



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Bam Bam
Sale AT-341-2022-W00537-01

District: Astoria

Date: April 26, 2021

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,222,685.42	\$75,265.05	\$2,297,950.47
		Project Work:	(\$130,308.00)
		Advertised Value:	\$2,167,642.47



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District: Astoria

Date: April 26, 2021

Timber Description

Location:

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	31	0	97
Western Hemlock / Fir	12	0	95
Alder (Red)	22	0	95

Volume by Grade	2S	3S & 4S 6"-11"	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	3,811	290	0	0	0	0	4,101
Western Hemlock / Fir	0	54	0	0	0	0	54
Alder (Red)	0	0	14	15	164	22	215
Total	3,811	344	14	15	164	22	4,370

Comments: Pond Values Used: Local Pond Values, April, 2021.

Expected Log Markets: Banks, Mist, Warrenton, Wauna, Forest Grove, Noti, Clatskanie, Willamina, Longview, WA, Vancouver, WA, Elma, WA, Chehalis, WA.

PRICING:

Western Red Cedar and other Cedars stumpage = pond value - (Douglas-fir) logging cost.
\$856.42/MBF = \$1,159/MBF - \$302.58/MBF

Other Costs (with Profit & Risk to be added):

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

Ditch Filters:

15 bales of straw @ \$12/bale = \$180
2 hours of labor @ \$45/hr = \$90

TOTAL Other Costs (with Profit & Risk to be added):\$2,270

Other Costs (No Profit & Risk added):

None.

SLASH PILING

(See attached appraisal. Includes move-in, pile materials) = \$8,631

ROAD MAINTENANCE

(See attached Road Maintenance Cost Summary Sheet)
TOTAL Road Maintenance: \$25,863/4,370 MBF = \$5.92/MBF



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Logging Conditions

Combination#: 1 Douglas - Fir 46.00%
 Western Hemlock / Fir 46.00%
 Alder (Red) 46.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Falling/Delimiting

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

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

loads / day: 8 **bd. ft / load:** 4300

cost / mbf: \$191.86

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

Combination#: 2 Douglas - Fir 54.00%
 Western Hemlock / Fir 54.00%
 Alder (Red) 54.00%

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

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

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

loads / day: 9 **bd. ft / load:** 4300

cost / mbf: \$101.74

machines: Shovel Logger



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Logging Costs

Operating Seasons: 3.00	Profit Risk: 12%
Project Costs: \$130,308.00	Other Costs (P/R): \$2,270.00
Slash Disposal: \$8,631.00	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$5.92

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	2.0	4.3
Western Hemlock / Fir	\$0.00	2.0	4.0
Alder (Red)	\$0.00	2.0	3.0



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$143.20	\$6.10	\$3.01	\$113.78	\$0.52	\$31.99	\$1.98	\$2.00	\$0.00	\$302.58
Western Hemlock / Fir									
\$143.20	\$6.22	\$3.01	\$124.69	\$0.52	\$33.32	\$1.98	\$2.00	\$0.00	\$314.94
Alder (Red)									
\$143.20	\$6.22	\$3.01	\$166.25	\$0.52	\$38.30	\$1.98	\$2.00	\$0.00	\$361.48

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$840.76	\$538.18	\$0.00
Western Hemlock / Fir	\$0.00	\$604.00	\$289.06	\$0.00
Alder (Red)	\$0.00	\$711.55	\$350.07	\$0.00



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District: Astoria

Date: April 26, 2021

Summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	4,101	\$538.18	\$2,207,076.18
Western Hemlock / Fir	54	\$289.06	\$15,609.24
Alder (Red)	215	\$350.07	\$75,265.05

Gross Timber Sale Value

Recovery: \$2,297,950.47

Prepared By: Michele Huffman

Phone: 503-325-5451

Site Prep/Machine Piling Appraisal

Sale Number: AT-341-2022-W00537-01
Sale Name: Bam Bam
Date: 05/06/2021

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre	Landing Production Rate (hrs/30 acres)
Doug-fir	A	0.5	0.5	6
Hemlock/Fir	B	1.3	4.5	8
Hemlock/Spruce	C	1.8	5.0	10
Hemlock	D	1.8	5.0	8
Conifer/Hardwood	E	1.0	2.0	8
Whole Tree Yarding	F	0.5	0.5	12

Unit	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area	
1	MC	A	56	28	\$145	\$4,060	
					In-unit Piling	Sub Total =	\$4,060
Sale Area	Number of Landings to be Piled	Harvested acres per area	Total Cost/Area	Number of Piles	Material Cost/Pile	Total Cost/Area	
1	25	104	\$3,016	53	\$5	\$265	
					Materials	Sub Total =	\$265
					Landing Piling	Sub Total =	\$3,016
Move-In Allowance	Number of Move-In's	Total Move-In Allowance					
\$1,290.00	1	\$1,290					
					Move-In	Sub Total =	\$1,290
Slash Endhaul Dump Truck hrs	Cost/Hour	Total	Loader hrs	Cost/Hour	Total		
0	\$89.00	\$0	0	\$145	\$0		
						Sub Total =	\$0
Grand Total =							\$8,631

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Bam Bam
Date: April 6, 2021
By: Michele Huffman *FL*

MBF: 4,370.00
\$/MBF: \$5.92

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations	Grader 14G	\$875	1	8	\$113	\$1,779
	Dump Truck 12CY	\$184	1	8	\$89	\$896
	Rubber tired backhoe	\$361	1	4	\$87	\$709
	Vibratory Roller	\$875	1	4	\$87	\$1,223
Final Road Maintenance	Grader 14G	\$875	1	45	\$113	\$5,960
	Dump Truck 12CY	\$184	2	20	\$89	\$2,148
	FE Loader C966	\$875	1	10	\$94	\$1,815
	Vibratory Roller	\$875	1	45	\$87	\$4,790
	Water Truck 2,500 gallon	\$214	1	24	\$101	\$2,638
	Excavator C315	\$905	1	20	\$114	\$3,185
	Labor				16	\$45
Total						\$25,863

