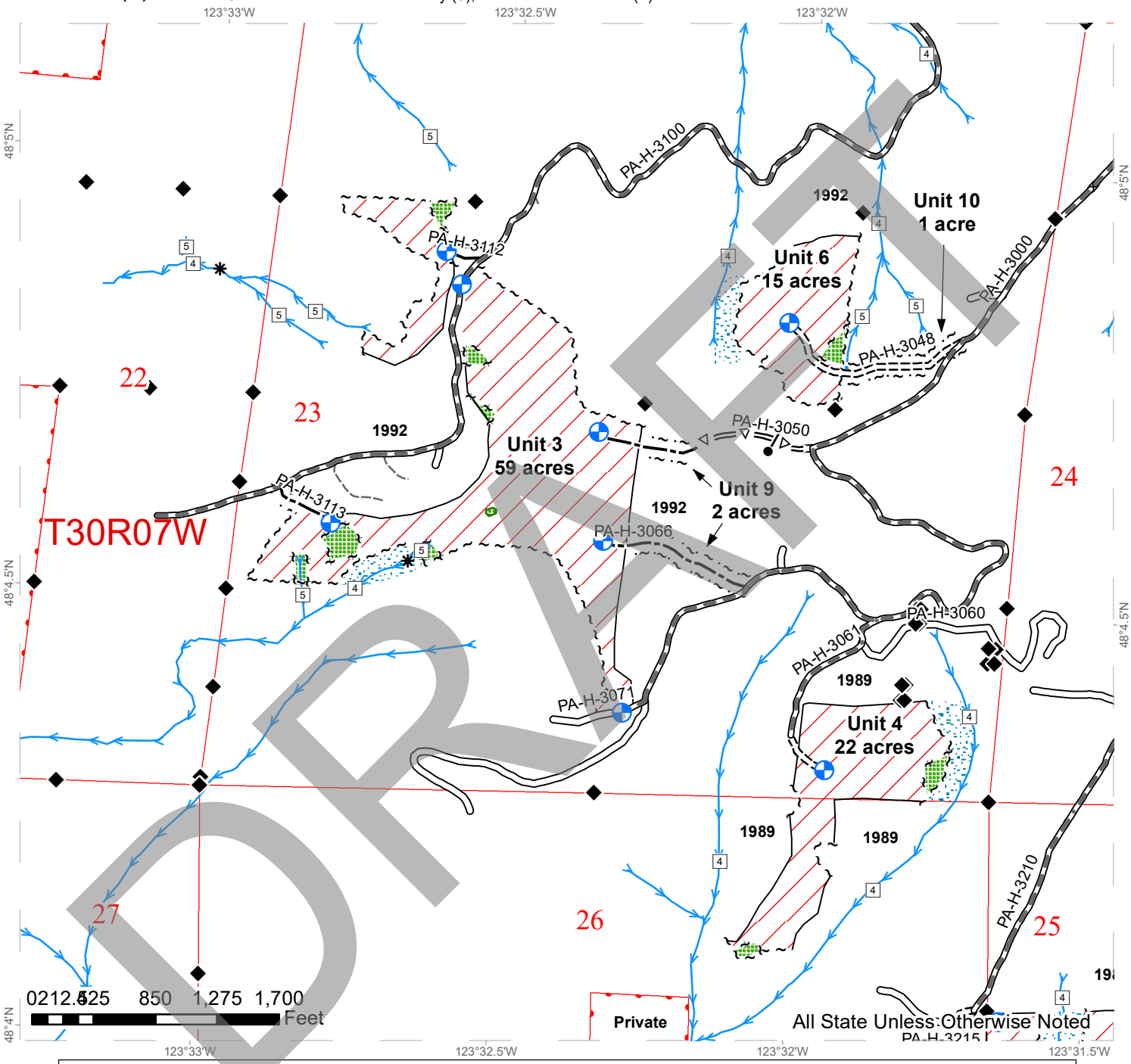
Prepared By: kgal490
Accessed: 10/01/2024 14:26

Modification Date: bsin490 4/18/2023

TIMBER SALE MAP

SALE NAME: PARCHED
AGREEMENT #: 30-102017
TOWNSHIP(S): T30R6W, T30R7W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 1120-2120



- Variable Retention Harvest
- DNR Managed Lands
- Leave Tree Area
- Riparian Mgt Zone
- Streams
- Existing Roads
- Required Pre-Haul Maintenance
- Required Construction
- Required Reconstruction
- Optional Pre-Haul Maintenance
- Optional Construction
- Old Grades/Trails
- Sale Boundary Tags
- Leave Tree Tags
- Right of Way Tags
- Painted Property Line
- Timber Type Change
- Survey Monument
- Landing
- Existing Gate
- Rock Pit
- Structure
- Stream Type
- Stream Type Break

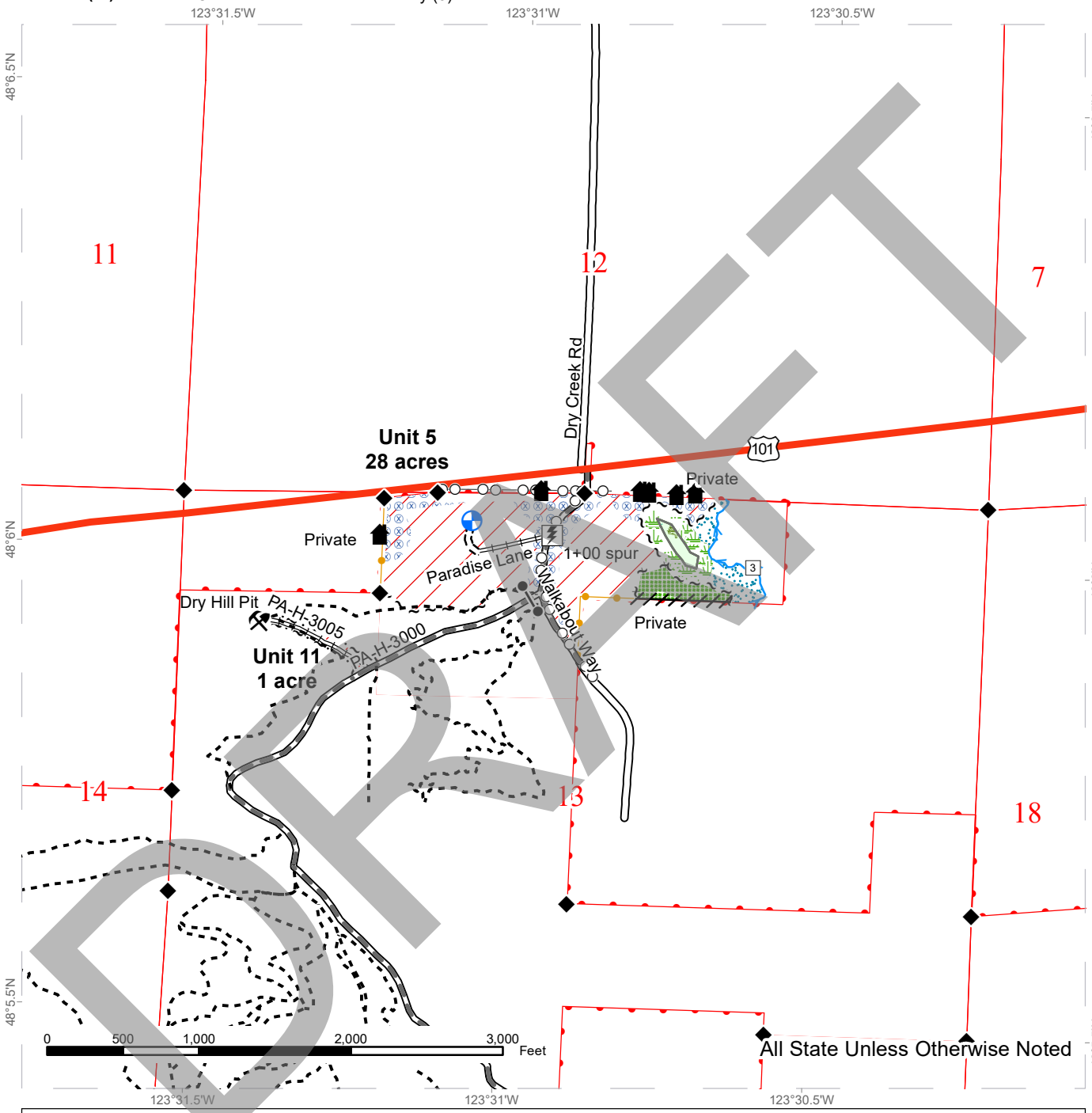
N

Prepared By: kgal490
Accessed: 10/01/2024 14:26
Modification Date: bsin490 4/18/2023

TIMBER SALE MAP

SALE NAME: PARCHED
AGREEMENT #: 30-102017
TOWNSHIP(S): T30R7W
TRUST(S): Common School and Indemnity (3)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 440-600'



- Variable Retention Harvest
- DNR Managed Lands
- Leave Tree Area
- Riparian Mgt Zone
- Forested Wetland
- Wetland Mgt Zone
- Hazard Abatement Area
- Sale Boundary Tags
- Right of Way Tags
- Leave Tree Tags
- Take / Removal Trees
- Flag Line
- Existing Roads
- Required Pre-Haul Maintenance
- Required Construction
- Required Reconstruction
- Power Lines
- Streams
- Stream Type
- Survey Monument
- Recreation Trail
- Gate (AA-1)
- Landing - Proposed
- Rock Pit
- Structure
- Utility Box

N

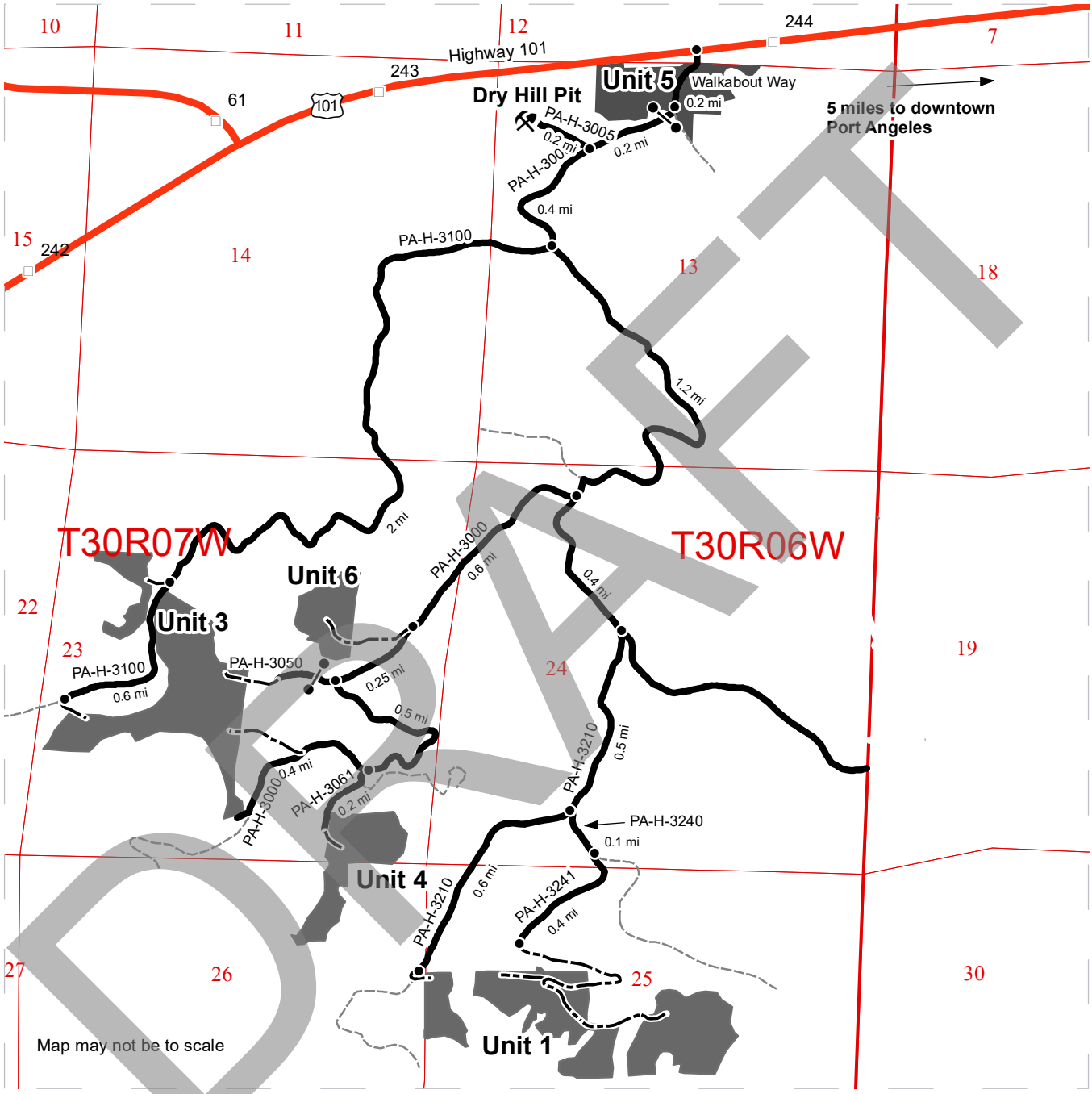
Prepared By: bsin490
Modification Date: bsin490 6/9/2022

Accessed: 10/01/2024 14:26

DRIVING MAP

SALE NAME: PARCHED
AGREEMENT#: 30-102017
TOWNSHIP(S): T30R6W, T30R7W
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 1120-2120



- Timber Sale Unit
- Haul Route
- Other Roads
- New Construction
- Milepost Markers
- Distance Indicator
- Gate
- Rock Pit

DRIVING DIRECTIONS:

See attached driving direction sheet.

N

Prepared By: kgal490
Accessed: 10/01/2024 14:26

Modification Date: bsin490 3/20/2023

Parched Driving Directions

Unit 1: From the intersection of Walkabout Way and Highway 101, turn south onto Walkabout Way and proceed for 0.2 miles until reaching a gate on your right. Proceed through the gate (AA1 key) and continue on the PA-H-3000 for 0.6 miles. Stay to the left to continue on the PA-H-3000 and continue for 1.2 miles to the intersection with the H-3200. Stay straight and continue on the PA-H-3200 for 0.4 miles and veer uphill onto the PA-H-3210. Continue for 0.5 miles. To access eastern portion of unit 1, turn left onto the PA-H-3240 and continue for 0.1 miles before veering downhill onto the PA-H-3241 which terminates at the beginning of new construction into the harvest unit.

Unit 3: From the intersection of the PA-H-3000 and PA-H-3100, turn right to continue on the PA-H-3100 and proceed for approximately 2 miles before reaching the edge of the unit.

Unit 4: From the intersection of the PA-H-3000 and PA-H-3061, turn left downhill for a couple hundred feet, turn right and continue for 0.2 miles to reach the beginning of new construction into the unit.

Unit 5: From the intersection of US-101 and Walkabout Way, head south on Walkabout Way for 200 feet before arriving at unit 5.

Unit 6: From the intersection of the PA-H-3000 and PA-H-3200, turn right to head up hill and proceed on the PA-H-3000 for 0.6 miles before arriving at the right of way for unit 6.

Timber Sale Cruise Report
Parched

Sale Name: PARCHED

Sale Type: LUMP SUM

Region: OLYMPIC

District: STRAITS

Lead Cruiser: Matt Llobet

Other Cruisers:PK, AH and DR. Prepared by Kevin Peterson

Cruise Narrative:
Location:
Parched timber sale is located 5 miles West of Port Angeles off Walkabout way road. Cruise Design:
A cruise all sample was applied throughout all three units and right of ways.
Log Lengths cruised:
Conifer- 12', 18', 24', 26', 30', 32', 34', 36', and 40'
Hardwood- 18', 20', 28', 30', and 40'
Poles- Class 3-45'+

All timber was graded in variable log lengths with the Scaling Bureaus Westsdide/Northwest log rules. The utility wood was given a board ft. volume. Parched timber sale was cruised using the variable plot and fix plot sample method. If a plot landed near or in a "Leave Tree Area" the leave trees were recorded as leave. A species and DBH was obtained. This volume is not included in the sale volume. Cruised acres are based on FMA acres including leave tree areas.
Parched ranges in elevation from 1,120 feet - 2,120 feet, with good road access. Parched has a dominant Douglas fir component (90%), with a scattered component of Western Hemlock, Western Red Cedar, True Fir, and Hardwoods. The Terrain throughout Parched is gentle to moderate, making for excellent operator ground.

Unit 1
- DF dominant, variability in diameters and heights
- Moderate and steady slopes
- Waist height salal understory in a lot of places
- WH, RC, and mixed hardwood understory

Unit 2:
- DF dominant
- WH, RC, and RA scattered throughout

Unit 3:
- DF dominant- variability in diameters and heights
- Moderate and steady slopes
- WH, RC, and mixed hardwood understory
- DF poles observed in central and southern portion of U3A ROW:
- DF plantation, small trees around 8-14" dbh

Unit 4:
- DF dominant- variability in sizes and heights
- In some places small scattered WH and RC in understory
- Appears to be lower DF stocking in southern "tail" end of unit. This area tended to have a more open understory and seemed "drier"

Unit 5:
- Mixture of widely spaced RA, DF and RC.

Unit 6:
_ DF dominant with scattered RC, WH and SF.
- Eastern side of unit (plots 22-28) looks wetter with greater WH and RC stocking, more downed woody debris. Some large WH and RC here.

