



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Wild Bill

Sale 19- W0-0734-01-

District: Astoria

Date: October 29, 2018

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,054,952.32	\$89,665.10	\$2,144,617.42
		Project Work:	(\$272,812.00)
		Advertised Value:	\$1,871,805.42



Timber Sale Appraisal Wild Bill Sale 19- W0-0734-01-

District: Astoria

Date: October 29, 2018

Timber Description

Location: Areas 1 through 4 are located in portions of Sections 1, 2, and 3, T6N R7W, W.M., Clatsop County, OR.

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	25	0	97
Western Hemlock / Fir	21	0	97
Sitka Spruce	39	0	97
Alder (Red)	12	0	97

Volume by Grade	2S	3S & 4S 6"-11"	8" - 9"	6" - 7"	Total
Douglas - Fir	3,216	712	0	0	3,928
Western Hemlock / Fir	1,779	451	0	0	2,230
Sitka Spruce	12	1	0	0	13
Alder (Red)	0	0	258	32	290
Total	5,007	1,164	258	32	6,461

Comments:

1. SOURCE OF POND VALUES

Pond Values Used: Local Pond Values, August 2018.

2. PRICING

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
\$979.79/MBF = \$1,300/MBF - \$320.21/MBF

3. PULP PRICE

Pulp (Conifer and Hardwood) Price = \$30/MBF

4. PROFIT & RISK COSTS

Machine Washing for Invasive Weed Compliance = \$2,000

Endhaul slash from roadside landings in Areas 2 and 3:

Move in dump truck x2 @ \$184/truck = \$368

8 Hours dump truck x2 @ \$89/Hr = \$1,424

8 Hours log loader x2 @ \$129/Hr = \$2,064

Total Endhaul Cost = \$3,856

TOTAL Other Costs (with Profit & Risk to be added) = \$5,856

5. NON-PROFIT & RISK COSTS

Waterbar and block dirt spurs @ \$35/waterbar x 10 waterbars = \$350

6. SLASH DISPOSAL

Slash and Landing Piling (See attached appraisal) = \$15,421.22

7. ROAD MAINTENANCE COST

4.75/mbf (See attached appraisal)



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Logging Conditions

Combination#: 1

Sitka Spruce	90.00%
Alder (Red)	90.00%
Western Hemlock / Fir	90.00%
Douglas - Fir	90.00%

Logging System: Cable: Large Tower >=70 **Process:** Manual Falling/Delimbing

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 10 **bd. ft / load:** 4200

cost / mbf: \$161.90

machines: Log Loader (A)
Tower Yarder (Large)

Combination#: 2

Sitka Spruce	10.00%
Alder (Red)	10.00%
Western Hemlock / Fir	10.00%
Douglas - Fir	10.00%

Logging System: Shovel **Process:** Manual Falling/Delimbing

yarding distance: Short (400 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 14 **bd. ft / load:** 4200

cost / mbf: \$66.96

machines: Shovel Logger



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Wild Bill

Sale 19- W0-0734-01-

District: Astoria

Date: October 29, 2018

Logging Costs

Operating Seasons: 2.00	Profit Risk: 12%
Project Costs: \$272,812.00	Other Costs (P/R): \$5,856.00
Slash Disposal: \$15,421.22	Other Costs: \$350.00

Miles of Road

Road Maintenance: \$4.75

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.5
Western Hemlock / Fir	\$0.00	3.0	4.5
Noble Fir	\$0.00	2.0	4.0
Sitka Spruce	\$0.00	1.0	4.0
Alder (Red)	\$0.00	2.0	3.0



Timber Sale Appraisal Wild Bill

Sale 19- W0-0734-01-

District: Astoria

Date: October 29, 2018

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$152.41	\$4.89	\$1.36	\$72.48	\$0.91	\$27.85	\$2.39	\$2.00	\$0.05	\$264.34
Western Hemlock / Fir									
\$152.41	\$4.89	\$1.36	\$72.48	\$0.91	\$27.85	\$2.39	\$2.00	\$0.05	\$264.34
Sitka Spruce									
\$152.41	\$4.89	\$1.36	\$244.62	\$0.91	\$48.50	\$2.39	\$2.00	\$0.05	\$457.13
Alder (Red)									
\$152.41	\$4.89	\$1.36	\$163.08	\$0.91	\$38.72	\$2.39	\$2.00	\$0.05	\$365.81

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$659.06	\$394.72	\$0.00
Western Hemlock / Fir	\$0.00	\$490.00	\$225.66	\$0.00
Sitka Spruce	\$0.00	\$554.85	\$97.72	\$0.00
Alder (Red)	\$0.00	\$675.00	\$309.19	\$0.00



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Date: October 29, 2018

Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Sitka Spruce	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,928	\$394.72	\$1,550,460.16
Western Hemlock / Fir	2,230	\$225.66	\$503,221.80
Sitka Spruce	13	\$97.72	\$1,270.36
Alder (Red)	290	\$309.19	\$89,665.10

Gross Timber Sale Value

Recovery: \$2,144,617.42

Prepared By: Avery Petersen

Phone: 503-325-5451

Site Prep Appraisal

Sale Number: W00734-01
Sale Name: Wild Bill
Date: 09/05/2018

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	1.0	0.5
Hemlock/Fir	B	1.5	0.8
Hemlock/Spruce	C	2.0	1.0
Hemlock	D	2.0	1.0
Conifer/Hardwood	E	1.0	0.5

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	B	15	22.5	\$145.00	\$3,262.50
2	MC	B	3	4.5	\$145.00	\$652.50
3	MC	B	3	4.5	\$145.00	\$652.50

Sub Total = \$4,567.50

Sale Area	Number of cable Landings	Number of acres to landing	\$ per 20 acres yarded	Cost/Area	Number of In-Piles	Material Cost/Pile	Material Cost/Area	Total Cost/Area
1	5	59.93	\$1,160.00	\$3,475.94	11	\$20.00	\$325.00	\$3,800.94
2	5	64.94	\$1,160.00	\$3,766.52	2	\$20.00	\$145.00	\$3,911.52
3	7	50.97	\$1,160.00	\$2,956.26	2	\$20.00	\$185.00	\$3,141.26

*Cost includes separating firewood

Sub Total = \$10,853.72

Grand Total = \$15,421.22

Road Maintenance Cost Summary

Sale: Wild Bill
Date: 25-Oct-18
By: A. Petersen

MBF: 6,461
\$/MBF: \$4.75

Type	Equipment/Rationale	Move In	Times	Hours	Rate	Cost
Progressive Operations 1st Entry	Grader 14G	\$875	1	8	\$113	\$1,779
	Dump Truck 12CY	\$184	1	8	\$89	\$896
	FE Loader C966	\$875	1	8	\$94	\$1,627
	Vibratory Roller	\$875	1	4	\$87	\$1,223
Progressive Operations 2nd Entry	Grader 14G	\$875	1	8	\$113	\$1,779
	Dump Truck 12CY	\$184	1	8	\$89	\$896
	FE Loader C966	\$875	1	8	\$94	\$1,627
Final Haul Maintenance Haul Route	Grader 14G	\$875	1	59	\$113	\$7,542
	Dump Truck 12CY	\$184	2	8	\$89	\$1,792
	Vibratory Roller	\$875	1	51	\$87	\$5,312
	FE Loader C966	\$875	1	8	\$94	\$1,627
	Rubber Tire Backhoe	\$361	1	8	\$87	\$1,057
	Laborer	\$0	1	8	\$45	\$360
Water Truck 2,500 gallon						\$214
Total						\$30,660

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	1.5	1.0
Vibratory Roller	0.8	1.5	2.0

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	1.5	1.0

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	11.1	7.4
Vibratory Roller	1.5	11.1	7.4

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Wild Bill

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
2A, 2B, 3A	n/a	\$4,186.96
Road Maint.		\$295.72
Move-In		\$399.73
TOTALS		\$4,882

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
I1-I2, I3-I4, I5-I6, I7-I8, I9-I10	466.15	\$60,262.00
I11-I12, I13-I14, I15-I16, I17-I18		
I19-I20, I21-I22, I23-I24, I25-I26		
Road Maint.		\$4,256.28
Move-In		\$5,753.27
TOTALS		\$70,272

