



**TIMBER NOTICE OF SALE**

**SALE NAME:** PICNIC BASKET

**AGREEMENT NO:** 30-100428

**AUCTION:** December 16, 2020 starting at 10:00 a.m., **COUNTY:** Skagit

**SALE LOCATION:** Sale located approximately 16 miles northeast of Hamilton, WA

**PRODUCTS SOLD AND SALE AREA:** All timber bounded by white timber sale boundary tags, property lines and the DK-ML Road, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in the Unit.

All forest products above located on part(s) of Sections 3 and 4 all in Township 36 North, Range 8 East, W.M., containing 63 acres, more or less.

**CERTIFICATION:** This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513)

**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	7	937						425	374	83	54
Hemlock	17		742						418	229	85	9
Red cedar	17		38							28	10	
Silver fir	15.5		36						7	25	5	
Cottonwood	23		6						5		1	
Red alder	12.7		4						2		2	1
Sale Total			1,763									

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

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

**EXPIRATION DATE:** December 31, 2023 **ALLOCATION:** Export Restricted

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

**HARVEST METHOD:** Cable; shovel and rubber-tired skidder (See below for restrictions) on sustained slopes 40% or less; self-leveling equipment on sustained slopes 55% or less; tethered equipment may be utilized (See below for restrictions); also, a feller-buncher may be utilized on sustained slopes 40% or less.

Purchaser must obtain prior written approval from the Contract Administrator for areas as to where to utilize tethered equipment prior to use.

Purchaser must obtain prior written approval from the Contract Administrator for areas as to where to utilize rubber-tired skidder equipment prior to use. Skidders shall be limited to preapproved skid trails only. If ground disturbance is causing excessive damage, as determined by the Contract Administrator, skidders will no longer be authorized. Falling



## TIMBER NOTICE OF SALE

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and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

### **ROADS:**

11.70 stations of required reconstruction. 5.91 stations of optional construction. 16.61 stations of optional reconstruction. 127.10 stations of required prehaul maintenance. 16.61 stations of abandonment. 5.91 stations of abandonment, if built. Rock may be obtained from the following source on State land at no charge to the Purchaser: Picnic Basket Pit at station 116+82 of the DK-ML Road.

Development of new rock source will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast rock (a portion of which will be stockpiled at the pit).

An estimated total quantity of rock needed for this proposal: 83 cubic yards of riprap and 4,240 cubic yards of ballast rock.

Road work and the hauling of rock will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation. The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation

### **ACREAGE DETERMINATION**

**CRUISE METHOD:** Acres determined by GPS traverse. Cruise was conducted via variable plot sample type. See Cruise Narrative for further details. Shapefiles of units are available upon request after the BNR meeting in which the sale is presented.

### **FEES:**

1. Purchaser shall furnish the State with a check made payable to Sierra Pacific Land & Timber Company in the amount of \$500.00 on the day of sale for permit #55-101132, for road work and use.
2. \$29,971.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** 1. Pole quality redcedar was noted within the sale area, estimated 1-2 loads. No formal cruise was conducted for cedar poles.

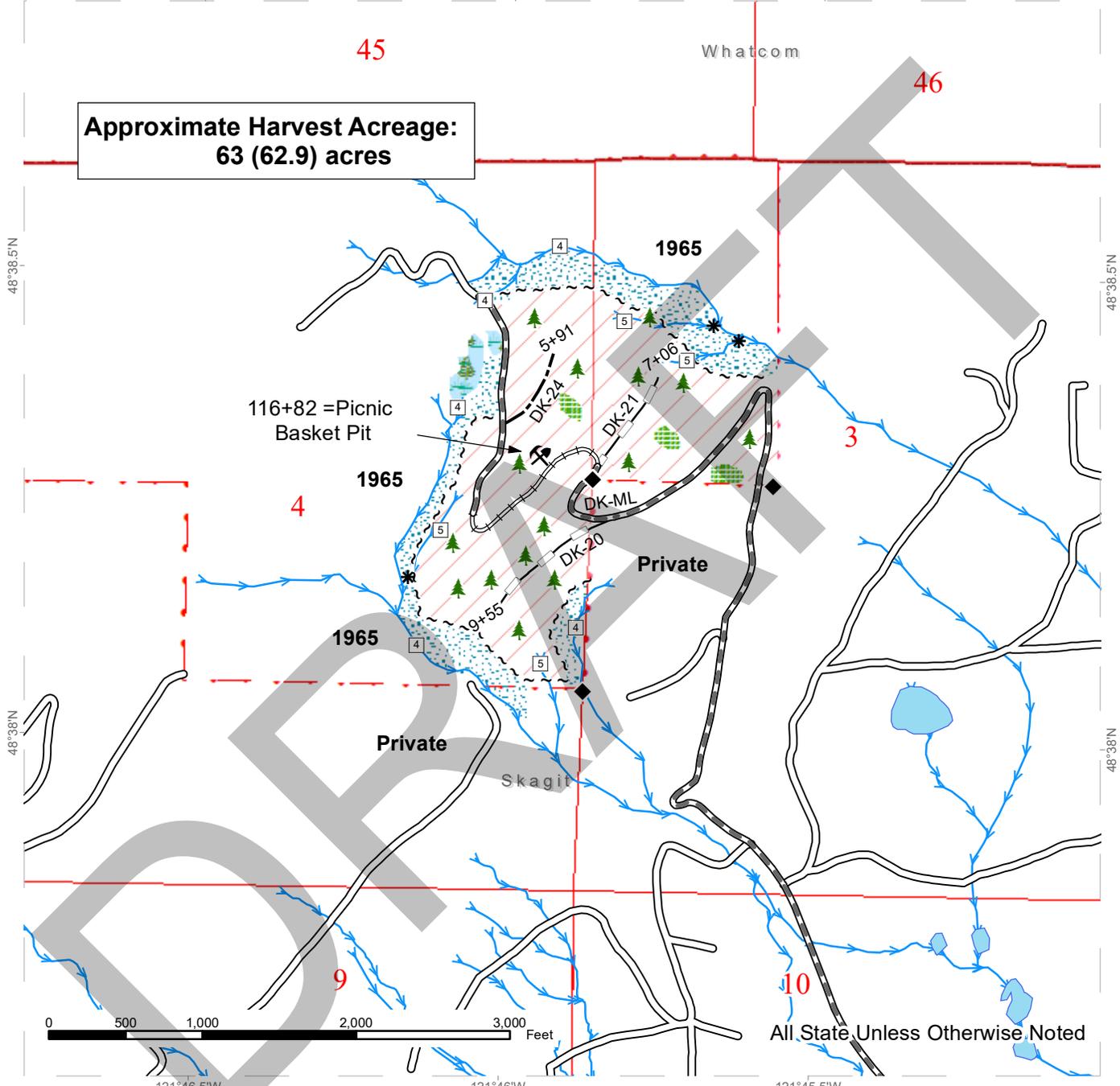
# TIMBER SALE MAP

**SALE NAME:** PICNIC BASKET  
**AGREEMENT #:** 30-100428  
**TOWNSHIP(S):** T36R8E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Skagit  
**ELEVATION RGE:** 1480-2560

121°46.5'W                      121°46'W                      121°45.5'W

**Approximate Harvest Acreage:  
63 (62.9) acres**



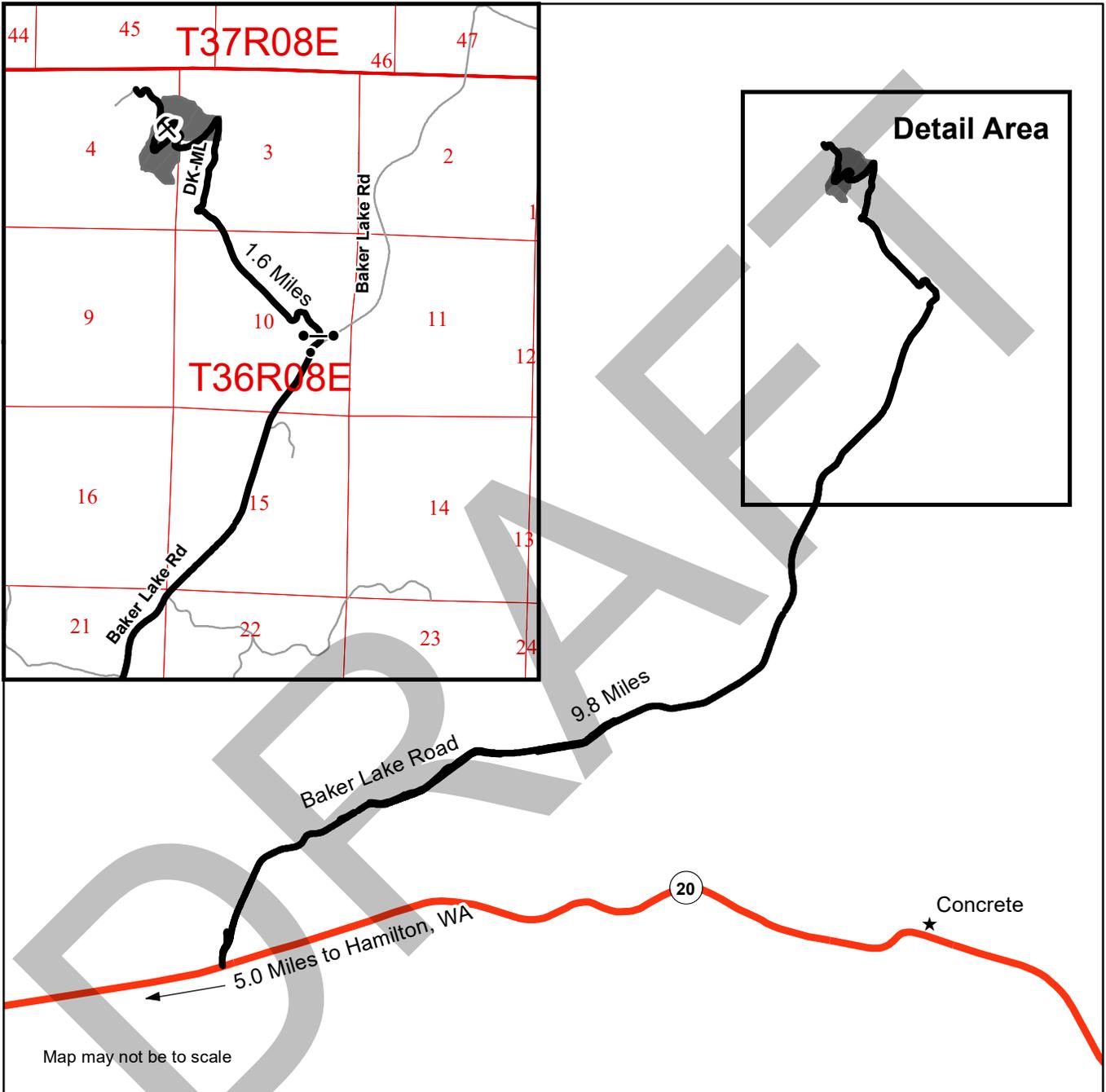
Variable Retention Harvest	Existing Roads	Streams
Leave Tree Area	Required Pre-Haul Maintenance	Survey Monument
Riparian Mgt Zone	Required Reconstruction	Leave Tree Area <1/4-acre
Forested Wetland	Optional Construction	Rock Pit
	Optional Reconstruction	



# DRIVING MAP

**SALE NAME:** PICNIC BASKET  
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**REGION:** Northwest Region  
**COUNTY(S):** Skagit  
**ELEVATION RGE:** 1480-2560



Map may not be to scale

-  Timber Sale Unit
-  Haul Route
-  Distance Indicator
-  Gate (F1-3)
-  Rock Pit

**DRIVING DIRECTIONS:**

From Hamilton, WA. Travel 5.0 miles on Hwy 20 and turn left on Baker Lake Rd.  
 Once on Baker Lake Rd., travel 9.8 miles and turn left onto the DK-ML.  
 Pass through the gate (F1-3) and travel 1.6 miles to arrive at the harvest unit.



## PRE-CRUISE NARRATIVE

Sale Name: <b>Picnic Basket</b>	Region: <b>Northwest</b>
Agreement #: <b>30-100428</b>	District: Baker
Contact Forester: Zach Bastow Phone / Location: 360-854-8235/Sedro Woolley	County(s): Skagit, Choose a county
Alternate Contact: Chris Hankey Phone / Location: <b>360-854-8310/ Sedro Woolley</b>	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	75%
Harvest System: Downhill Cable Click here to enter text.	25%
Enter % of sale acres	
Harvest System: Select harvest system Click here to enter text.	Click here to enter percent sale acres.