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	2.5	2.5	1.0	8

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	8.4	5.6	45
Vibratory Roller	1.5	8.4	5.6	45

Process and compact: All crushed rock roads	
Foster Mainline: 5.3 Miles	
Northrup Creek Road: 1.7 Miles	
Big Creek Mainline: 0.6 Miles	
Unnamed Spurs: 0.8 Miles	
Grade & Process Total = 8.4 Miles	

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Bam Bam

<u>Road segment</u>	<u>Length (Sta)</u>	<u>Length (Mile)</u>	<u>Cost</u>
Road Maint.			
Move-In			
TOTALS			

Project No. 1: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length (Sta)</u>	<u>Length (Mile)</u>	<u>Cost</u>
l1 to l2, l3 to l4, l5 to l6, l7 to l8, and l9 to l10	632.65	11.98	\$85,703.03
Road Maint.			\$12,064.00
Move-In			\$5,455.00
TOTALS		11.98	\$103,222

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

<u>Description</u>	<u>Length (Mile)</u>	<u>Cost</u>
Proj. 2 Road Brushing	21.8	\$27,086.00
TOTAL		\$27,086

GRAND TOTAL **\$130,308**

Compiled By: Cole H. & Will L. *FL*

Date: 04/01/2021

Move In and Maintenance Calculator for Construction and Improvement

SALE NAME: Bam Bam

<u>Road segment</u>	<u>Length/Sta</u>	<u>Length/Mile</u>	<u>Cost</u>
TOTALS			

Project No. 1: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Length/Mile</u>	<u>Cost</u>
I1 to I2, I3 to I4,	632.65	11.98	\$85,703
I5 to I6, I7 to I8, and I9 to I10			
TOTALS	632.65	11.98	\$85,703

MOVE IN (Construction & Improvement Only)

<u>Equipment</u>	<u>Length/Mile</u>	<u>Cost</u>
Excavator C315		\$905.00
Grader 14G		\$875.00
Backhoe C580		\$361.00
Front End Loader C966		\$875.00
Vibratory Roller		\$875.00
Water Truck (2,500 gal)		\$214.00
10-12cy Highway Dump (x5)		\$920.00
20cy Highway Dump w/ Pup Trailer (x2)		\$430.00
TOTAL		\$5,455.00

ROAD MAINTENANCE (Construction & Improvement Only)

	<u>Length/Mile</u>	<u>Cost</u>
Final Road Maintenance	5.1	\$12,064.00
TOTAL		\$12,064.00

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Bam Bam
ROAD: 11 to 12 (348.65), 13 to 14 (8.10), 15 to 16 (27.30),
 17 to 18 (4.30), and 19 to 110 (244.30)
POINTS:

NEW CONSTRUCTION: _____ **STATIONS** _____ **0.00 MILES**
IMPROVEMENT: 632.65 **STATIONS** _____ **11.98 MILES**

Material	Cy/amount	x	Rate	=	Cost
11 to 12					
46+15, 55+30,					
62+40, 66+10,					
132+50, 144+15,					
147+05, 246+30					
155+90	5.0	x	\$45.00	=	\$225.00
13 to 14	1.0	x	\$114.00	=	\$114.00
8+10	10.0	x	\$114.00	=	\$1,140.00
15 to 16					
20+60	0.5	x	\$114.00	=	\$57.00
17 to 18					
0+00	1.0	x	\$114.00	=	\$114.00
SUB TOTAL FOR EXCAVATION					\$1,650

Location	Dia/type	Lineal ft.	Rate	Location	Dia/type	Lineal ft.	Rate	Cost
11 to 12				15 to 16				
71+15	18" CPP	30	\$21.95	17+20	18" CPP	30	\$21.95	\$658.50
83+55	18" CPP	35	\$21.95	22+10	18" CPP	30	\$21.95	\$658.50
289+80	18" CPP	40	\$21.95					
293+80	18" CPP	40	\$21.95					
297+35	18" CPP	40	\$21.95					
336+30	18" CPP	30	\$21.95					
344+45	18" CPP	30	\$21.95					

Description	Quantity	Rate	Cost
Other/miscellaneous:			
Culvert stakes & markers:	12		\$0.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION **\$6,695**
Subtotal of Clearing, Exc., Culv. **\$8,345**

SURFACING

Subgrade prep:

Description

Grade, Shape and Ditch 16' (11 to 12, 13 to 14, 15 to 16, 17 to 18)
 Subgrade Compaction (11 to 12, 13 to 14, 15 to 16, 17 to 18)
 Sod Removal and scatter on site w/ backhoe (13 to 14, 15 to 16, 17 to 18)
 Spot Grade (19 to 110)