SPECIAL PROJECTS (Move-In and Road Maint. are included separately as needed, for each Special Project):

<u>Description</u>	<u>Cost</u>
Proj. No. 3: Rock Crushing & Stockpiling	\$197,658.00
TOTAL	\$197,658

GRAND TOTAL **\$272,812**

Compiled By: K. Kirkpatrick *FL*

Date: 10/25/2018

Move In and Maintenance Calculator for Construction and Improvement

SALE NAME: Wild Bill

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
2A, 2B, 3A	n/a	\$4,187
TOTALS		\$4,187

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
I1-I2, I3-I4, I5-I6, I7-I8, I9-I10	466.15	\$60,262
I11-I12, I13-I14, I15-I16, I17-I18		
I19-I20, I21-I22, I23-I24, I25-I26		
TOTALS		\$60,262

MOVE IN (Construction & Improvement Only)

<u>Equipment</u>	<u>Cost</u>
Dozer (D6)	\$875.00
Excavator (315)	\$905.00
Dump Trucks (10-12cy x 6)	\$1,104.00
Dump Trucks w/pup trailer (20cy x 2)	\$430.00
Front End Loader (C966)	\$875.00
Grader (14G)	\$875.00
Vibratory Roller	\$875.00
Water Truck (2,500 gallon)	\$214.00
TOTAL	\$6,153.00

ROAD MAINTENANCE (Construction & Improvement Only)

Kalina Quarry to Wild Bill Quarry & Wild Goose Quarry Road	\$4,552
TOTAL	\$4,552.00

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Wild Bill
ROAD: 2A, 2B, and 3A
POINTS: 2A, 2B, and 3A
NEW CONSTRUCTION: 0.00 STATIONS
IMPROVEMENT: 0.00 MILES
0.00 MILES

CLEARING & GRUBBING				
Method	Acres/amount	x	Rate	= Cost
2A, 2B, & 3A Scatter outside of ROW (\$/acre)	1.00	x	\$ 1,503	= \$1,503.00
SUB TOTAL FOR CLEARING & GRUBBING				\$1,503

EXCAVATION				
Material	Cy/amount	x	Rate	= Cost
2A, 2B, & 3A Landing Construction	3	x	\$438.00	= \$1,314.00
SUB TOTAL FOR EXCAVATION				\$1,314

CULVERT MATERIALS AND INSTALLATION					
Location	Dia/type	Lineal ft.	Rate	Cost	
Other/miscellaneous:					
Culvert stakes & markers:					
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION					\$0

Subtotal of Clearing, Exc., Culv. \$2,817

SURFACING						
			Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:	Description		0.00	x	\$0.00	\$0.00
	Grade, Shape and Ditch 16'		0.00	x	\$0.00	\$0.00
	Subgrade Compaction					

ROAD SEGMENT		2A		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Junctions	1 1/2"-0" crushed	0+00	4	junction	22	junctions	1	22	\$4.42	\$97
Landings	6"-0" pit run	N/A	N/A	Landing	77	Landings	1.00	77	\$5.17	\$398
Total Rock for Road Segment:				2A				99		\$495
ROAD SEGMENT		2B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Junctions	1 1/2"-0" crushed	0+00	4	junction	22	junctions	1	22	\$4.42	\$97
Landings	6"-0" pit run	N/A	N/A	Landing	77	Landings	1.00	77	\$5.17	\$398
Total Rock for Road Segment:				2B				99		\$495
ROAD SEGMENT		3A		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Junctions	1 1/2"-0" crushed	0+00	4	junction	22	junctions	1	22	\$4.42	\$97
Landings	6"-0" pit run	N/A	N/A	Landing	33	Landings	1.00	33	\$5.17	\$171
Total Rock for Road Segment:				3A				55		\$267

Processing:					
Description	No. sta	Rate/sta	Cost		
Water, Process & Compact Base Rock (4"-0"):	2	\$56.48	\$112.96		
				Total	
		4"-0" crushed	1 1/2"-0" crushed	253	253
	187	0	66		
SUB TOTAL FOR SURFACING					\$1,370

SPECIAL PROJECTS		
Description	Cost	
SUB TOTAL FOR SPECIAL PROJECTS		\$0
	Subtotal of Surfacing & Spec. Proj.	\$1,370
	Subtotal of Clearing, Exc., Culv.	\$2,817
GRAND TOTAL		\$4,187

Compiled By: Avey Petersen

Date: 09/27/2018

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Wild Bill
ROAD: 11-12, 13-14, 15-16, 17-18, 19-20, 111-112, 113-114
POINTS: 115-116, 117-118, 119-120, 121-122, 123-124, & 125-126

NEW CONSTRUCTION: STATIONS 0.00 MILES
IMPROVEMENT: 466.15 STATIONS 8.83 MILES

CLEARING & GRUBBING		Method	Acres/amount	X	Rate	=	Cost
I1 to I2 0+00-1+70							
		Clear, grub & clean fill slopes w/315, \$/hr	6	X	\$114	=	\$684.00
		Cleanout ditches, catch basins and sumps w/315, \$/hr	2	X	\$114	=	\$228.00
		End-haul to waste area w/10-12cy dump, \$/hr	8	X	\$89	=	\$712.00
I9 to I10 9+60							
		Stump Removal (Excavator hours)	1	X	\$114	=	\$114.00
I15 to I16 1+40							
		Brush Removal (Excavator hours)	1	X	\$114	=	\$114.00
I17 to I18 1+70							
		Brush and waterbar removal (Dozer Hours)	1	X	128.00	=	\$128.00
I19 to I20 1+20							
		Brush and waterbar removal (Dozer Hours)	0.5	X	128.00	=	\$64.00
I21 to I22 1+20							
		Brush and waterbar removal (Dozer Hours)	0.5	X	128.00	=	\$64.00
I23 to I24 1+20							
		Brush and waterbar removal (Dozer Hours)	1	X	128.00	=	\$128.00
I25 to I26 1+20							
		Walk Dozer (Dozer Hours)	0.5	X	128.00	=	\$64.00
SUB TOTAL FOR CLEARING & GRUBBING							
		Brush, and waterbar removal (Dozer Hours)	1	X	128.00	=	\$128.00
		Walk Dozer (Dozer Hours)	0.5	X	128.00	=	\$64.00

EXCAVATION						
	Material		Cy/amount	x	Rate	= Cost
11 to 12						
	Construct rock ditchfilters & dissipators, w/315, \$		8	x	\$114.00	= \$912.00
	Fill armor placement w/315, \$/hr		8	x	\$114.00	= \$912.00
SUB TOTAL FOR EXCAVATION \$1,824						

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
11-12					153+60	18"CPP	30	\$21.95	\$658.50
41+70	18"CPP	30	\$21.95	\$658.50	200+80	18"CPP	30	\$21.95	\$658.50
45+00	18"CPP	50	\$21.95	\$1,097.50	203+15	18"CPP	30	\$21.95	\$658.50
135+20	18"CPP	30	\$21.95	\$658.50	207+55	18"CPP	30	\$21.95	\$658.50
138+10	18"CPP	30	\$21.95	\$658.50	318+95	18"CPP	30	\$21.95	\$658.50
141+40	18"CPP	30	\$21.95	\$658.50	327+90	18"CPP	30	\$21.95	\$658.50
145+20	18"CPP	30	\$21.95	\$658.50					
Other/miscellaneous:									
Culvert stakes & markers:									

Subtotal of Clearing, Exc, Culv.