ROW:
- Df plantation, small trees around 8-12" DBH

Daylight:
- Along grade- drivable to the pit
- Mostly contains plantation DF 8-13" DBH

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	18.8	23.1	122	6,499	80	627	3,576	1,752	401	64
RC	15.8			414				308	106	
WH	15.1			277			135	104	22	16
SF	17.5			84			53	28	3	
MA	15.2			62			12	10	24	16
RA	12.1			55			3	10	29	14
ALL	17.9	23.0	122	7,391	80	627	3,779	2,212	584	109

Timber Sale Notice Weight (tons)

	Tons by Grade						
Sp	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	45,591	411	3,645	23,102	14,424	3,574	436
RC	3,558				2,566	992	
WH	2,345			989	1,005	229	123
SF	578			317	237	25	
MA	518			82	78	248	110
RA	493			25	66	306	96
ALL	53,084	411	3,645	24,515	18,375	5,374	765

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 (%)
272.4	3.3	138.5	1.4	39,953	3.7

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
PARCHED 1A	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	26.9	26.9	25	25	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
PARCHED 1B	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	29.8	29.8	26	26	0
PARCHED 1C	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	8.1	8.1	9	9	0
PARCHED 1 RW	B1: VR, 1 BAF (10) Measure All, Sighting Ht = 0 ft	3.2	3.2	2	2	0
PARCHED 3A	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	53.8	53.8	43	43	0
PARCHED 3B	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	7.9	7.9	8	8	0
PARCHED 3 RW	FX: FR plots (20 tree / acre expansion)	2.7	2.7	1	1	0
PARCHED U4	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	23.2	23.2	28	28	0
PARCHED U5	B2C: VR, 2 BAF (40, 40 for some species) Measure/Count Plots, Sighting Ht = 0 ft	27.8	27.8	21	17	0
PARCHED 6	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	15.6	15.6	14	14	0
PARCHED U11	B1: VR, 1 BAF (20) Measure All, Sighting Ht = 4.5 ft	1.3	1.3	1	1	0
All		200.3	200.2	178	174	0

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	DEAD	2 SAW	Domestic	16.4	40	33	24	28.5	43.7	4.7
DF	DEAD	3 SAW	Domestic	12.9	40	41	21	48.5	63.3	4.2
DF	DEAD	UTILITY	Pulp	8.4	29	14	14	0.0	22.2	2.7
DF	LIVE	2 SAW	Domestic	16.1	39	10,561	10,434	1.2	13,016.4	2,089.9
DF	LIVE	2 SAW	HQ-A	14.0	36	3,051	3,031	0.7	4,196.9	607.2
DF	LIVE	2 SAW	HQ-B	15.6	38	3,776	3,717	1.6	4,957.4	744.5
DF	LIVE	2 SAW	Pole	14.3	37	646	646	0.0	887.7	129.3
DF	LIVE	3 PEELER	Domestic	26.9	33	399	399	0.0	411.1	79.9
DF	LIVE	3 SAW	Domestic	8.4	36	5,945	5,879	1.1	9,933.3	1,177.7
DF	LIVE	3 SAW	HQ-B	9.9	37	2,409	2,406	0.1	3,726.4	481.9

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	Pole	10.4	36	439	439	0.0	700.7	88.0
DF	LIVE	4 SAW	Domestic	5.9	25	1,965	1,959	0.3	3,506.6	392.5
DF	LIVE	4 SAW	Pole	8.7	23	40	40	0.0	67.2	8.1
DF	LIVE	CULL	Cull	7.2	7	1,059	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	18.8	35	3,151	3,130	0.7	3,644.7	627.0
DF	LIVE	UTILITY	Pulp	5.7	21	309	307	0.6	413.6	61.6
MA	LIVE	2 SAW	Domestic	16.3	26	68	62	9.1	82.1	12.4
MA	LIVE	3 SAW	Domestic	12.0	24	52	50	3.4	77.7	10.1
MA	LIVE	4 SAW	Domestic	6.8	30	121	118	2.9	248.3	23.6
MA	LIVE	CULL	Cull	6.5	20	39	0	100.0	0.0	0.0
MA	LIVE	UTILITY	Pulp	6.2	19	79	79	0.0	110.1	15.8
RA	LIVE	2 SAW	Domestic	13.3	28	18	15	18.9	25.3	2.9
RA	LIVE	3 SAW	Domestic	10.2	29	49	49	0.0	66.0	9.7
RA	LIVE	4 SAW	Domestic	6.5	29	158	146	7.6	305.7	29.2
RA	LIVE	CULL	Cull	5.0	11	10	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.6	22	68	68	0.0	96.4	13.5
RC	LIVE	3 SAW	Domestic	9.8	34	1,597	1,515	5.1	2,528.2	303.4
RC	LIVE	3 SAW	Pole	9.0	40	24	24	0.0	37.4	4.7
RC	LIVE	4 SAW	Domestic	6.0	26	533	528	0.9	992.3	105.8
RC	LIVE	CULL	Cull	8.2	9	425	0	100.0	0.0	0.0
SF	LIVE	2 SAW	Domestic	19.0	39	266	266	0.0	316.6	53.2
SF	LIVE	3 SAW	Domestic	8.0	37	141	141	0.0	237.0	28.2
SF	LIVE	4 SAW	Domestic	6.2	26	14	14	0.0	24.6	2.7
SF	LIVE	CULL	Cull	7.0	8	27	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	15.0	38	694	674	2.9	988.7	135.1
WH	LIVE	3 SAW	Domestic	8.4	35	527	521	1.1	1,004.9	104.4
WH	LIVE	4 SAW	Domestic	5.7	26	111	109	1.9	228.8	21.9
WH	LIVE	CULL	Cull	8.6	7	60	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.7	20	77	77	0.0	122.9	15.5

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 8	LIVE	Pulp	5.3	20	189	1.0	278.6	37.9
DF	5 - 8	LIVE	Cull	5.8	7	0	100.0	0.0	0.0
DF	5 - 8	LIVE	Domestic	6.4	30	4,780	0.6	8,581.6	957.4
DF	5 - 8	DEAD	Pulp	7.5	16	2	0.0	3.8	0.4
DF	5 - 8	LIVE	Pole	8.3	34	78	0.0	163.3	15.5

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 8	LIVE	HQ-B	8.5	37	325	0.0	584.6	65.1
DF	9 - 11	DEAD	Pulp	9.1	40	11	0.0	18.5	2.3
DF	9 - 11	LIVE	Pulp	9.6	22	9	0.0	14.7	1.8
DF	9 - 11	LIVE	Cull	10.3	12	0	100.0	0.0	0.0
DF	9 - 11	LIVE	Domestic	10.3	35	3,045	1.3	4,839.0	609.9
DF	9 - 11	LIVE	HQ-B	10.3	37	2,081	0.1	3,141.8	416.8
DF	9 - 11	LIVE	Pole	10.6	34	402	0.0	604.5	80.5
DF	9 - 11	DEAD	Domestic	10.8	40	6	52.9	19.7	1.2
DF	12 - 14	LIVE	Pulp	12.3	20	13	0.0	16.2	2.7
DF	12 - 14	LIVE	HQ-B	13.2	38	1,139	0.6	1,746.4	228.1
DF	12 - 14	LIVE	Domestic	13.3	38	2,810	0.7	4,010.8	562.9
DF	12 - 14	LIVE	Pole	13.3	37	347	0.0	499.6	69.6
DF	12 - 14	LIVE	HQ-A	13.4	36	1,999	0.5	2,917.8	400.3
DF	12 - 14	LIVE	Cull	13.9	6	0	100.0	0.0	0.0
DF	12 - 14	DEAD	Domestic	14.7	40	15	46.5	43.6	3.0
DF	15 - 19	LIVE	Pole	16.3	40	298	0.0	388.1	59.8
DF	15 - 19	DEAD	Domestic	16.4	40	24	28.5	43.7	4.7
DF	15 - 19	LIVE	Pulp	16.6	33	63	0.0	71.6	12.7
DF	15 - 19	LIVE	Domestic	16.8	39	4,653	0.9	5,693.2	932.1
DF	15 - 19	LIVE	HQ-A	17.0	35	2,481	0.6	3,031.9	497.0
DF	15 - 19	LIVE	Cull	17.1	14	0	100.0	0.0	0.0
DF	15 - 19	LIVE	HQ-B	17.1	37	1,715	0.9	2,190.4	343.6
DF	20+	LIVE	HQ-A	21.6	35	1,682	1.0	1,891.9	336.8
DF	20+	LIVE	HQ-B	22.1	36	863	4.1	1,020.5	172.9
DF	20+	LIVE	Domestic	23.6	39	3,383	1.9	3,742.8	677.7
DF	20+	LIVE	Pulp	24.6	18	32	0.0	32.5	6.5
DF	20+	LIVE	Cull	26.0	13	0	100.0	0.0	0.0
MA	5 - 8	LIVE	Cull	5.7	19	0	100.0	0.0	0.0
MA	5 - 8	LIVE	Pulp	5.8	18	40	0.0	53.8	8.1
MA	5 - 8	LIVE	Domestic	6.6	29	89	2.0	193.7	17.9
MA	9 - 11	LIVE	Domestic	9.9	27	45	3.5	76.2	9.1
MA	9 - 11	LIVE	Pulp	10.6	32	27	0.0	43.0	5.4
MA	12 - 14	LIVE	Domestic	13.0	30	33	5.0	56.0	6.7
MA	12 - 14	LIVE	Pulp	13.0	28	12	0.0	13.2	2.3
MA	15 - 19	LIVE	Domestic	16.5	24	62	9.1	82.1	12.4
MA	15 - 19	LIVE	Cull	18.4	11	0	100.0	0.0	0.0
RA	5 - 8	LIVE	Cull	5.0	15	0	100.0	0.0	0.0
RA	5 - 8	LIVE	Pulp	5.1	22	60	0.0	85.6	12.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
RA	5 - 8	LIVE	Domestic	6.2	30	120	7.8	256.6	24.0
RA	9 - 11	LIVE	Domestic	10.0	27	74	2.5	115.1	14.9
RA	9 - 11	LIVE	Pulp	11.3	14	8	0.0	10.8	1.6
RA	12 - 14	LIVE	Domestic	13.3	28	15	18.9	25.3	2.9
RC	5 - 8	LIVE	Cull	5.3	11	0	100.0	0.0	0.0
RC	5 - 8	LIVE	Domestic	6.3	28	863	3.4	1,755.0	172.8
RC	9 - 11	LIVE	Pole	9.0	40	24	0.0	37.4	4.7
RC	9 - 11	LIVE	Cull	9.6	6	0	100.0	0.0	0.0
RC	9 - 11	LIVE	Domestic	10.0	33	524	5.4	924.1	105.0
RC	12 - 14	LIVE	Domestic	13.1	34	360	4.3	527.7	72.1
RC	12 - 14	LIVE	Cull	13.6	11	0	100.0	0.0	0.0
RC	15 - 19	LIVE	Cull	17.2	8	0	100.0	0.0	0.0
RC	15 - 19	LIVE	Domestic	17.6	33	230	3.7	253.8	46.1
RC	20+	LIVE	Domestic	21.5	35	65	1.4	59.9	13.1
RC	20+	LIVE	Cull	23.8	11	0	100.0	0.0	0.0
SF	5 - 8	LIVE	Cull	5.4	8	0	100.0	0.0	0.0
SF	5 - 8	LIVE	Domestic	6.7	33	77	0.0	132.7	15.4
SF	9 - 11	LIVE	Domestic	9.6	36	78	0.0	128.9	15.5
SF	12 - 14	LIVE	Domestic	13.0	39	84	0.0	133.3	16.8
SF	12 - 14	LIVE	Cull	14.6	8	0	100.0	0.0	0.0
SF	15 - 19	LIVE	Domestic	17.0	40	17	0.0	22.3	3.4
SF	20+	LIVE	Domestic	24.5	40	165	0.0	161.0	33.0
SF	20+	LIVE	Cull	39.4	6	0	100.0	0.0	0.0
WH	5 - 8	LIVE	Pulp	5.4	19	57	0.0	91.5	11.3
WH	5 - 8	LIVE	Cull	5.8	8	0	100.0	0.0	0.0
WH	5 - 8	LIVE	Domestic	6.9	31	399	1.9	844.4	79.9
WH	9 - 11	LIVE	Domestic	9.8	34	231	0.0	389.4	46.3
WH	9 - 11	LIVE	Pulp	9.8	15	2	0.0	4.9	0.4
WH	12 - 14	LIVE	Cull	12.9	5	0	100.0	0.0	0.0
WH	12 - 14	LIVE	Domestic	13.3	34	231	0.0	356.5	46.3
WH	12 - 14	LIVE	Pulp	14.7	16	19	0.0	26.4	3.8
WH	15 - 19	LIVE	Cull	15.9	5	0	100.0	0.0	0.0
WH	15 - 19	LIVE	Domestic	16.1	40	343	5.5	512.4	68.7
WH	20+	LIVE	Domestic	20.9	40	100	0.0	119.7	20.1
WH	20+	LIVE	Cull	26.7	5	0	100.0	0.0	0.0

Cruise Unit Report
PARCHED 1A

Unit Sale Notice Volume (MBF): PARCHED 1A

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	20.6			1,094	49	775	224	43	3
RC	19.5			39			34	5	
MA	15.9			15			3	7	4
WH	13.5			11			9	2	
RA	15.8			7		3		4	
ALL	20.0			1,166	49	778	271	60	7

Unit Cruise Design: PARCHED 1A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	26.9	26.9	25	25	0

Unit Cruise Summary: PARCHED 1A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	91	105	4.2	0
RC	10	13	0.5	0
MA	4	4	0.2	0
WH	2	2	0.1	0
RA	2	2	0.1	0
ALL	109	126	5.0	0

Unit Cruise Statistics: PARCHED 1A

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	262.5	52.3	10.5	178.8	26.1	2.7	46,934	58.5	10.8
RC	21.7	229.9	46.0	90.8	67.9	21.5	1,970	239.7	50.7
MA	6.4	295.4	59.1	85.9	42.6	21.3	549	298.4	62.8
WH	5.0	346.1	69.2	78.3	23.2	16.4	392	346.9	71.1
RA	3.2	500.0	100.0	82.6	2.5	1.8	264	500.0	100.0
ALL	298.8	51.8	10.4	167.7	34.4	3.3	50,109	62.2	10.9

Unit Summary: PARCHED 1A

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	86	ALL	20.5	85	116	39,778	38,441	3.4	93.8	215.0	47.5	1,034.1
DF	LIVE	CUT	5	ALL	22.0	99	127	2,313	2,235	3.4	4.7	12.5	2.7	60.1
MA	LIVE	CUT	4	ALL	15.9	57	91	699	549	21.3	4.6	6.4	1.6	14.8
RA	LIVE	CUT	2	ALL	15.8	56	68	308	264	14.1	2.4	3.2	0.8	7.1
RC	LIVE	CUT	10	ALL	19.5	64	80	2,018	1,453	28.0	7.7	16.0	3.6	39.1
WH	LIVE	CUT	2	ALL	13.5	53	64	413	392	5.1	5.0	5.0	1.4	10.5
ALL	LIVE	CUT	109	ALL	20.0	81	110	45,528	43,334	4.8	118.2	258.1	57.5	1,165.7
ALL	ALL	CUT	109	ALL	20.0	81	110	45,528	43,334	4.8	118.2	258.1	57.5	1,165.7

Cruise Unit Report
PARCHED 1B

Unit Sale Notice Volume (MBF): PARCHED 1B

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	16.8	13.0		934	18	520	325	58	14
RC	15.7			18			12	6	
MA	16.8			11		3	3	3	2
ALL	16.8	13.0		963	18	523	340	66	16

Unit Cruise Design: PARCHED 1B

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	29.8	29.8	26	26	0

Unit Cruise Summary: PARCHED 1B

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	87	100	3.8	1
RC	7	10	0.4	0
MA	3	3	0.1	0
ALL	97	113	4.3	1

Unit Cruise Statistics: PARCHED 1B

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	240.4	53.9	10.6	149.9	30.1	3.2	36,039	61.7	11.0
RC	15.4	209.0	41.0	55.4	28.5	10.8	852	210.9	42.4
MA	4.6	509.9	100.0	80.4	3.7	2.1	371	509.9	100.0
ALL	260.4	47.4	9.3	143.1	35.3	3.6	37,262	59.1	10.0

Unit Summary: PARCHED 1B

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	87	ALL	16.8	74	95	33,076	31,354	5.2	135.9	209.1	51.0	934.3
MA	LIVE	CUT	3	ALL	16.8	50	64	391	371	5.0	3.0	4.6	1.1	11.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	CUT	7	ALL	15.7	55	69	932	596	36.0	8.0	10.8	2.7	17.8
ALL	LIVE	CUT	97	ALL	16.7	72	93	34,398	32,321	6.0	146.9	224.5	54.9	963.2
ALL	ALL	CUT	97	ALL	16.7	72	93	34,398	32,321	6.0	146.9	224.5	54.9	963.2

Cruise Unit Report
PARCHED 1C

Unit Sale Notice Volume (MBF): PARCHED 1C

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	17.2	13.0		318	8	58	122	94	29	5
MA	18.0			16			9		2	5
RC	18.3			14				12	2	
RA	12.8			11				7	4	1
SF	19.1			7			6	2		
ALL	17.1	13.0		367	8	58	137	115	37	12

Unit Cruise Design: PARCHED 1C

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	8.1	8.1	9	9	0

Unit Cruise Summary: PARCHED 1C

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	36	38	4.2	1
RC	7	10	1.1	0
MA	4	4	0.4	0
RA	3	3	0.3	0
SF	1	1	0.1	0
ALL	51	56	6.2	1

Unit Cruise Statistics: PARCHED 1C

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	263.9	56.5	18.8	156.8	38.6	6.4	41,382	68.5	19.9
RC	46.9	96.1	32.0	57.4	80.1	30.3	2,696	125.1	44.1
MA	17.8	228.1	76.0	113.9	34.1	17.1	2,025	230.6	77.9
RA	13.3	300.0	100.0	103.7	18.5	10.7	1,383	300.6	100.6
SF	6.9	300.0	100.0	131.2	0.0	0.0	911	300.0	100.0
ALL	348.9	34.6	11.5	138.7	46.8	6.5	48,397	58.2	13.3

Unit Summary: PARCHED 1C

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	36	ALL	17.2	75	94	42,420	39,204	7.6	154.9	250.0	60.3	317.5
MA	LIVE	CUT	4	ALL	18.0	62	75	2,348	2,025	13.8	10.1	17.8	4.2	16.4
RA	LIVE	CUT	3	ALL	12.8	61	75	1,530	1,383	9.6	14.9	13.3	3.7	11.2
RC	LIVE	CUT	7	ALL	18.3	56	70	3,547	1,787	49.6	17.0	31.1	7.3	14.5
SF	LIVE	CUT	1	ALL	19.1	84	107	932	911	2.2	3.5	6.9	1.6	7.4
ALL	LIVE	CUT	51	ALL	17.1	72	90	50,778	45,309	10.8	200.4	319.2	77.1	367.0
ALL	ALL	CUT	51	ALL	17.1	72	90	50,778	45,309	10.8	200.4	319.2	77.1	367.0