Stations/
amount
388.35
388.35
39.70
244.30

Rate/
sta/amt
\$27.91
\$22.69
\$36.28
\$9.21

Cost
\$10,838.85
\$8,811.66
\$1,440.32
\$2,250.08

Application	11 to 12		Depth of Rock (inches)	Location	POINT TO POINT 11 to 12 Volume (CY) per	Sta. to Sta. 0+00 to 348+65 Number of	Rate/ Sta./ amt.	Cost	
	Rock Size and Type	Rock Volume (CY)							
Leveling Rock	3/4"-0" crushed	11	N/A	3+85, 6+40, 7+30, 13+45, 15+45, 21+50, 56+25, 70+55, 72+60, 78+40, 81+75, 82+80, 98+55, 106+15, 112+55, 118+00, 121+60, 144+55, 147+00, 155+90, 156+70, 157+75, 160+55, 162+60, 174+15, 184+25, 188+00, 190+45, 200+75, 208+35, 236+15, 243+10, 245+10, 252+10, 255+30, 262+00, 275+35, 279+00, 285+35, 288+60, 301+80, 311+05, 319+00, 320+15, 321+45, 322+20, 335+50, 340+10	48	loads	\$7.01	\$3,701	
Culvert Bedding and Backfill	3/4"-0" crushed	44	N/A	71+15, 83+55, 289+80, 293+80, 297+35, 336+30, 344+45	7	culverts	\$7.01	\$2,159	
Rock Ditch Filters	6"-4" pit-run	11	N/A	155+90	1	3 filter series	\$7.95	\$87	
Surfacing	3/4"-0" crushed	19	3	317+25 to 348+65 and 332+30	31.4	stations	\$7.01	\$4,185	
Junctions	3/4"-0" crushed	11	3	325+30, 330+20, and 346+00	3	junctions	\$7.01	\$231	
Turnouts	3/4"-0" crushed	11	3		3	turnouts	\$7.01	\$231	
Total Rock for Road Segment:								1,510	\$10,595
Application	13 to 14		Depth of Rock (inches)	Location	POINT TO POINT 13 to 14 Volume (CY) per	Sta. to Sta. 0+00 to 8+10 Number of	Rate/ Sta./ amt.	Cost	
	Rock Size and Type	Rock Volume (CY)							
Surfacing	4"-0" crushed	25	4	0+00 to 8+10	8.1	stations	\$7.01	\$1,423	
Junctions	3/4"-0" crushed	11	4	0+00	1	junctions	\$7.01	\$77	
Roadside Landing	6"-0" pit-run	55	N/A	4+00	1	landings	\$7.95	\$77	
Roadside Landing	6"-0" pit-run	33	N/A	4+70	1	landings	\$7.95	\$437	
Turnaround / Landing	6"-0" pit-run	44	N/A	7+50	1	turnaround	\$7.95	\$437	
Landing	6"-0" pit-run	110	N/A	8+10	1	landings	\$7.95	\$875	
Total Rock for Road Segment:								456	\$3,326

ROAD SEGMENT		15 to 16		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	15 to 16 Volume (CY) per	0+00 to 27+30 Number of	0+00 to 27+30 loads	stations			
Leveling Rock Surfacing	4"-0" crushed	2+90, 6+40, 18+10, 20+60	N/A	load station	27.3	4	stations	44	\$7.01	\$308
Turnouts	4"-0" crushed	23+50	4	turnout	11	4	turnouts	683	\$7.01	\$4,788
Curve Widening Surface	4"-0" crushed	6+40	N/A	load	11	4	loads	44	\$7.01	\$308
Junctions	3/4"-0" crushed	0+00	N/A	junction	11	1	junctions	22	\$7.01	\$154
Traction Rock	3/4"-0" crushed	0+00 to 27+30	2	station	13	27.3	stations	355	\$7.01	\$2,489
Turnouts	3/4"-0" crushed	23+50	2	turnout	11	4	turnouts	44	\$7.01	\$308
Curve Widening Surface	3/4"-0" crushed	6+40	N/A	load	11	2	loads	22	\$7.01	\$154
Roadside Landings	6"-0" pit-run	13+90 and 19+05	N/A	landing	55	2	landings	110	\$7.95	\$875
Culvert Bedding and Backfill	3/4"-0" crushed	17+20 and 22+10	N/A	culvert	33	2	culverts	66	\$7.01	\$463
Culvert Energy Dissipator	24"-6" riprap	22+10	N/A	dissipator	11	1	dissipators	11	\$7.95	\$87
Landing	6"-0" pit-run	27+30	N/A	landing	77	1	landings	77	\$7.95	\$612
Total Rock for Road Segment:								1,489		\$10,624

ROAD SEGMENT		17 to 18		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	17 to 18 Volume (CY) per	0+00 to 4+30 Number of	0+00 to 4+30 loads	stations			
Leveling Rock Surfacing	4"-0" crushed	2+80	N/A	load station	11	1	loads	11	\$7.01	\$77
Junctions	4"-0" crushed	0+00 to 4+30	4	junction	25	4.3	junctions	108	\$7.01	\$757
Landings	6"-0" pit-run	4+30	N/A	landing	77	1	landings	11	\$7.01	\$77
Total Rock for Road Segment:								207		\$1,523

Processing:	Description	No. sta	Rate/sta	Cost
Water, Process & Compact: (11 to 12, 13 to 14, 15 to 16, 17 to 18)		388.35	\$63.48	\$24,652
Traction Rock Water, Process & Compact: (15 to 16)		27.30	\$63.48	\$1,733
	24"-6" rr	6"-4" pr	6"-0" pr	4"-0" crushed
	11	11	506	1,115
SUB TOTAL FOR SURFACING				\$75,796

SPECIAL PROJECTS		Description	Cy/Amount	Rate	Cost
		pit-run development	517	\$2.92	\$1,509.64
		riprap development	11	\$4.83	\$53.13
SUB TOTAL FOR SPECIAL PROJECTS					\$1,563
GRAND TOTAL					\$85,703

Subtotal of Surfacing & Spec. Proj. \$77,358
Subtotal of Clearing, Exc., Culv. \$8,345

Compiled By: W. Lawrence / C. Hatcher Date: 03/31/2021

CRUSHED ROCK COST

SALE NAME: Bam Bam
 PROJECT: Project No. 1
 Stockpile: Knob Point

MATERIAL: 3/4"-0" and 4"-0"

DATE: 03/26/2021
 BY: Cole H.