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #  Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) <b>Sec/Twp/Rng</b>	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1a VRH	Sec 04 T36N R08E	01	69.3		3.2	3.2		62.9	Choose an item.
<b>TOTAL ACRES</b>			79.3	0	3.2	3.2	0	62.9	

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1A VRH	Harvest all timber bounded by white timber sale boundary tags; except for forest products bounded by yellow leave tree tags or trees marked with blue paint on bole and collar.	See VDT harvest units.	538 trees within 18 individual Leave Tree Areas have been marked with Yellow LTA tags. 14 individual trees

			have been marked with blue paint around the bole.
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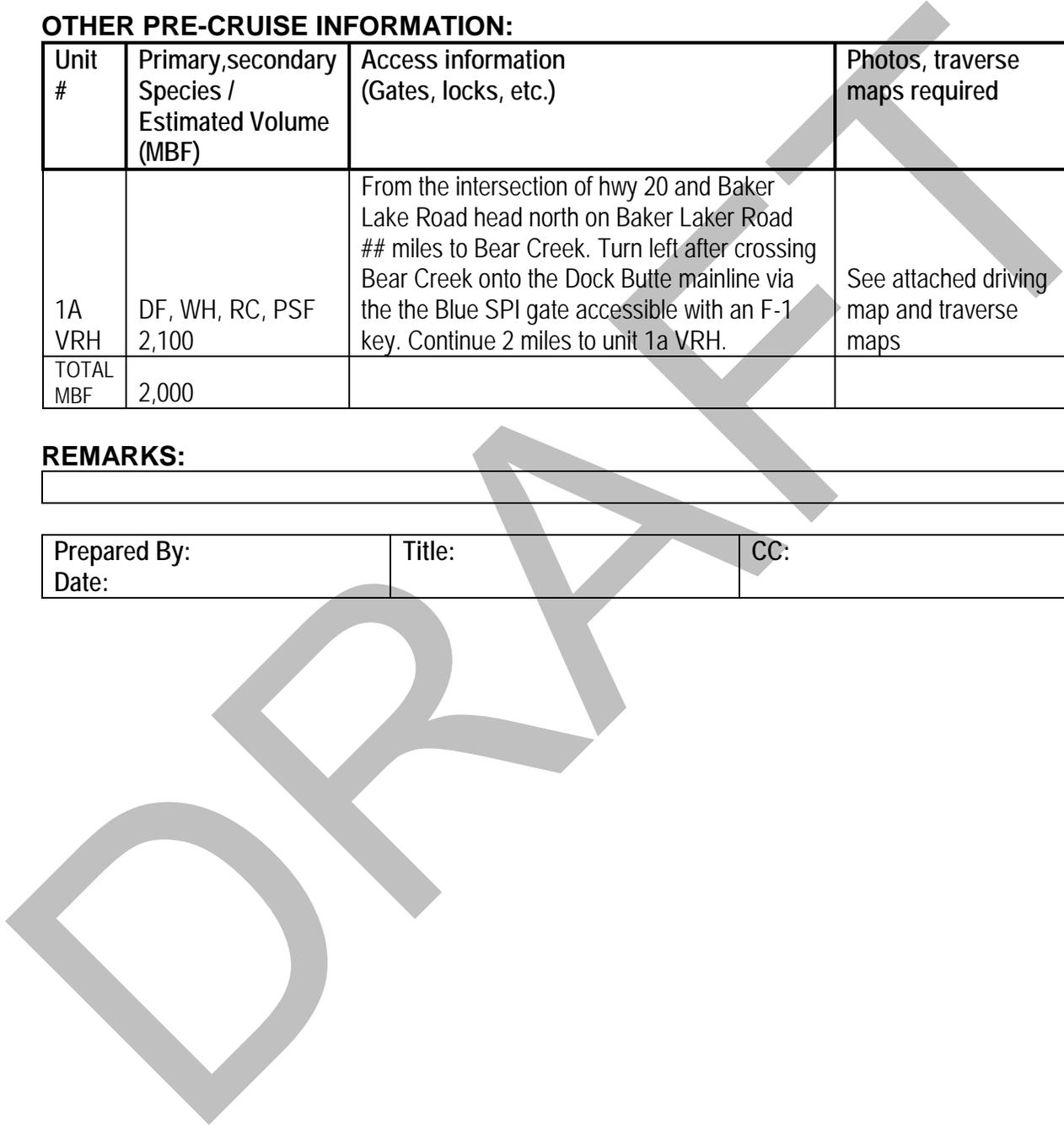
**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1A VRH	DF, WH, RC, PSF 2,100	From the intersection of hwy 20 and Baker Lake Road head north on Baker Laker Road ## miles to Bear Creek. Turn left after crossing Bear Creek onto the Dock Butte mainline via the the Blue SPI gate accessible with an F-1 key. Continue 2 miles to unit 1a VRH.	See attached driving map and traverse maps
TOTAL MBF	2,000		

**REMARKS:**

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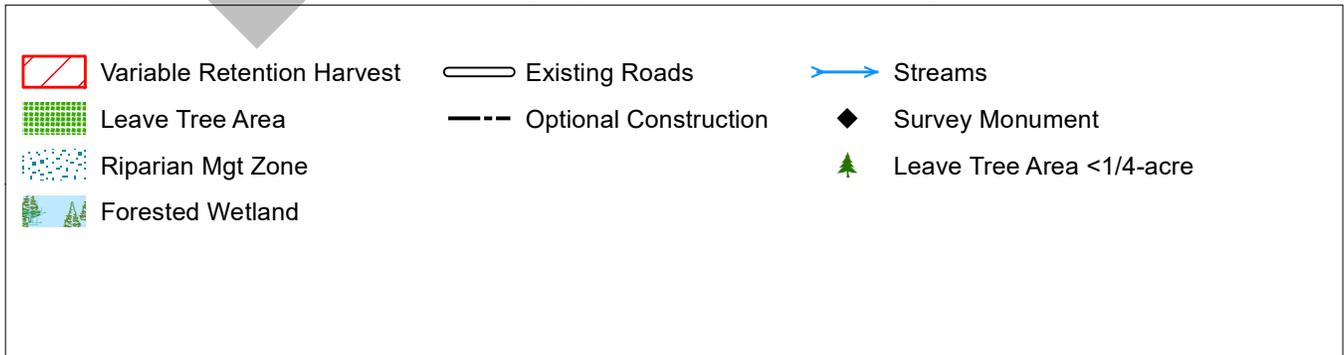
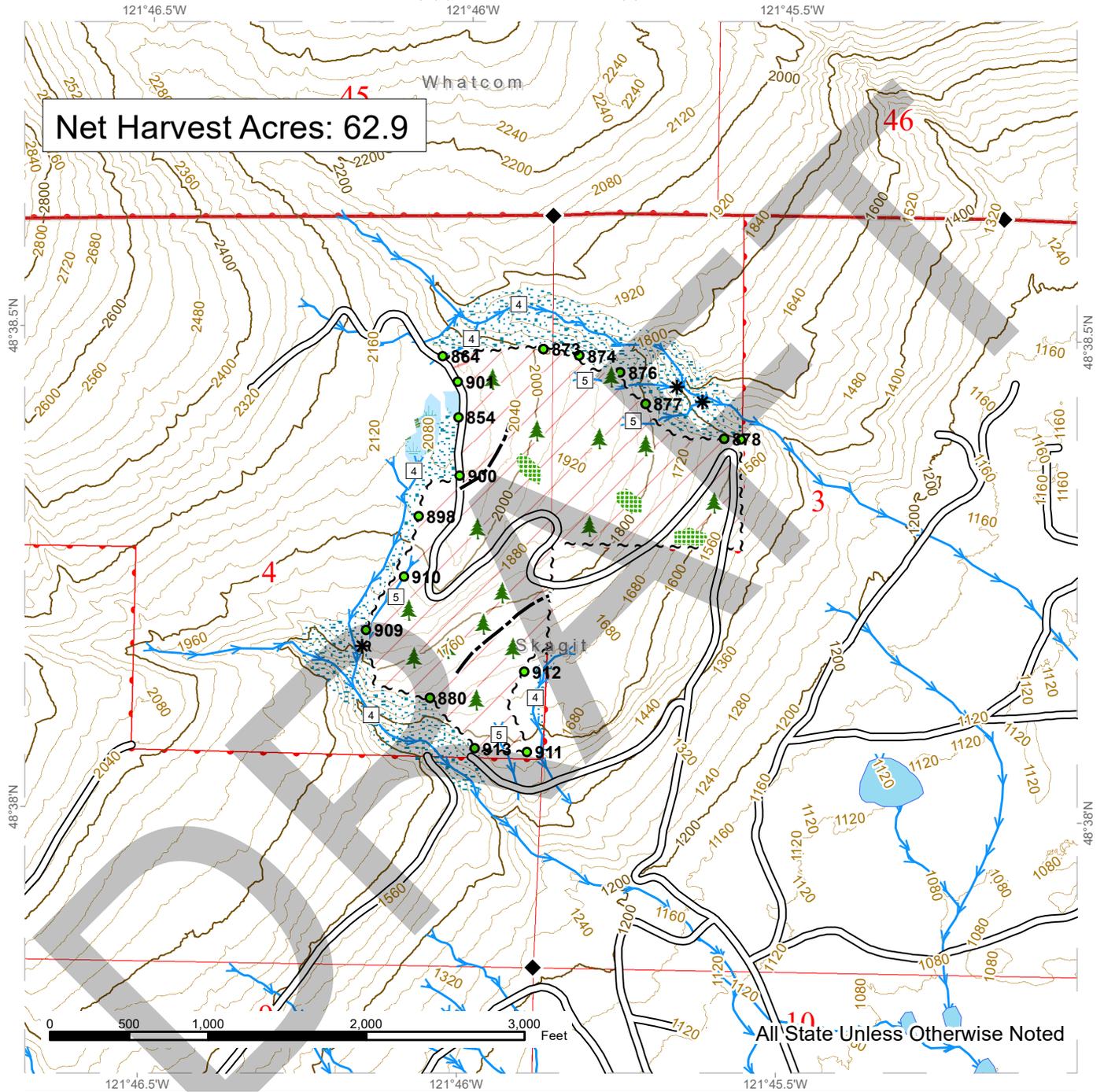
Prepared By: Date:	Title:	CC:
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# TRAVERSE MAP

**SALE NAME:** PICNIC BASKET  
**AGREEMENT #:** 30-100428  
**TOWNSHIP(S):** T36R8E  
**TRUST(S):** Common School and Indemnity (3), State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Skagit  
**ELEVATION RGE:** 1480-2560



## Timber Sale Cruise Report Picnic Basket - NW

**Sale Name:** PICNIC BASKET

**Sale Type:** LUMP SUM

**Region:** NORTHWEST

**District:** BAKER

**Lead Cruiser:** Matt Llobet

**Other Cruisers:**

**Cruise Narrative:**

**Location:**

Picnic Basket Timber Sale is located up the Baker Lake Road, off HW 20

**Cruise Design:**

- Harvest all timber bounded by white timber sale boundary tags; except for forest products bounded by yellow leave tree tags or trees marked with blue paint on the bole and collar
- 62 sample points were installed with a 1:1 ratio (cruise-count)
- Sample points were dropped that fell within internal road grades and leave tree clumps
- Designated blue painted leave trees picked up within a sample point, were not accounted for in the cruise
- A 20 BAF was used on Western Red Cedar to gather a better sample
- Min DBH 7 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point
- Min. sawlog length 12' and Max sawlog length was 40'
- Log lengths were called to maximize the amount of preferred lengths
- Standard conifer log lengths cruised were in 2' multiples, targeting 32', 36' and 40'

**Timber Quality:**

- Overall health of the sale is excellent
- Pole quality Western Red Cedar was scattered throughout the sale(1-2 loads)
- Observed defect included: Forked or multiple top, sinuosity, crook, broken top, frost checking(both straight and spiraled), spike knots, and bear damage
- Age class present 38-40 years old

**Logging and Stand Conditions:**

- 75% Cable & 25% ground-based harvesting
- Picnic Basket consists of gentle to mild terrain, making for excellent operator ground
- Cruise acres were determined by the district forester

**General Remarks:**

All timber was graded in variable log lengths with the Scaling Bureaus Westside/Northwest log rules. The utility wood was given a board ft. volume. Picnic Basket is at an elevation of 1480'-2560' and has excellent operator ground throughout the sale. Picnic Basket is described as a homogeneous Douglas fir and Western Hemlock timber type, with Western Red Cedar scattered throughout. On the north side of the sale, Western Hemlock is the primary species and the central/southern portion of the sale, Douglas fir is dominant. The stocking throughout the sale is uniform with little variability in the basal area and volume per acre.