SURFACING									
Subgrade prep: 11-12 (0+00-2+25), 13-14, 15-16, 17- Grade, Shape and Ditch 16' 111-112, 113-114, 115-116 Subgrade Compaction Sod Removal									
Description									
Stations/ amount		Rate/ Sta./ amt.		Cost					
		x		\$3,921.36					
		x		\$27.91					
		x		\$22.69					
		x		\$36.28					
				\$5,015.71					
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				11 to 12	Sta. to Sta. 0+00 to 327+90				
Curve Widening	4"-0" crushed	0+50	8	load	11 loads	99	\$4.42	\$438	
Curve Widening	1 1/2"-0" crushed	0+50	3	load	11 loads	88	\$4.42	\$389	
Subgrade Leveling Rock	1 1/2"-0" crushed	0+00-2+25	N/A	load	11 loads	110	\$4.42	\$486	
Surface Rock	1 1/2"-0" crushed	0+00-2+25	3	station	19 stations	43	\$4.42	\$189	
Junctions	1 1/2"-0" crushed	1+50	3	junction	22 junctions	22	\$4.42	\$97	
		41+70, 45+00, 135+20							
		138+10, 141+40, 145							
		+20, 153+60, 200+80,							
		203+15, 207+55, 318+							
Culvert Bedding/Backfill	1 1/2"-0" crushed	95-327+90	N/A	culvert	See Spec. culverts	12	\$4.42	\$1,848	
		0+00, 276+70, 277+50							
		.286+90, 287+70, 291							
		+65, 292+20, 296+00,							
		296+85, 316+20, 320+							
Road Ditch filter	6"-4" pit-run	135+20, 200+90, 203+40	N/A	filter	See Spec. filters	11	\$5.17	\$739	
Dissipator	24"-6" riprap	15	N/A	dissipator	11 dissipators	3	\$7.42	\$245	
Fill Armor	24"-6" riprap	1+20	N/A	fill	See Spec. fills	1	\$7.42	\$1,039	
Total Rock for Road Segment:		11 to 12		See Spec.		1,096		\$5,469	
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				13 to 14	Sta. to Sta. 0+00 to 62+10				
Subgrade Leveling Rock	1 1/2"-0" crushed	0+00 to 9+50	N/A	load	11 loads	110	\$4.42	\$486	
Surface Rock	4"-0" crushed	0+00 to 9+50	4	station	25 stations	238	\$4.42	\$1,028	
Surface Rock	1 1/2"-0" crushed	9+50 to 62+10	4	station	25 stations	1,315	\$4.42	\$5,812	
		0+00, 1+55, 32+70,							
		35+00, 43+30,							
Junctions	1 1/2"-0" crushed	48+25, 62+10	4	junction	22 junctions	7	\$4.42	\$681	
		12+30, 16+85,							
		24+10, 28+10,							
		38+40, 44+55,							
Turnouts	1 1/2"-0" crushed	48+25, 54+20, 57+85	4	turnout	11 turnouts	9	\$4.42	\$438	
Landings	6"-0" pit-run	56+20	N/A	landing	22 landings	1	\$5.17	\$114	
Total Rock for Road Segment:		13 to 14		See Spec.		1,938		\$8,559	
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				15 to 16	Sta. to Sta. 0+00 to 5+00				
Subgrade Leveling Rock	1 1/2"-0" crushed	0+00 to 4+00	N/A	load	11 loads	55	\$4.42	\$243	
Surface Rock	4"-0" crushed	0+00 to 4+00	4	station	25 stations	4	\$4.42	\$442	
Surface Rock	6"-0" pit-run	4+00 to 5+00	8	station	50 stations	1	\$5.17	\$259	
Junctions	1 1/2"-0" crushed	0+00	4	junction	22 junctions	1	\$4.42	\$97	
Turnouts	1 1/2"-0" crushed	2+85	4	turnout	11 turnouts	1	\$4.42	\$49	
Landings	6"-0" pit-run	5+00	N/A	landing	22 landings	1	\$5.17	\$114	
Total Rock for Road Segment:		15 to 16		See Spec.		260		\$1,190	
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				17 to 18	Sta. to Sta. 0+00 to 14+30				
Subgrade Leveling Rock	1 1/2"-0" crushed	0+00 to 14+30	N/A	load	11 loads	55	\$4.42	\$243	
Surface Rock	1 1/2"-0" crushed	0+00 to 14+30	4	station	25 stations	14.3	\$4.42	\$1,580	
Junctions	1 1/2"-0" crushed	0+00, 8+90	4	junction	22 junctions	2	\$4.42	\$194	
Turnouts	1 1/2"-0" crushed	1+65	4	turnout	11 turnouts	1	\$4.42	\$49	
Landings	6"-0" pit-run	11+50	N/A	landing	22 landings	1	\$5.17	\$114	
Total Rock for Road Segment:		17 to 18		See Spec.		490		\$2,135	

ROAD SEGMENT		19 to 110	POINT TO POINT	Sta. to Sta.	TOTAL	Rate/	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	19 to 110 Volume (CY) per load	0+00 to 15+80 Number of loads	Sta./amt.	
Subgrade Leveling Rock	1 1/2"-0" crushed		N/A	11	5	\$4.42	\$243
Surface Rock	1 1/2"-0" crushed	0+00 to 14+80	4	25	14.8	\$4.42	\$1,635
Surface Rock	6"-0" pit-run	14+80 to 15+80	8	50	1	\$5.17	\$259
Junctions	1 1/2"-0" crushed	0+00	4	22	1	\$4.42	\$97
Turnouts	1 1/2"-0" crushed	1+00, 3+95, 6+80, 12+00	4	turnout	4	\$4.42	\$194
Turnarounds	1 1/2"-0" crushed	12+00	4	turnaround	1	\$4.42	\$49
Landings	6"-0" pit-run	9+60, 14+00, 15+80	N/A	landing	3	\$5.17	\$341
Total Rock for Road Segment:			19 to 110	22	66		\$2,819
ROAD SEGMENT		111 to 112	POINT TO POINT	Sta. to Sta.	TOTAL	Rate/	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	111 to 112 Volume (CY) per station	0+00 to 1+80 Number of stations	Sta./amt.	
Surface Rock	1 1/2"-0" crushed	0+00 to 0+80	4	25	0.8	\$4.42	\$88
Surface Rock	6"-0" pit-run	0+80 to 1+80	8	50	1	\$5.17	\$259
Junctions	1 1/2"-0" crushed	0+00	4	22	1	\$4.42	\$97
Landings	6"-0" pit-run	1+80	N/A	landing	1	\$5.17	\$114
Total Rock for Road Segment:			111 to 112	22	114		\$558
ROAD SEGMENT		113 to 114	POINT TO POINT	Sta. to Sta.	TOTAL	Rate/	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	113 to 114 Volume (CY) per station	0+00 to 37+85 Number of stations	Sta./amt.	
Surface Rock	1 1/2"-0" crushed	0+00, 7+75, 24+20, 31+30,	4	25	37.85	\$4.42	\$4,182
Junctions	1 1/2"-0" crushed		4	junction	4	\$4.42	\$389
Turnouts	1 1/2"-0" crushed	2+80, 13+45, 17+55, 32+75, 35+45,	4	turnout	5	\$4.42	\$243
Total Rock for Road Segment:			113 to 114	11	55		\$4,814
ROAD SEGMENT		115 to 116	POINT TO POINT	Sta. to Sta.	TOTAL	Rate/	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	115 to 116 Volume (CY) per station	0+00 to 1+40 Number of stations	Sta./amt.	
Surface Rock	1 1/2"-0" crushed	0+00 to 0+40	4	25	0.4	\$4.42	\$44
Surface Rock	6"-0" pit-run	0+40 to 1+40	8	50	1	\$5.17	\$259
Junctions	1 1/2"-0" crushed	0+00	4	22	1	\$4.42	\$97
Landings	6"-0" pit-run	1+40	N/A	landing	1	\$5.17	\$341
Total Rock for Road Segment:			115 to 116	66	148		\$741
SUB TOTAL FOR SURFACING							\$47,329
Processing:		Description		No. sta	Rate/sta	Cost	
11-12 (0+00-2+25) 13-14, 15-16, 17-18, 19-110 Water, Process & Compact:				140.50	\$63.48	\$8,919	
111-112, 113-114, 115-116							
24"-12" rr		24"-6" rr	12"-6" rr	6"-4" pr	6"-0" pr	4"-0" crushed	1 1/2"-0" crushed
173				143	420	437	4,580
SUB TOTAL FOR SURFACING							5,753
SPECIAL PROJECTS		Description		Cyl/Amount	Rate	Cost	
SUB TOTAL FOR SPECIAL PROJECTS							
Subtotal of Surfacing & Spec. Proj.						\$47,329	
Subtotal of Clearing, Exc., Culv.						\$12,833	
GRAND TOTAL						\$60,262	