Cruise Unit Report
PARCHED 1 RW

Unit Sale Notice Volume (MBF): PARCHED 1 RW

				MBF Volume by Grade	
Sp	DBH	Rings/In	Age	All	4 Saw
DF	8.0			9	9
ALL	8.0			9	9

Unit Cruise Design: PARCHED 1 RW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (10) Measure All, Sighting Ht = 0 ft	3.2	3.1	2	2	0

Unit Cruise Summary: PARCHED 1 RW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	10	10	5.0	0
ALL	10	10	5.0	0

Unit Cruise Statistics: PARCHED 1 RW

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	50.0	0.0	0.0	54.4	0.0	0.0	2,722	0.0	0.0
ALL	50.0	0.0	0.0	54.4	0.0	0.0	2,722	0.0	0.0

Unit Summary: PARCHED 1 RW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	10	ALL	8.0	25	28	2,722	2,722	0.0	143.2	50.0	17.7	8.7
ALL	LIVE	CUT	10	ALL	8.0	25	28	2,722	2,722	0.0	143.2	50.0	17.7	8.7
ALL	ALL	CUT	10	ALL	8.0	25	28	2,722	2,722	0.0	143.2	50.0	17.7	8.7

Cruise Unit Report
PARCHED 3A

Unit Sale Notice Volume (MBF): PARCHED 3A

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	18.7	33.0	131	2,391	42	258	1,309	649	112	21
RC	14.4			73				53	20	
WH	13.9			63			22	32	7	2
SF	16.9			42			26	17		
MA	15.0			3				3		
ALL	18.1	33.0	131	2,572	42	258	1,356	754	139	23

Unit Cruise Design: PARCHED 3A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	53.8	53.8	43	43	0

Unit Cruise Summary: PARCHED 3A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	180	195	4.5	7
RC	19	19	0.4	0
WH	5	5	0.1	0
SF	3	3	0.1	0
MA	1	1	0.0	0
ALL	208	223	5.2	7

Unit Cruise Statistics: PARCHED 3A

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	283.4	46.5	7.1	168.9	32.7	2.4	47,874	56.8	7.5
RC	17.7	253.3	38.6	76.6	39.7	9.1	1,353	256.4	39.7
WH	7.3	278.9	42.5	160.8	38.8	17.4	1,169	281.6	45.9
SF	4.4	369.5	56.3	180.0	74.6	43.1	785	376.9	70.9
MA	0.9	655.7	100.0	67.6	0.0	0.0	63	655.7	100.0
ALL	313.7	39.3	6.0	163.4	37.4	2.6	51,244	54.2	6.5

Unit Summary: PARCHED 3A

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	16	ALL	19.6	89	115	4,091	3,928	4.0	11.1	23.3	5.3	211.3
DF	LIVE	CUT	164	ALL	18.7	79	100	42,184	40,509	4.0	125.7	239.8	55.5	2,179.4
MA	LIVE	CUT	1	ALL	15.0	50	60	85	63	25.9	0.8	0.9	0.2	3.4
RC	LIVE	CUT	18	ALL	14.4	54	66	1,540	1,282	16.7	14.8	16.7	4.4	69.0
RC	LIVE	CUT	1	ALL	15.0	67	98	86	71	16.7	0.8	0.9	0.2	3.8
SF	LIVE	CUT	3	ALL	16.9	71	90	874	785	10.3	2.8	4.4	1.1	42.2
WH	LIVE	CUT	5	ALL	13.9	76	107	1,218	1,169	4.0	6.9	7.3	1.9	62.9
ALL	LIVE	CUT	208	ALL	18.2	77	98	50,078	47,807	4.5	162.9	293.3	68.6	2,572.0
ALL	ALL	CUT	208	ALL	18.2	77	98	50,078	47,807	4.5	162.9	293.3	68.6	2,572.0

Cruise Unit Report
PARCHED 3B

Unit Sale Notice Volume (MBF): PARCHED 3B

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	16.5			257	10	25	126	73	17	5
WH	18.7			45			28	12		5
RC	16.8			6				4	2	
ALL	16.8			308	10	25	154	89	19	10

Unit Cruise Design: PARCHED 3B

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	7.9	7.9	8	8	0

Unit Cruise Summary: PARCHED 3B

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	27	31	3.9	0
WH	5	5	0.6	0
RC	3	3	0.4	0
ALL	35	39	4.9	0

Unit Cruise Statistics: PARCHED 3B

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	242.2	55.9	19.8	148.5	37.0	7.1	35,961	67.1	21.0
WH	39.1	146.6	51.8	147.3	36.8	16.5	5,754	151.1	54.4
RC	15.0	282.8	100.0	51.4	62.8	36.2	771	289.7	106.4
ALL	296.3	47.3	16.7	143.4	41.1	6.9	42,486	62.7	18.1

Unit Summary: PARCHED 3B

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	27	ALL	16.6	68	87	33,909	32,481	4.2	145.6	218.8	53.7	256.6
RC	LIVE	CUT	3	ALL	16.8	55	67	1,159	771	33.5	9.7	15.0	3.7	6.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	5	ALL	18.7	72	90	5,854	5,754	1.7	20.5	39.1	9.0	45.5
ALL	LIVE	CUT	35	ALL	16.9	68	86	40,922	39,006	4.7	175.8	272.8	66.4	308.1
ALL	ALL	CUT	35	ALL	16.9	68	86	40,922	39,006	4.7	175.8	272.8	66.4	308.1

Cruise Unit Report
PARCHED 3 RW

Unit Sale Notice Volume (MBF): PARCHED 3 RW

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	13.0			6	5	1
ALL	13.0			6	5	1

Unit Cruise Design: PARCHED 3 RW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	2.7	2.7	1	1	0

Unit Cruise Summary: PARCHED 3 RW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	1	1	1.0	0
ALL	1	1	1.0	0

Unit Cruise Statistics: PARCHED 3 RW

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	18.4	0.0	0.0	117.2	0.0	0.0	2,160	0.0	0.0
ALL	18.4	0.0	0.0	117.2	0.0	0.0	2,160	0.0	0.0

Unit Summary: PARCHED 3 RW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	13.0	65	82	2,160	2,160	0.0	20.0	18.4	5.1	5.8
ALL	LIVE	CUT	1	ALL	13.0	65	82	2,160	2,160	0.0	20.0	18.4	5.1	5.8
ALL	ALL	CUT	1	ALL	13.0	65	82	2,160	2,160	0.0	20.0	18.4	5.1	5.8

Cruise Unit Report
PARCHED U4

Unit Sale Notice Volume (MBF): PARCHED U4

				MBF Volume by Grade					
Sp	DBH	Rings/In	Age	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	18.4	11.0	99	927	67	526	261	67	7
RC	15.1			77			55	23	
WH	21.1			14		10	4	0	
RA	12.2			13			3	8	2
ALL	17.8	11.0	99	1,032	67	536	322	98	9

Unit Cruise Design: PARCHED U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	23.2	23.2	28	28	0

Unit Cruise Summary: PARCHED U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	113	116	4.1	1
RC	26	26	0.9	0
WH	3	3	0.1	0
RA	3	3	0.1	0
ALL	145	148	5.3	1

Unit Cruise Statistics: PARCHED 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	258.9	53.7	10.1	157.1	32.4	3.0	40,674	62.7	10.6
RC	39.6	145.1	27.4	84.0	39.5	7.8	3,324	150.4	28.5
WH	6.7	294.0	55.6	90.9	44.0	25.4	609	297.2	61.1
RA	4.3	529.2	100.0	130.8	12.9	7.4	561	529.3	100.3
ALL	309.5	37.1	7.0	146.0	38.0	3.2	45,167	53.1	7.7

Unit Summary: PARCHED U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	DEAD	CUT	2	ALL	22.9	96	123	724	701	3.2	1.6	4.5	0.9	16.3
DF	LIVE	CUT	5	ALL	19.4	86	110	1,811	1,753	3.2	5.4	11.2	2.5	40.7
DF	LIVE	CUT	106	ALL	18.3	76	97	38,750	37,518	3.2	130.8	238.8	55.8	870.4
RA	LIVE	CUT	3	ALL	12.2	72	102	597	561	6.0	5.3	4.3	1.2	13.0
RC	LIVE	CUT	26	ALL	15.1	50	64	3,887	3,324	14.5	31.8	39.6	10.2	77.1
WH	LIVE	CUT	3	ALL	21.1	66	81	854	609	28.7	2.8	6.7	1.5	14.1
ALL	LIVE	CUT	143	ALL	17.7	71	91	45,899	43,765	4.6	176.1	300.5	71.2	1,015.3
ALL	DEAD	CUT	2	ALL	22.9	96	123	724	701	3.2	1.6	4.5	0.9	16.3
ALL	ALL	CUT	145	ALL	17.7	72	92	46,623	44,466	4.6	177.7	305.0	72.2	1,031.6

Cruise Unit Report
PARCHED U5

Unit Sale Notice Volume (MBF): PARCHED U5

				MBF Volume by Grade			
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw	Utility
DF	12.1			104	51	53	
RC	14.9			95	67	28	
RA	10.7			24		14	10
MA	10.5			13		9	4
WH	14.0			2		2	
ALL	12.5			238	118	105	15

Unit Cruise Design: PARCHED U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (40, 40 for some species) Measure/ Count Plots, Sighting Ht = 0 ft	27.8	27.8	21	17	0

Unit Cruise Summary: PARCHED U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	18	31	1.5	0
RC	22	34	1.6	0
RA	9	9	0.4	0
MA	6	6	0.3	0
WH	1	1	0.0	0
ALL	56	81	3.9	0

Unit Cruise Statistics: PARCHED U5

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	59.0	138.2	30.2	63.3	23.8	5.6	3,741	140.2	30.7
RC	64.8	122.7	26.8	52.7	41.8	8.9	3,411	129.6	28.2
RA	17.1	157.8	34.4	50.5	29.2	9.7	865	160.4	35.8
MA	11.4	196.2	42.8	42.2	24.6	10.0	482	197.8	44.0
WH	1.9	458.3	100.0	33.7	0.0	0.0	64	458.3	100.0
ALL	154.3	44.4	9.7	55.5	33.7	4.5	8,563	55.7	10.7

Unit Summary: PARCHED U5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	18	ALL	12.1	44	54	3,828	3,741	2.3	73.9	59.0	17.0	104.0
MA	LIVE	CUT	6	ALL	10.5	29	33	494	482	2.3	19.0	11.4	3.5	13.4
RA	LIVE	CUT	9	ALL	10.7	35	41	935	865	7.4	27.5	17.1	5.2	24.1
RC	LIVE	CUT	22	ALL	14.9	43	52	3,806	3,411	10.4	53.5	64.8	16.8	94.8
WH	LIVE	CUT	1	ALL	14.0	44	53	77	64	16.3	1.8	1.9	0.5	1.8
ALL	LIVE	CUT	56	ALL	12.7	41	49	9,139	8,563	6.3	175.7	154.3	43.0	238.0
ALL	ALL	CUT	56	ALL	12.7	41	49	9,139	8,563	6.3	175.7	154.3	43.0	238.0

Cruise Unit Report
PARCHED 6

Unit Sale Notice Volume (MBF): PARCHED 6

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	23.9			453	20	153	198	65	8	9
WH	14.1			139			75	46	10	8
RC	16.5			92				71	21	
SF	17.8			34			22	10	3	
MA	12.5			3					3	
ALL	18.3			721	20	153	295	192	44	17

Unit Cruise Design: PARCHED 6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	15.6	15.6	14	14	0

Unit Cruise Summary: PARCHED 6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	34	35	2.5	0
WH	14	14	1.0	0
RC	23	28	2.0	0
SF	3	3	0.2	0
MA	1	1	0.1	0
ALL	75	81	5.8	0

Unit Cruise Statistics: PARCHED 6

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	156.3	69.7	18.6	191.3	32.0	5.5	29,884	76.7	19.4
WH	62.5	135.9	36.3	142.7	34.8	9.3	8,918	140.3	37.5
RC	81.6	87.8	23.5	83.9	35.8	7.5	6,844	94.8	24.6
SF	13.4	270.2	72.2	165.0	28.3	16.4	2,209	271.7	74.0
MA	2.9	374.2	100.0	61.0	0.0	0.0	174	374.2	100.0
ALL	316.6	44.3	11.8	151.7	44.9	5.2	48,030	63.1	12.9

Unit Summary: PARCHED 6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	34	ALL	23.9	92	117	30,327	29,030	4.3	48.7	151.8	31.0	452.9
MA	LIVE	CUT	1	ALL	12.5	61	75	268	174	35.0	3.4	2.9	0.8	2.7
RC	LIVE	CUT	23	ALL	16.5	63	80	7,247	5,886	18.8	47.3	70.2	17.3	91.8
SF	LIVE	CUT	3	ALL	17.8	79	100	2,240	2,209	1.4	7.8	13.4	3.2	34.5
WH	LIVE	CUT	14	ALL	14.1	61	75	9,395	8,918	5.1	57.6	62.5	16.6	139.1
ALL	LIVE	CUT	75	ALL	18.3	72	90	49,477	46,217	6.6	164.8	300.7	69.0	721.0
ALL	ALL	CUT	75	ALL	18.3	72	90	49,477	46,217	6.6	164.8	300.7	69.0	721.0

Cruise Unit Report
PARCHED U11

Unit Sale Notice Volume (MBF): PARCHED U11

				MBF Volume by Grade		
Sp	DBH	Rings/In	Age	All	3 Saw	4 Saw
DF	11.5			7	4	3
WH	11.0			3	2	1
ALL	11.3			10	6	4

Unit Cruise Design: PARCHED U11

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	1.3	1.3	1	1	0

Unit Cruise Summary: PARCHED U11

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	3	3	3.0	0
WH	1	1	1.0	0
ALL	4	4	4.0	0

Unit Cruise Statistics: PARCHED U11

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	60.0	0.0	0.0	89.2	17.7	10.2	5,355	17.7	10.2
WH	20.0	0.0	0.0	112.1	0.0	0.0	2,243	0.0	0.0
ALL	80.0	0.0	0.0	95.0	18.2	9.1	7,598	18.2	9.1

Unit Summary: PARCHED U11

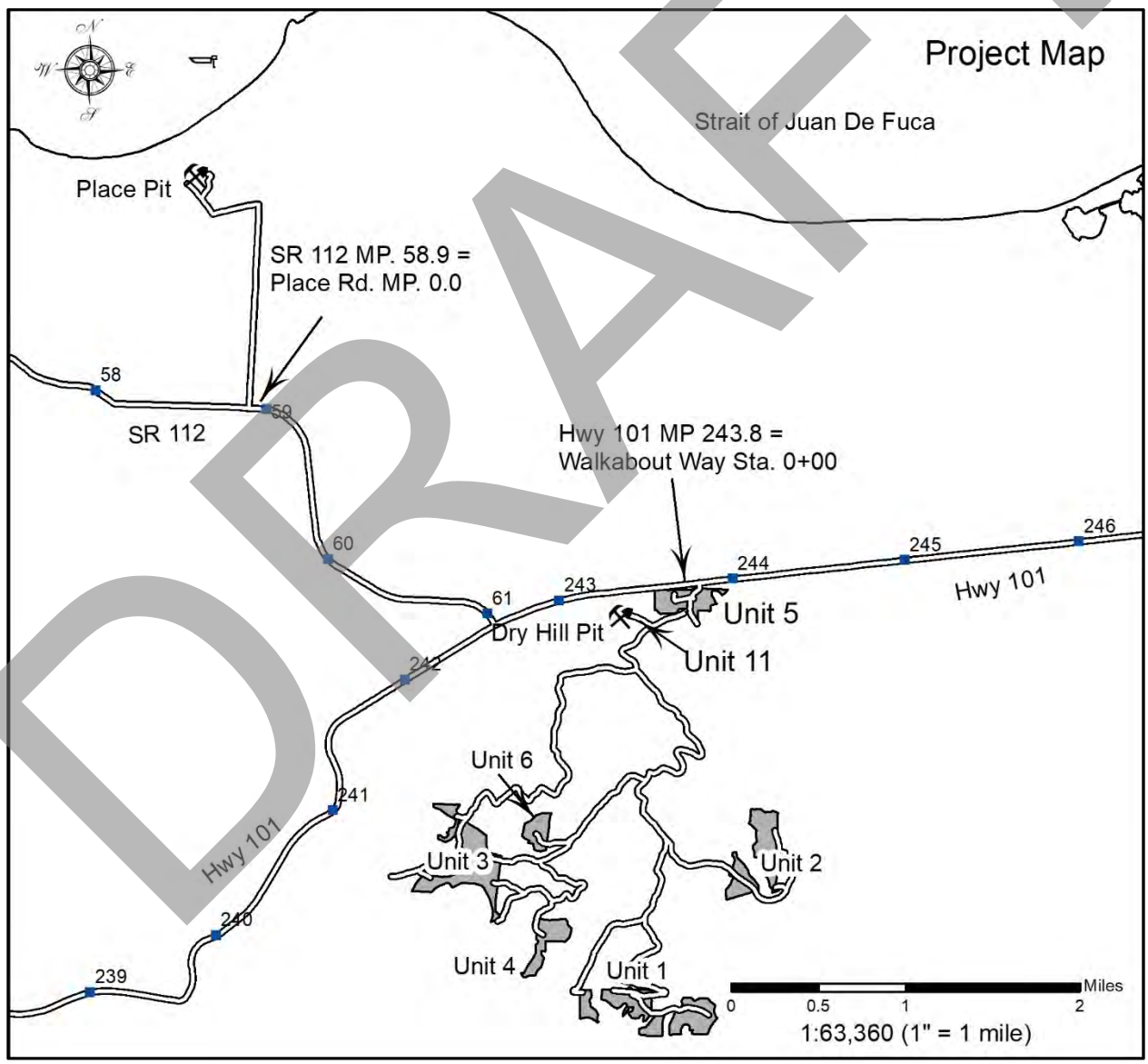
Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	11.5	52	64	5,355	5,355	0.0	83.2	60.0	17.7	7.0
WH	LIVE	CUT	1	ALL	11.0	55	67	2,243	2,243	0.0	30.3	20.0	6.0	2.9
ALL	LIVE	CUT	4	ALL	11.4	53	65	7,598	7,598	0.0	113.5	80.0	23.7	9.9
ALL	ALL	CUT	4	ALL	11.4	53	65	7,598	7,598	0.0	113.5	80.0	23.7	9.9