### Timber Sale Notice Volume (MBF)

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	18.0	7.0	39	936.9	425.4	374.1	83.2	54.2
WH	16.7			742.2	418.1	229.0	85.2	9.9
RC	17.0			38.4		27.9	10.4	

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
SF	15.5			35.7	6.7	24.5	4.5	
BC	23.0			6.3	5.2		1.1	
RA	12.7			3.6	1.5		1.8	0.3
ALL	17.1	7.0	39	1,763.0	856.9	655.5	186.3	64.5

### Timber Sale Notice Weight (tons)

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	7,405.8	3,043.2	3,090.8	842.7	429.1
WH	6,649.3	3,362.1	2,157.3	1,043.1	86.8
RC	348.9		246.2	102.7	
SF	295.8	54.5	193.1	48.2	
BC	41.6	31.1		10.5	
RA	28.1	9.2		15.1	3.8
ALL	14,769.5	6,500.2	5,687.3	2,062.2	519.7

### Timber Sale Overall Cruise Statistics (Cut + Leave Trees)

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
251.5	5.2	111.4	2.2	28,030	5.6

### Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
PICNIC BASKET	B2C: VR, 2 BAF (40, 20 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	62.9	69.0	59	30	0
All		62.9	69.0	59	30	0

### Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	15.9	40.0	83	0.0	31.1	5.2
BC	LIVE	4 SAW	Domestic	9.9	30.0	17	0.0	10.5	1.1
BC	LIVE	CULL	Cull	7.6	7.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	13.9	34.0	6,762	1.6	3,043.2	425.4
DF	LIVE	3 SAW	Domestic	9.5	35.0	5,947	2.1	3,090.8	374.1

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	4 SAW	Domestic	6.2	25.0	1,323	0.9	842.7	83.2
DF	LIVE	CULL	Cull	7.7	7.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	7.5	26.0	862	0.2	429.1	54.2
RA	LIVE	2 SAW	Domestic	12.0	20.0	24	0.0	9.2	1.5
RA	LIVE	4 SAW	Domestic	8.0	19.0	29	0.0	15.1	1.8
RA	LIVE	CULL	Cull	7.0	8.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.2	20.0	5	0.0	3.8	0.3
RC	LIVE	3 SAW	Domestic	12.0	35.0	444	6.6	246.2	27.9
RC	LIVE	4 SAW	Domestic	6.0	23.0	166	0.0	102.7	10.4
RC	LIVE	CULL	Cull	7.9	5.0	0	100.0	0.0	0.0
SF	LIVE	2 SAW	Domestic	14.5	40.0	106	15.4	54.5	6.7
SF	LIVE	3 SAW	Domestic	9.2	36.0	389	0.0	193.1	24.5
SF	LIVE	4 SAW	Domestic	5.7	29.0	72	0.0	48.2	4.5
SF	LIVE	CULL	Cull	5.5	10.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	14.3	34.0	6,647	0.9	3,362.1	418.1
WH	LIVE	3 SAW	Domestic	9.2	34.0	3,640	0.9	2,157.3	229.0
WH	LIVE	4 SAW	Domestic	6.1	25.0	1,354	0.2	1,043.1	85.2
WH	LIVE	CULL	Cull	7.5	8.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.1	23.0	157	0.0	86.8	9.9

### Timber Sale Log Grade x Diameter Bin Summary

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 11	LIVE	CULL	7.6	7.0	0	100.0	0.0	0.0
BC	5 - 11	LIVE	4 SAW	9.9	30.0	17	0.0	10.5	1.1
BC	12 - 19	LIVE	2 SAW	15.9	40.0	83	0.0	31.1	5.2
DF	5 - 11	LIVE	4 SAW	6.2	25.0	1,323	0.9	842.7	83.2
DF	5 - 11	LIVE	CULL	6.2	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	UTILITY	7.5	26.0	862	0.2	429.1	54.2
DF	5 - 11	LIVE	3 SAW	9.5	35.0	5,947	2.1	3,090.8	374.1
DF	12 - 19	LIVE	2 SAW	13.7	34.0	6,305	1.5	2,883.4	396.6
DF	12 - 19	LIVE	CULL	14.6	6.0	0	100.0	0.0	0.0
DF	20+	LIVE	2 SAW	22.1	38.0	457	2.5	159.8	28.7
RA	5 - 11	LIVE	CULL	5.0	8.0	0	100.0	0.0	0.0
RA	5 - 11	LIVE	UTILITY	5.2	20.0	5	0.0	3.8	0.3
RA	5 - 11	LIVE	4 SAW	8.0	19.0	29	0.0	15.1	1.8
RA	12 - 19	LIVE	2 SAW	12.0	20.0	24	0.0	9.2	1.5
RA	12 - 19	LIVE	CULL	12.0	7.0	0	100.0	0.0	0.0

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
RC	5 - 11	LIVE	4 SAW	6.0	23.0	166	0.0	102.7	10.4
RC	5 - 11	LIVE	CULL	6.0	5.0	0	100.0	0.0	0.0
RC	5 - 11	LIVE	3 SAW	9.3	34.0	123	0.0	77.6	7.7
RC	12 - 19	LIVE	3 SAW	14.3	36.0	218	2.6	117.9	13.7
RC	12 - 19	LIVE	CULL	15.3	7.0	0	100.0	0.0	0.0
RC	20+	LIVE	CULL	24.2	8.0	0	100.0	0.0	0.0
RC	20+	LIVE	3 SAW	26.1	38.0	103	20.0	50.7	6.5
SF	5 - 11	LIVE	CULL	5.5	10.0	0	100.0	0.0	0.0
SF	5 - 11	LIVE	4 SAW	5.7	29.0	72	0.0	48.2	4.5
SF	5 - 11	LIVE	3 SAW	9.2	36.0	389	0.0	193.1	24.5
SF	12 - 19	LIVE	2 SAW	14.5	40.0	106	15.4	54.5	6.7
WH	5 - 11	LIVE	UTILITY	5.1	23.0	157	0.0	86.8	9.9
WH	5 - 11	LIVE	CULL	5.9	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	4 SAW	6.1	25.0	1,354	0.2	1,043.1	85.2
WH	5 - 11	LIVE	3 SAW	9.2	34.0	3,610	0.8	2,138.5	227.1
WH	12 - 19	LIVE	3 SAW	12.2	24.0	30	8.5	18.8	1.9
WH	12 - 19	LIVE	2 SAW	14.2	35.0	6,447	0.7	3,287.5	405.5
WH	12 - 19	LIVE	CULL	15.3	7.0	0	100.0	0.0	0.0
WH	20+	LIVE	CULL	22.4	6.0	0	100.0	0.0	0.0
WH	20+	LIVE	2 SAW	22.6	17.0	200	6.9	74.6	12.6

### Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 11	LIVE	Cull	7.6	7.0	0	100.0	0.0	0.0
BC	5 - 11	LIVE	Domestic	9.9	30.0	17	0.0	10.5	1.1
BC	12 - 19	LIVE	Domestic	15.9	40.0	83	0.0	31.1	5.2
DF	5 - 11	LIVE	Cull	6.2	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Pulp	7.5	26.0	862	0.2	429.1	54.2
DF	5 - 11	LIVE	Domestic	8.1	31.0	7,270	1.9	3,933.5	457.3
DF	12 - 19	LIVE	Domestic	13.7	34.0	6,305	1.5	2,883.4	396.6
DF	12 - 19	LIVE	Cull	14.6	6.0	0	100.0	0.0	0.0
DF	20+	LIVE	Domestic	22.1	38.0	457	2.5	159.8	28.7
RA	5 - 11	LIVE	Cull	5.0	8.0	0	100.0	0.0	0.0
RA	5 - 11	LIVE	Pulp	5.2	20.0	5	0.0	3.8	0.3
RA	5 - 11	LIVE	Domestic	8.0	19.0	29	0.0	15.1	1.8
RA	12 - 19	LIVE	Cull	12.0	7.0	0	100.0	0.0	0.0
RA	12 - 19	LIVE	Domestic	12.0	20.0	24	0.0	9.2	1.5

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
RC	5 - 11	LIVE	Cull	6.0	5.0	0	100.0	0.0	0.0
RC	5 - 11	LIVE	Domestic	6.6	25.0	289	0.0	180.3	18.2
RC	12 - 19	LIVE	Domestic	14.3	36.0	218	2.6	117.9	13.7
RC	12 - 19	LIVE	Cull	15.3	7.0	0	100.0	0.0	0.0
RC	20+	LIVE	Cull	24.2	8.0	0	100.0	0.0	0.0
RC	20+	LIVE	Domestic	26.1	38.0	103	20.0	50.7	6.5
SF	5 - 11	LIVE	Cull	5.5	10.0	0	100.0	0.0	0.0
SF	5 - 11	LIVE	Domestic	7.9	34.0	461	0.0	241.3	29.0
SF	12 - 19	LIVE	Domestic	14.5	40.0	106	15.4	54.5	6.7
WH	5 - 11	LIVE	Pulp	5.1	23.0	157	0.0	86.8	9.9
WH	5 - 11	LIVE	Cull	5.9	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	7.6	29.0	4,965	0.6	3,181.6	312.3
WH	12 - 19	LIVE	Domestic	14.2	35.0	6,476	0.8	3,306.3	407.4
WH	12 - 19	LIVE	Cull	15.3	7.0	0	100.0	0.0	0.0
WH	20+	LIVE	Cull	22.4	6.0	0	100.0	0.0	0.0
WH	20+	LIVE	Domestic	22.6	17.0	200	6.9	74.6	12.6

## Cruise Unit Report PICNIC BASKET

### Unit Sale Notice Volume (MBF): PICNIC BASKET

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	18.0	7.0	39	936.9	425.4	374.1	83.2	54.2
WH	16.7			742.2	418.1	229.0	85.2	9.9
RC	17.0			38.4		27.9	10.4	
SF	15.5			35.7	6.7	24.5	4.5	
BC	23.0			6.3	5.2		1.1	
RA	12.7			3.6	1.5		1.8	0.3
ALL	17.1	7.0	39	1,763.0	856.9	655.5	186.3	64.5

### Unit Sale Notice Weight (tons): PICNIC BASKET

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	7,405.8	3,043.2	3,090.8	842.7	429.1
WH	6,649.3	3,362.1	2,157.3	1,043.1	86.8
RC	348.9		246.2	102.7	
SF	295.8	54.5	193.1	48.2	
BC	41.6	31.1		10.5	
RA	28.1	9.2		15.1	3.8
ALL	14,769.5	6,500.2	5,687.3	2,062.2	519.7

### Unit Cruise Design: PICNIC BASKET

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (40, 20 for some species) Measure/ Count Plots, Sighting Ht = 4.5 ft	62.9	69.0	59	30	0

### Unit Cruise Summary: PICNIC BASKET

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	71	189	3.2	1
WH	90	158	2.7	0
RC	16	27	0.5	0
SF	5	8	0.1	0

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
BC	1	1	0.0	0
RA	3	3	0.1	0
ALL	186	386	6.5	1

### Unit Cruise Statistics (Cut + Leave Trees): PICNIC BASKET

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	128.1	95.7	12.5	116.2	23.0	2.7	14,895	98.5	12.8
WH	107.1	113.4	14.8	110.1	28.6	3.0	11,799	116.9	15.1
RC	9.2	158.8	20.7	66.7	44.3	11.1	610	164.9	23.5
SF	5.4	374.0	48.7	104.6	34.5	15.4	567	375.6	51.1
BC	0.7	768.1	100.0	148.0	0.0	0.0	100	768.1	100.0
RA	1.0	768.1	100.0	57.3	43.2	24.9	58	769.3	103.1
ALL	251.5	39.6	5.2	111.4	29.5	2.2	28,030	49.3	5.6

### Unit Summary: PICNIC BASKET

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	LIVE	CUT	1	ALL	23.0	80	99	100	2.3	0.2	0.7	0.1	41.6	6.3
DF	LIVE	CUT	71	ALL	18.0	67	86	14,895	5.6	72.5	128.1	30.2	7,405.8	936.9
RA	LIVE	CUT	3	ALL	12.7	36	42	58	25.0	1.2	1.0	0.3	28.1	3.7
RC	LIVE	CUT	12	ALL	15.9	40	55	520	15.5	5.7	7.8	2.0	297.2	32.7
RC	LIVE	POLE	4	ALL	22.1	62	75	90	15.5	0.5	1.4	0.3	51.7	5.7
SF	LIVE	CUT	5	ALL	15.5	58	75	567	6.9	4.1	5.4	1.4	295.8	35.7
WH	LIVE	CUT	90	ALL	16.7	57	71	11,799	5.9	70.4	107.1	26.2	6,649.3	742.1
ALL	LIVE	CUT	182	ALL	17.2	61	77	27,939	6.0	154.1	250.1	60.2	14,717.8	1,757.4
ALL	LIVE	POLE	4	ALL	22.1	62	75	90	15.9	0.5	1.4	0.3	51.7	5.7
ALL	ALL	ALL	186	ALL	17.3	61	77	28,029	6.0	154.6	251.5	60.5	14,769.5	1,763.1