Compiled By: K. Kirkpatrick

Date: 10/28/2018

Sale: Wild Bill
Date: 25-Oct-18
By:

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	2.65	1.8
Vibratory Roller	1.5	2.65	1.8

NOTE: Kalina Quarry to Wild Bill Quarry & Wild Goose Quarry Road	2.65	Miles
		Miles
		Miles
		Miles
TOTAL=	2.65	Miles

CRUSHED ROCK COST

SALE NAME:	Wild Bill
PROJECT:	No. 1 and 2
Stockpile:	Wild Bill

MATERIAL: 1 1/2"-0", 4"-0"

DATE: 08/30/2018
BY: Avery Petersen

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$3.16	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type:	D12	No. trucks:	4
Delay min.:	6	Efficiency:	85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,306

CRUSHED ROCK HAUL COSTS 5,083 cy @ \$4.42 /cy

PIT RUN ROCK COST

SALE NAME: Wild Bill
PROJECT: No. 1 and 2
QUARRY: Wild Bill

MATERIAL: Pit Run

DATE: 08/30/2018
BY: Avery Petersen

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$3.84	/cy
Load:	\$0.48	/cy
Spread:	\$0.84	/cy

Truck type:	D12	No. trucks:	6
Delay min.:	6	Efficiency:	85%

Truck type: D10 No. trucks:
Delay min.: 5 Efficiency: 85%

Production: cy/day = 986

PIT RUN ROCK HAUL COSTS	750 cy @	\$5.17 /cy
-------------------------	----------	------------

RIP RAP ROCK COST

SALE NAME: Wild Bill
PROJECT: No. 1 and 2
QUARRY: Wild Bill

MATERIAL: 24"-6"
Rip Rap

DATE: 08/22/2018
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D12 No. trucks: 2
 Delay min.: 6 Efficiency: 85%

Ave haul:	\$4.71	/cy
Load:	\$2.70	/cy
Develop:		/cy

Truck type: _____ No. trucks: _____
 Delay min.: _____ Efficiency: _____

Production: cy/day = 268

RIP RAP ROCK HAUL COSTS

173 cy @ \$7.42 /cy

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. <u>3</u>	Timber Sale Name: <u>341-19-W00734-01</u>
Quarry: <u>Wild Bill</u>	Swell: _____
Location: <u>NW 1/4, NW 1/4, Sec. 3, T6N, R7W</u>	Shrink: <u>16%</u>
County: <u>Clatsop</u>	
By: <u>Kraig Kirkpatrick</u>	Loading Hopper: <u>Yes</u>
Date: <u>06/08/2018</u>	

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
1 1/2"-0"	2%	CR	3,000	4,646	8,126
4"-0"	2%	CR		1,000	1,000
4"-0"	2%	CR	3,500	437	4,497
6"-0"		PR		750	750
24"-6"		RR		173	173
36"		RR			
TOTAL CUBIC YARDS OF ROCK:			6,500	7,006	14,546

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Dump Trucks		\$163		Off Highway Dump Truck	1	\$553	\$553
Screening Plants		\$553		Screening Plant		\$553	
D8 Cat		\$1,406		Loading Hopper	1	\$553	\$553
D6 Cat	1	\$778	\$778	Loader	1	\$805	\$805
Drill & Compressor	1	\$1,406	\$1,406				
Powder	1	\$351	\$351	3 Stage Crusher	1	\$2,891	\$2,891
Dump Trucks		\$163					
Excavator	1	\$1,406	\$1,406	Excavator		\$1,406	

SUB TOTAL FOR MOBILIZATION

\$8,742

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,439	\$3,439
Screening Plants		\$293	\$293
Loading Hopper	1	\$293	\$293
Original Calibration	1	\$544	\$544

SUB TOTAL FOR SET UP COSTS

\$4,569

TOTAL MOBILIZATION & SET UP COSTS**\$13,311****2) CLEARING & GRUBBING**

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Clear, Load, Haul to Waste Area	2.5	acres	\$2,702	\$6,755
Slash and Stumps (1 truck, 1 exc.)				
Quarry and Crusher Site				
Pile & Burn Slash and Stumps(1 exc)	16.0	hr	\$155	\$2,480
Clear & scatter at Wild Goose Stockpile w/315	4.0	hr	\$101	\$404
Clear and scatter at Wild Cabin Stockpile w/315	8.0	hr	\$101	\$808
Move-in Fire Truck for the burning of the Clearing Debris	1.0	ea	\$190	\$190

TOTAL CLEARING & GRUBBING COSTS**\$10,637**

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread)	1,400	bcy	\$2.60	\$3,640
Crusher Site Prep w/330, \$/hr	2	\$/hr	\$155.00	\$310
Crusher Site Prep w/D6, \$/hr	2	\$/hr	\$133.00	\$266
Repair fill slope at Wild Goose Stockpile w/315	8	\$/hr	\$101.00	\$808

TOTAL EXCAVATION COSTS

\$5,024

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping	50%	7,273	\$2.20	\$16,001
crushed	13,623	94%	Drill & shoot	50%	7,409	\$2.30	\$17,041
pit run	750	5%	Oversize red	10%	1,437	\$5.80	\$8,336
rip rap	173	1%	Other				
Total	14,546						
reject	272	1.9%					

TOTAL ROCK DEVELOPMENT COSTS

\$41,378

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	2	\$507.00	\$1,014
Calibrate			
Test	23	\$57.30	\$1,318
Test			

TOTAL CALIBRATION & TESTING COSTS

\$2,332

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	13,895	\$0.85	\$11,826

TOTAL FEEDING & LOADING COSTS

\$11,826

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
1 1/2"-0"	crushed	8,126	3 stage w/s	120	\$3.24	\$26,342
4"-0"	crushed	1,000	3 stage w/s	140	\$2.78	\$2,779
4"-0"	crushed	4,497	2 stage w/s	140	\$2.48	\$11,146

TOTAL ROCK CRUSHING COSTS

\$40,266

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader	6	\$90.00	\$540.00
Excavator		\$101.00	

Rock for Floor (CY)	\$/CY Haul	Total

\$540.00

SUB TOTAL

\$540

HAUL & STOCKPILE

STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. Wild Cabin Stockpile Site	1-1/2"-0"	6	1,000	\$4.69	\$4,688
2. Wild Goose Stockpile Site	1-1/2"-0"	8	3,480	\$7.75	\$26,979
3. Wild Goose Stockpile Site	4"-0"	8	4,060	\$7.75	\$31,475
4.		8			
5.		2			
6.					

SUB TOTAL

\$63,142

TOTAL STOCKPILING COSTS

\$63,682

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	\$1,030
\$3.78 /CY 272 CY	
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access	\$2,565
Haul Pit-run Rock from Kalina Quarry to Wild Bill Quarry	
1,725cy X \$3.25/cy	\$5,606

TOTAL MISCELLANEOUS COSTS

\$9,201

10) GRAND TOTAL:

\$197,658

\$/Cubic Yard

\$14.51

Footnotes:

**Wild Bill
TIMBER CRUISE REPORT
FY 2018**

1. Sale Area Location: Areas 1 through 4, are located in portions of Sections 1, 2, and 3, T6N, R7W, W.M., Clatsop County, OR.

2. Fund Distribution: BOF 100%
Tax Code 8-01 (100%)

3. Sale Acreage by Area:

Area	Treatment	Gross Acres	Stream Buffer	Existing Surface Roads	Net Acres	Survey Method
1	Modified Clearcut	95.01	13.19	5.26	76.56	GIS
2	Modified Clearcut	78.46	8.02	2.21	68.23	GIS
3	Modified Clearcut	68.10	12.17	2.52	53.41	GIS
4	R/W	<1	0	0	<1	GIS
TOTALS		241.57	33.38	9.99	198.2	

*Area 4 R/W consist of less than one acre right of way.