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
I1 to I2	348.65	1,499			3.00	3.50	1.00	0.33	0.10	7.93
I3 to I4	7.50	214			2.00	2.00	0.70	0.21	0.10	5.01
I5 to I6	27.30	1,291			2.00	2.00	0.70	0.38	0.10	5.18
I7 to I8	4.30	130			2.00	2.00	0.70	0.38	0.10	5.18
TOTAL	387.75	3,134								
	STA./NO.	CU. YD.								AVERAGE HAUL
CUBIC YARD WEIGHTED HAUL					2.48	2.72	0.84	0.34	0.10	6.48
Average Round Trip Distance (miles)									12.97	

ROCK HAUL:

Truck type: <u>D20</u>	No. trucks: <u>2</u>
Delay min.: <u>8</u>	Efficiency: <u>85%</u>
Truck type: <u>D12</u>	No. trucks: <u>5</u>
Delay min.: <u>6</u>	Efficiency: <u>85%</u>
Truck type: <u>D10</u>	No. trucks: _____
Delay min.: <u>5</u>	Efficiency: <u>85%</u>

Ave haul: \$5.51 /cy
 Load: \$0.54 /cy
 Spread: \$0.96 /cy

Production: cy/day = 863

CRUSHED ROCK HAUL COSTS 3,134 cy @ \$7.01 /cy

PIT RUN ROCK COST

SALE NAME: Bam Bam
 PROJECT: Project No. 1
 QUARRY: Knob Point

MATERIAL: Pit-Run Riprap

DATE: 03/26/2021
 BY: Cole H.

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
I1 to I2	348.65	11			3.00	3.50	1.00	0.33	0.10	7.93
I3 to I4	7.50	242			2.00	2.00	1.17	0.40	0.10	5.67
I5 to I6	27.30	198			2.00	2.00	1.00	0.40	0.10	5.50
I7 to I8	4.30	77			2.00	2.00	1.17	0.40	0.10	5.67
TOTAL	387.75	528								
CUBIC YARD WEIGHTED HAUL		STA./NO. CU. YD.			2.0	2.0	1.1	0.4	0.1	AVERAGE HAUL 5.65

Average Round Trip Distance (miles) 11.31

ROCK HAUL:

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

Truck type: D12 No. trucks: 5
 Delay min.: 6 Efficiency: 85%

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

Ave haul: \$5.55 /cy
 Load: \$0.84 /cy
 Spread: \$1.56 /cy

Production: cy/day = 569

PIT RUN ROCK HAUL COSTS 528 cy @ \$7.95 /cy

BRUSHING COST ANALYSIS	
Sale Name:	Bam Bam
Project No.	2
Date:	03/31/2021
Compiled by:	Cole H.

Brushing Type	\$/mi.
Light (1)	956.00
Medium (2)	1,237.00
Heavy (3)	1,743.00

Total Cost= \$27,086

Total Miles= 21.81
Avg. \$/mi.= \$1,241.78

Additional Costs

	Hrs	\$/Hr	\$
Laborer	10	\$45.00	\$450.00
Mobilization	N/A	N/A	\$361.00

Road Segment	Road Name	Measured Feet	Miles	Brushing Type	\$	Notes
Big Creek Road	BG	3188.2	0.60	2	\$746.94	
	BG10	2693.2	0.51	2	\$630.97	
	BG20	2081.2	0.39	2	\$487.58	
	BG40	418.5	0.08	3	\$138.17	
Foster Mainline	FM100AA	232.6	0.04	1	\$42.11	
	FM109	2349.9	0.45	2	\$550.54	
	FM129	119.0	0.02	1	\$21.54	
	FM131	137.2	0.03	3	\$45.28	
	FM142	131.3	0.02	1	\$23.76	
	FM146	494.4	0.09	2	\$115.83	
	FM147	933.8	0.18	3	\$308.26	
	FM148	221.4	0.04	2	\$51.87	
	FM150	2007.8	0.38	2	\$470.39	
	FM150AA	417.3	0.08	2	\$97.76	
	FM150DD	5703.5	1.08	2	\$1,336.21	
	FM150DD80	298.4	0.06	3	\$98.51	
	FM150DD90	605.1	0.11	2	\$141.77	
	FM170	3612.7	0.68	2	\$846.38	
	FM180	1748.3	0.33	2	\$409.60	
	FM190	728.3	0.14	2	\$170.63	
	FM190AA	1007.5	0.19	2	\$236.03	
	FM190AA10	629.2	0.12	2	\$147.42	
	FM200	3924.0	0.74	1	\$710.47	
	FM200AA	909.5	0.17	1	\$164.68	
	FM200AA10	849.5	0.16	1	\$153.82	
	FM200AA20	158.9	0.03	1	\$28.77	
	FM200BB	2128.1	0.40	1	\$385.31	
	FM200CC	259.1	0.05	1	\$46.91	
	FM20AA	2666.2	0.50	1	\$482.74	
	FM20BB	2237.5	0.42	3	\$738.62	
	FM20BB20	296.6	0.06	3	\$97.92	
	FM210	521.2	0.10	1	\$94.37	
	FM230	2374.6	0.45	2	\$556.32	
	FM230AA	928.4	0.18	2	\$217.50	
	FM235	303	0.06	1	\$54.86	
	FM240	7442.1	1.41	2	\$1,743.54	
FM240AA	7852.7	1.49	2	\$1,839.74		
FM240AA10	1322.9	0.25	3	\$436.72		
FM240AA10AA	492.3	0.09	2	\$115.34		
FM240AA30	2336.8	0.44	2	\$547.46		
FM240AA30AA	333.2	0.06	3	\$110.00		
FM240AA40	1690.7	0.32	2	\$396.10		
FM240BB	1061.0	0.20	1	\$192.10		
FM240CC	335.8	0.06	2	\$78.67		
FM240DD	292.3	0.06	2	\$68.47		
FM240EE	307.9	0.06	2	\$72.13		
FM240FF	1124.6	0.21	2	\$263.47		
FM240GG	241.3	0.05	1	\$43.69		
FM240HH	1568.6	0.30	1	\$284.02		
FM240HH10	133.9	0.03	1	\$24.25		
FM240JJ	353.1	0.07	2	\$82.72		