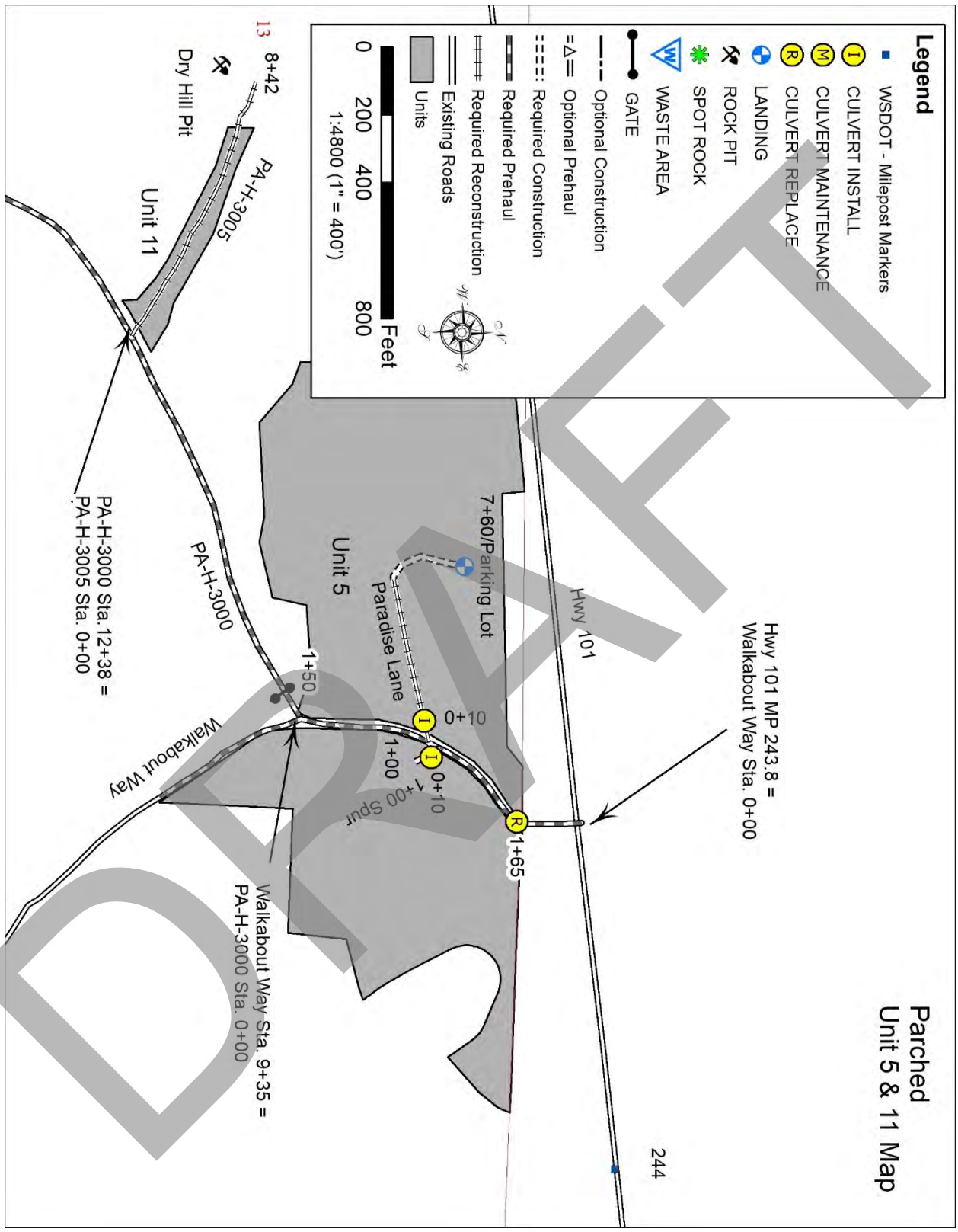
STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

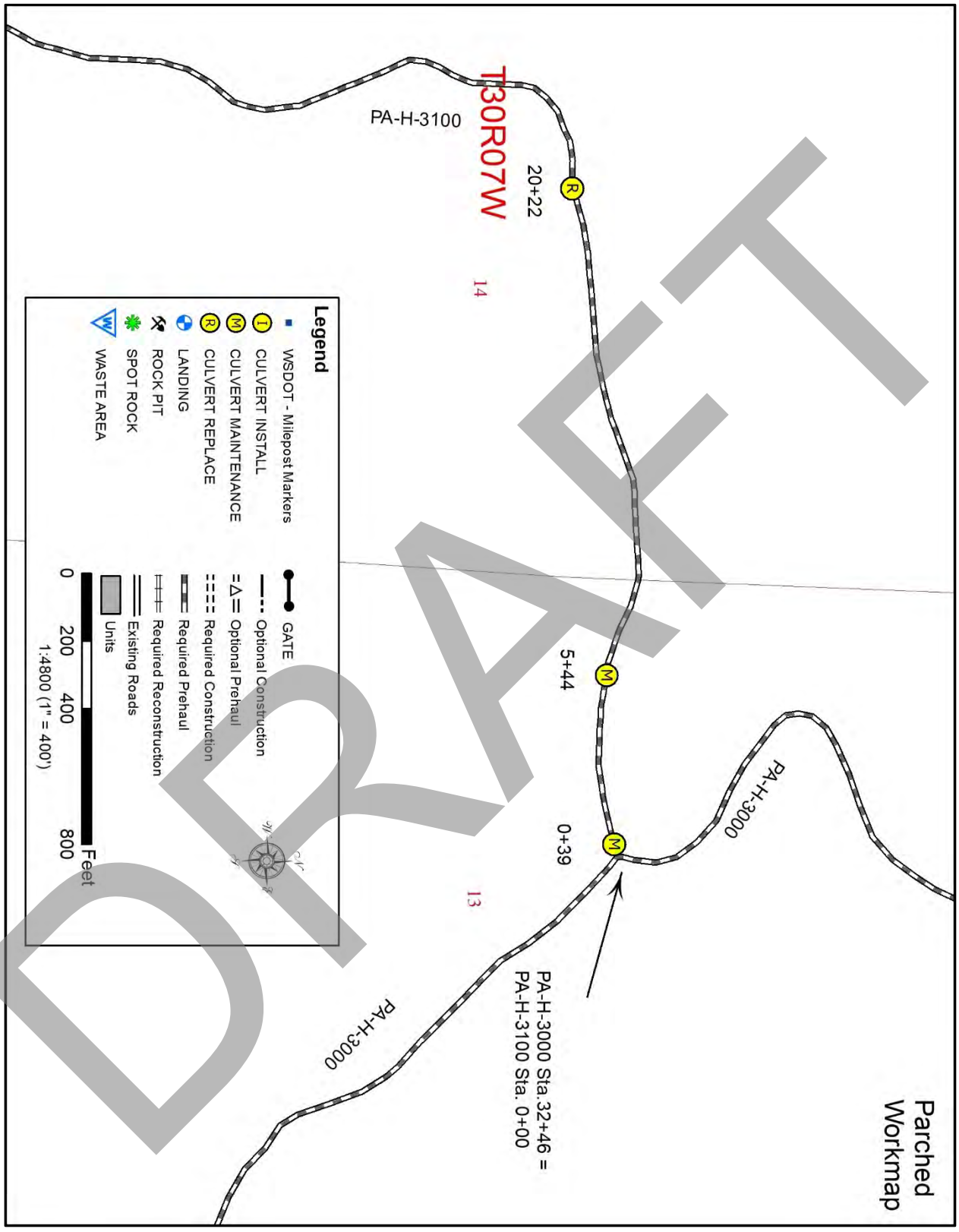
PARCHED TIMBER SALE ROAD PLAN
CLALLAM COUNTY
STRAITS DISTRICT
OLYMPIC REGION

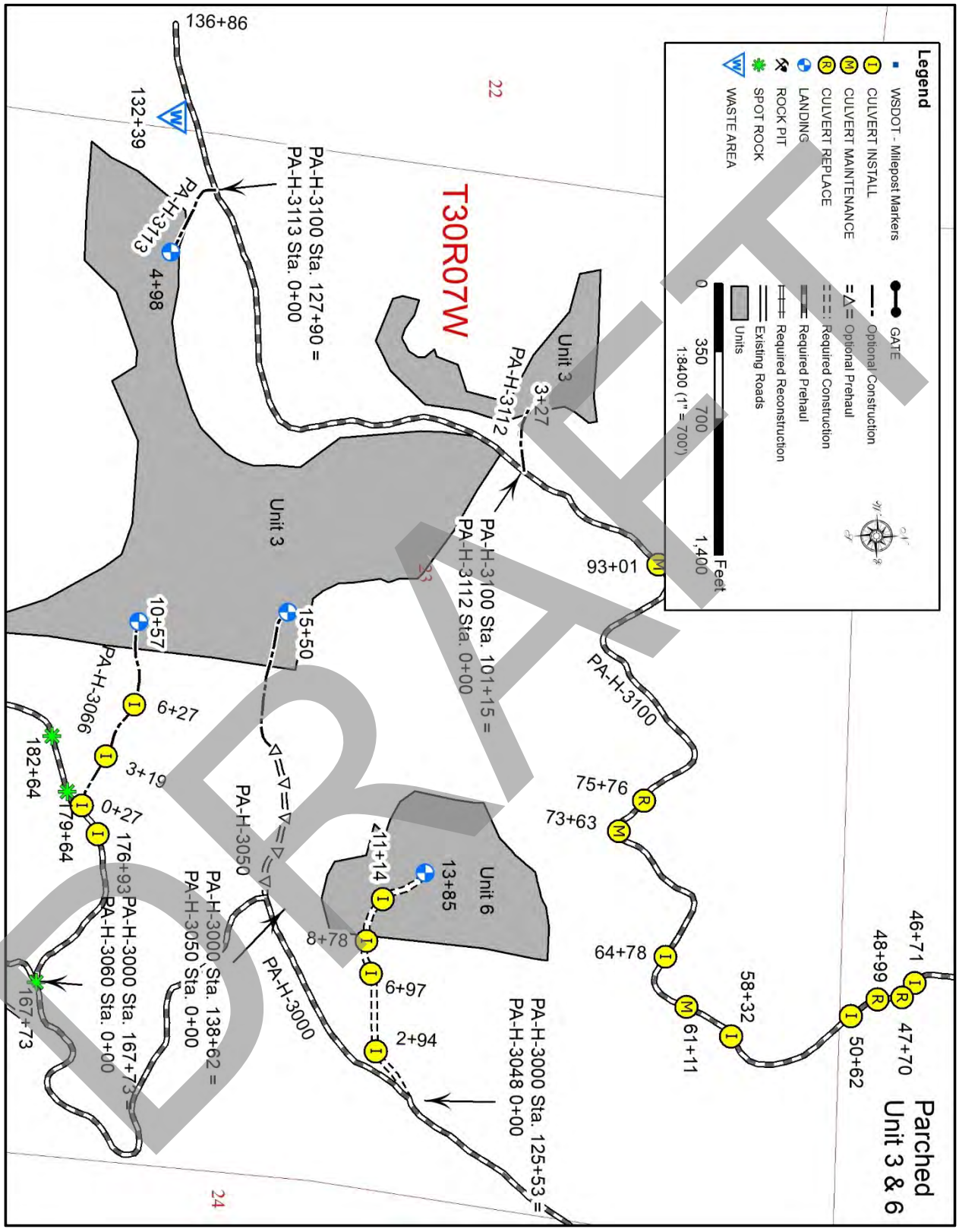
AGREEMENT NO.: 30-102017 DISTRICT ENGINEER: GREG ELLIS

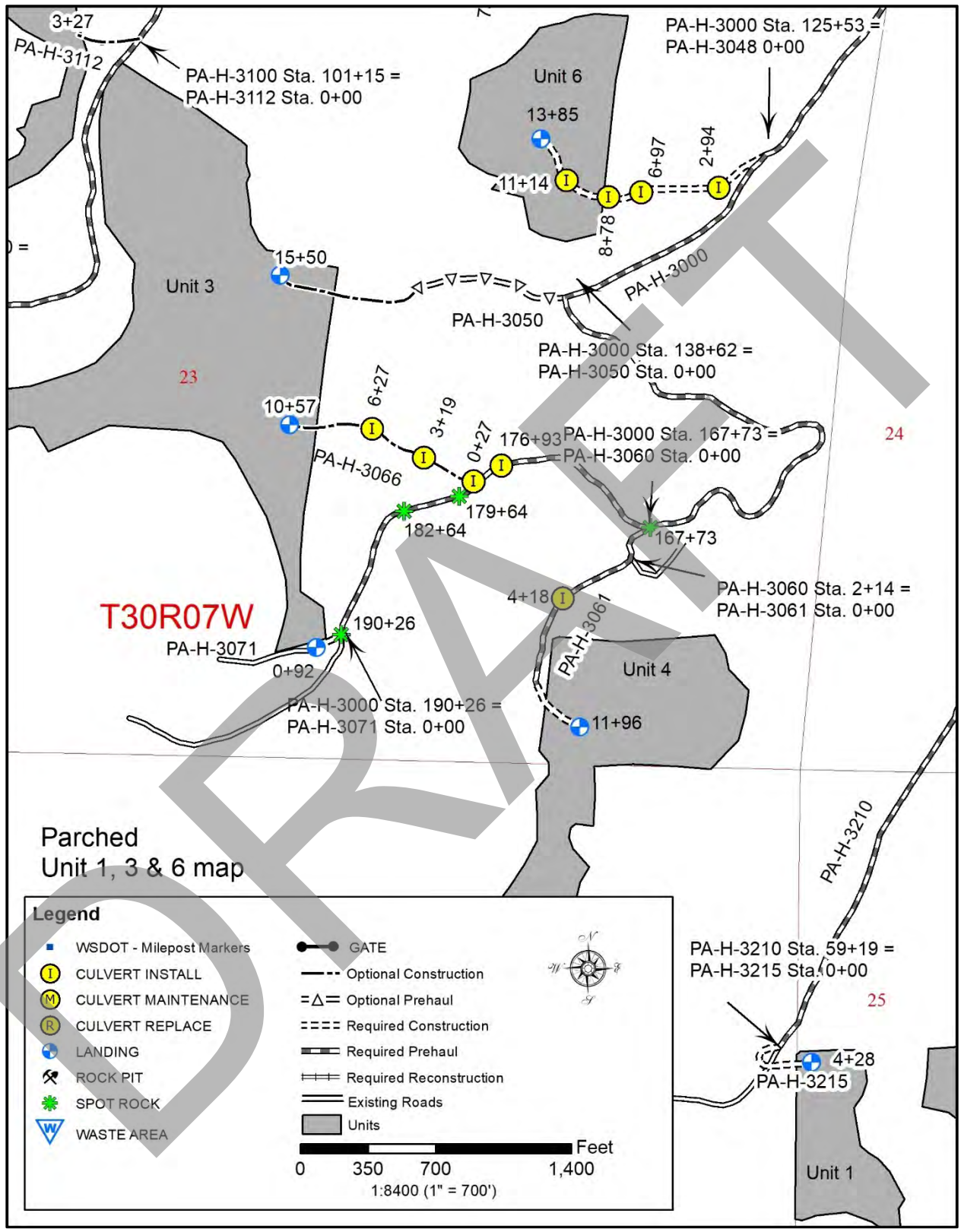
DATE: JUNE 16, 2021 DRAWN & COMPILED BY: J. WESTRA