4. Cruisers and Cruise Dates:

All areas were cruised by Avery Petersen, Kevin Berry, Derek Bangs, Matt Dimick, and Justin Bush during July of 2018.

5. Cruise Method and Computation:

Areas 1, 2, and 3 are modified clearcut units and were variable plot cruised using a 40 BAF. These plots are located on a 5 chain by 9 chain grid, with every third plot measured and graded. A total of 46 plots were sampled, with 18 measured and graded plots, 28 count plots.

Area 4 (R/W) consists of roadside landings and equals less than one acre of total clearing. Due to the small area being affected this area was not pulled out of the cruise and is accounted for in the volumes associated with Areas 1, 2, and 3.

Data was collected on Allegro 2 data collectors, and downloaded to the Atterbury Super A.C.E. program for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

AREA	CRUISE	TRACT	TYPE	ACRES
1, 2, and 3	Wild Bill	A123	Take	198.2

6. Timber Description:

Areas 1, 2, and 3 are modified clearcut units, approximately 65 to 80 years-old, consisting of Douglas-fir and western Hemlock, with minor amounts of Red Alder, Noble Fir, and Sitka Spruce. The average Douglas-fir tree size is 25.5 inches DBH, with an average height of 92 feet to a merchantable top (7 inch d.o.b.) The average Western Hemlock is 21.3 inches DBH and 72 feet to a merchantable top (7 inch d.o.b). The average Red Alder tree size 11.9 inches DBH and 37 feet to a merchantable top (7 inch d.o.b). The average Noble Fir size is 28.0 inches DBH, with an average height of 86 feet to a merchantable top (7 inch d.o.b). The average Sitka Spruce tree size is 39.0 inches DBH, with an average height of 84 feet to a merchantable top (7 inch d.o.b). The net volume per acre to be harvested is 32.6 MBF/acre.

Area 4 R/W in sale R/W is similar to the timber description above in Areas 2 and 3.

7. Statistical Analysis and Stand Summary

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1, 2, and 3	55.0%	8.0%	47.4%	7.0%

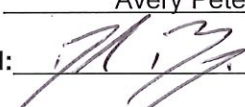
8. Volumes by Species and Log Grade:

Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

Species	DBH	Net Vol.	2 Saw	3 Saw	4 Saw	8"-9"	6"-7"	% D & B	% Sale
Douglas-fir	25.5"	3,928	3,216	616	96	0	0	7.0%	61%
Hemlock	21.3"	2,194	1,750	401	43	0	0	6.5%	34%
Red Alder/other Hardwoods	11.9"	290	0	0	0	258	32	<1.0%	4%
Noble Fir	28.0"	36	29	7	0	0	0	<1.0%	1%
Sitka Spruce	39.0"	13	12	0	1	0	0	67.5%	<1%
TOTALS		6,461	4,995	1,036	140	258	32		

9. Approvals:

Prepared by: Avery Petersen Date: 7-26-2018

Unit Forester Approval:  Date: 10/10/18

10. Attachments:
- Cruise Designs and Maps – 3 pages
 - Volume Reports - 1 page
 - Statistics Reports - 2 pages
 - Stand Table Summary – 2 page
 - Log Stock Tables – 2 pages

X:\STATE_FORESTS\UNIT_JEWELL\Timber Sales\2016\Packy\Sale Prep\Packy_CruiseReport.docx

Revised August, 2002

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Wild Bill **Area(s)** 1, 2, and 3

Harvest Type: Modified Clearcut

Approx. Cruise Acres: 200 **Estimated CV%** 55 Net BF or
BA/Acre **SE% Objective** 8

Planned Sale Volume: 6,370 MBF **Estimated Sale Area Value/Acre:** \$18,596.78

A. Cruise Goals: (a) Grade minimum 85 trees:

Determine log grades for sale value; Determine snag and leave tree species and sizes;
Determine "diameter limit" harvest parameters;

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 Full point
Cruise Line Direction(s) (Area 1, 2, and 3) N, S,
Cruise Line Spacing 9 chains
Cruise Plot Spacing 5 chains
Grade/Count Ratio 1:2

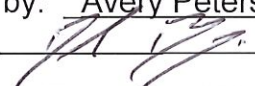
Record all cedar as leave. Record all snags as SN and record diameter & total height. If plot lands in buffer then offset at least 1/2 chain outside the buffer.

C. Tree Measurements:

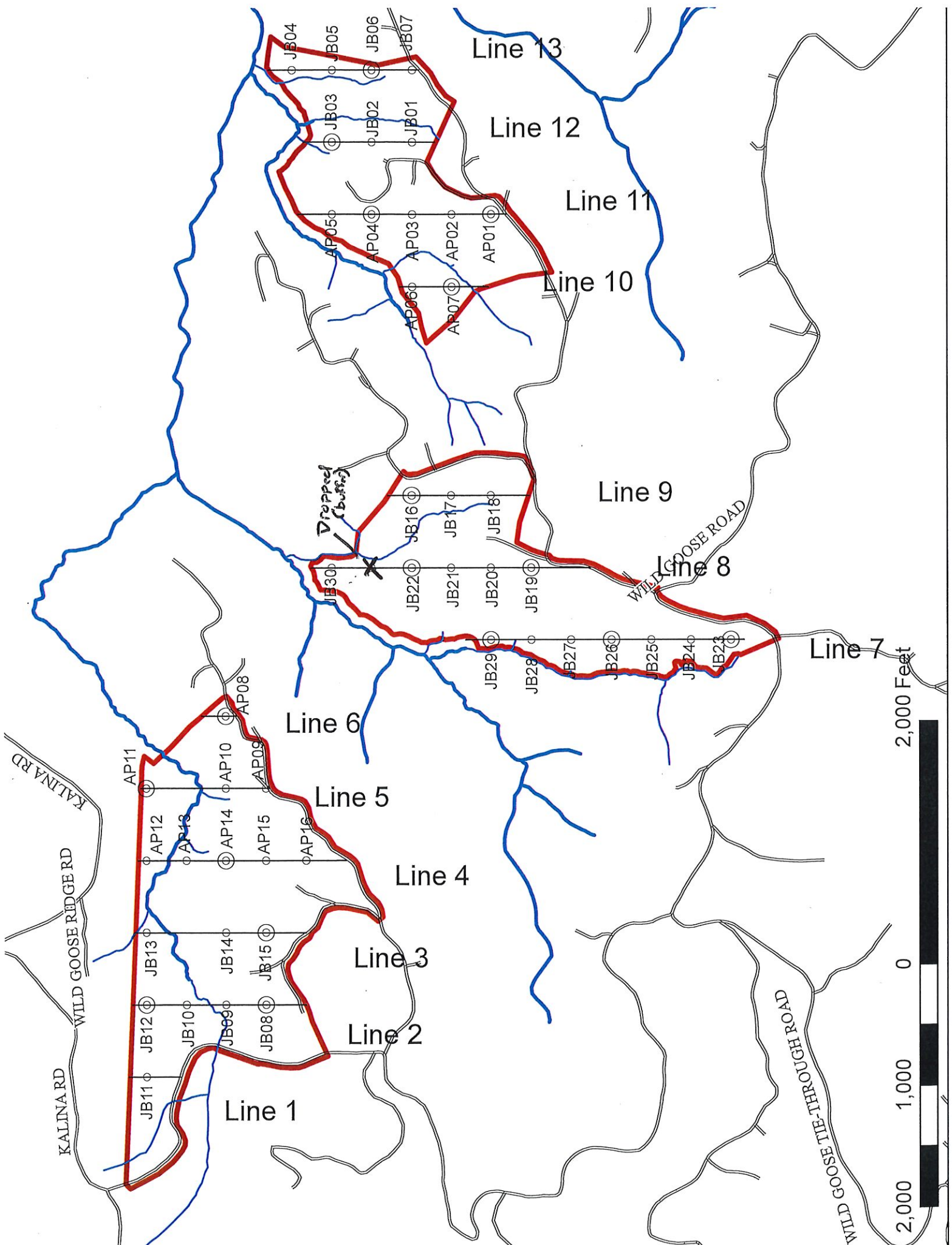
- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods.
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" or 40% of dob at 16' form point. Generally, use 7" outside bark for trees less than 18" dbh and 40% of dob @ FP for trees greater than 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; Hardwood form factors are a Standard 87.
- 5. Tree Segments:** Record log segments in "standard" 32" and 40' log lengths whenever possible. Do not record odd segments just to maximize grade. The maximum segment length is 40'. The minimum segment length is 12' for conifer and 8' for hardwoods. Minimum merchantable diameter for conifer is 8" dbh and 10" dbh for hardwoods. One foot of trim is assumed for each merchantable segment.