Projects Road Maintenance Cost Summary

Sale: Bam Bam
Date: _____
By: Will Lawrence

Type	Equipment/Rationale	Hours	Rate	Cost
Project Work	Grader 14G	34	\$113	\$3,842
Final Haul	Dump Truck 12CY	10	\$89	\$890
Road	FE Loader C966	10	\$94	\$940
Maintenance	Vibratory Roller	34	\$87	\$2,958
	Water Truck 2,500 gallon	34	\$101	\$3,434
Total				\$12,064

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	5.10	3.4
Vibratory Roller	1.5	5.10	3.4

NOTE: Knob Point to Foster / Big Creek junction 5.10 Miles
 _____ Miles
 _____ Miles
 _____ Miles
 _____ Miles
TOTAL= 5.10 Miles

**Bam Bam
TIMBER CRUISE REPORT
FY 2022**

1. **Sale Area Location:** Portions of Section 31 of T7N, R6W, W.M., Clatsop County, OR.
2. **Fund Distribution:** BOF 100% Tax Code: 30-05 (100%)
3. **Sale Acreage by Area:**

Unit	Harvest Type	Gross Acres	Stream Buffer Acres	Existing R/W Acres	New R/W	Non-Stocked Area	Reserve Tree Area	Net Acres	Survey Method
1	Modified Clearcut	117	6	7	-	-	-	104	GIS
TOTAL	-	117	6	7	-	-	-	104	-

4. Cruisers and Cruise Dates: Avery Petersen, John Choate, Kevin Berry, Justin Bush, John Czarnecki, and Ryan Simpson (04/02/2021)

5. Cruise Method and Computation:

Unit 1: Unit 1 was variable plot cruised with a 40 BAF. A total of 61 plots were sampled on a 3 by 6 chain spacing with a grade to count ratio of 1:2, resulting in 20 grade plots and 41 count plots.

Data was collected on Allegro 2 data collectors and downloaded to the Atterbury SuperACE 2008 program for computing. See the attached Cruise Designs for more details on the cruise method. The cruise calculations were processed at the Astoria District office.

UNIT(s)	CRUISE	TRACT	TYPE	ACRES
1	BamBam	U1	00MC	104

6. Timber Description:

Unit 1 is a modified clearcut with an average age of 74 years. The stands consist of Douglas-fir, red alder, and western hemlock. The average take Douglas-fir is approximately 31 inches DBH and 110 feet to a merchantable top. The average take red alder is approximately 22 inches DBH and 76 feet to a merchantable top. The average take western hemlock is approximately 12 inches DBH and 23 feet to a merchantable top. Average net volume to be harvested per acre is 42 MBF. All trees were cruised to a merchantable top of six inches DIB, 40% of form point, or an otherwise anticipated break point.

7. Statistical Analysis and Stand Summary:

Statistics for Stand B.F. volumes

Unit	Estimated CV	Target SE%	Actual CV	Actual SE%
1	42.0%	8.0%	40.2%	5.1%

8. Volumes by Species and Log Grade:

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

Conifer

Species	DBH	Net Vol.	2 Saw	3 Saw	4 Saw	% D & B	% Sale
Douglas-fir	31"	4,101	3,811	272	18	0.9%	94%
Western hemlock	12"	54	-	17	37	0%	1%
TOTALS	--	4,155	3,811	289	55	--	--

Hardwood

Species	DBH	Net Vol.	12"+	10"-11"	8"-9"	6"-7"	% D & B	% Sale
Red alder	22"	215	164	15	14	22	0%	5%
TOTALS	--	215	164	15	14	22	--	--

TOTAL VOLUME	4,370 MBF
---------------------	------------------

9. Approvals:

Prepared by: Michele Huffman
 Unit Forester Approval: /s/John Tillotson *JT*

Date: 04/12/2021
 Date: 05/06/2021

- 10. Attachments:** Cruise Design and Maps (3 pages)
 Volume Reports (1 page)
 Statistics Reports (3 pages)
 Log Stock Table (1 pages)
 Stand Table Summary (1 page)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Bam Bam **Unit** 1

Harvest Type: Modified Clearcut

Approx. Cruise Acres: 104 **Estimated CV%** 42 Net BF/Acre **SE% Objective** 8% Net BF/Acre

Planned Sale Volume : 3,800 MBF **Estimated Sale Area Value/Acre:** \$17,020/Acre

A. Cruise Goals: (a) Grade minimum 100 conifer trees.
(b) Sample 63 cruise plots (21 grade/ 42 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; Determine snag and leave tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point)
Cruise Line Direction: Unit 1: 360°/180°
Cruise Line Spacing 6 (chains) 396 (Feet)
Cruise Plot Spacing 3 (chains) 198 (Feet)
Grade/Count Ratio 1:2

Take plots as marked on cruise map.

Grade minor species (true fir, spruce, cedar, maple, etc.) on count plots if encountered.

DO NOT: record any 22' log lengths, or any 12', 24', or 32' log lengths for hardwoods.

DO NOT: record snags < 12" DBH or record snag measurements on count plots.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.
Record dbh to nearest $\frac{1}{2}$ " 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" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 20" dbh and 40% of dob @ FP for conifer trees > 20" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in “standard” log lengths in general use, such as 32’ and 40’ lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12’; for hardwoods, it’s 8’. Maximum segment length is 40’. One foot of trim is assumed for each merch segment. Do not use “double dash” (--) feature on the data recorder except for the top segment of the tree. Hardwoods shall be recorded in 8’ and 10’ multiples.