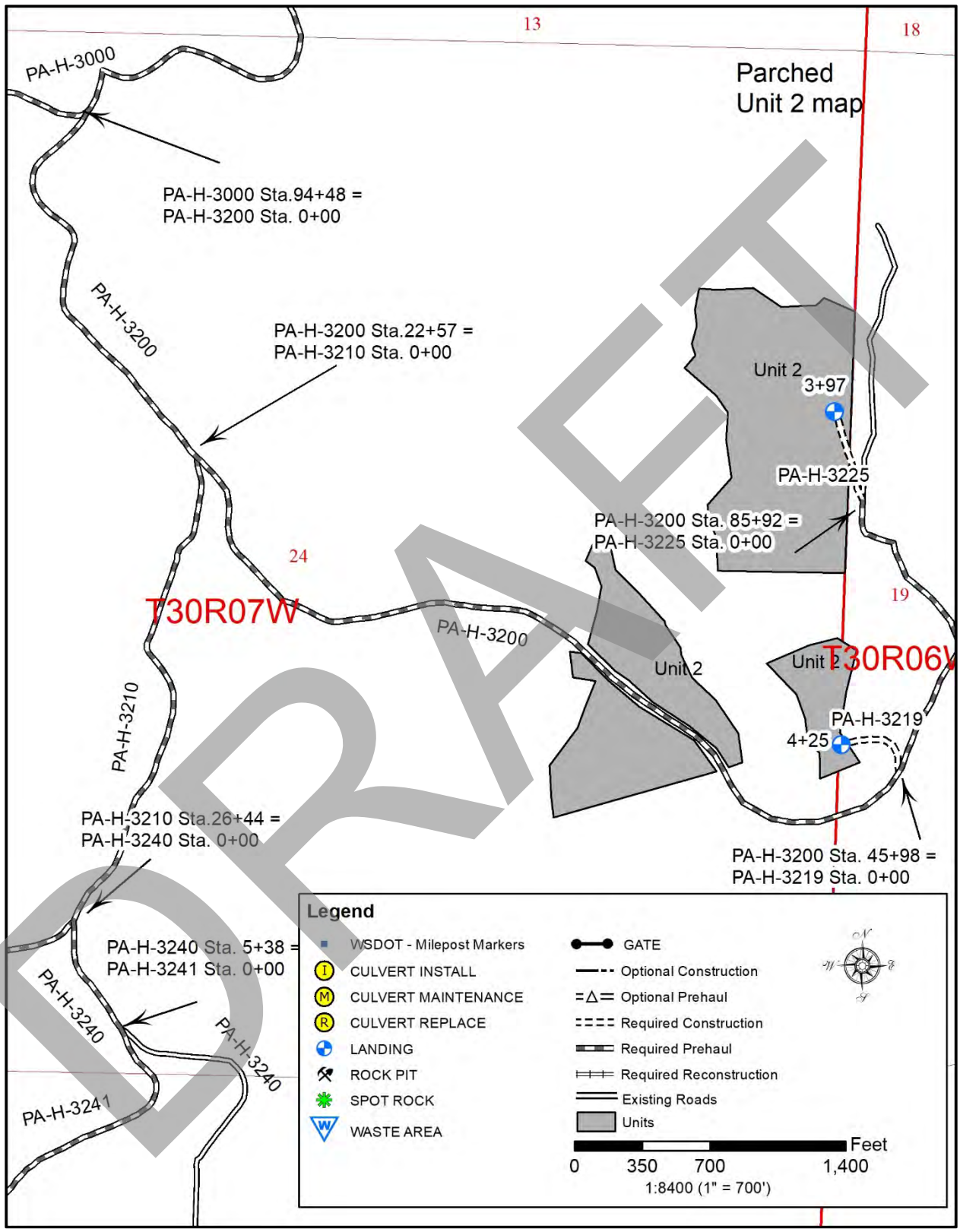




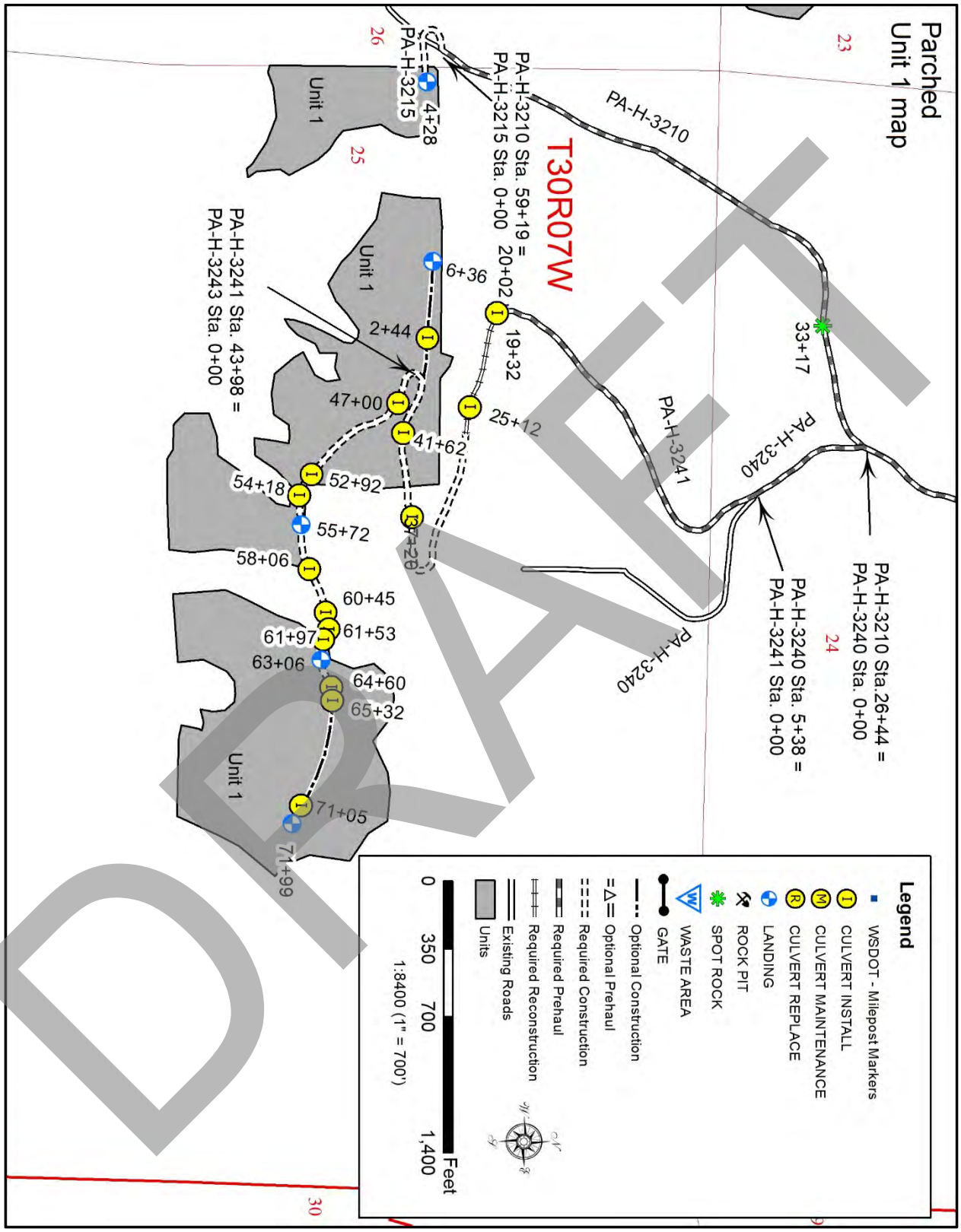


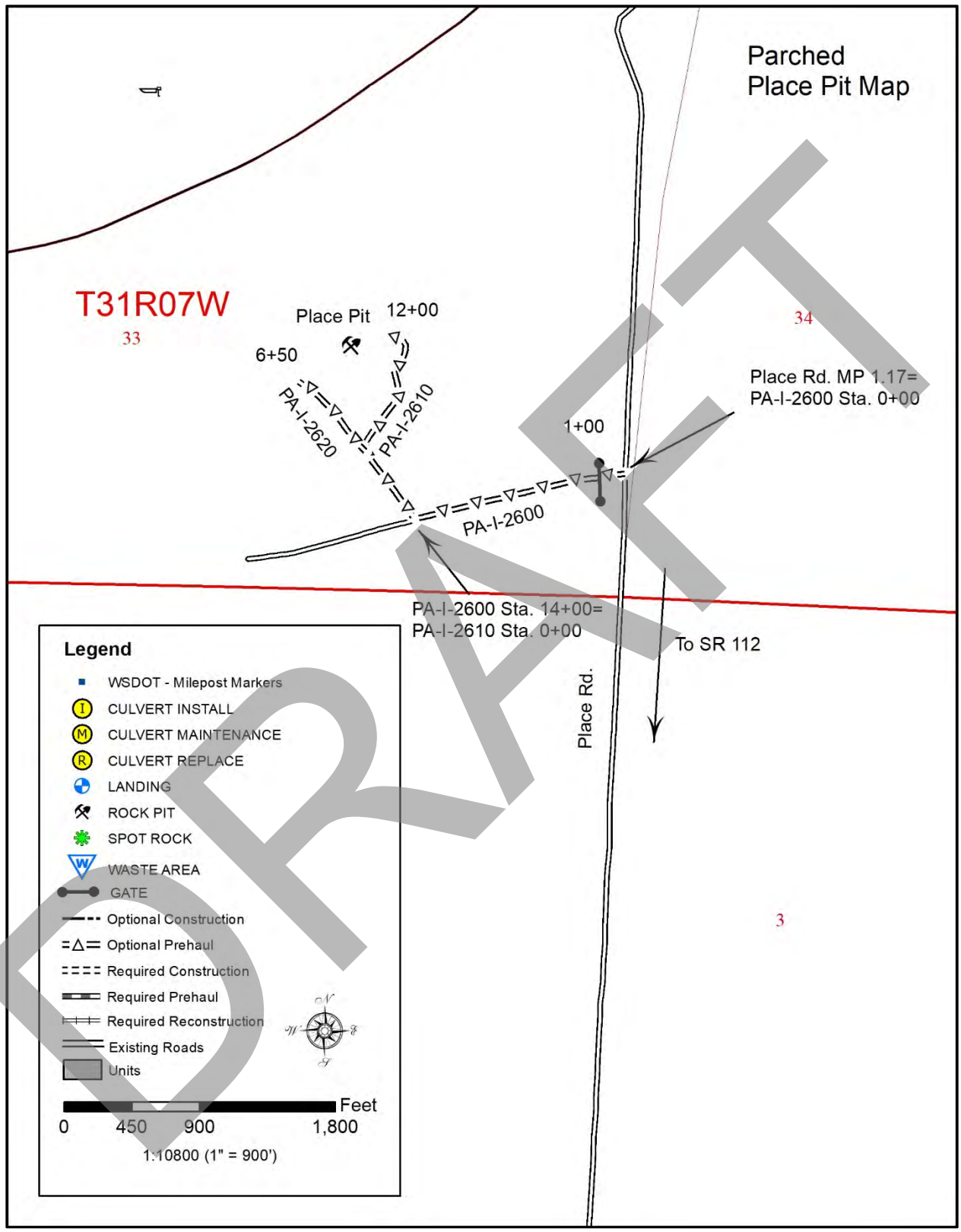






PARCHED UNIT 1 MAP





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
Paradise Lane	0+00 to 4+90	RECONSTRUCTION
Paradise Lane	4+90 to 7+60	CONSTRUCTION
1+00 Spur	0+00 – 1+00	CONSTRUCTION
PA-H-3000	0+00 to 190+26	PREHAUL MAINTENANCE
PA-H-3005	0+00 to 8+42	RECONSTRUCTION
PA-H-3048	0+00 to 13+85	CONSTRUCTION
PA-H-3060	0+00 to 2+14	PREHAUL MAINTENANCE
PA-H-3061	0+00 to 8+73	PREHAUL MAINTENANCE
PA-H-3061	8+73 to 11+96	CONSTRUCTION
PA-H-3071	0+00 to 0+92	PREHAUL MAINTENANCE
PA-H-3100	0+00 to 136+86	PREHAUL MAINTENANCE
PA-H-3200	0+00 to 85+92	PREHAUL MAINTENANCE
PA-H-3210	0+00 to 59+19	PREHAUL MAINTENANCE
PA-H-3215	0+00 to 4+28	CONSTRUCTION
PA-H-3219	0+00 to 4+25	CONSTRUCTION
PA-H-3225	0+00 to 3+97	CONSTRUCTION
PA-H-3240	0+00 to 5+38	PREHAUL MAINTENANCE
PA-H-3241	0+00 to 19+32	PREHAUL MAINTENANCE
PA-H-3241	19+32 to 26+75	RECONSTRUCTION
PA-H-3241	26+75 to 64+83	CONSTRUCTION
Walkabout Way	0+00 to 17+75	PREHAUL MAINTENANCE

0-3 OPTIONAL ROADS

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

Road	Stations	Type
PA-H-3050	0+00 to 8+15	PREHAUL MAINTENANCE*
PA-H-3050	8+15 to 15+50	CONSTRUCTION
PA-H-3066	0+00 to 10+57	CONSTRUCTION
PA-H-3112	0+00 to 3+27	CONSTRUCTION
PA-H-3113	0+00 to 4+98	CONSTRUCTION
PA-H-3241	64+83 to 71+99	CONSTRUCTION

PA-H-3243	0+00 to 6+36	CONSTRUCTION
PA-I-2600	0+00 to 14+00	PREHAUL MAINTENANCE
PA-I-2610	0+00 to 12+00	PREHAUL MAINTENANCE
PA-I-2620	0+00 to 6+50	PREHAUL MAINTENANCE

*Pre-haul maintenance on the PA-H-3050 is required if Purchaser chooses to use it as a haul route.

0-4 CONSTRUCTION

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

Road	Stations	Requirements
Paradise Lane	4+90 to 7+60	See Below:
1+00 Spur	0+00 to 1+00	
PA-H-3048	0+00 to 13+85	
PA-H-3050	8+15 to 15+50	
PA-H-3061	8+73 to 11+96	
PA-H-3066	0+00 to 10+57	
PA-H-3112	0+00 to 3+27	
PA-H-3113	0+00 to 4+98	
PA-H-3215	0+00 to 4+28	
PA-H-3219	0+00 to 4+25	
PA-H-3225	0+00 to 3+97	
PA-H-3241	26+75 to 71+99	
PA-H-3243	0+00 to 6+36	
Total Stations:	111.05 Stations	

Construction may include, 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.

0-5 RECONSTRUCTION

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

Road	Stations	Requirements
Paradise Lane	0+00 to 4+90	
PA-H-3005	0+00 to 8+42	See Below:
PA-H-3241	19+32 to 26+75	
Total Stations:	20.75 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 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, drill and shoot, 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-H-3000	0+00 to 190+26	Grading road surface in accordance with Clause 2-5. Spot Rock Patching in accordance with Clause 6-78. Clean/construct ditch lines in accordance with Clause 2-7. Brush road in accordance with Clause 3-1. Culvert Installation in accordance with Clause 5-15.
PA-H-3050	0+00 to 8+15	Grading road surface in accordance with Clause 2-5. 4" Rock Surfacing in accordance with Clause 6-71.
PA-H-3060	0+00 to 2+14	Grading road surface in accordance with Clause 2-5.
PA-H-3061	0+00 to 8+73	Clearing road surface in accordance with 3-5. Grading road surface in accordance with Clause 2-5. 4" Rock Surfacing in accordance with Clause 6-71. Clean/construct ditch lines in accordance with Clause 2-7. Culvert Installation in accordance with Clause 5-15.
PA-H-3071	0+00 to 0+92	Grading road surface in accordance with Clause 2-5.
PA-H-3100	0+00 to 136+86	Grading road surface in accordance with Clause 2-5. Rock buttress construction in accordance with 8-10. Culvert maintenance in accordance with 2-6 and culvert installation in accordance with Clause 5-15. Clean/construct ditch lines in accordance with Clause 2-7. Perform

		gate maintenance in accordance with clause 7-75.
PA-H-3200	0+00 to 85+92	Grading road surface in accordance with Clause 2-5. Clean/construct ditch lines in accordance with Clause 2-7.
PA-H-3210	0+00 to 59+19	Grading road surface in accordance with Clause 2-5. Spot Rock Patching in accordance with Clause 6-78.
PA-H-3240	0+00 to 5+38	Grading road surface in accordance with Clause 2-5. Clean/construct ditch lines in accordance with Clause 2-7.
PA-H-3241	0+00 to 19+32	Grading road surface in accordance with Clause 2-5. Clean/construct ditch lines in accordance with Clause 2-7.
WALKABOUT WAY	0+00 to 14+75	Grading road surface in accordance with Clause 2-5. Clean/construct ditch lines in accordance with Clause 2-7. 4" Rock Surfacing in accordance with Clause 6-71. Brush road in accordance with Clause 3-1.
PA-I-2600	0+00 to 14+00	Grading road surface in accordance with Clause 2-5.
PA-I-2610	0+00 to 12+00	Grading road surface in accordance with Clause 2-5.
PA-I-2620	0+00 to 6+50	Grading road surface in accordance with Clause 2-5.
Total Stations:	564.12 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 replacement, 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 an 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 Dry Hill Pit. Rock source development will involve clearing, stripping approximately 0.5 acres and processing bank run to generate 13,950 yds^3 of pit run ballast.

Purchaser may develop an existing rock source called Place Pit. Rock source development will involve digging and loading out of a stockpile to obtain 730 yds^3 of 1 ¼" minus crushed rock.

Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.
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 to 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 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.

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 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.

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.

1-13 LOG LOADING

At no time shall the loading of logs occur on Walkabout Way or PA-H-3000. In addition, no debris from harvesting operations shall be allowed on this road.

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 flagging and/or stakes for road centerline
- 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 before 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 3 business days before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

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

1-25 ACTIVITY TIMING RESTRICTION

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

Road	Stations	Activity	Closure Period
All	All	All	State Recognized Holidays and Weekends
All	All	All roadwork activities including Timber Haul and rock pit development.	November 1 to April 30
All	All	All	During Sanctioned Bike Events
All	All	All	8 pm – 6 am

1-26 OPERATING DURING CLOSURE PERIOD

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

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road, any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operation is not allowed from two hours before official sunset to two hours after official sunrise from April 1 through September 23. This restriction does not apply to hauling timber, rock, or equipment.

Road	Stations
PA-H-3200	34+65 to 45+34
PA-I-2600	ALL
PA-I-2610	ALL
PT-I-2620	ALL

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

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

1-33 SNOW PLOWING RESTRICTION

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

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.

1-42 UTILITY ACCESS ROAD

The following road intersects existing utility access roads. Purchaser shall conduct road work on the intersecting roads so that the utility access roads are accessible at all times.

Road	Stations
PA-H-3000	24+46 to 25+26

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
Walkabout Way	0+00 to 14+75	Overhead power	811
Walkabout Way	0+00 to 14+75	Buried Communication	811
PA-H-3050	8+15 to 9+47	811	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 roads in a condition that will allow the passage of light administrative vehicles.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following maintenance roads, Purchaser shall use a grader to shape the existing surface before timber haul as needed or directed by Contract Administrator on other haul routes.

Road	Stations	Requirements
PA-H-3000	0+00 to 190+26	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3050	0+00 to 8+15	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3060	0+00 to 2+14	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3061	0+00 to 8+73	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3071	0+00 to 0+92	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3100	0+00 to 136+86	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3200	0+00 to 85+92	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3210	0+00 to 32+75	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3240	0+00 to 5+38	Grade, shape, compact and remove shoulder vegetation and berms.
PA-H-3241	0+00 to 19+32	Grade, shape, compact and remove shoulder vegetation and berms.

2-6 CLEANING CULVERTS

On the following road, Purchaser shall clean the inlets and outlets of all culverts listed in the MATERIALS LIST before timber haul. Contract Administrator may direct culvert cleaning on other haul routes as needed.

Road	Stations
PA-H-3100	0+00 to 136+86

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following roads, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before timber haul and must be done in accordance with the TYPICAL SECTION.

Road	Stations	Left and/or Right	Comments
PA-H-3000	0+003 to 190+26	Left and/or Right	Ditching where ditch lines are present
PA-H-3061	0+00 to 8+73	Left and/or Right	Ditching where ditch lines are present
PA-H-3100	0+00 to 136+86	Left and/or Right	Ditching where ditch lines are present
PA-H-3200	0+00 to 85+92	Left and/or Right	Ditching where ditch lines are present
PA-H-3240	0+00 to 5+38	Left and/or Right	Ditching where ditch lines are present
PA-H-3241	0+00 to 19+32	Left and/or Right	Ditching where ditch lines are present

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-H-3005	0+00 to 8+42

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
Walkabout Way	0+00 to 14+75

PA-H-3000	0+00 to 190+26

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

3-7 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.