### Unit Stand Table: PICNIC BASKET

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	24	LIVE	CUT	1	23.0	80	99	100	2.3	0.2	0.7	0.1	41.6	6.3
DF	12	LIVE	CUT	4	12.1	59	76	602	13.9	8.2	6.6	1.9	302.8	37.9
DF	14	LIVE	CUT	4	13.9	57	74	608	6.7	6.2	6.6	1.8	332.3	38.2
DF	16	LIVE	CUT	9	16.2	64	82	1,688	1.6	10.3	14.8	3.7	844.0	106.2
DF	18	LIVE	CUT	26	17.9	67	87	5,234	8.1	27.2	47.6	11.3	2,627.1	329.2

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	20	LIVE	CUT	16	19.9	74	94	3,673	3.3	13.7	29.6	6.6	1,859.2	231.0
DF	22	LIVE	CUT	3	21.3	75	95	644	5.0	2.0	4.9	1.1	304.8	40.5
DF	24	LIVE	CUT	6	24.0	78	98	1,687	7.1	4.2	13.1	2.7	830.4	106.1
DF	26	LIVE	CUT	1	25.5	51	75	165	11.0	0.5	1.6	0.3	75.8	10.4
DF	30	LIVE	CUT	1	29.8	96	123	361	0.0	0.3	1.6	0.3	134.8	22.7
DF	36	LIVE	CUT	1	35.0	65	83	234	5.7	0.2	1.6	0.3	94.6	14.7
RA	10	LIVE	CUT	1	10.5	30	34	16	19.4	0.6	0.3	0.1	7.8	1.0
RA	14	LIVE	CUT	1	13.3	41	49	13	54.3	0.3	0.3	0.1	7.3	0.8
RA	16	LIVE	CUT	1	16.0	42	50	29	0.0	0.2	0.3	0.1	13.0	1.8
RC	10	LIVE	CUT	2	10.4	33	52	69	13.6	2.2	1.3	0.4	40.8	4.3
RC	12	LIVE	CUT	1	11.5	25	28	21	8.3	0.9	0.6	0.2	13.0	1.3
RC	14	LIVE	CUT	2	14.4	55	72	86	5.4	1.1	1.3	0.3	57.6	5.4
RC	16	LIVE	CUT	1	16.0	41	50	16	56.8	0.5	0.6	0.2	13.4	1.0
RC	20	LIVE	CUT	1	20.5	39	53	24	2.5	0.3	0.6	0.1	25.4	1.5
RC	24	LIVE	CUT	1	23.8	55	68	31	45.6	0.2	0.6	0.1	16.8	2.0
RC	26	LIVE	CUT	1	26.2	60	75	79	1.4	0.2	0.6	0.1	32.2	5.0
RC	30	LIVE	CUT	1	29.8	70	81	42	41.6	0.1	0.6	0.1	20.0	2.6
RC	44	LIVE	CUT	1	43.1	73	92	84	8.7	0.1	0.6	0.1	38.9	5.3
RC	46	LIVE	CUT	1	45.0	78	99	67	29.9	0.1	0.6	0.1	39.1	4.2
RC	18	LIVE	POLE	1	17.0	65	80	29	1.2	0.2	0.4	0.1	13.4	1.8
RC	24	LIVE	POLE	2	24.2	57	70	38	0.0	0.2	0.7	0.1	25.1	2.4
RC	28	LIVE	POLE	1	27.3	65	76	23	5.5	0.1	0.4	0.1	13.1	1.5
SF	14	LIVE	CUT	3	14.2	54	70	301	7.1	2.9	3.2	0.9	157.8	18.9
SF	16	LIVE	CUT	1	16.6	68	86	140	0.0	0.7	1.1	0.3	67.6	8.8
SF	22	LIVE	CUT	1	21.3	70	88	126	13.3	0.4	1.1	0.2	70.3	7.9
WH	8	LIVE	CUT	1	8.0	25	28	59	0.0	3.2	1.1	0.4	26.1	3.7
WH	10	LIVE	CUT	5	10.1	44	57	359	7.7	10.2	5.6	1.8	247.9	22.6
WH	12	LIVE	CUT	5	12.0	44	55	375	8.5	7.2	5.6	1.6	260.5	23.6
WH	14	LIVE	CUT	8	13.6	55	68	937	6.6	8.9	9.0	2.4	486.7	58.9
WH	16	LIVE	CUT	12	15.8	57	70	1,576	3.4	11.6	15.8	4.0	927.6	99.1
WH	18	LIVE	CUT	10	18.0	65	82	1,354	11.3	7.0	12.4	2.9	772.3	85.1
WH	20	LIVE	CUT	20	19.7	68	84	2,829	4.0	11.2	23.7	5.3	1,609.7	177.9
WH	22	LIVE	CUT	16	21.7	69	86	2,451	4.6	7.5	19.2	4.1	1,319.8	154.2
WH	24	LIVE	CUT	6	24.3	71	89	934	7.4	2.1	6.8	1.4	463.8	58.8
WH	26	LIVE	CUT	2	25.0	68	82	255	0.0	0.7	2.3	0.5	155.8	16.0
WH	28	LIVE	CUT	3	27.9	72	106	390	11.3	0.8	3.4	0.6	217.0	24.5
WH	32	LIVE	CUT	1	32.5	75	93	120	7.3	0.2	1.1	0.2	85.1	7.5
WH	34	LIVE	CUT	1	34.7	78	97	162	21.2	0.2	1.1	0.2	77.1	10.2

**Unit Log Grade Summary: PICNIC BASKET**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	15.9	40.0	83	0.0	31.1	5.2
BC	LIVE	4 SAW	9.9	30.0	17	0.0	10.5	1.1
BC	LIVE	CULL	7.6	7.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	13.9	34.0	6,762	1.6	3,043.2	425.4
DF	LIVE	3 SAW	9.5	35.0	5,947	2.1	3,090.8	374.1
DF	LIVE	4 SAW	6.2	25.0	1,323	0.9	842.7	83.2
DF	LIVE	CULL	7.7	7.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	7.5	26.0	862	0.2	429.1	54.2
RA	LIVE	2 SAW	12.0	20.0	24	0.0	9.2	1.5
RA	LIVE	4 SAW	8.0	19.0	29	0.0	15.1	1.8
RA	LIVE	CULL	7.0	8.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	5.2	20.0	5	0.0	3.8	0.3
RC	LIVE	3 SAW	12.0	35.0	444	6.6	246.2	27.9
RC	LIVE	4 SAW	6.0	23.0	166	0.0	102.7	10.4
RC	LIVE	CULL	7.9	5.0	0	100.0	0.0	0.0
SF	LIVE	2 SAW	14.5	40.0	106	15.4	54.5	6.7
SF	LIVE	3 SAW	9.2	36.0	389	0.0	193.1	24.5
SF	LIVE	4 SAW	5.7	29.0	72	0.0	48.2	4.5
SF	LIVE	CULL	5.5	10.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	14.3	34.0	6,647	0.9	3,362.1	418.1
WH	LIVE	3 SAW	9.2	34.0	3,640	0.9	2,157.3	229.0
WH	LIVE	4 SAW	6.1	25.0	1,354	0.2	1,043.1	85.2
WH	LIVE	CULL	7.5	8.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.1	23.0	157	0.0	86.8	9.9

**Unit Log Sort Summary: PICNIC BASKET**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	Cull	7.6	7.0	0	100.0	0.0	0.0
BC	LIVE	Domestic	12.9	35.0	100	0.0	41.6	6.3
DF	LIVE	Cull	7.7	7.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	9.5	32.0	14,033	1.7	6,976.7	882.7
DF	LIVE	Pulp	7.5	26.0	862	0.2	429.1	54.2
RA	LIVE	Cull	7.0	8.0	0	100.0	0.0	0.0
RA	LIVE	Domestic	8.8	19.0	53	0.0	24.3	3.3
RA	LIVE	Pulp	5.2	20.0	5	0.0	3.8	0.3
RC	LIVE	Cull	7.9	5.0	0	100.0	0.0	0.0

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
RC	LIVE	Domestic	7.7	27.0	610	4.9	348.9	38.4
SF	LIVE	Cull	5.5	10.0	0	100.0	0.0	0.0
SF	LIVE	Domestic	8.4	34.0	567	3.3	295.8	35.7
WH	LIVE	Cull	7.5	8.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	9.3	30.0	11,642	0.8	6,562.5	732.3
WH	LIVE	Pulp	5.1	23.0	157	0.0	86.8	9.9

### Unit Log Grade x Sort Summary: PICNIC BASKET

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	15.9	40.0	83	0.0	31.1	5.2
BC	LIVE	4 SAW	Domestic	9.9	30.0	17	0.0	10.5	1.1
BC	LIVE	CULL	Cull	7.6	7.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	13.9	34.0	6,762	1.6	3,043.2	425.4
DF	LIVE	3 SAW	Domestic	9.5	35.0	5,947	2.1	3,090.8	374.1
DF	LIVE	4 SAW	Domestic	6.2	25.0	1,323	0.9	842.7	83.2
DF	LIVE	CULL	Cull	7.7	7.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	7.5	26.0	862	0.2	429.1	54.2
RA	LIVE	2 SAW	Domestic	12.0	20.0	24	0.0	9.2	1.5
RA	LIVE	4 SAW	Domestic	8.0	19.0	29	0.0	15.1	1.8
RA	LIVE	CULL	Cull	7.0	8.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.2	20.0	5	0.0	3.8	0.3
RC	LIVE	3 SAW	Domestic	12.0	35.0	444	6.6	246.2	27.9
RC	LIVE	4 SAW	Domestic	6.0	23.0	166	0.0	102.7	10.4
RC	LIVE	CULL	Cull	7.9	5.0	0	100.0	0.0	0.0
SF	LIVE	2 SAW	Domestic	14.5	40.0	106	15.4	54.5	6.7
SF	LIVE	3 SAW	Domestic	9.2	36.0	389	0.0	193.1	24.5
SF	LIVE	4 SAW	Domestic	5.7	29.0	72	0.0	48.2	4.5
SF	LIVE	CULL	Cull	5.5	10.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	14.3	34.0	6,647	0.9	3,362.1	418.1
WH	LIVE	3 SAW	Domestic	9.2	34.0	3,640	0.9	2,157.3	229.0
WH	LIVE	4 SAW	Domestic	6.1	25.0	1,354	0.2	1,043.1	85.2
WH	LIVE	CULL	Cull	7.5	8.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.1	23.0	157	0.0	86.8	9.9

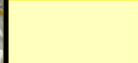
## Unit Log Grade x Diameter Bin Summary: PICNIC BASKET