- 6. Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple).
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; 0 = Cull
Hardwoods: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill; 0 = Cull.
- 7. Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
- 8. Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points. On "measure/grade" plots paint the tree diameter on each tree starting with the first tree right of the cruise line direction and continuing clockwise.
- 9. Cruising Equipment:** Relaskop, Rangefinder, Biltmore Stick, Compass, Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging.
- 10. Attachments:** A. Cruise Map (showing cruise unit boundaries, cruise lines and plot locations, BAF or plot size, measure/count plot ratio, north arrow, and scale bar).

Cruise Design by: Avery Petersen

Approved by: 

Date: 7-24-18



TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T06N R07W S1 TyTAKE198.20						Project: WILDBILL										Page 1					
						Acres 198.20										Date 10/24/2018					
																Time 3:15:00PM					
Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre		
			Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99							
H	DOCU		100.0	599												8	23		0.00	3.1	
H	DO2S	79	1.7	8,983	8,828	1,750		8	48	44				1	99	40	15	351	2.07	25.1	
H	DO3S	19	1.1	2,043	2,022	401		98	2			2	4	24	70	37	8	84	0.78	24.2	
H	DO4S	2		218	218	43		9	91			75	25			20	7	29	0.58	7.5	
H Totals		34	6.5	11,843	11,068	2,194		0	26	39	35	2	1	5	91	34	11	185	1.38	60.0	
D	DOCU		100.0	1,141												12	17		0.00	7.4	
D	DO2S	81	1.8	16,521	16,228	3,216			3	24	73	3	5	9	83	38	17	433	2.46	37.5	
D	DO3S	16	1.9	3,165	3,106	616			51	49		6	9	25	60	34	10	124	1.08	25.1	
D	DO4S	3		486	486	96		9	91			71	20	9		20	7	32	0.59	15.1	
D Totals		61	7.0	21,313	19,820	3,928		0	13	28	59	5	6	12	78	31	13	233	1.73	85.2	
A	DO3S	89		1,301	1,301	258			100					28	72	37	6	61	0.55	21.3	
A	DO4S	11		160	160	32		100						100		32	4	20	0.31	8.0	
A Totals		4		1,461	1,461	290		11	89					36	64	35	6	50	0.49	29.3	
NF	DO2S	80	.0	144	144	29					100				100	40	19	600	2.65	.2	
NF	DO3S	20	.0	36	36	7			100						100	40	10	150	1.32	.2	
NF Totals		1		180	180	36			20		80				100	40	15	375	1.99	.5	
S	DOCU		100.0	129												30	30		0.00	.1	
S	DO2S	94		59	59	12					100				100	32	20	560	3.75	.1	
S	DO4S	6		3	3	1			100			100				20	7	30	1.25	.1	
S Totals		0	67.6	191	62	12			5		95	5		95		27	19	197	1.77	.3	
Totals			6.9	34,989	32,592	6,460		1	21	30	49	4	4	11	82	33	11	186	1.38	175.2	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILDBILL	DATE 10/24/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	1	A123	TAKE	198.20	46	239	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		46	239	5.2						
CRUISE		18	83	4.6	18,318		.5			
DBH COUNT										
REFOREST										
COUNT		28	155	5.5						
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR		44	29.7	25.5	92	20.8	105.2	21,313	19,820	4,802
WHEMLOCK		28	29.9	21.3	72	16.0	73.8	11,843	11,068	2,939
R ALDER		5	29.3	11.9	37	6.5	22.6	1,461	1,461	509
SNAG		4	3.1	24.7	34	2.1	10.4			
NOB FIR		1	.2	28.0	86	0.2	1.0	180	180	38
S SPRUCE		1	.1	39.0	84	0.1	.9	191	62	37
TOTAL		83	92.4	20.6	66	47.1	213.9	34,989	32,592	8,325
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR		51.7	7.8	755	819	882				
WHEMLOCK		64.4	12.4	434	495	557				
R ALDER		44.8	22.3	44	56	68				
SNAG										
NOB FIR										
S SPRUCE										
TOTAL		70.7	7.8	572	621	669	200	50	22	
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR		86.9	12.8	26	30	34				
WHEMLOCK		92.8	13.7	26	30	34				
R ALDER		204.1	30.1	20	29	38				
SNAG		242.0	35.7	2	3	4				
NOB FIR		678.2	99.9	0	0	0				
S SPRUCE		678.2	99.9	0	0	0				
TOTAL		67.9	10.0	83	92	102	184	46	20	
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR		77.7	11.4	93	105	117				
WHEMLOCK		89.5	13.2	64	74	84				
R ALDER		202.0	29.8	16	23	29				
SNAG		234.7	34.6	7	10	14				
NOB FIR		678.2	99.9	0	1	2				
S SPRUCE		678.2	99.9	0	1	2				
TOTAL		44.4	6.5	200	214	228	79	20	9	
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR		79.0	11.6	17,512	19,820	22,127				
WHEMLOCK		91.3	13.5	9,580	11,068	12,557				
R ALDER		203.6	30.0	1,023	1,461	1,900				
SNAG										

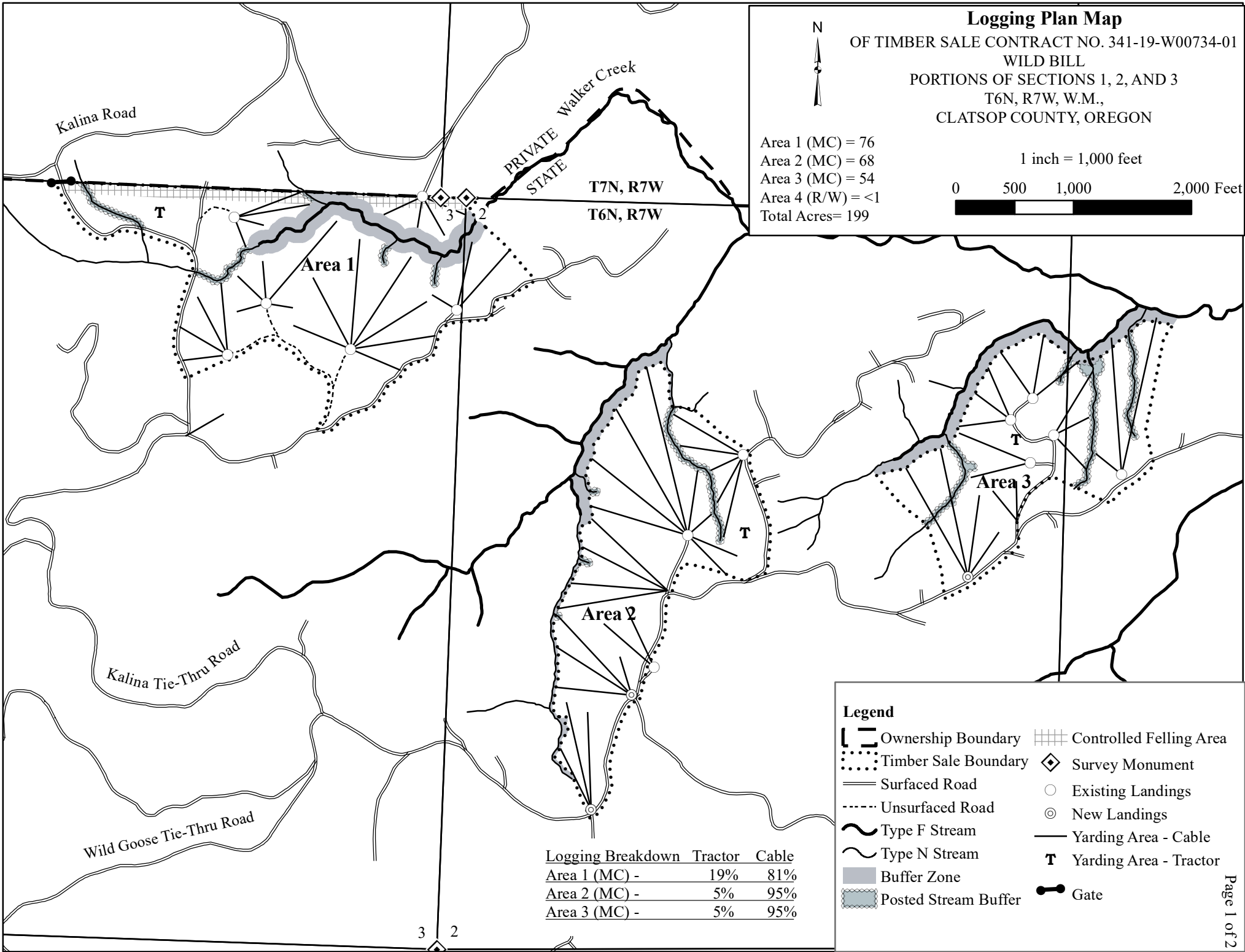
TC TSTATS				STATISTICS			PAGE	2	
				PROJECT	WILDBILL		DATE	10/24/2018	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	07W	1	A123	TAKE	198.20	46	239	1	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
NOB FIR		678.2	99.9	0	180	360			
S SPRUCE		678.2	99.9	0	62	124			
TOTAL		47.4	7.0	30,314	32,592	34,869	90	22	10