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 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 3-32 unless otherwise detailed in this road plan and as directed by Contract Administrator.

SUBSECTION PILE

3-30 EXCLUSION OF DOZER BLADES

Purchaser shall not use dozer blades for the piling of organic debris.

3-31 PILING

Purchaser shall pile organic debris no closer than 20 feet from standing timber and no higher than 20 feet. Piles must be free of rock and soil.

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 1,000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

Material Type	Excavation Slope Ratio	Excavation Slope Percent
Common Earth (on side slopes up to 55%)	1:1	100

Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-12 FULL BENCH CONSTRUCTION

Where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width. Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION or in a location approved by the Contract Administrator.

4-15 NO EXCAVATION IN SUBGRADE

At the specified locations, Purchaser shall not excavate the subgrade.

Road	Stations
Paradise Lane	0+00 to 1+00 or as needed to avoid utilities
1+00 spur	0+00 to 1+00 or as needed to avoid utilities

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS

On the following road(s), Purchaser shall construct the subgrade to the dimensions shown on the INTERSECTION DETAIL.

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Purchaser shall construct turnarounds in accordance with the TURNAROUND DETAIL on all roads. Turnarounds must be no larger than 50 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

4-23 SUBGRADE FLARE FOR INTERSECTIONS

Intersections shall be constructed/reconstructed to include additional intersection flare.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be end hauled to the location specified in Clauses 4-36 through 4-38.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

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.

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.

Road	Waste Area Location	Comments
PA-H-3100	132+39	Fill in old borrow pit with waste generated from keyed embankment construction, culvert maintenance and installation on the PA-H-3100.

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.

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 BACKFILL 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.

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

5-6 CULVERT TYPE

Purchaser shall install culverts in accordance with Clauses 10-15 through 10-24 and the Materials List.

5-7 USED CULVERT MATERIAL

On the following road(s), Purchaser may install used culverts. All other culverts must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-24.

Road	Stations
1+00 spur	0+10

5-12 UNUSED MATERIALS STATE PROPERTY

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

5-13 CONTINGENCY CULVERTS

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator. In the event that culverts are not used, culverts shall be stockpiled at the Port Angeles Work Center.

Road	Size
On any portion of road used for timber or rock haul.	TWO: 18” x 30’ culvert

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.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 30 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 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 ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

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

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

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 10 feet must be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the

posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with the TYPICAL CULVERT INSTALLAION DETAILS SHEET.

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.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At stream crossing culverts, Purchaser shall place riprap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

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

Source	Location	Rock Type
DRY HILL PIT	Sec 13 T30N R07W	Pitrun Ballast
PLACE PIT	Sec 33 T31N R07W	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 565 cubic yards of 1 ¼" minus crushed rock. 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	T31 R07W Sec 33	1 ¼" minus crushed rock	730 yd^3

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. 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
Place Pit	1 ¼" minus Crushed Rock
Dry Hill Pit	Pit Run Ballast

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

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

Material	Maximum Slope Ratio (Horiz. :Vert.)	Maximum Slope Percent
Sand	2:1	50
Gravel	1.5:1	67

Common Earth	1:1	100
Fractured Rock	0.5:1	200
Solid Rock	0:1	vertical

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

SUBSECTION ROCK MANUFACTURE

6-23 ROCK GRADATION TYPES

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

SUBSECTION ROCK GRADATIONS

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.

6-41 PIT RUN ROCK

No more than 50 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

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

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

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

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

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade construction and culvert installation before rock application.

6-71 ROCK APPLICATION

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

6-72 ROCK APPLICATION AFTER HAULING

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

Road	Location	Rock Type	Amount
PA-H-3000	As directed by Contract Administrator	1 ¼" Minus Crushed rock	250 yd^3
Walkabout Way			50 yd^3
PA-H-3100		Pit Run	100 yd^3
PA-H-3200			100 yd^3
PA-H-3210			100 yd^3
Paradise Lane			50 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.

SECTION 7 – STRUCTURES

7-1 SIGN INSTALLATION

Purchaser shall purchase, install, and maintain the following road signs. The Contract Administrator may approve alternate sign language and location.

Road	Station	Sign
WALKABOUT WAY	0+15	Timber Operations Ahead
PA-H-3000	30+10	

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structure(s) must be removed from state land or, as directed in writing, by the Contract Administrator. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately, and placed in the site(s) designated for stockpiling or disposal**.** Purchaser shall retrieve all material carried downstream from the jobsite.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, and as directed by the District Engineer or their designee.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

Purchaser shall design and construct bank protection to prevent the undermining of the structure.

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

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.

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-H-3100	1+50	Replace broken toaster box lever

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 3-inch layer of straw and/or hay to all exposed soils at culvert installations within 100 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-10 STABILIZE SLOPES – ROCK APPLICATION

On the following road, Purchaser shall stabilize excavation slopes by applying rock as specified below. Rock must be applied in quantities specified in the MATERIALS LIST to exposed soil on the excavated slopes to a minimum depth of 30 inches. Rock must be set in place by machine. No placement by end dumping or dropping of rock is allowed.

Work must be done in accordance with the attached rock buttress construction detail.

Road	Stations	Rock Type
PA-H-3100	48+30 to 50+10	Light Loose Riprap, Heavy Loose Riprap

SUBSECTION REVEGETATION

8-15 REVEGETATION

Purchaser shall spread grass seed and straw and/or hay mulch on all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pullback areas, stream crossing removals, bridge installations, and other areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed and straw.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover over the revegetated area. The protective cover may consist of but not be limited to, such items as dispersed straw and/or hay mulch 3" thick or jute matting. Seed must be covered before the first anticipated storm event.

8-19 ASSURANCE FOR SEEDED AREA

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

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

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

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

Kind and Variety of Seed in Mixture	% by Weight	Minimum % germination
Perennial Rye	35-45	90
Red Fescue	30-40	90
Highland Bent	5-15	85

White Clover	10-20	90
Inert and Other Crop	0.5	

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

Culverts removed from roads become the property of the Purchaser and must be removed from state land.

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-H-3000	0+00 to 190+26	Apply post haul rock per Clause 6-72.
PA-H-3100	0+00 to 127+82	Apply post haul rock per Clause 6-72.
PA-H-3200	0+00 to 85+92	Apply post haul rock per Clause 6-72.
PA-H-3210	0+00 to 59+19	Apply post haul rock per Clause 6-72.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

10-2 GEOTEXTILE FOR SEPARATION

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

	ASTM Test	Requirements
Type	--	Non-woven
Apparent opening size	D 4751	No. 30 max
Water permittivity	D 4491	0.02 sec^{-1}
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	>= 50%
Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-3 GEOTEXTILE FOR STABILIZATION

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

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

10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for filtration. Woven slit-film geotextiles are not allowed. Material must be free of defects, cuts, and tears.

	ASTM Test	Requirements
Type	--	Unsupported between posts
Apparent opening size	D 4751	No. 30 max., No. 100 min.
Water permittivity	D 4491	0.02 sec^{-1}

Grab tensile strength	D 4632	180 lb in machine direction, 100lb in cross-machine direction
Grab tensile elongation	D 4632	30% max. at 180 lb or more
Ultraviolet stability	D 4355	70% retained after 500 hours of exposure

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.

10-20 FLUME AND DOWNSPOUT

Downspouts and flumes must meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes must be Type S – double walled with a corrugated exterior and smooth interior.

10-21 METAL BAND

Metal coupling and end bands must meet the AASHTO specification designated for the culvert and must have matching corrugations. Culverts 24 inches and smaller must have bands with a minimum width of 12 inches. Culverts over 24 inches must have bands with a minimum width of 24 inches.

10-22 PLASTIC BAND

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

10-24 GAUGE AND CORRUGATION

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

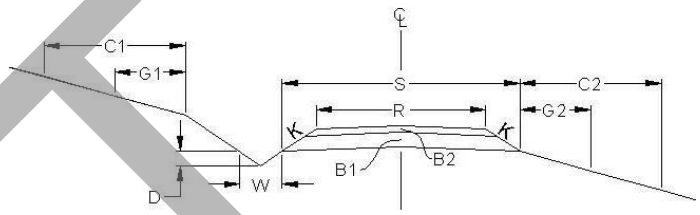
Diameter	Gage	Corrugation
18"	16 (0.064”)	$2\ ^{2}/_{3}$" X $^{1}/_{2}$"
24" to 48"	14 (0.079”)	$2\ ^{2}/_{3}$" X $^{1}/_{2}$"
54" to 96"	12 (0.079”)	3” x 1” or 5" X 1"

11-1 BIKE TRAIL AND ROAD INTERSECTIONS

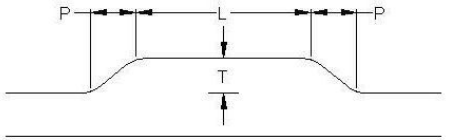
Where road construction intersects with bike trails, Purchaser shall construct dirt ramps on the road edges to allow for a smooth transition between trails and road surface.

ROAD #		PA-H-3000	PA-H-3005	PA-H-3048	PA-H-3050
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	OPTIONAL
CONSTRUCT / RECONSTRUCT		PRE-HAUL	RECONSTRUCT	CONSTRUCT	PRE-HAUL
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		167+73	0+00	0+00	0+00
STATION / MP		190+26	8+42	13+85	8+15
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	--	--	25	--
TURNOUT WIDTH	T	--	--	10	--
TURNOUT TAPER	P	--	--	25	--
GRUBBING	G1	--	5	5	--
	G2	--	5	5	--
CLEARING	C1	--	10	10	--
	C2	--	10	10	--
ROCK FILLSLOPE	K:1	--	1 ½ : 1	1 ½ : 1	--
❖ BALLAST DEPTH	B1	--	6	18	--
CUBIC YARDS / STATION		--	34	110	--
➢ TOTAL CY BALLAST		--	285	1,525	--
❖ SURFACING DEPTH	B2	--	--	--	4
CUBIC YARDS / STATION		--	--	--	23
➢ TOTAL CY SURFACING		--	--	--	185
➢ TOTAL CUBIC YARDS		100[AB]	285	1,525	185
SUBGRADE WIDTH	S	12	13	16.5	12.5
BRUSHCUT (Y/N)		N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	N	N	Y

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



SYMBOL NOTES

❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.

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

A: Rock for spot patching as directed by Contract Administrator.
B: Rock for use shall be 1 ¼" minus crushed rock

Rock Totals Summary (including Post Haul Rock)

Type	Quantity (Cubic Yards)
Pit Run Rock	13,950
1 ¼" minus crushed Rock	730
Rip Rap	510

ROAD #		PA-H-3050	PA-H-3060	PA-H-3061	PA-H-3061	PA-H-3066	PA-H-3071	PA-H-3100
REQUIRED / OPTIONAL		OPTIONAL	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		CONSTRUCT	PRE-HAUL	PRE-HAUL	CONSTRUCTION	CONSTRUCTION	PRE-HAUL	PRE-HAUL
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		8+15	0+00	0+00	8+73	0+00	0+00	0+00
STATION / MP		15+50	2+14	8+73	11+96	10+57	0+92	136+86
ROAD WIDTH	R	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	W	3	3	3	3	3	3	3
DITCH DEPTH	D	1	1	1	1	1	1	1
TURNOUT LENGTH	L	25	--	--	--	--	--	--
TURNOUT WIDTH	T	10	--	--	--	--	--	--
TURNOUT TAPER	P	25	--	--	--	--	--	--
GRUBBING	G1	5	--	--	5	5	--	--
	G2	5	--	--	5	5	--	--
CLEARING	C1	10	--	5	10	10	--	--
	C2	10	--	5	10	10	--	--
ROCK FILLSLOPE	K:1	1 ½ : 1	--	--	1 ½ : 1	1 ½ : 1	--	--
❖ BALLAST DEPTH	B1	12	--	--	18	18	--	--
CUBIC YARDS / STATION		70	--	--	110	110	--	--
➢ TOTAL CY BALLAST		515	--	--	355	1,165	--	--
❖ SURFACING DEPTH	B2	--	--	4	--	--	--	--
CUBIC YARDS / STATION		--	--	23	--	--	--	--
➢ TOTAL CY SURFACING		--	--	200	--	--	--	--
➢ TOTAL CUBIC YARDS		515	--	200	355	1,165	--	150[A]
SUBGRADE WIDTH	S	15	12	12.5	16.5	16.5	12	12
BRUSHCUT (Y/N)		N	N	N	N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		N	Y	Y	N	N	Y	N

ROAD #		PA-H-3112	PA-H-3113	PA-H-3200	PA-H-3210	PA-H-3215	PA-H-3219	PA-H-3225
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSTRUCT	PRE-HAUL	PRE-HAUL	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		0+00	0+00	21+60	26+44	0+00	0+00	0+00
STATION / MP		3+27	4+98	85+92	59+19	4+28	4+25	3+97
ROAD WIDTH	**R**	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	**W**	3	3	3	3	3	3	3
DITCH DEPTH	**D**	1	1	1	1	1	1	1
TURNOUT LENGTH	**L**	--	--	--	--	--	--	--
TURNOUT WIDTH	**T**	--	--	--	--	--	--	--
TURNOUT TAPER	**P**	--	--	--	--	--	--	--
GRUBBING	**G1**	5	5	--	--	5	5	5
	G2	5	5	--	--	5	5	5
CLEARING	**C1**	10	10	--	--	10	10	10
	C2	10	10	--	--	10	10	10
ROCK FILLSLOPE	**K:1**	1 ½ : 1	1 ½ : 1	--	--	1 ½ : 1	1 ½ : 1	1 ½ : 1
❖ **BALLAST DEPTH**	**B1**	12	12	--	--	12	12	12
CUBIC YARDS / STATION		70	70	--	--	70	70	70
➢ **TOTAL CY BALLAST**		230	350	--	--	300	300	280
❖ **SURFACING DEPTH**	**B2**	--	--	--	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--	--	--	--
➢ **TOTAL CY SURFACING**		--	--	--	--	--	--	--
➢ **TOTAL CUBIC YARDS**		230	350	--	50[A]	300	300	280
SUBGRADE WIDTH	**S**	15	15	12	12	15	15	15
BRUSHCUT (Y/N)		N	N	N	N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	N	Y	Y	N	N	N

ROAD #		PA-H-3240	PA-H-3241	PA-H-3241	PA-H-3241	PA-H-3241	PA-H-3243	WALKABOUT WAY
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	REQUIRED
CONSTRUCT / RECONSTRUCT		PRE-HAUL	PRE-HAUL	RECONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	PRE-HAUL
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		0+00	0+00	19+32	26+75	64+83	0+00	0+00
STATION / MP		5+38	19+32	26+75	64+83	71+99	6+36	14+75
ROAD WIDTH	**R**	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	**W**	3	3	3	3	3	3	3
DITCH DEPTH	**D**	1	1	1	1	1	1	1
TURNOUT LENGTH	**L**	--	--	--	25	--	--	--
TURNOUT WIDTH	**T**	--	--	--	10	--	--	--
TURNOUT TAPER	**P**	--	--	--	25	--	--	--
GRUBBING	**G1**	--	--	5	5	5	5	--
	G2	--	--	5	5	5	5	--
CLEARING	**C1**	--	--	10	10	10	10	--
	C2	--	--	10	10	10	10	--
ROCK FILLSLOPE	**K:1**	--	--	1 ½ : 1	1 ½ : 1	1 ½ : 1	1 ½ : 1	--
❖ **BALLAST DEPTH**	**B1**	--	--	12	18	18	18	--
CUBIC YARDS / STATION		--	--	70	110	110	110	--
➢ **TOTAL CY BALLAST**		--	--	520	4,190	790	700	--
❖ **SURFACING DEPTH**	**B2**	--	--	--	--	--	--	4
CUBIC YARDS / STATION		--	--	--	--	--	--	20
➢ **TOTAL CY SURFACING**		--	--	--	--	--	--	330
➢ **TOTAL CUBIC YARDS**		--	--	520	4,190	790	700	330[B]
SUBGRADE WIDTH	**S**	12	12	15	16.5	16.5	16.5	12
BRUSHCUT (Y/N)		N	N	N	N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	N	N	N	N	Y

ROAD #		PA-I-2600	PA-I-2610	PA-I-2620	Paradise Lane	Paradise Lane	1+00 Spur	Parking Lot
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	OPTIONAL	Required	Required	Required	Required
CONSTRUCT / RECONSTRUCT		PRE-HAUL	PRE-HAUL	PRE-HAUL	Reconstruction	Construction	Construction	Construction
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00	4+90	0+00	0+00
STATION / MP		14+00	12+00	6+50	4+90	7+60	1+00	1+00
ROAD WIDTH	R	12	12	12	12	12	12	100' x 100'
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	W	3	3	3	3	3	3	3
DITCH DEPTH	D	1	1	1	1	1	1	3
TURNOUT LENGTH	L	--	--	--				
TURNOUT WIDTH	T	--	--	--				
TURNOUT TAPER	P	--	--	--				
GRUBBING	G1	--	--	--	5	5	5	5
	G2	--	--	--	5	5	5	5
CLEARING	C1	--	--	--	10	10	10	10
	C2	--	--	--	10	10	10	10
ROCK FILLSLOPE	K:1	--	--	--	1 ½ : 1	1 ½ : 1	1 ½ : 1	1 ½ : 1
❖ BALLAST DEPTH	B1	--	--	--	18	18	18	12
CUBIC YARDS / STATION		--	--	--	110	110	110	N/A
➢ TOTAL CY BALLAST		--	--	--	600	300	140	450
❖ SURFACING DEPTH	B2	--	--	--				
CUBIC YARDS / STATION		--	--	--				
➢ TOTAL CY SURFACING		--	--	--				
➢ TOTAL CUBIC YARDS		--	--	--	600	300	140	450
SUBGRADE WIDTH	S	12	12	12	16.5	16.5	16.5	N/A
BRUSHCUT (Y/N)		N	N	N	N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	Y	N	N	N	N