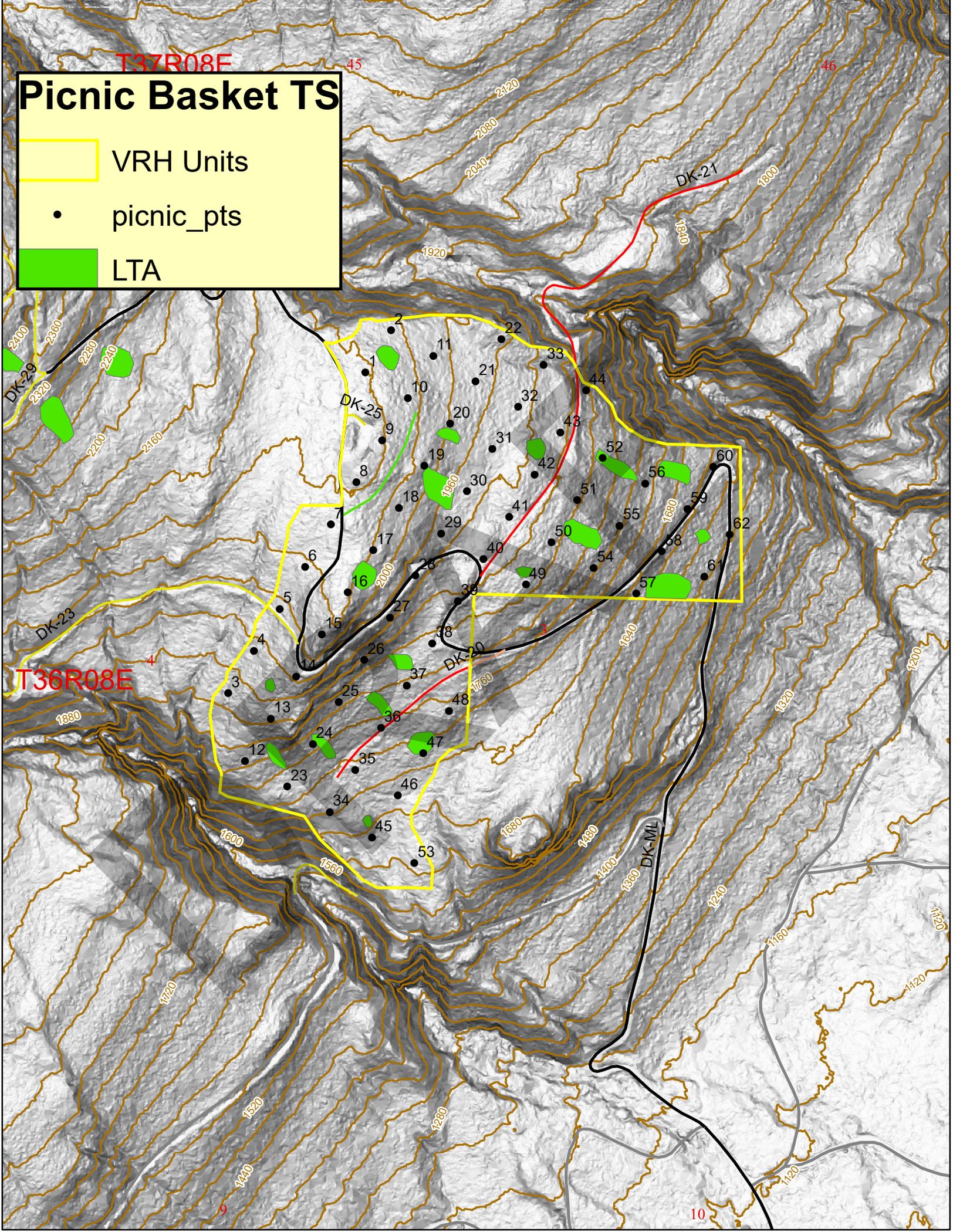
Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 11	LIVE	CULL	7.6	7.0	0	100.0	0.0	0.0
BC	5 - 11	LIVE	4 SAW	9.9	30.0	17	0.0	10.5	1.1
BC	12 - 19	LIVE	2 SAW	15.9	40.0	83	0.0	31.1	5.2
DF	5 - 11	LIVE	4 SAW	6.2	25.0	1,323	0.9	842.7	83.2
DF	5 - 11	LIVE	CULL	6.2	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	UTILITY	7.5	26.0	862	0.2	429.1	54.2
DF	5 - 11	LIVE	3 SAW	9.5	35.0	5,947	2.1	3,090.8	374.1
DF	12 - 19	LIVE	2 SAW	13.7	34.0	6,305	1.5	2,883.4	396.6
DF	12 - 19	LIVE	CULL	14.6	6.0	0	100.0	0.0	0.0
DF	20+	LIVE	2 SAW	22.1	38.0	457	2.5	159.8	28.7
RA	5 - 11	LIVE	CULL	5.0	8.0	0	100.0	0.0	0.0
RA	5 - 11	LIVE	UTILITY	5.2	20.0	5	0.0	3.8	0.3
RA	5 - 11	LIVE	4 SAW	8.0	19.0	29	0.0	15.1	1.8
RA	12 - 19	LIVE	2 SAW	12.0	20.0	24	0.0	9.2	1.5
RA	12 - 19	LIVE	CULL	12.0	7.0	0	100.0	0.0	0.0
RC	5 - 11	LIVE	4 SAW	6.0	23.0	166	0.0	102.7	10.4
RC	5 - 11	LIVE	CULL	6.0	5.0	0	100.0	0.0	0.0
RC	5 - 11	LIVE	3 SAW	9.3	34.0	123	0.0	77.6	7.7
RC	12 - 19	LIVE	3 SAW	14.3	36.0	218	2.6	117.9	13.7
RC	12 - 19	LIVE	CULL	15.3	7.0	0	100.0	0.0	0.0
RC	20+	LIVE	CULL	24.2	8.0	0	100.0	0.0	0.0
RC	20+	LIVE	3 SAW	26.1	38.0	103	20.0	50.7	6.5
SF	5 - 11	LIVE	CULL	5.5	10.0	0	100.0	0.0	0.0
SF	5 - 11	LIVE	4 SAW	5.7	29.0	72	0.0	48.2	4.5
SF	5 - 11	LIVE	3 SAW	9.2	36.0	389	0.0	193.1	24.5
SF	12 - 19	LIVE	2 SAW	14.5	40.0	106	15.4	54.5	6.7
WH	5 - 11	LIVE	UTILITY	5.1	23.0	157	0.0	86.8	9.9
WH	5 - 11	LIVE	CULL	5.9	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	4 SAW	6.1	25.0	1,354	0.2	1,043.1	85.2
WH	5 - 11	LIVE	3 SAW	9.2	34.0	3,610	0.8	2,138.5	227.1
WH	12 - 19	LIVE	3 SAW	12.2	24.0	30	8.5	18.8	1.9
WH	12 - 19	LIVE	2 SAW	14.2	35.0	6,447	0.7	3,287.5	405.5
WH	12 - 19	LIVE	CULL	15.3	7.0	0	100.0	0.0	0.0
WH	20+	LIVE	CULL	22.4	6.0	0	100.0	0.0	0.0
WH	20+	LIVE	2 SAW	22.6	17.0	200	6.9	74.6	12.6

**Unit Log Sort x Diameter Bin Summary: PICNIC BASKET**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 11	LIVE	Cull	7.6	7.0	0	100.0	0.0	0.0
BC	5 - 11	LIVE	Domestic	9.9	30.0	17	0.0	10.5	1.1
BC	12 - 19	LIVE	Domestic	15.9	40.0	83	0.0	31.1	5.2
DF	5 - 11	LIVE	Cull	6.2	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Pulp	7.5	26.0	862	0.2	429.1	54.2
DF	5 - 11	LIVE	Domestic	8.1	31.0	7,270	1.9	3,933.5	457.3
DF	12 - 19	LIVE	Domestic	13.7	34.0	6,305	1.5	2,883.4	396.6
DF	12 - 19	LIVE	Cull	14.6	6.0	0	100.0	0.0	0.0
DF	20+	LIVE	Domestic	22.1	38.0	457	2.5	159.8	28.7
RA	5 - 11	LIVE	Cull	5.0	8.0	0	100.0	0.0	0.0
RA	5 - 11	LIVE	Pulp	5.2	20.0	5	0.0	3.8	0.3
RA	5 - 11	LIVE	Domestic	8.0	19.0	29	0.0	15.1	1.8
RA	12 - 19	LIVE	Cull	12.0	7.0	0	100.0	0.0	0.0
RA	12 - 19	LIVE	Domestic	12.0	20.0	24	0.0	9.2	1.5
RC	5 - 11	LIVE	Cull	6.0	5.0	0	100.0	0.0	0.0
RC	5 - 11	LIVE	Domestic	6.6	25.0	289	0.0	180.3	18.2
RC	12 - 19	LIVE	Domestic	14.3	36.0	218	2.6	117.9	13.7
RC	12 - 19	LIVE	Cull	15.3	7.0	0	100.0	0.0	0.0
RC	20+	LIVE	Cull	24.2	8.0	0	100.0	0.0	0.0
RC	20+	LIVE	Domestic	26.1	38.0	103	20.0	50.7	6.5
SF	5 - 11	LIVE	Cull	5.5	10.0	0	100.0	0.0	0.0
SF	5 - 11	LIVE	Domestic	7.9	34.0	461	0.0	241.3	29.0
SF	12 - 19	LIVE	Domestic	14.5	40.0	106	15.4	54.5	6.7
WH	5 - 11	LIVE	Pulp	5.1	23.0	157	0.0	86.8	9.9
WH	5 - 11	LIVE	Cull	5.9	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	7.6	29.0	4,965	0.6	3,181.6	312.3
WH	12 - 19	LIVE	Domestic	14.2	35.0	6,476	0.8	3,306.3	407.4
WH	12 - 19	LIVE	Cull	15.3	7.0	0	100.0	0.0	0.0
WH	20+	LIVE	Cull	22.4	6.0	0	100.0	0.0	0.0
WH	20+	LIVE	Domestic	22.6	17.0	200	6.9	74.6	12.6

# Picnic Basket TS

-  VRH Units
-  picnic\_pts
-  LTA



# ROAD PLAN AND SPECIFICATIONS

## #30-100428 PICNIC BASKET TIMBER SALE



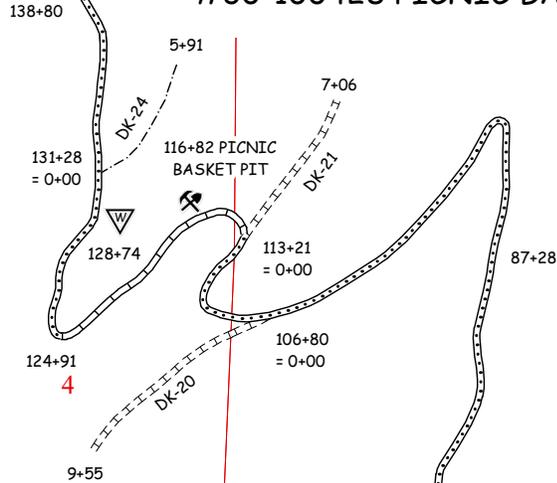
WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

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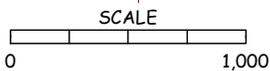
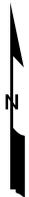


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DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
J. WESTRA	ZYLSTRA 6/16/2020	ZYLSTRA 6/16/2020	5/18/2020	1 OF 28

MP 9.8 = 0+00

Baker Lake Rd

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

PICNIC BASKET TIMBER SALE ROAD PLAN  
SKAGIT COUNTY  
BAKER DISTRICT  
NORTHWEST REGION

AGREEMENT NO.: 30-100428

STAFF ENGINEER: J. WESTRA

DATE: MAY 18, 2020

SECTION 0 – SCOPE OF PROJECT

**0-1 ROAD PLAN SCOPE**

Clauses in this road plan apply to all road related work, including landings and rock source development, unless otherwise noted.

**0-2 REQUIRED ROADS**

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
DK-ML	0+00 to 113+21 124+91 to 138+80	PREHAUL MAINTENANCE
DK-ML	113+21 to 124+91	RECONSTRUCTION

**0-3 OPTIONAL ROADS**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
DK-20	0+00 to 9+55	RECONSTRUCTION
DK-21	0+00 to 7+06	RECONSTRUCTION
DK-24	0+00 to 5+91	CONSTRUCTION

**0-4 CONSTRUCTION**

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

**0-5 RECONSTRUCTION**

Reconstruction includes, but is not limited to clearing, grubbing, drill and shoot, excavation and embankment to sub-grade, landing and turnout construction, culvert installation and application of 3-inch-minus ballast rock. Additional requirements are as follows:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
DK-ML	113+21 to 124+91	<ul style="list-style-type: none"><li>- Smooth out subgrade for continuity of grade alignment</li><li>- Ditch Reconstruction</li><li>- Culvert Installation</li><li>- Application of rock</li></ul>
DK-20	0+00 to 0+50	<ul style="list-style-type: none"><li>- Application of 50 cubic yards of shot rock to obtain grade alignment at road junction</li></ul>

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
DK-ML	0+00 to 87+28	<ul style="list-style-type: none"><li>- Spot Grade and spot rock patching as directed by Contract Administrator.</li></ul>
DK-ML	87+28 to 113+21	<ul style="list-style-type: none"><li>- Grade road surface and rip out potholes, shape road surface to establish crown and clean ditches and ditchouts.</li><li>- Clean culvert inlets and outlets.</li><li>- Culvert Installation.</li><li>- Application of spot rock as directed by Contract Administrator.</li></ul>
DK-ML	124+91 to 138+80	<ul style="list-style-type: none"><li>- Grade road surface and rip out potholes, shape road surface to establish crown.</li><li>- Construct ditches.</li><li>- Clean culvert inlets and outlets.</li><li>- Culvert Installation.</li><li>- Application of rock</li></ul>

**0-7 POST-HAUL MAINTENANCE**

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

**0-10 ABANDONMENT**

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

**0-12 DEVELOP ROCK SOURCE**

Purchaser shall develop a new rock source. Rock source development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and 3-inch-minus. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**SECTION 1 – GENERAL**

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

Purchaser shall perform road work within the tolerances listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

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

## **1-6 ORDER OF PRECEDENCE**

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

1. Addenda.
2. Road Plan Clauses.
3. Typical Section Sheet.
4. Standard Lists.
5. Standard Details.
6. 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.

## **1-15 ROAD MARKING**

Purchaser shall perform road work in accordance with the state's marked location. All road work is marked as follows:

- Orange flagging for road centerline.
- Orange and blue flagging for culvert locations.
- Orange and pink flagging for full bench locations.
- Blue or orange paint with metal tag for reference points (RPs).