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); SN (Snag). For “leave trees”, add an “L” to the species code (such as DL, HL, CL, etc.)

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; R = Camp Run; 0 = Cull
Hardwoods: Alder Grades: 12” + = 1 Sawmill; 10”-12” = 2 Sawmill; 10”-8” = 3 Sawmill; and 8”-6” 4 Sawmill, or R = Camp Run; 0 = Cull.
All Maple Camp Run = R

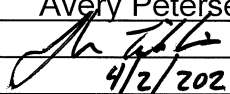
Grade oversized 3-SAW (DIB ≥ 12”, knots > 2½” inside scaling cylinder affecting > 50% of log)

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 inter-visible points, not to exceed 100’ apart. On “measure/grade” plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.

9. **Cruising Equipment:** Relaskop, Rangefinder, Logger’s Tape (with dbh on back), Compass, Allegro II Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint, Permanent Marker.

10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Avery Petersen
Approved by: 
Date: 4/2/2021

T7N R7W

T7N R6W

25

30

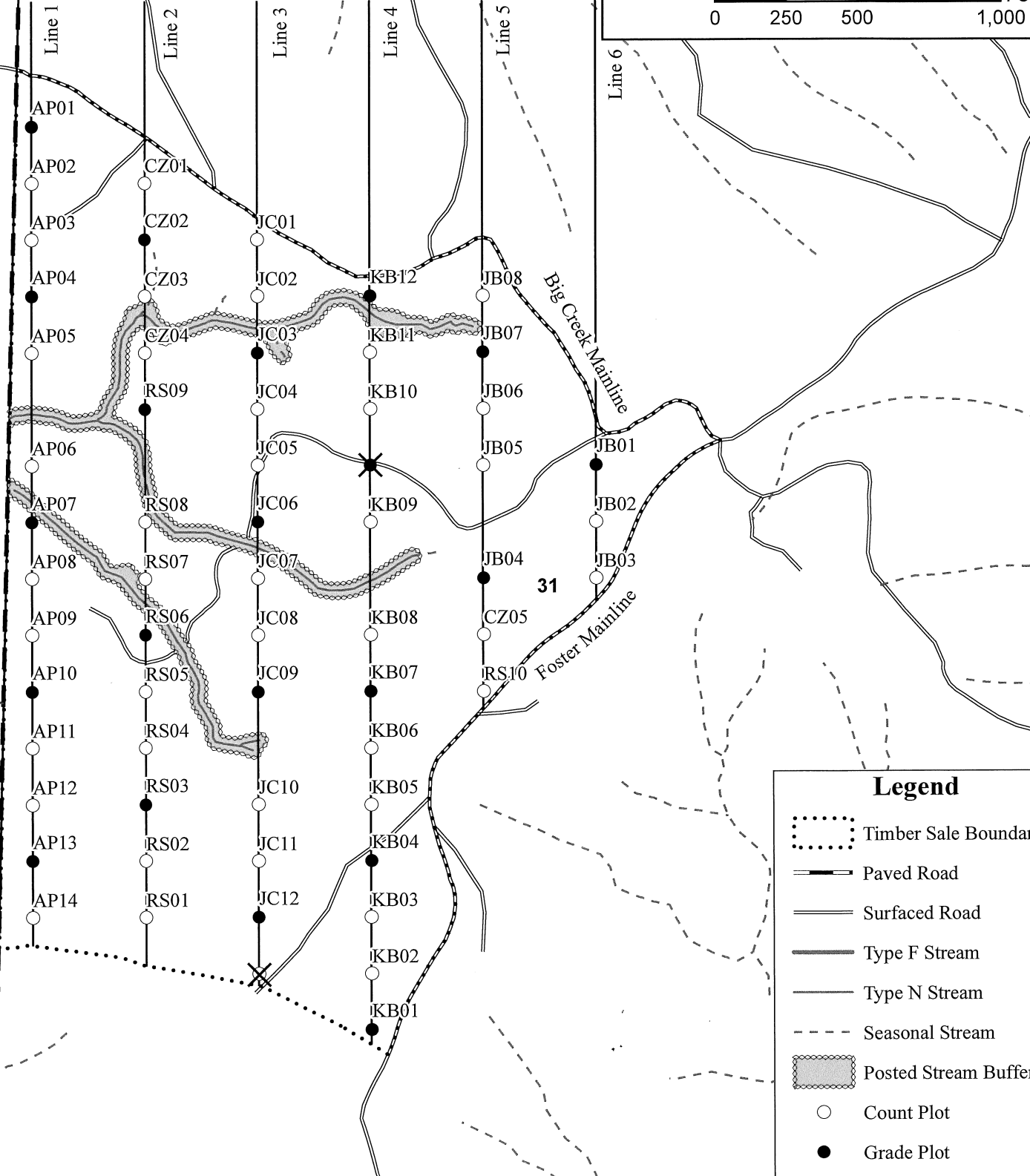
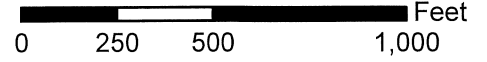
36

31



TIMBER CRUISE
 OF TIMBER SALE CONTRACT
 NO. AT-341-2022-W00537-01
 BAM BAM
 PORTIONS OF SECTION 31, T7N, R6W,
 W.M., CLATSOP COUNTY, OREGON

BAF = 40 AZ = 360°/180°
 Net Acres = 104 Line Spacing = 6 ch. (396 ft.)
 Grade Plots = 20 Plot Spacing = 3 ch. (198 ft.)
 Count Plots = 41
 Total Plots = 61 1 Inch = 500 Feet