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			**Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:** **Diameter / Gage / Corrugation** **18" / 16 / 2 2/3" x 1/2"** **24" – 48" / 14 / 2 2/3" x 1/2"** **54" – 96" / 12 / 5" x 1"**
PA-H-3000	176+93	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3048	2+94	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3048	6+97	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3048	8+78	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3048	11+14	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3061	4+18	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3066	0+27	18	30	XX	--	--	1	2	L	NT	C	DITCH LAY
PA-H-3066	3+19	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3066	6+27	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3100	0+39	--	--	--	--	--	--	--	--	--	--	CLEAN INLET
PA-H-3100	5+44	--	--	--	--	--	--	--	--	--	--	CLEAN INLET
PA-H-3100	20+22	18	30	XX	--	--	1	2	L	NT	C	REPLACE EXISTING CULVERT
PA-H-3100	46+71	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3100	47+70	24	40	XX	--	--	1	10	L	NT	C	REPLACE EXISTING STREAM CULVERT, Rip Rap Energy Dissipater Rock
PA-H-3100	48+30 to 50+10						350		L/H			RIPRAP FOR SLOPE STABILIZATION
PA-H-3100	48+99	18	30	XX	--	--	1	10	L	NT	C	REPLACE CULVERT, Rip Rap Energy Dissipater Rock
PA-H-3100	50+62	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3100	58+32	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3100	61+11	--	--	--	--	--	--	--	--	--	--	CLEAN INLET

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

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:
												Diameter / Gage / Corrugation 18" / 16 / 2 2/3" x 1/2" 24" – 48" / 14 / 2 2/3" x 1/2" 54" – 96" / 12 / 5" x 1"
PA-H-3100	64+78	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3100	73+63	--	--	--	--	--	--	--	--	--	--	CLEAN INLET
PA-H-3100	75+76	36	60	AM	10	AM	3	20	L/H	NT	C	REPLACE EXISTING STREAM CULVERT
PA-H-3100	93+01	--	--	--	--	--	--	--	--	--	--	CLEAN INLET
PA-H-3241	20+02	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	25+12	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	37+20	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	41+62	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	47+00	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	52+92	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	54+18	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	58+06	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	60+45	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	61+53	24	30	XX	--	--	1	2	L	NT	C	TYPE 5 STREAM
PA-H-3241	61+97	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	64+60	18	40	XX	--	--	1	2	L	NT	C	
PA-H-3241	65+32	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3241	71+05	18	30	XX	--	--	1	2	L	NT	C	
PA-H-3243	2+44	18	30	XX	--	--	1	2	L	NT	C	

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

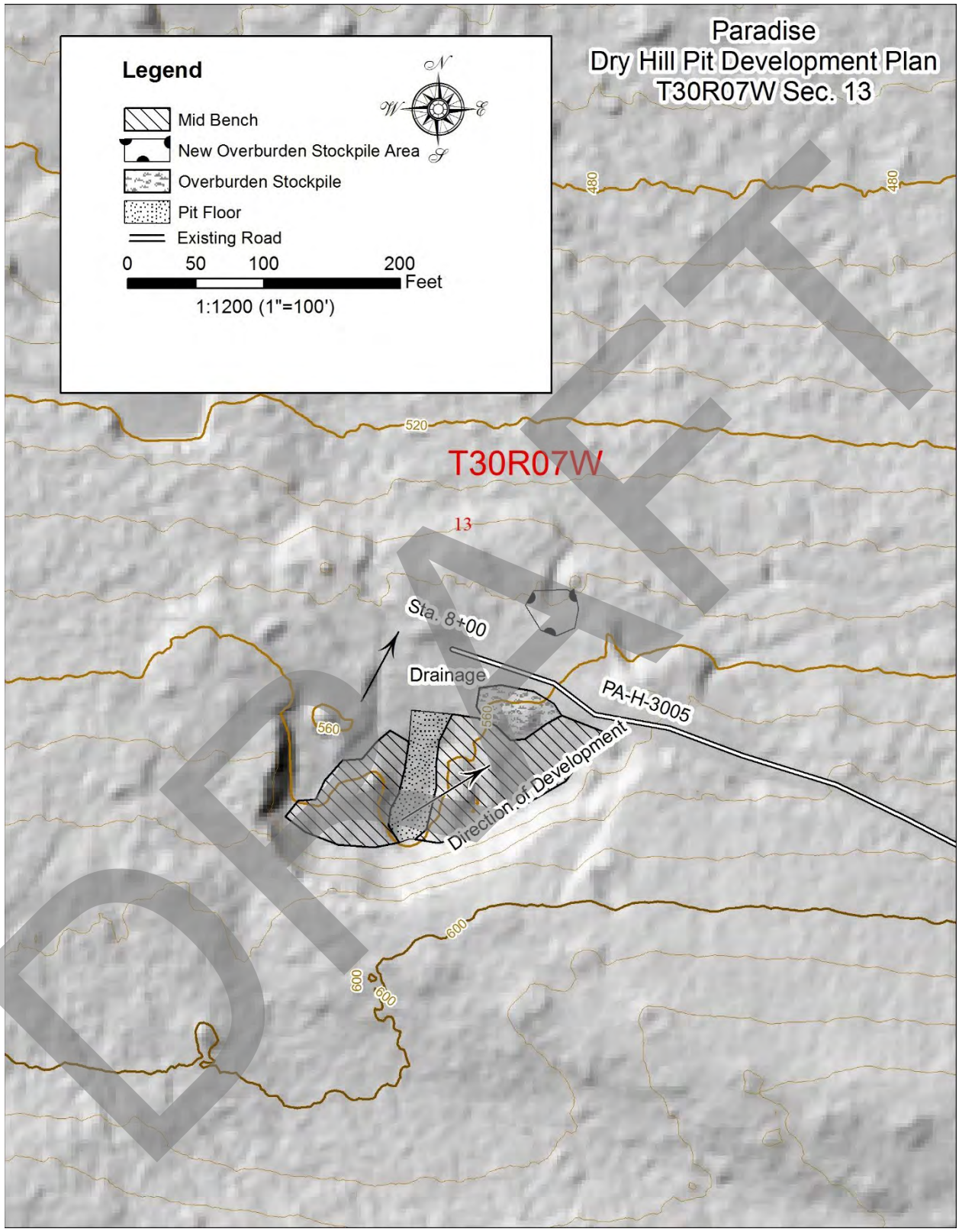
MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			**Note:** Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter: **Diameter** / **Gage** / **Corrugation** **18”** / **16** / **2 2/3" x 1/2"** **24” – 48”** / **14** / **2 2/3" x 1/2"** **54” – 96”** / **12** / **5" x 1"**
Walkabout Way	1+65	18	40	XX	--	--	--	--	--	CR	C	Culvert Replacement
Paradise Lane	0+10	18	60	XX	--	--	--	--	--	CR	C	
1+00 Spur	0+10	18	40	XX	--	--	--	--	--	CR	C	

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

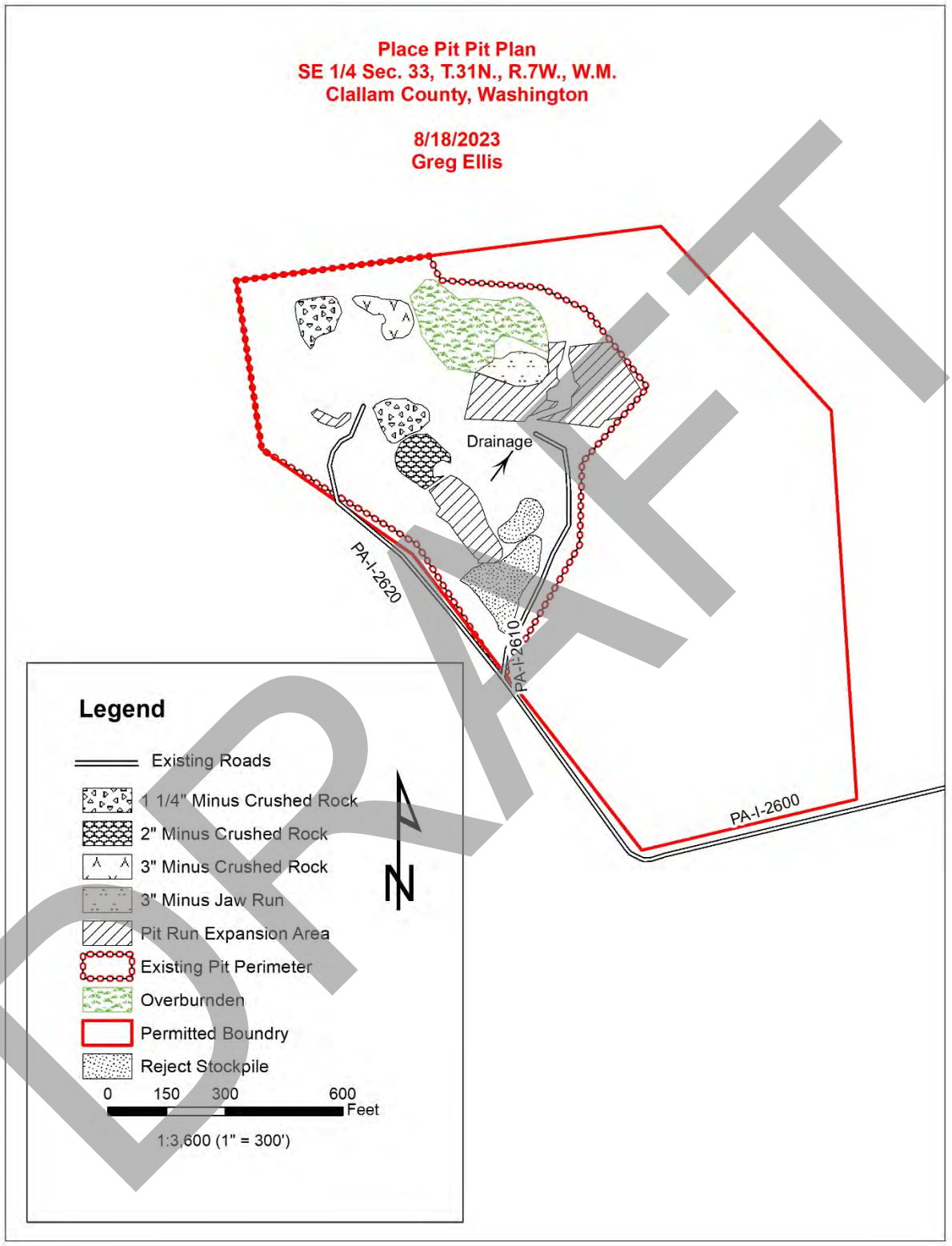
COMPACTION LIST

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



Dry Hill Pit
ROCK SOURCE DEVELOPMENT PLAN
SEC. 13, T.30N R.07W
PIT USE REQUIREMENTS

1. Mining shall begin in the development shown on pit plan.
2. All vegetation including stumps shall be cleared a minimum 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of ¾ of height of the tallest tree adjacent to the pit. The Contractor shall maintain a minimum of 10 foot wide stripped area from the pit face at all times.
3. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in an area designated by the Contract Administrator.
4. All exposed soils shall be grass seeded in accordance with Road Plan Clause 8-25.
5. Activity restrictions per Clause 1-25.
6. 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.
7. 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 southeast 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.
8. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
9. Excavated slopes shall have a 1 1/2:1 back slope or less at the completion of operations unless otherwise stated in Clause 4-5.
10. 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.
11. 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.
12. 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 contractor shall use Light Loose Rip Rap to block the drill trail.
13. All material shall remain the property of the State.
14. 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.
15. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.
16. Purchaser shall give the Contract Administrator a minimum of 7 days' notice prior to commencing any operations.



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

1. Mining shall begin in the development shown on pit plan.
2. All vegetation including stumps shall be cleared a minimum 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of ¾ of height of the tallest tree adjacent to the pit. The Contractor shall maintain a minimum of 10 foot wide stripped area from the pit face at all times.
3. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in an area designated by the Contract Administrator.
4. All exposed soils shall be grass seeded in accordance with Road Plan Clause 8-25.
5. Activity restrictions per Clause 1-25 & 1-27.
6. 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.
7. 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 southeast 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.
8. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
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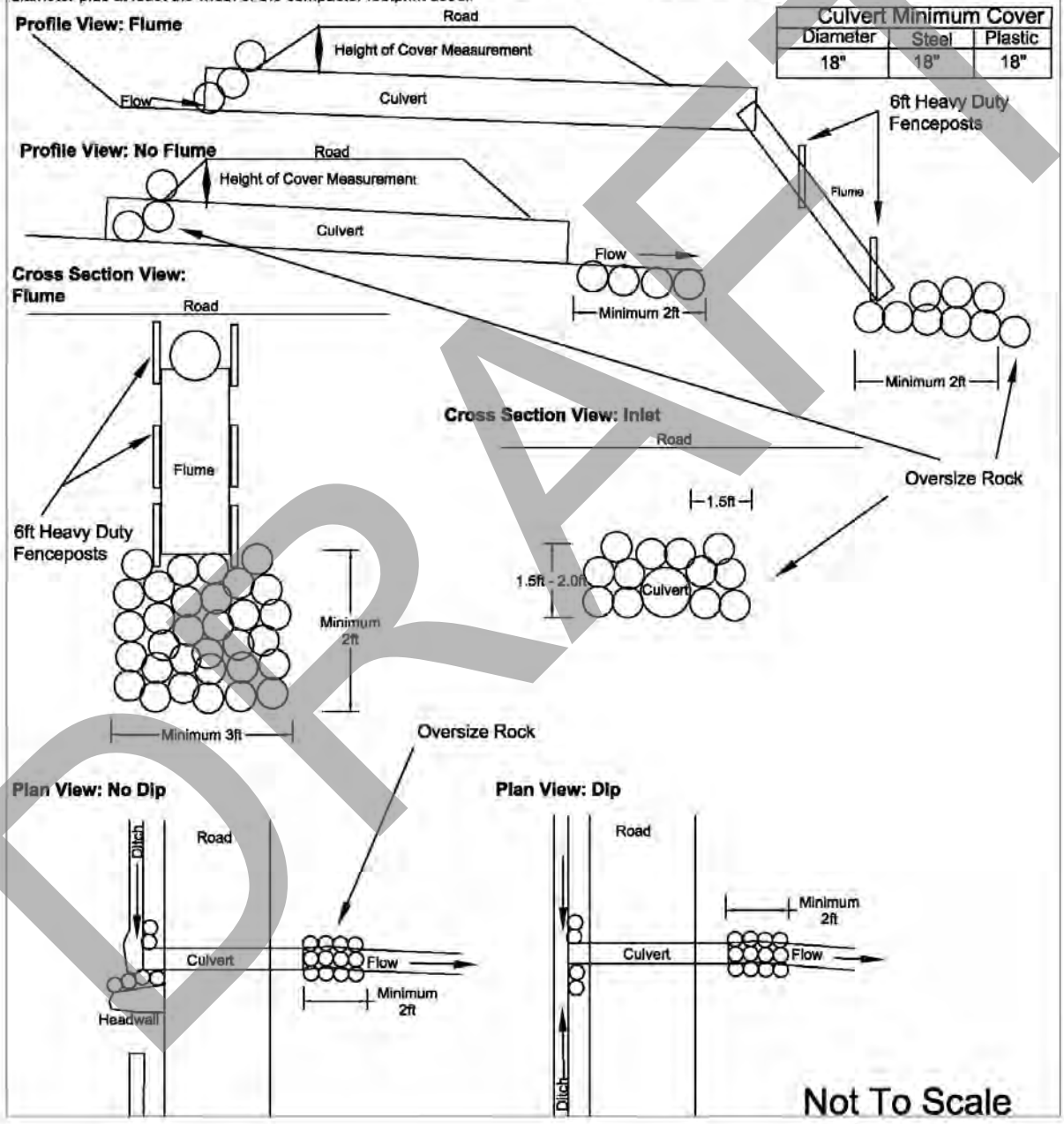
12. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed or access blocked to highway vehicles. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The contractor shall use Light Loose Rip Rap to block the drill trail.
13. All material shall remain the property of the State.
14. 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.
15. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.
16. Purchaser shall give the Contract Administrator a minimum of 7 days' notice prior to commencing any operations.

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..