## **1-18 REFERENCE POINT DAMAGE**

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

## **1-21 HAUL APPROVAL**

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

**1-23 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 periods unless authorized in writing by the Contract Administrator.

<u>Activity</u>	<u>Closure Period</u>
All activities.	November 1 to March 31

**1-26 OPERATING DURING CLOSURE PERIOD**

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

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

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

**1-33 SNOW PLOWING RESTRICTION**

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

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

Purchaser shall immediately remove any mud, dirt, rock, or other material tracked or spilled on to county roads and state highways.

If additional damage to the surface, signs, guardrails, etc. occurs then the damage will be repaired, at the Purchaser's expense, as directed by the Contract Administrator when authorized by the county or WSDOT.

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

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

**2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE**

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

**2-5 MAINTENANCE GRADING – EXISTING ROAD**

On listed Prehaul Maintenance roads, Purchaser shall use a grader to shape the existing surface before application of rock surfacing.

**2-6 CLEANING CULVERTS**

On listed Prehaul Maintenance roads, Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before timber haul.

**2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS**

On listed Prehaul Maintenance 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 SHEET and the CULVERT AND DRAINAGE SPECIFICATION.

## SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

### 3-5 CLEARING

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

### 3-8 PROHIBITED DECKING AREAS

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

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

### 3-10 GRUBBING

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

### 3-20 ORGANIC DEBRIS DEFINITION

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

### 3-21 DISPOSAL COMPLETION

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

### 3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

**3-25 SCATTERING ORGANIC DEBRIS**

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

**SECTION 4 – EXCAVATION**

**4-2 PIONEERING**

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

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

**4-3 ROAD GRADE AND ALIGNMENT STANDARDS**

Purchaser shall follow these standards for road grade and alignment:

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

**4-5 CUT SLOPE RATIO**

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

**4-6 EMBANKMENT SLOPE RATIO**

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

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

**4-7 SHAPING CUT AND FILL SLOPE**

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

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

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

**4-21 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 as shown on the TURNAROUND DETAIL. Turnaround type and location are subject to written approval by the Contract Administrator.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

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

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

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

**4-37 WASTE AREA LOCATION**

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

<u>Road</u>	<u>Disposal Location</u>
DK-ML	128+74 ROADSIDE RIGHT

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas:

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

**4-55 ROAD SHAPING**

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

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

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

SECTION 5 – DRAINAGE

**5-5 CULVERTS**

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

**5-7 USED CULVERT MATERIAL**

On temporary roads, Purchaser may install used culverts. All other roads must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation.

**5-12 UNUSED MATERIALS STATE PROPERTY**

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

**5-15 CULVERT INSTALLATION**

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

**5-17 CROSS DRAIN SKEW AND SLOPE**

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

**5-18 CULVERT DEPTH OF COVER**

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

**5-20 ENERGY DISSIPATERS**

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

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

**5-25 CATCH BASINS**

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

**5-26 HEADWALLS FOR CROSS DRAIN CULVERTS**

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must weigh at least 50 pounds. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

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

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
PICNIC BASKET PIT	116+82 of the DK-ML	3-INCH MINUS BALLAST, RIPRAP

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

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

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

<u>Source</u>	<u>Rock Type</u>
PICNIC BASKET PIT	3-INCH MINUS BALLAST, RIPRAP

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

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.

## 6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

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

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

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

## 6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source. No oversize material is allowed to remain in the rock source at the termination of this timber sale.
- Oversize material is defined as rock fragments too large to be converted by the Purchaser to a size that will meet specifications used for the roads in this sale.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

**6-23 ROCK GRADATION TYPES**

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

**6-34 3-INCH MINUS BALLAST ROCK**

Ballast rock must be 100% equal to, or smaller than, 3 inches in at least one dimension. Rock may contain no more than 5 percent organic debris, dirt, and trash.

**6-50 LIGHT LOOSE RIP RAP**

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

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

**6-51 HEAVY LOOSE RIP RAP**

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

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

**6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH**

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

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

**6-65 ROCK STOCKPILE LOCATION**

Purchaser shall stockpile rock as listed below. Rock stockpiles must be in accordance Clause 6-67 ROCK STOCKPILE SPECIFICATIONS.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
PICNIC BASKET PIT	3-INCH MINUS BALLAST	500	PICNIC BASKET PIT

**6-67 ROCK STOCKPILE SPECIFICATIONS**

Rock stockpiles listed in Clause 6-65 ROCK STOCKPILE LOCATION must meet the following specifications:

Before placing aggregates upon the stockpile site, the site must be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface.

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 24 feet. Stockpiles in excess of 200 cubic yards must be built up in layers of not more than 4 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile.

Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

**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.

**6-73 ROCK FOR WIDENED PORTIONS**

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

## SECTION 8 – EROSION CONTROL

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

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

### **8-15 REVEGETATION**

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

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

The Purchaser shall provide the seed and fertilizer.

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

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

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

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

**8-19 ASSURANCE FOR SEEDED AREA**

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

**8-25 GRASS SEED**

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

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

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

**8-27 FERTILIZER**

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

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

SECTION 9 – POST-HAUL ROAD WORK

**9-3 CULVERT MATERIAL REMOVED FROM STATE LAND**

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

**9-5 POST-HAUL MAINTENANCE**

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

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-21 ROAD ABANDONMENT**

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

<u>Road</u>	<u>Stations</u>
DK-20	0+00 to 9+55
DK-21	0+00 to 7+06
DK-24	0+00 to 5+91

**9-22 ABANDONMENT**

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1.5:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Purchaser.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.

- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

## SECTION 10 MATERIALS

### 10-15 CORRUGATED STEEL CULVERT

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

### 10-17 CORRUGATED PLASTIC CULVERT

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

### 10-21 METAL BAND

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

### 10-22 PLASTIC BAND

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

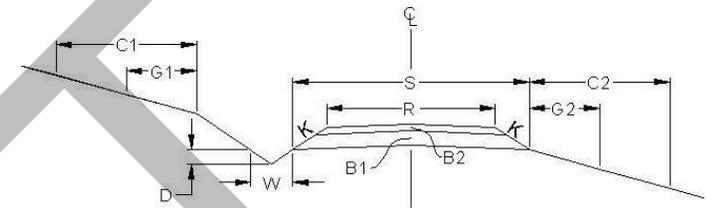
### 10-24 GAUGE AND CORRUGATION

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

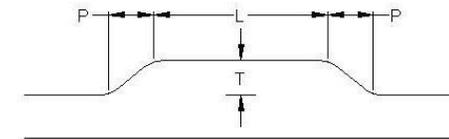
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		DK-ML	DK-ML	DK-ML	DK-ML
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		PREHAUL	PREHAUL	RECONSTRUCT	PREHAUL
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	87+28	113+21	124+91
STATION / MP		87+28	113+21	124+91	138+80
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	--	--	50	--
TURNOUT WIDTH	T	--	--	10	--
TURNOUT TAPER	P	--	--	25	--
GRUBBING	G1	--	--	5	--
	G2	--	--	5	--
CLEARING	C1	--	--	10	--
	C2	--	--	10	--
ROCK FILLSLOPE	K:1	--	--	1 ½	1 ½
❖ BALLAST DEPTH	B1	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY BALLAST		--	--	--	--
❖ SURFACING DEPTH	B2	--	--	6	6
CUBIC YARDS / STATION		--	--	34	34
➤ TOTAL CY SURFACING		--	--	400	470
➤ TOTAL CUBIC YARDS		200 <sup>A</sup>	100 <sup>A</sup>	400	470
SUBGRADE WIDTH	S	13	13	13	13
BRUSHCUT (Y/N)		N	N	Y	N
BLADE, SHAPE, & DITCH (Y/N)		N	Y	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.

Rock Totals Summary

Type	Quantity (Cubic Yards)
Ballast	4,240
Rip Rap	83

ROAD #		DK-20	DK-21	DK-24			
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	OPTIONAL			
CONSTRUCT / RECONSTRUCT		RECONSTRUCT	RECONSTRUCT	CONSTRUCT			
TOLERANCE CLASS (A/B/C)		C	C	C			
STATION / MP TO		0+00	0+00	0+00			
STATION / MP		9+55	7+06	5+91			
ROAD WIDTH	R	12	12	12			
CROWN (INCHES @ C/L)		3	3	3			
DITCH WIDTH	W	2	2	2			
DITCH DEPTH	D	1	1	1			
TURNOUT LENGTH	L	--	--	--			
TURNOUT WIDTH	T	--	--	--			
TURNOUT TAPER	P	--	--	--			
GRUBBING	G1	5	5	5			
	G2	5	5	5			
CLEARING	C1	10	10	10			
	C2	10	10	10			
ROCK FILLSLOPE	K:1	1 ½	1 ½	1 ½			
❖ BALLAST DEPTH	B1	18	18	18			
CUBIC YARDS / STATION		114	114	114			
➤ TOTAL CY BALLAST		1,090	805	675			
❖ SURFACING DEPTH	B2	--	--	--			
CUBIC YARDS / STATION		--	--	--			
➤ TOTAL CY SURFACING		--	--	--			
➤ TOTAL CUBIC YARDS		1,090	805	675			
SUBGRADE WIDTH	S	16.5	16.5	16.5			
BRUSHCUT (Y/N)		N	N	N			
BLADE, SHAPE, & DITCH (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"	14	3" x 1"												
DK-ML	111+36	18	30	PD	--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-ML	118+41	18	30	PD	--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-ML	121+71	18	30	PD	--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-ML	124+41	--	--	--	--	--	2	--	--	--	--	Prehaul Maintenance: Armor culvert inlet.		
DK-ML	126+93	18	30	PD	--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-ML	129+23	18	30	PD	--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-ML	131+38	18	30	PD	--	--	2	3	L	NT	C	Install concurrent with construction of DK-24.		
DK-ML	137+67	24	30		--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-ML	138+42	18	30	PD	--	--	2	3	L	NT	C	Prehaul Maintenance		
DK-20	2+71	18	30	PD	--	--	2	2	L	NT	C			
DK-20	4+76	18	30	PD	--	--	2	2	L	NT	C			
DK-20	7+69	18	30	PD	--	--	2	2	L	NT	C			
DK-20	8+90	18	30	PD	--	--	2	2	L	NT	C			
DK-21	0+99	18	30	PD	--	--	2	2	L	NT	C			
DK-21	2+76	18	30	PD	--	--	2	2	L	NT	C			
DK-21	4+98	18	30	PD	--	--	2	2	L	NT	C			
DK-24	2+19	18	30	PD	--	--	2	2	L	NT	C			
DK-24	5+37	18	30	PD	--	--	2	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 GM  
 H – Heavy Loose Riprap    L – Light Loose Riprap    SR – Shot Rock    NT – Native (Bank Run)    QS – Quarry Spalls