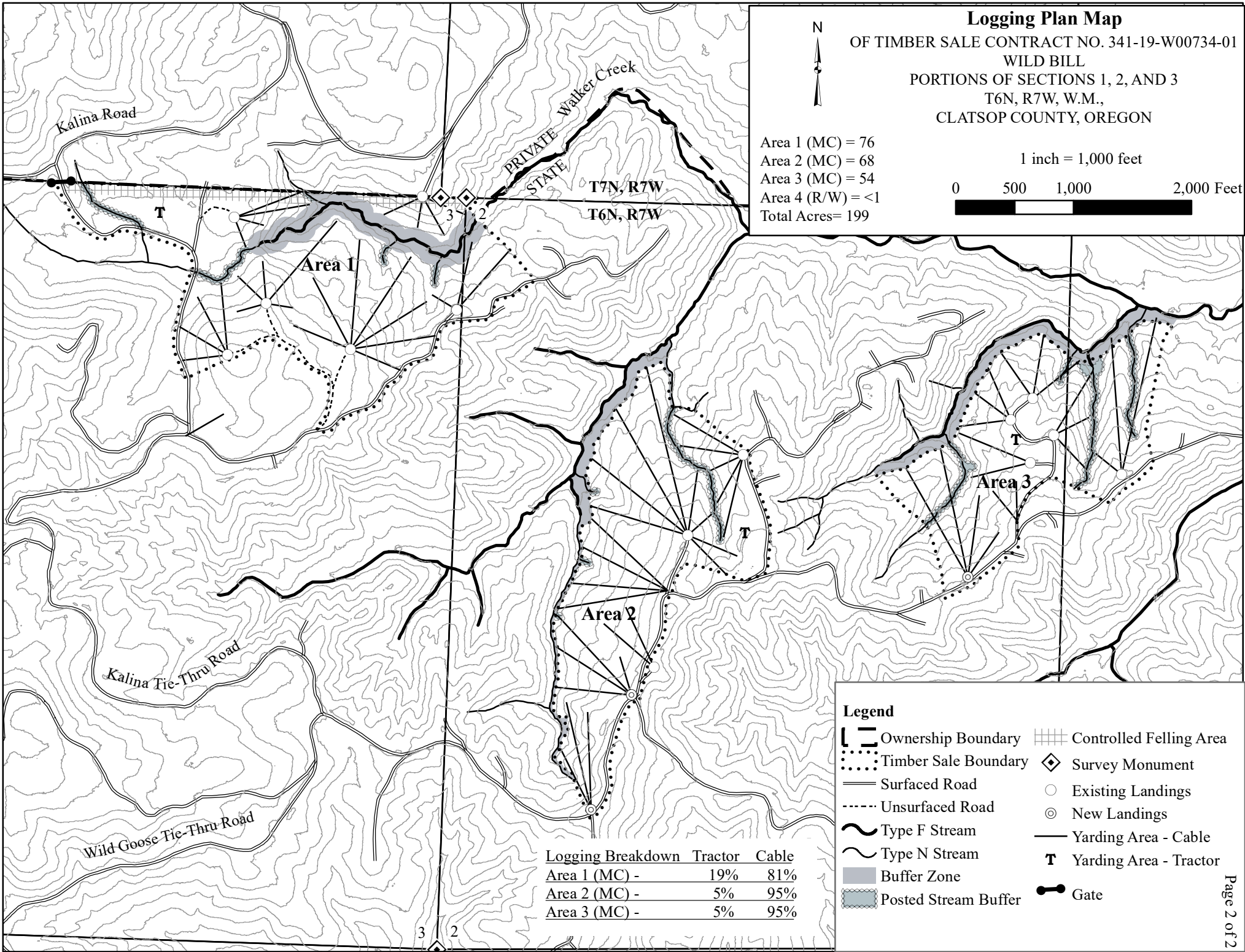
TC PSTNDSUM		Stand Table Summary										Page	1		
												Date:	10/26/2018		
T06N R07W S1 TyTAKE 198.20					Project WILDBILL					Time: 3:20:51PM					
					Acres 198.20					Grown Year:					
S SpC T	Tot				Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
	DBH	Sample Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
D	16	1	85	87	1.698	2.37	3.40	25.0	90.0		85	306	168	61	
D	18	2	87	115	2.684	4.74	5.37	27.8	97.5		149	523	295	104	
D	20	3	87	107	3.644	7.95	8.37	35.1	128.6		294	1,077	583	214	
D	22	2	89	120	1.797	4.74	5.39	38.5	163.3		208	880	411	174	
D	23	2	90	109	1.644	4.74	4.11	51.2	212.0		210	871	417	173	
D	24	5	87	120	3.774	11.86	10.57	52.1	210.7		550	2,227	1,091	441	
D	25	3	89	126	2.087	7.11	6.26	56.4	252.2		353	1,579	700	313	
D	26	3	90	133	1.930	7.11	5.79	62.2	284.4		360	1,647	714	326	
D	27	1	85	103	.596	2.37	1.19	72.5	255.0		86	304	171	60	
D	28	3	86	126	1.664	7.11	4.99	68.2	286.7		341	1,431	675	284	
D	29	2	87	107	1.034	4.74	2.59	75.2	294.0		194	760	385	151	
D	30	3	87	130	1.449	7.11	4.35	80.3	370.0		349	1,609	692	319	
D	31	5	83	117	2.262	11.86	5.43	75.1	330.0		408	1,792	808	355	
D	32	4	86	124	1.698	9.49	4.67	92.8	428.2		434	2,000	859	396	
D	33	1	88	116	.399	2.37	1.20	90.7	443.3		109	531	215	105	
D	34	1	89	133	.376	2.37	1.13	107.0	520.0		121	587	239	116	
D	35	2	89	137	.710	4.74	2.13	115.5	575.0		246	1,225	488	243	
D	41	1	97	130	.259	2.37	.78	117.3	606.7		91	471	180	93	
D	Totals	44	87	117	29.707	105.18	77.71	59.0	255.1		4,588	19,820	9,094	3,928	
H	12	1	86	53	3.242	2.55	3.24	17.0	50.0		55	162	109	32	
H	16	2	88	83	4.621	6.45	6.78	25.5	95.0		173	644	342	128	
H	18	1	89	88	1.819	3.21	3.64	28.0	105.0		102	382	202	76	
H	19	1	89	79	1.293	2.55	2.59	34.0	115.0		88	297	174	59	
H	20	3	87	87	3.502	7.64	7.00	41.8	141.7		293	992	581	197	
H	21	2	89	100	2.310	5.56	4.62	48.5	169.6		224	783	444	155	
H	22	3	84	94	2.894	7.64	6.75	46.3	168.6		313	1,138	619	226	
H	23	2	87	93	1.765	5.09	3.53	60.2	225.0		213	794	422	157	
H	24	2	89	97	1.621	5.09	3.24	68.7	280.0		223	908	442	180	
H	25	1	90	106	.747	2.55	1.49	78.0	340.0		117	508	231	101	
H	26	4	87	95	2.763	10.19	5.53	63.4	255.0		350	1,409	694	279	
H	27	3	87	119	1.921	7.64	5.12	67.6	302.5		346	1,550	687	307	
H	29	1	86	107	.555	2.55	1.11	102.0	435.0		113	483	224	96	
H	31	1	83	110	.486	2.55	.97	94.5	415.0		92	403	182	80	
H	34	1	86	129	.404	2.55	1.21	111.3	506.7		135	614	267	122	
H	Totals	28	87	89	29.944	73.79	56.83	49.9	194.8		2,836	11,068	5,621	2,194	
A	10	2	86	67	14.668	8.00	14.67	15.5	55.0		227	807	451	160	
A	11	1	86	43	8.008	5.28	8.01	10.0	20.0		80	160	159	32	
A	15	1	87	58	3.259	4.00	3.26	34.0	90.0		111	293	220	58	
A	17	1	86	53	3.353	5.28	3.35	27.0	60.0		91	201	179	40	
A	Totals	5	86	58	29.288	22.57	29.29	17.4	49.9		509	1,461	1,008	290	
NF	28	1	92	109	.240	1.03	.48	79.5	375.0		38	180	76	36	
NF	Totals	1	92	109	.240	1.03	.48	79.5	375.0		38	180	76	36	
S	39	1	88	90	.105	.87	.21	72.5	295.0		15	62	30	12	
S	Totals	1	88	90	.105	.87	.21	72.5	295.0		15	62	30	12	
SN	19	1	89	20	1.325	2.61									
SN	22	1	89	58	.988	2.61									
SN	29	1	91	20	.569	2.61									
SN	43	1	89	83	.259	2.61									