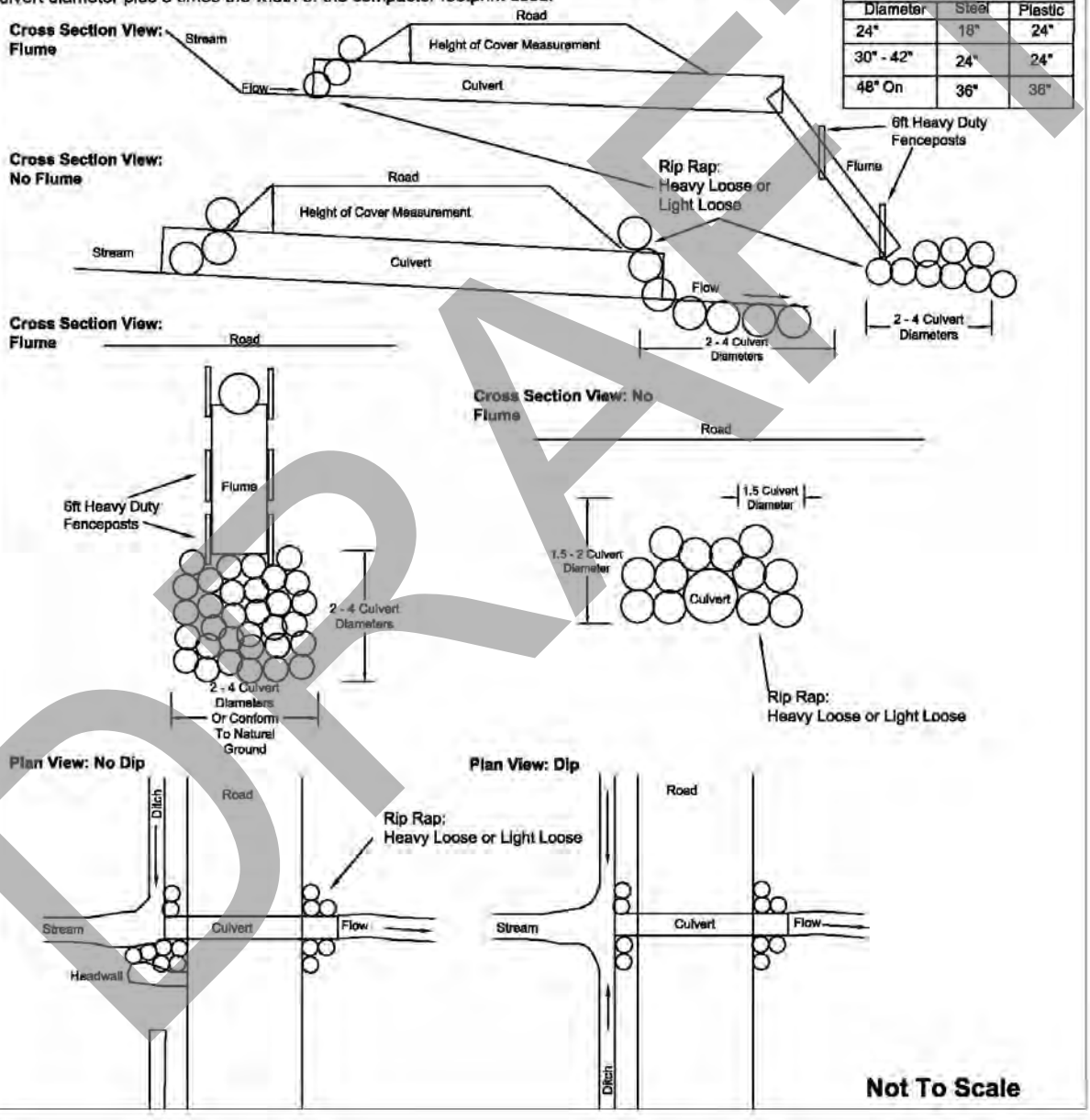
Culvert Minimum Cover		
Diameter	Steel	Plastic
18"	18"	18"



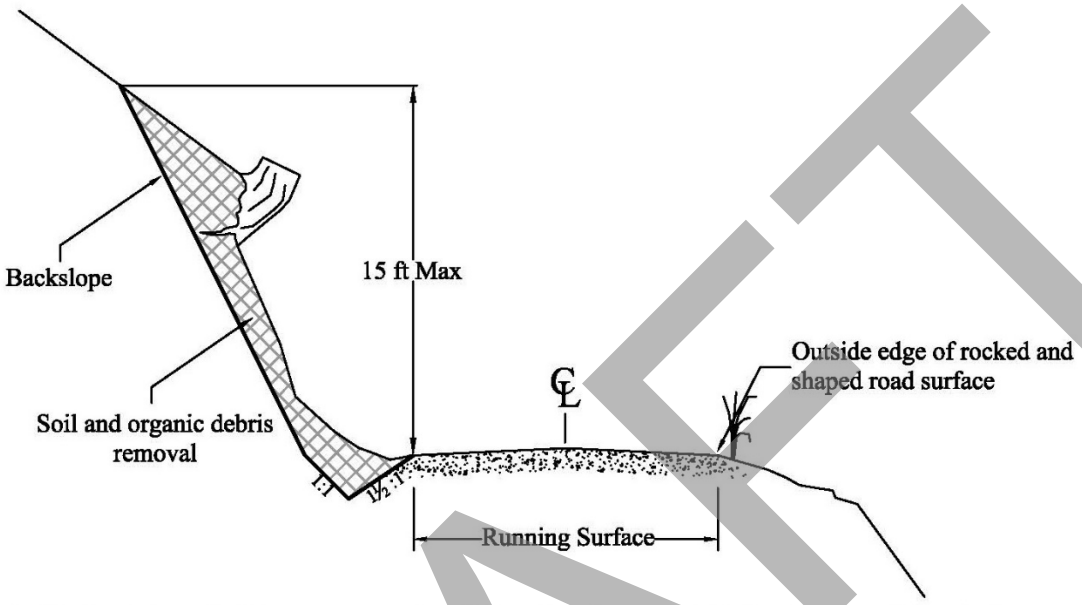
Typical Type Ns, Np Culvert Installation Detail Sheet.

-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 trench 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"



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.

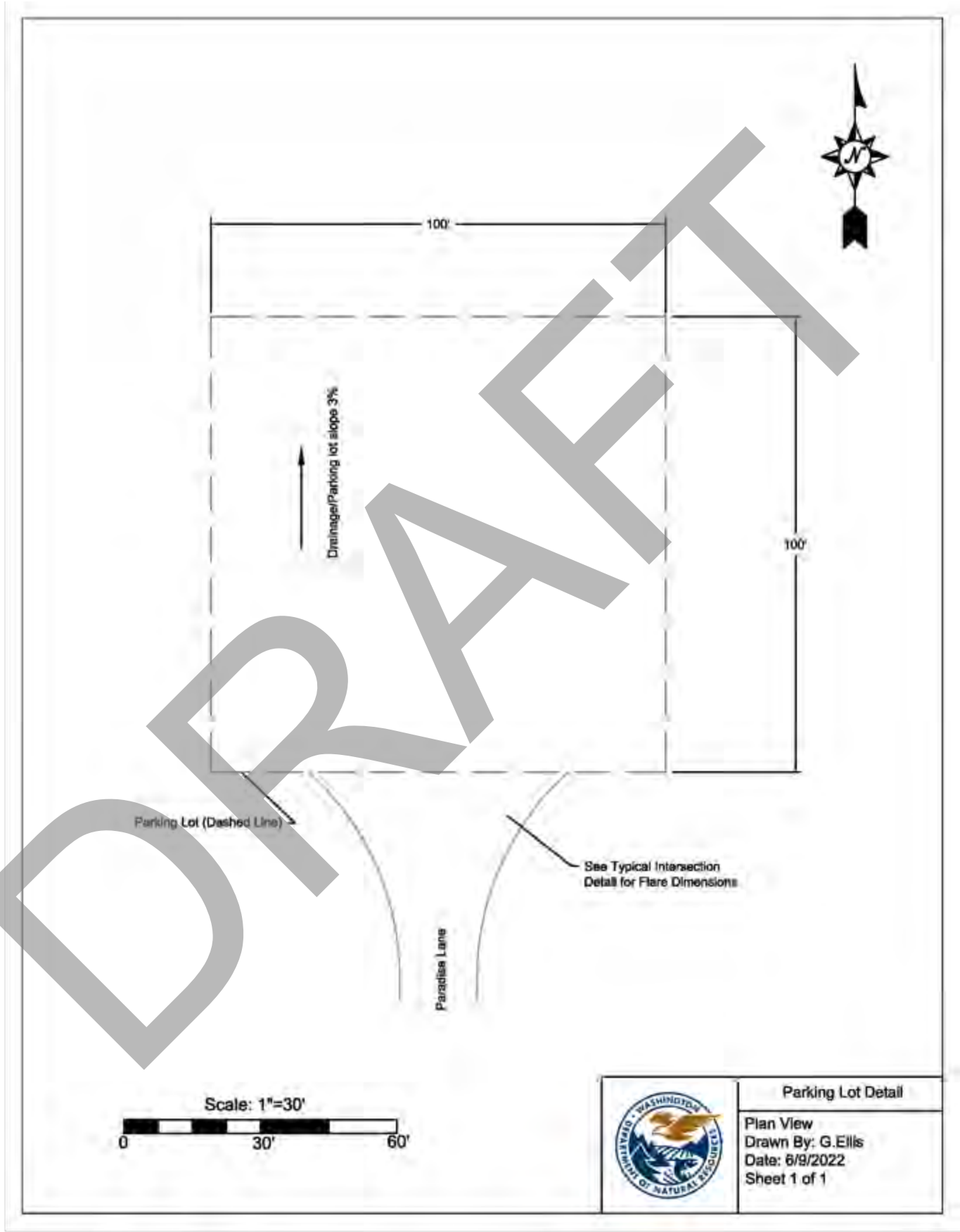
4. If there is insufficient width to clean or construct a ditch without disturbing more than 15 vertical feet of bank, the Contract Administrator may authorize changes to this plan in order to still meet the intent of having a ditch, while staying within the excavation limits already set.

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

Notes:

- Construct rock buttress according to specifications given in Clause 8-10
- Haul all waste to areas listed in Clause 4-37
- Cover all exposed soils at culvert locations and slide body with seed and straw
- Completion subject to approval from Straits District Engineer

CONTRACT #	PROJECT/ DETAIL	SHEET
30-102017	PARCHED TIMBER SALE Buttress Detail Sheet	1 OF 1



SUMMARY - Road Development Costs

SALE NAME: Parched | CONTRACT#: 30-102017 | REGION: Olympic | DISTRICT: Straits

LEGAL DESCRIPTION: 0

ROAD NAME:			H-3048	H-3050	H-3061	H-3066	H-3112	H-3113	H-3215	H-3219	H-3225	H-3241	H-3243	TOTAL:	TOTAL SHEET #2-4
ROAD TYPE:			Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction		
NUMBER OF STATIONS:			13.85	7.35	3.23	10.57	3.27	4.98	4.28	4.25	3.97	45.24	6.36	107.35	1,278.13
SIDESLOPE:			40%	20%	45%	40%	15%	30%	30%	15%	30%	35%	30%	330%	83%
CLEARING AND GRUBBING:			$3,245	$838	$757	$1,603	$414	$1,167	$732	$485	$930	$10,598	$1,490	$22,257	$2,579
ROAD BRUSHING:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EXCAVATION AND FILL:			$6,651	$1,661	$2,007	$5,076	$647	$1,407	$1,209	$840	$1,122	$15,336	$1,797	$37,754	$7,568
ROAD GRADING:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,157
DITCH CLEANING/CONSTRUCTION:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,222
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:															
Ballast:	13950	13,950	1,526	515	355	1,165	231	350	300	300	280	4,980	700	10,700	3,251
			$17,223	$6,004	$4,615	$15,258	$2,697	$4,884	$4,242	$3,867	$3,524	$67,833	$9,480	$139,626	$34,616
Surface:	730	730	0	0	0	0	0	0	0	0	0	0	0	0	730
			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	9,097
Oversize:	510	510	12	0	3	9	0	0	0	0	0	42	3	69	441
			$395	$0	$101	$303	$0	$0	$0	$0	$0	$1,425	$131	$2,356	$14,386
CULVERTS AND FLUMES:			$3,696	$0	$0	$2,772	$0	$0	$0	$0	$0	$11,256	$924	$18,648	$20,132
STRUCTURES:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$500
MISC. EXPENSES:			$81	$43	$19	$62	$19	$29	$25	$25	$23	$265	$37	$628	$9,996
OVERHEAD:			$2,503	$684	$600	$2,006	$302	$599	$497	$417	$448	$8,537	$1,109	$17,702	$11,299
TOTAL COSTS:			$33,794	$9,230	$8,099	$27,080	$4,079	$8,085	$6,705	$5,634	$6,047	$115,251	$14,967	$238,971	$136,552
COST PER STATION:			$2,440	$1,256	$2,508	$2,562	$1,247	$1,624	$1,567	$1,326	$1,523	$2,548	$2,353	$2,226	$106.84
MOBILIZATION:					$9,800										
ROAD DEACTIVATION AND ABANDONMENT COSTS:					$0										
Pit Work				$15,000											

Road Standard	Const.	Reconst.	Prehaul	Posthaul				
Total Costs =	272,279	31,455	77,572	20,216			TOTAL (All Roads) =	$401,523
Total Sta. =	112	21	564	564			SALE VOLUME MBF =	8,579
Cost per Sta. =	2,430	1,516	138	36			TOTAL COST PER MBF =	$46.80
Compiled by:	GTE						TOTAL COST PER STATION=	$289.81
							Date:	3/14/23

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

Sheet 1 of 4

ns to be furnished by: G.Ellis

SUMMARY - Road Development Costs

SALE NAME:	Parched	CONTRACT#:	30-102017		REGION:	Olympic		DISTRICT:	Straits					
	LEGAL DESCRIPTION:	0												
ROAD NAME:		Paradise	1+00 Spur	Parking	H-3005	H-3241	Paradise	H-3000	H-3050	H-3060	H-3061	H-3071	H-3100	H-3200
ROAD TYPE:		Construction	Construction	Construction	Recon.	Recon.	Recon.	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul
NUMBER OF STATIONS:		2.70	1.00	1.00	8.42	7.43	4.90	190.26	8.15	2.14	8.73	0.92	136.86	85.92
SIDESLOPE:		10%	10%	8%	15%	30%	10%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:		$269	$100	$100	$840	$1,271	$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:		$458	$170	$1,177	$1,665	$2,099	$0	$0	$0	$0	$0	$0	$2,000	$0
ROAD GRADING:		$0	$0	$0	$55	$48	$32	$1,237	$53	$14	$57	$6	$890	$558
DITCH CLEANING/CONSTRUCTION:		$0	$0	$0	$328	$290	$191	$7,420	$0	$0	$340	$0	$5,338	$3,351
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:														
	Ballast:	300	140	450	285	520	620	0	185	0	200	0	150	0
		$2,535	$1,183	$6,323	$2,074	$6,600	$5,065	$0	$2,162	$0	$2,553	$0	$1,575	$0
	Surface:	0	0	0	0	0	100	0	0	0	0	0	0	0
		$0	$0	$0	$0	$0	$1,247	$0	$0	$0	$0	$0	$0	$0
	Oversize:	0	0	0	0	6	0	3	0	0	0	0	432	0
		$0	$0	$0	$0	$215	$0	$101	$0	$0	$0	$0	$14,070	$0
CULVERTS AND FLUMES:		$0	$1,232	$0	$0	$1,848	$1,848	$2,772	$0	$0	$924	$0	$10,276	$0
STRUCTURES:		$0	$0	$0	$0	$0	$0	$500	$0	$0	$0	$0	$0	$0
MISC. EXPENSES:		$16	$6	$6	$869	$767	$506	$1,113	$48	$13	$51	$5	$1,409	$503
OVERHEAD:		$262	$215	$608	$525	$1,182	$688	$1,295	$204	$2	$353	$1	$3,200	$397
TOTAL COSTS:		$3,540	$2,905	$8,213	$6,356	$14,320	$8,330	$15,685	$2,467	$29	$4,279	$12	$38,756	$4,809
COST PER STATION:		$1,311	$2,905	$8,213	$755	$1,927	$1,700	$82	$303	$13	$490	$13	$283	$56

SUMMARY - Road Development Costs														
SALE NAME: Parched	CONTRACT#: 30-102017			REGION: Olympic		DISTRICT: Straits								
LEGAL DESCRIPTION 0														
ROAD NAME:	H-3210	H-3240	H-3241	Walk Way	I-2600	I-2610	I-2620	H-3000	H-3005	H-3048	H-3050	H-3060	H-3061	
ROAD TYPE:	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	
NUMBER OF STATIONS:	59.19	5.38	19.32	14.75	14.00	12.00	6.50	190.26	8.42	13.85	15.50	2.14	11.96	
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:	$385	$35	$126	$96	$91	$0	$0	$1,237	$55	$90	$101	$14	$78	
DITCHING:	$0	$210	$753	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:														
Ballast:	50	0	0	0	0	0	0	0	0	0	0	0	0	
	$636	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Surface:	0	0	0	330	0	0	0	250	0	0	0	0	0	
	$0	$0	$0	$4,112	$0	$0	$0	$3,115	$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	$1,232	$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:	$346	$31	$113	$86	$82	$0	$0	$1,113	$49	$81	$91	$13	$70	
OVERHEAD:	$123	$25	$89	$497	$16	$0	$0	$546	$10	$17	$19	$3	$15	
TOTAL COSTS:	$1,490	$301	$1,081	$6,023	$188	$0	$0	$6,011	$114	$188	$211	$29	$162	
COST PER STATION:	$25	$56	$56	$408	$13	$0	$0	$32	$14	$14	$14	$14	$14	

SUMMARY - Road Development Costs

SALE NAME: Parched	CONTRACT#: 30-102017			REGION: Olympic		DISTRICT: Straits											
LEGAL DESCRIPTION:	0																
ROAD NAME:	H-3066	H-3071	H-3100	H-3112	H-3113	H-3200	H-3210	H-3215	H-3219	H-3225	H-3240	H-3241	Walk Way	I-2600	I-2610	I-2620	Paradise
ROAD TYPE:	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul
NUMBER OF STATIONS:	10.57	0.92	136.86	3.27	4.98	85.92	59.19	4.28	4.25	3.97	5.38	71.99	14.75	14.00	12.00	6.50	7.60
SIDESLOPE:	0%	0%	0%	0%	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	$0	$0	$0	$0
ROAD BRUSHING:	$0	$0	$0	$0	$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	$0	$0	$0	$0
ROAD GRADING:	$69	$6	$890	$21	$32	$558	$385	$28	$28	$26	$35	$468	$96	$91	$78	$42	$49
DITCHing:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:																	
Ballast: 6850	0	0	100	0	0	100	100	0	0	0	0	0	0	0	0	0	50
	$0	$0	$1,047	$0	$0	$1,082	$1,358	$0	$0	$0	$0	$0	$0	$0	$0	$0	$423
Surface: 0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$623	$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	$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	$0	$0	$0	$0
STRUCTURES:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISC. EXPENSES:	$62	$5	$801	$19	$29	$503	$346	$25	$25	$23	$31	$421	$86	$82	$70	$38	$44
OVERHEAD:	$13	$1	$274	$4	$6	$214	$209	$5	$5	$5	$7	$89	$81	$17	$15	$8	$52
TOTAL COSTS:	$144	$12	$3,011	$44	$68	$2,357	$2,298	$58	$58	$54	$73	$978	$886	$190	$163	$88	$568
COST PER STATION:	$14	$14	$22	$14	$14	$27	$39	$14	$14	$14	$14	$14	$60	$14	$14	$14	$75

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the construction materials. Remove slides from ditches and the roadway. Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade and shape the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET. Inslope or outslope as directed to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

Drainage

- Prevent silt bearing road surface and ditch runoff from delivering sediment to any streams or wetlands.
- Maintain rolling dips and drivable waterbars as needed to keep them functioning as intended.
- Maintain headwalls to the road shoulder level with material that will resist erosion.
- Maintain energy dissipaters at culvert outlets with non-erodible material or rock.
- Keep ditches, culverts, and other drainage structures clear of obstructions and functioning as intended.
- Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This shall be done even during periods of inactivity.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Preventative Maintenance

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

Termination of Use or End of Season

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

Debris

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