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Cuts and Fills

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

### Surface

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

### Drainage

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

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Preventative Maintenance

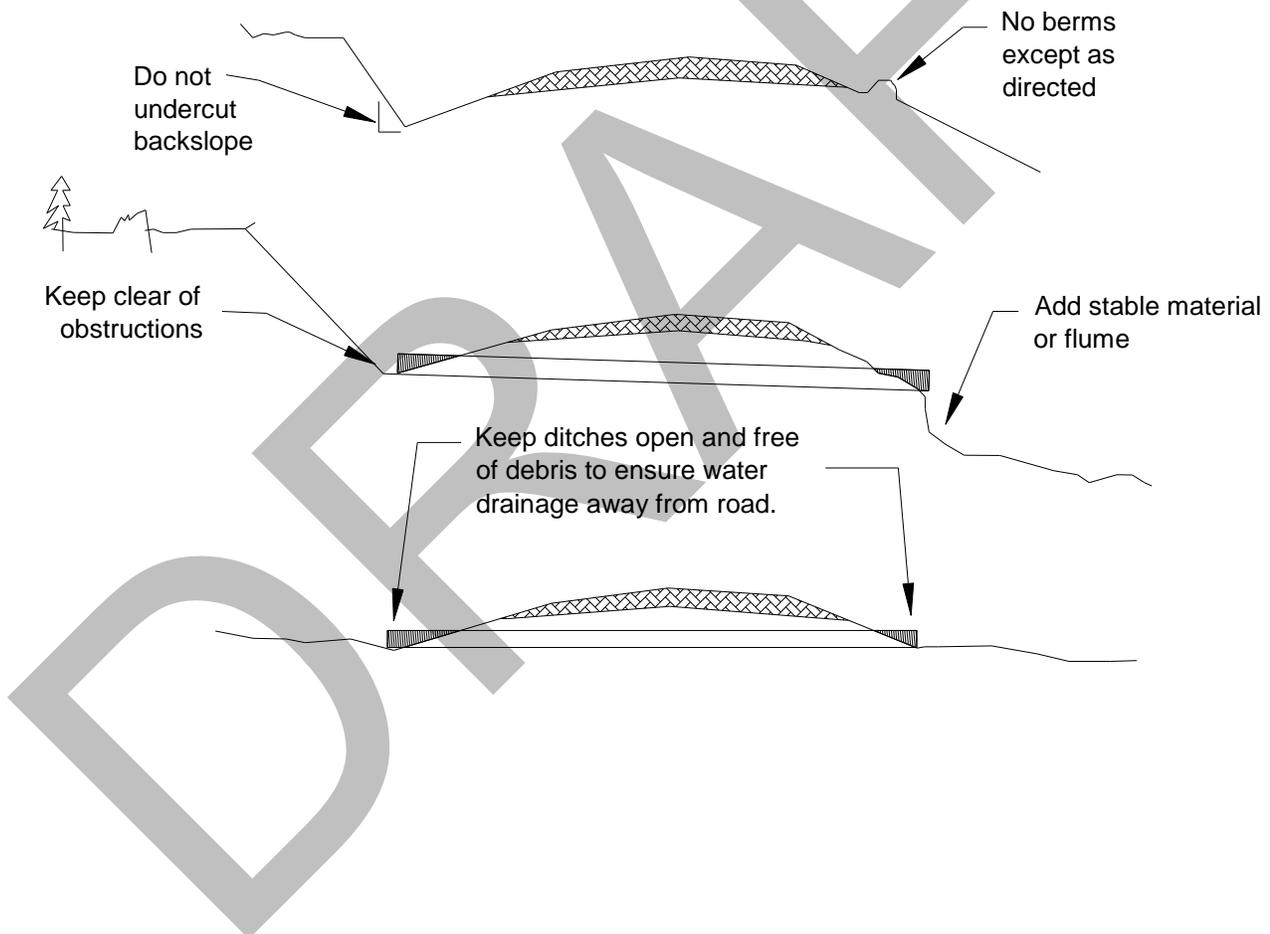
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

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

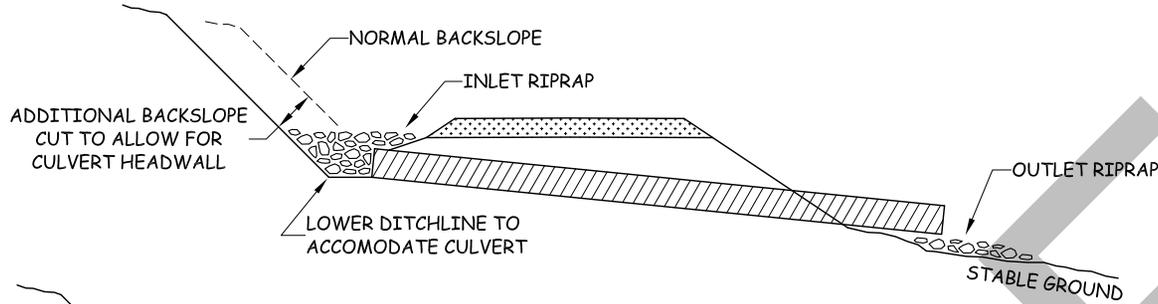
### Debris

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

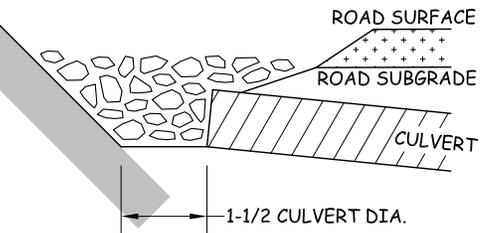


# CULVERT AND DRAINAGE SPECIFICATIONS

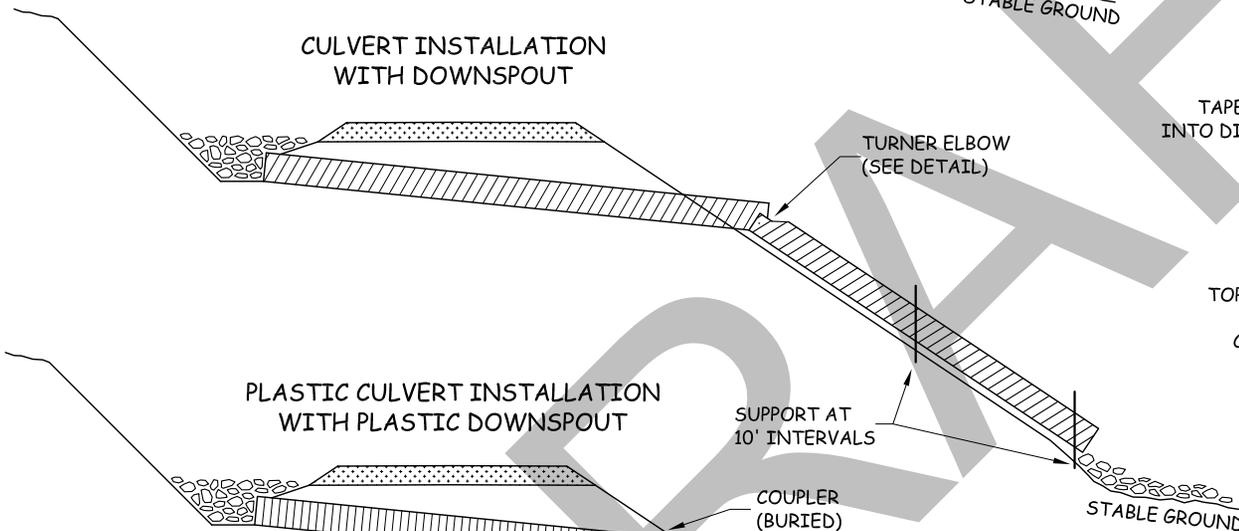
**CULVERT INSTALLATION (TYPICAL)**



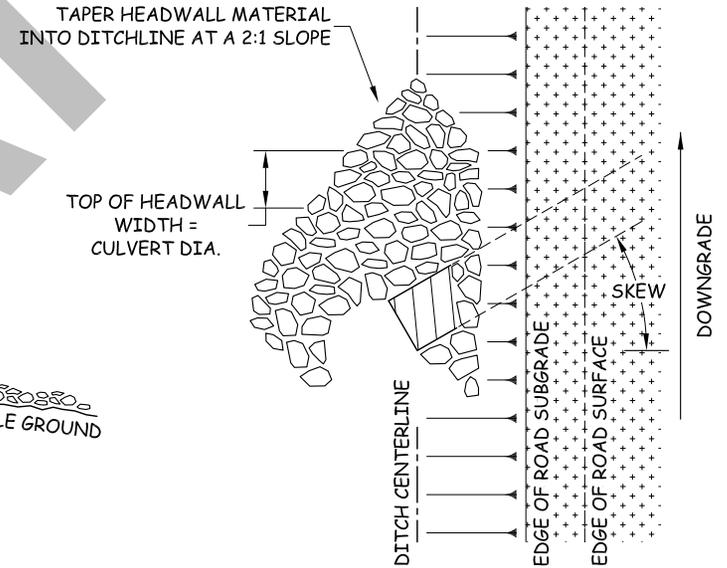
**CULVERT HEADWALL - SECTION VIEW**



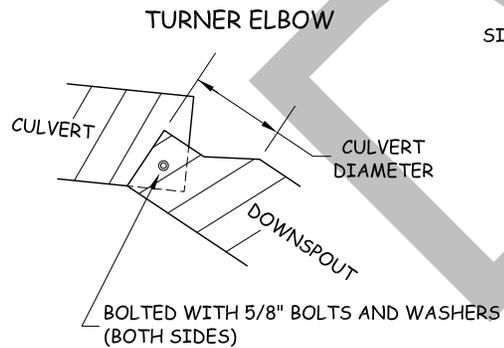
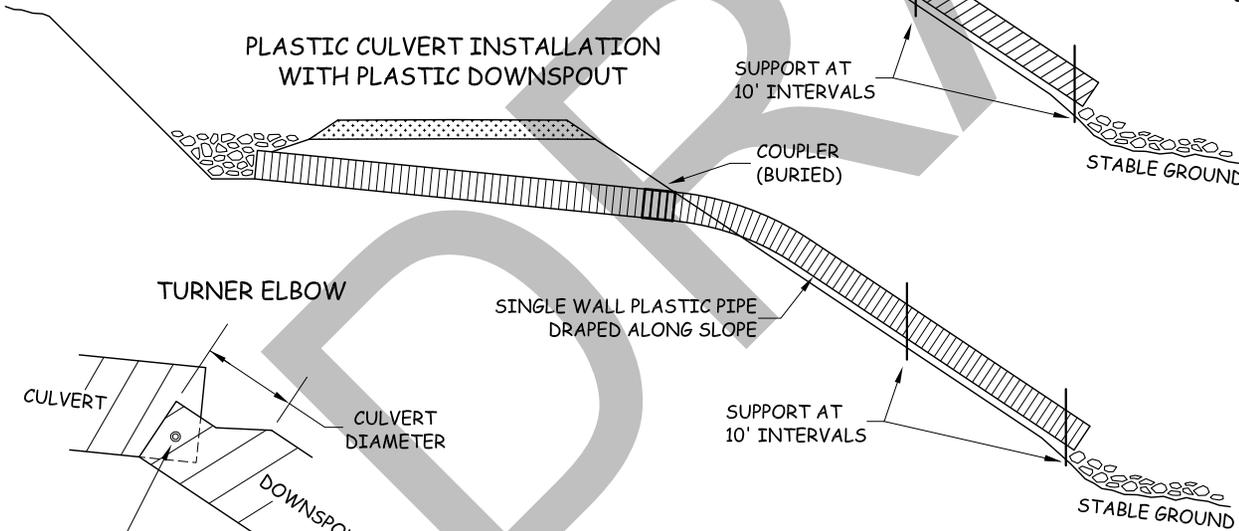
**CULVERT INSTALLATION WITH DOWNSPOUT**



**CULVERT HEADWALL - PLAN VIEW**



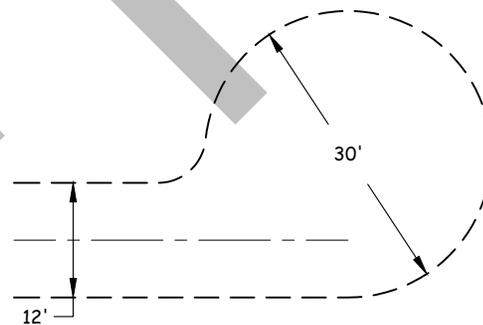
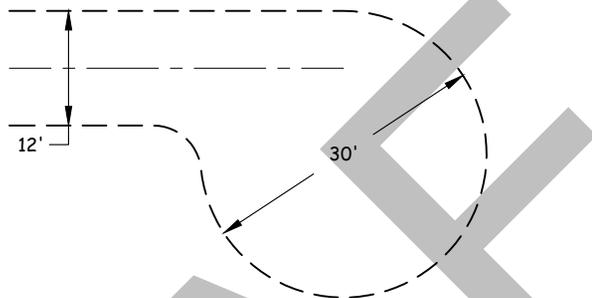
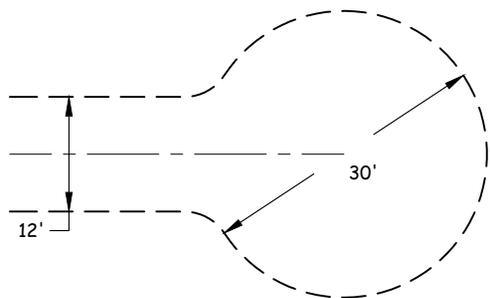
**PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT**



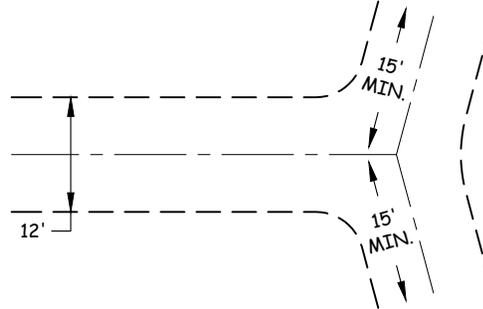
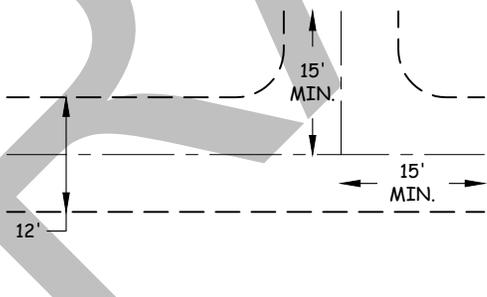
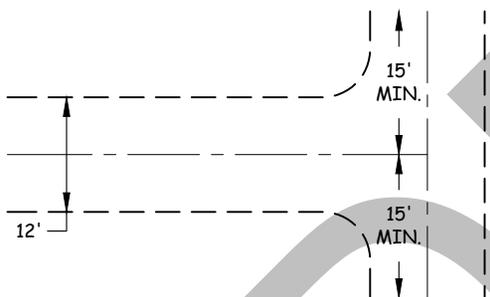
**HEADWALL NOTE:**  
 HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