Legend

- Timber Sale Boundary
- Paved Road
- Surfaced Road
- Type F Stream
- Type N Stream
- Seasonal Stream
- Posted Stream Buffer
- Count Plot
- Grade Plot
- Cruise Line

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1											
		Project: BAMBAM								Date	4/28/2021										
										Time	8:05:48AM										
T07N R06W S31 T00MC										T07N R06W S31 T00MC											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt	W											
07N	06W	31	UITAKE	00MC	104.00	61	89	1													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs
					Net	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	
									4-5	6-11	12-16	17+	12-20	21-30	32-35	36-99	Ft	In	Ft	Lf	/Acre
D	DO	CU		00.0		372											12	26		0.00	1.1
D	DO	2S	92	.9	36,963	36,643	3,811		0	18	82		1	3	5	92	38	19	597	3.15	61.4
D	DO	3S	7	.7	2,639	2,619	272		85	15			19	20	30	31	29	10	100	1.02	26.1
D	DO	4S	1		174	174	18		100				57	43			19	7	34	0.56	5.2
D	Totals		94	1.8	40,148	39,437	4,101		6	17	76		2	5	6	87	34	16	421	2.55	93.7
A	DO	CU		00.0		7											2	14		0.00	.7
A	DO	1S	76		1,575	1,575	164			70	30				100		39	15	338	2.05	4.7
A	DO	2S	7		141	141	15		41	59			41	59			24	11	107	1.12	1.3
A	DO	3S	6		137	137	14		100						100		40	9	109	1.26	1.3
A	DO	4S	11		212	212	22		100				19		31	51	31	7	51	0.69	4.2
A	Totals		5	.3	2,072	2,065	215		20	57	23		5	4	3	88	33	11	170	1.43	12.1
H	DO	3S	31		163	163	17		100						42	58	36	6	55	0.64	3.0
H	DO	4S	69		352	352	37		100				76	24			19	7	27	0.49	12.9
H	Totals		1		515	515	54		100				52	17	13	18	22	7	33	0.53	15.9
Type Totals				1.7	42,735	42,017	4,370		8	19	73		3	5	6	86	32	14	345	2.26	121.7

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT				DATE	4/28/2021	
				BAMBAM						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	31	U1	00MC	104.00	61	283	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		
DOUGLEAV	781.0	99.9	0	163	325					
CEDLEAV	781.0	99.9	0	22	45					
TOTAL	<i>40.2</i>	<i>5.1</i>	<i>40,030</i>	<i>42,202</i>	<i>44,374</i>	<i>65</i>	<i>16</i>	<i>7</i>		

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	BAMBAM			DATE	4/28/2021		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
07N	06W	31	UITAKE	00MC	104.00	61	272	1	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		61	272	4.5							
CRUISE		21	89	4.2	5,320	1.7					
DBH COUNT											
REFOREST											
COUNT		40	176	4.4							
BLANKS											
100 %											
STAND SUMMARY											
		SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR		74	29.8	30.6	110	27.6	152.8	40,148	39,437	8,185	8,130
R ALDER		8	5.5	21.5	76	3.0	13.8	2,072	2,065	567	565
WHEMLOCK		7	15.9	11.7	23	3.5	11.8	515	515	188	188
TOTAL		<i>89</i>	<i>51.2</i>	<i>25.3</i>	<i>80</i>	<i>35.5</i>	<i>178.4</i>	<i>42,735</i>	<i>42,017</i>	<i>8,940</i>	<i>8,883</i>
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		53.3	6.2	1,500	1,599	1,698					
R ALDER		42.3	16.0	345	410	475					
WHEMLOCK		42.3	17.2	30	36	42					
TOTAL		<i>68.3</i>	<i>7.2</i>	<i>1,270</i>	<i>1,369</i>	<i>1,468</i>	<i>186</i>	<i>47</i>	<i>21</i>		
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		46.6	6.0	28	30	32					
R ALDER		451.6	57.8	2	5	9					
WHEMLOCK		206.1	26.4	12	16	20					
TOTAL		<i>74.9</i>	<i>9.6</i>	<i>46</i>	<i>51</i>	<i>56</i>	<i>224</i>	<i>56</i>	<i>25</i>		
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		43.4	5.6	144	153	161					
R ALDER		452.8	57.9	6	14	22					
WHEMLOCK		199.0	25.5	9	12	15					
TOTAL		<i>41.9</i>	<i>5.4</i>	<i>169</i>	<i>178</i>	<i>188</i>	<i>70</i>	<i>18</i>	<i>8</i>		
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		45.6	5.8	37,137	39,437	41,736					
R ALDER		461.7	59.1	845	2,065	3,284					
WHEMLOCK		198.9	25.4	384	515	647					
TOTAL		<i>40.6</i>	<i>5.2</i>	<i>39,835</i>	<i>42,017</i>	<i>44,199</i>	<i>66</i>	<i>16</i>	<i>7</i>		