TC PSTNDSUM		Stand Table Summary										Page 2	
												Date: 10/26/2018	
T06N R07W S1 TyTAKE		198.20		Project		WILDBILL						Time: 3:20:51PM	
				Acres		198.20						Grown Year:	
S	Tot							Average Log					
Sp	Sample	FF	Av		Trees/	BA/	Logs	Net	Net	Net	Net	Totals	
C	DBH	Trees	16'	Ht	Acre	Acre	Acre	Cu.Ft.	Bd.Ft.	Tons/	Cu.Ft.	Bd.Ft.	
								Acre	Acre	Acre			
SN	Totals	4	89	37	3.141	10.43							
Totals		83	87	87	92.424	213.88	164.52	48.5	198.1	7,987	32,592		15,829 6,460

TC PLOGSTVB				Log Stock Table - MBF																
T06N R07W S1 TyTAKE 198.20				Project: WILDBILL Acres 198.20										Page 1 Date 10/24/2018 Time 3:15:49PM						
S T Spp	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches													
							2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+		
H	DO CU	5	17	100.0																
H	DO CU	6	39	100.0																
H	DO CU	12	63	100.0																
H	DO 2S	32	24		24	1.1					24									
H	DO 2S	38	39		39	1.8					39									
H	DO 2S	40	1,717	1.8	1,686	76.9				19	84	141	486	648	231	77				
H	DO 3S	20	8		8	.4						8								
H	DO 3S	24	8		8	.3				8										
H	DO 3S	30	10		10	.4				10										
H	DO 3S	32	63		63	2.9				36	27									
H	DO 3S	34	32		32	1.5			32											
H	DO 3S	36	13		13	.6				13										
H	DO 3S	38	41		41	1.9			41											
H	DO 3S	40	232	1.8	227	10.4			89	30	109									
H	DO 4S	16	14		14	.6		4	5	5										
H	DO 4S	18	6		6	.3			6											
H	DO 4S	20	13		13	.6			8	5										
H	DO 4S	28	11		11	.5			11											
H	Totals		2,347	6.5	2,194	34.0		4	190	125	259	173	486	648	231	77				
D	DO CU	3	3	100.0																
D	DO CU	4	6	100.0																
D	DO CU	6	31	100.0																
D	DO CU	8	13	100.0																
D	DO CU	10	16	100.0																
D	DO CU	12	27	100.0																
D	DO CU	16	34	100.0																
D	DO CU	24	56	100.0																
D	DO CU	30	40	100.0																
D	DO 2S	16	47		47	1.2										47				
D	DO 2S	18	34		34	.9									34					
D	DO 2S	28	108		108	2.7									108					
D	DO 2S	30	53		53	1.4								53						
D	DO 2S	32	309	4.0	296	7.5					23	93	109	71						
D	DO 2S	40	2,724	1.7	2,678	68.2					73	145	232	1392	603	233				
D	DO 3S	16	14		14	.4			4	4	6									

TC PLOGSTVB				Log Stock Table - MBF																
T06N R07W S1 TyTAKE 198.20				Project: WILDBILL				Page 2												
				Acres 198.20				Date 10/24/2018												
								Time 3:15:49PM												
S T	S pp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
D		DO	3S	20	23		23	.6			16		7							
D		DO	3S	24	7		7	.2					7							
D		DO	3S	26	8		8	.2					8							
D		DO	3S	28	10		10	.3						10						
D		DO	3S	30	31		31	.8			8				23					
D		DO	3S	32	142		142	3.6			9	25	48		32	29				
D		DO	3S	34	11		11	.3					11							
D		DO	3S	36	26		26	.7			3	10	13							
D		DO	3S	38	21		21	.5				21								
D		DO	3S	40	334	3.5	323	8.2			58	46	68	151						
D		DO	4S	16	29		29	.7			4	25								
D		DO	4S	18	18		18	.4			11	7								
D		DO	4S	20	22		22	.6			10	12								
D		DO	4S	24	19		19	.5			10	9								
D		DO	4S	34	9		9	.2		9										
D		Totals			4,224	7.0	3,928	60.8		9	101	166	233	454	395	1546	744	233	47	
A		DO	3S	34	73		73	25.1			73									
A		DO	3S	36	87		87	30.1			87									
A		DO	3S	40	98		98	33.8			40	58								
A		DO	4S	32	32		32	11.0		32										
A		Totals			290		290	4.5		32	200	58								
NF		DO	2S	40	29		29	80.0							29					
NF		DO	3S	40	7		7	20.0					7							
NF		Totals			36		36	.6					7		29					
S		DO	CU	30	26	100.0														
S		DO	2S	32	12		12	94.9									12			
S		DO	4S	20	1		1	5.1			1									
S		Totals			38	67.6	12	.2			1						12			
Total		All Species			6,935	6.9	6,460	100.0		44	492	350	499	627	881	2223	987	310	47	





Logging Plan Map
OF TIMBER SALE CONTRACT NO. 341-19-W00734-01
WILD BILL
PORTIONS OF SECTIONS 1, 2, AND 3
T6N, R7W, W.M.,
CLATSOP COUNTY, OREGON

Area 1 (MC) = 76
Area 2 (MC) = 68
Area 3 (MC) = 54
Area 4 (R/W) = <1
Total Acres= 199

1 inch = 1,000 feet

0 500 1,000 2,000 Feet

- Legend**
- Ownership Boundary
 - Timber Sale Boundary
 - Controlled Felling Area
 - Survey Monument
 - Existing Landings
 - New Landings
 - Yarding Area - Cable
 - Yarding Area - Tractor
 - Gate
 - Surfaced Road
 - Unsurfaced Road
 - Type F Stream
 - Type N Stream
 - Buffer Zone
 - Posted Stream Buffer

Logging Breakdown	Tractor	Cable
Area 1 (MC) -	19%	81%
Area 2 (MC) -	5%	95%
Area 3 (MC) -	5%	95%