CONTRACT #	PROJECT	SHEET
30-100428	PICNIC BASKET	27 OF 28

# TURNAROUND DETAILS



CUL-DE-SAC



HAMMERHEAD

3-POINT SIDE

3-POINT WYE

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

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

CONTRACT # 30-100428	PROJECT PICNIC BASKET	SHEET 28 OF 28
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# SUMMARY - Road Development Costs

REGION: NW

DISTRICT: BAKER

SALE/PROJECT NAME: PICNIC BASKET

CONTRACT #: 30-100428

ROAD NUMBERS:	DK-24	DK-ML, DK-20 DK-21	DK-ML
ROAD STANDARD:	Construction	Reconstruction	Pre-Haul Maintenance
NUMBER OF STATIONS:	5.91	28.31	127.10
CLEARING & GRUBBING:	\$4,233	\$3,985	\$0
EXCAVATION & FILL:	\$6,582	\$20,464	\$0
MISC. MAINTENANCE:	\$0	\$0	\$1,732
ROAD ROCK:	\$11,039	\$25,278	\$8,948
ROCK STOCKPILE PROD:	\$0	\$0	\$0
CULVERTS & FABRIC:	\$864	\$3,888	\$2,802
STRUCTURES:	\$0	\$0	\$0
MOBILIZATION:	\$2,576	\$2,576	\$1,982
TOTAL COSTS:	\$25,293	\$56,190	\$15,464
COST PER STATION:	\$4,280	\$1,985	\$122
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$1,978	

**TOTAL (All Roads) = \$98,926**  
**SALE VOLUME MBF = 1900**  
**TOTAL \$/MBF = \$52.07**

Compiled by: J. Westra

Date: 5/18/2020

**Road Summary**

<b>SUMMARY INFORMATION</b>					
Prehaul Maintenance (ft)	12,710	Construction (ft)	591	Reconstruction (ft)	2,831
Abandonment (ft)	2252	Subgrade (acres)	0.22	Subgrade (acres)	1.07
Ballast Rock (CY)	4,240	Steepest Side Slope	0%	Steepest Side Slope	0%
Rip Rap (CY)	83				

**PREHAUL MAINTENANCE**

Road	From	To	STA		\$/STA	Total Cost
DK-ML	0	8,728	87+28		\$32	\$2,756
DK-ML	8,728	11,321	25+93		\$92	\$2,390
DK-ML	12,491	13,880	13+89		\$600	\$8,336
<b>TOTAL</b>			<b>127+10</b>			<b>\$13,482</b>

**NEW CONSTRUCTION**

Road	From	To	STA	Side Slope	Subgrade Width	\$/STA	Total Cost
DK-24	0	591	5+91			\$2,563.10	\$15,148
			+				
PIT DEVELOPMENT			+				\$2,070
ROCK STOCKPILE			+				\$6,002
<b>TOTAL</b>			<b>5+91</b>				<b>\$23,220</b>

**RECONSTRUCTION**

Road	From	To	STA	Side Slope	Subgrade Width	Current Width	Current Cut Slope	\$/STA	Total Cost
DK-ML	11,321	12,491	11+70					\$1,882.71	\$22,028
DK-20	0	955	9+55					\$1,997.61	\$19,077
DK-21	0	706	7+06					\$1,980.87	\$13,985
<b>TOTAL</b>			<b>28+31</b>						<b>\$55,090</b>

**Prehaul Maintenance**

Road	STA	Miles	Brushing	Brushing \$	Grading	Grading \$	Rock*	Misc Cost	Total
DK-ML	87+28.	1.65	No		No		\$2,496	\$259	\$2,756
DK-ML	25+93.	0.49	No		Yes	\$308	\$1,150	\$500	\$1,958
DK-ML	13+89.	0.26	No		Yes	\$165	\$5,301	\$500	\$5,966
<b>TOTAL</b>				<b>\$0</b>		<b>\$473</b>	<b>\$8,948</b>	<b>\$1,259</b>	<b>\$10,680</b>

\*See Rock Production sheet

DRAFT

Clearing and Grubbing

CONSTRUCTION

Road	Side Slope	Acres	Factor	\$/Acre*	\$/STA	Cost
DK-24		0.52	1.2	\$3,450	\$365.91	\$2,163
PIT DEVELOPMENT		0.50	1.2	\$3,450	NA	\$2,070
ROCK STOCKPILE						
<b>TOTAL</b>						<b>\$4,233</b>

RECONSTRUCTION

Road	Side Slope	Acres	Factor	\$/Acre*	\$/STA	Cost
DK-ML		1.03	1.2	\$500	\$53.03	\$620
DK-20		0.84	1.2	\$1,910	\$202.58	\$1,935
DK-21		0.62	1.2	\$1,910	\$202.58	\$1,430
<b>TOTAL</b>						<b>\$3,985</b>

DRAFT

Excavation and Shaping

CONSTRUCTION							
Road	Full Bench	Expansion Factor	Waste Area (mi)	Endhaul Cost	STA	STA/DAY	TOTAL
DK-24	No				5+91	3	\$4,082
					+	1	
PIT DEVELOPMENT	No				+	1	
ROCK STOCKPILE	No				+	1	\$2,500
							\$6,582

RECONSTRUCTION							
Road	End Haul	Expansion Factor	Waste Area (mi)	Endhaul Cost	STA	STA/DAY	TOTAL
DK-ML	No				11+70	1.5	\$16,162
DK-20	No				9+55	8	\$2,473
DK-21	No				7+06	8	\$1,829
							\$20,464

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**Rock Production, Haul and Spread**

**PREHAUL MAINTENANCE**

Road	Ballast Depth	CY / STA	Existing			Rip Rap	Stockpile	Haul Mi	Prod Cost	\$/Load	\$/Load	Haul Cost	Spread Cost	Total Cost
			Ballast	Stockpile	Haul Mi					Ballast	Riprap			
DK-ML			200	No	1.39			\$1,401	\$26.28	\$8.17	\$526	\$570	\$2,496	
DK-ML			100	No	0.31	10	No	0.31	\$731	\$12.27	\$12.27	\$135	\$285	\$1,150
DK-ML	6"	34	470	No	0.28	25	No	0.28	\$3,367	\$11.89	\$11.89	\$594	\$1,340	\$5,301
<b>TOTAL</b>			770			35			<b>\$5,499</b>			<b>\$1,255</b>	<b>\$2,195</b>	<b>\$8,948</b>

**CONSTRUCTION**

Road	Ballast Depth	CY / STA	Existing			Rip Rap	Stockpile	Haul Mi	Prod Cost	\$/Load	\$/Load	Haul Cost	Spread Cost	Total Cost
			Ballast	Stockpile	Haul Mi					Ballast	Riprap			
DK-24	18"	114	675	No	0.33	8	No	0.33	\$4,752	\$12.48	\$12.48	\$861	\$1,924	\$7,537
PIT DEVELOPMENT														
ROCK STOCKPILE			500	No					\$3,502					\$3,502
			1,175			8			<b>\$8,254</b>			<b>\$861</b>	<b>\$1,924</b>	<b>\$11,039</b>

**RECONSTRUCTION**

Road	Ballast Depth	CY / STA	Existing			Rip Rap	Stockpile	Haul Mi	Prod Cost	\$/Load	\$/Load	Haul Cost	Spread Cost	Total Cost
			Ballast	Stockpile	Haul Mi					Ballast	Riprap			
DK-ML	6"	34	400	No	0.11	12	No	0.11	\$2,838	\$9.61	\$9.61	\$404	\$1,140	\$4,382
DK-20	18"	114	1,090	No	0.28	16	No	0.28	\$7,683	\$11.83	\$11.83	\$1,313	\$3,107	\$12,102
DK-21	18"	114	805	No	0.14	12	No	0.14	\$5,675	\$9.93	\$9.93	\$824	\$2,294	\$8,793
			2,295			40			<b>\$16,196</b>			<b>\$2,541</b>	<b>\$6,541</b>	<b>\$25,278</b>

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Road Abandonment

CONSTRUCTION									
Road	Abandon	STA	Barriers	Culverts	Waterbars	Seed Acres		\$/STA	Cost
DK-24	Yes	5+91.	1	2	2	0.01		\$85.08	\$503
		5+91.							\$503

RECONSTRUCTION									
Road	Abandon	STA	Barriers	Culverts	Waterbars	Seed Acres		\$/STA	Cost
DK-ML	No	+							
DK-20	Yes	9+55.	1	4	3	0.02		\$87.82	\$839
DK-21	Yes	7+06.	1	3	2	0.02		\$90.19	\$637
		16+61.							\$1,475

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**Culverts**

**PREHAUL MAINTENANCE**

Road	Round Culvert Pipe												Pipe-Arch				Total	
	18" # LF	24" # LF	30" # LF	36" # LF	42" # LF	48" # LF	54" # LF	60" # LF	66" # LF	72" # LF	84" # LF	96" # LF	54" # LF	60" # LF	72" # LF	84" # LF		
DK-ML																		
DK-ML	1	30																\$432
DK-ML	4	120	1	30														\$2,370
<b>TOTAL</b>	<b>5</b>	<b>1</b>																<b>\$2,802</b>

**NEW CONSTRUCTION**

Road	Round Culvert Pipe												Pipe-Arch				Total	
	18" # LF	24" # LF	30" # LF	36" # LF	42" # LF	48" # LF	54" # LF	60" # LF	66" # LF	72" # LF	84" # LF	96" # LF	54" # LF	60" # LF	72" # LF	84" # LF		
DK-24	2	60																\$864
PIT DEVELOPMENT																		
ROCK STOCKPILE																		
<b>TOTAL</b>	<b>2</b>																	<b>\$864</b>

**RECONSTRUCTION**

Road	Round Culvert Pipe												Pipe-Arch				Total	
	18" # LF	24" # LF	30" # LF	36" # LF	42" # LF	48" # LF	54" # LF	60" # LF	66" # LF	72" # LF	84" # LF	96" # LF	54" # LF	60" # LF	72" # LF	84" # LF		
DK-ML	2	60																\$864
DK-20	4	120																\$1,728
DK-21	3	90																\$1,296
<b>TOTAL</b>	<b>9</b>																	<b>\$3,888</b>

**Mobilization**

**Prehaul Maintenance**      0.00 miles from gate

Equipment	#	Haul Rate	Gravel mph	Hours	Move In	Move Out	Comments
Brusher (80 PTO HP)		\$110.00	15	2			Truck and tilt trailer
Grader (175 HP)	1	\$123.00	5	2	\$246	\$246	Small lowboy.
<b>Subtotal</b>					<b>\$246</b>	<b>\$246</b>	

**Construction/Reconstruction**      2.02 miles from gate

Equipment	#	Haul Rate	Gravel mph	Hours	Move In	Move Out	Comments
Excavator (Large)	1	\$145.00	2	4	\$580	\$580	Large Lowboy
Truck (10CY Dual Axle)	3	\$98.00	20	3	\$882	\$882	Rate from 2015 ARRF
Cat (Medium: D5, 650J)	1	\$123.00	5	3	\$369	\$369	Small Lowboy
Grader (175 HP)		\$123.00	5	3			Small Lowboy.
<b>Subtotal</b>					<b>\$1,831</b>	<b>\$1,831</b>	

**Pit**      2.21 miles from gate

Equipment	#	Haul Rate	Gravel mph	Hours	Move In	Move Out	Comments
Rock Drill	1	\$110.00	15	3	\$330	\$330	Truck and tilt trailer. Half prehaul/construction
Jaw Crusher	1	\$145.00	2	4	\$580	\$580	Large lowboy. Half prehaul/construction
Front End Loader (Large)	1	\$145.00	2	4	\$580	\$580	Large lowboy. Half prehaul/construction
<b>Subtotal</b>					<b>\$1,490</b>	<b>\$1,490</b>	

City	Miles to Gate
Everett	70
Granite	75
Arlington	60
Sedro	25
Bham	50
Use pavement	50 miles 30 mph

<b>Prehaul Mob</b>	<b>\$1,982</b>
<b>% of Project</b>	<b>2.04%</b>
<b>Construct/Reconstruct Mob</b>	<b>\$5,152</b>
<b>% of Project</b>	<b>5.49%</b>
<b>Total Mob</b>	<b>\$7,134</b>
<b>% of Project</b>	<b>7.77%</b>