TC TLOGSTVB

Log Stock Table - MBF

Project: **BAMBAM**

T07N R06W S31 T00MC

T07N R06W S31 T00M

Twp Rge Sec Tract
07N 06W 31 U1TAKE

Type Acres Plots Sample Trees
00MC 104.00 61 89

Page 1
Date 4/28/2021
Time 8:06:27AM

S Spp	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	20-26	27-31	32-39	40+		
D	DO	CU	6	12	100.0																
D	DO	CU	18	11	100.0																
D	DO	CU	20	15	100.0																
D	DO	2S	16	16		16	.4					13	3								
D	DO	2S	20	6		6	.1					3	3								
D	DO	2S	24	76		76	1.9						4			23	25		24		
D	DO	2S	26	7		7	.2						7								
D	DO	2S	28	23		23	.6					14			9						
D	DO	2S	30	17		17	.4					8	9								
D	DO	2S	32	156		156	3.8					25	57	33	41						
D	DO	2S	34	18		18	.5						9	9							
D	DO	2S	36	20		20	.5				5	5	10								
D	DO	2S	40	3,505	.9	3,472	84.7					118	234	730	1931	309		150			
D	DO	3S	16	27		27	.7				24	3									
D	DO	3S	18	5		5	.1				5										
D	DO	3S	20	19		19	.5				2	14		3							
D	DO	3S	24	23		23	.6			3	6	14									
D	DO	3S	26	14		14	.3					14									
D	DO	3S	28	14		14	.3					8	6								
D	DO	3S	30	5		5	.1						5								
D	DO	3S	32	77	1.3	76	1.9			6		51		14	5						
D	DO	3S	34	5		5	.1					5									
D	DO	3S	40	86	1.1	85	2.1			14	31	35	6								
D	DO	4S	16	10		10	.3			5	6										
D	DO	4S	24	8		8	.2			3	4										
D	Totals			4,175	1.8	4,101	93.9			30	49	175	206	352	786	1995	334	174			
A	DO	CU	2	1	100.0																
A	DO	1S	38	49		49	22.8							25	24						
A	DO	1S	40	115		115	53.5						42	24	50						
A	DO	2S	20	6		6	2.8					6									
A	DO	2S	28	9		9	4.0						9								
A	DO	3S	40	14		14	6.6				14										
A	DO	4S	18	2		2	.9			2											
A	DO	4S	20	2		2	1.0			2											
A	DO	4S	34	7		7	3.2			7											
A	DO	4S	36	5		5	2.5			5											
A	DO	4S	40	6		6	2.7			6											
A	Totals			215		215	4.9			22	14	6	50	49	73						
H	DO	3S	32	7		7	13.3			7											
H	DO	3S	40	10		10	18.4			10											
H	DO	4S	12	6		6	12.0				6										
H	DO	4S	16	8		8	14.9			8											
H	DO	4S	20	13		13	24.8			13											
H	DO	4S	30	9		9	16.7			9											
H	Totals			54		54	1.2			47	6										
Total All Species				4,444	1.7	4,370	100.0			99	70	181	256	402	859	1995	334	174			

TC TSTNDSUM														Stand Table Summary													
														Project BAMBAM													
T07N R06W S31 T00MC														T07N R06W S31 T00MC													
Twp Rge Sec Tract														Type Acres Plots Sample Trees													
07N 06W 31 U1TAKE														00MC 104.00 61 89													
														Page: 1													
														Date: 04/28/20													
														Time: 8:06:28AM													
S Spc	T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals													
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF											
D		18	1	92	161	1.168	2.06	3.51	35.0	146.7		123	514		128	53											
D		19	1	85	141	1.049	2.06	3.15	34.3	130.0		108	409		112	43											
D		20	1	89	93	.946	2.06	1.89	42.0	150.0		79	284		83	30											
D		21	1	88	104	.858	2.06	1.72	50.0	180.0		86	309		89	32											
D		22	1	85	115	.782	2.06	2.35	39.7	170.0		93	399		97	41											
D		23	1	86	115	.716	2.06	2.15	41.0	170.0		88	365		92	38											
D		24	2	89	134	1.314	4.13	3.94	52.8	225.0		208	887		217	92											
D		25	2	86	120	1.211	4.13	3.03	62.4	242.0		189	733		197	76											
D		26	1	86	136	.560	2.06	1.68	64.0	270.0		108	454		112	47											
D		27	3	86	127	1.558	6.19	4.15	71.2	295.0		296	1,225		308	127											
D		28	1	86	115	.483	2.06	1.45	62.7	300.0		91	435		94	45											
D		29	3	87	147	1.350	6.19	4.50	76.3	366.0		343	1,647		357	171											
D		30	4	89	161	1.682	8.26	6.31	79.3	405.3		501	2,557		521	266											
D		31	9	88	149	3.545	18.58	11.82	88.5	431.7	1,046	5,101		1,088	531												
D		32	4	87	156	1.479	8.26	5.18	92.4	467.9		478	2,421		497	252											
D		33	3	84	148	1.043	6.19	3.48	95.7	450.0		333	1,564		346	163											
D		34	8	86	140	2.620	16.52	8.19	103.9	500.4		850	4,097		884	426											
D		35	6	87	154	1.854	12.39	6.49	109.5	574.8		710	3,730		739	388											
D		36	7	85	129	2.045	14.45	5.55	121.3	555.8		673	3,085		700	321											
D		37	3	86	153	.830	6.19	2.77	121.7	649.0		337	1,795		350	187											
D		38	6	86	155	1.573	12.39	5.24	129.2	666.5		677	3,495		704	363											
D		39	1	88	148	.249	2.06	.75	152.0	790.0		113	590		118	61											
D		42	1	91	182	.215	2.06	.86	165.5	987.5		142	848		148	88											
D		44	2	85	155	.391	4.13	1.37	151.4	822.9		207	1,126		216	117											
D		46	1	86	191	.179	2.06	.72	193.5	1097.5		138	785		144	82											
D		51	1	86	146	.146	2.06	.44	255.0	1333.3		111	582		116	61											
D		Totals	74	87	141	29.846	152.79	92.65	87.8	425.7		8,130	39,437		8,455	4,101											
A		19	1	87	97	.874	1.72	1.75	43.5	150.0		76	262		79	27											
A		20	3	86	82	2.367	5.16	3.94	48.4	154.0		191	608		199	63											
A		21	1	87	101	.716	1.72	2.15	35.3	150.0		76	322		79	33											
A		23	1	86	103	.597	1.72	1.79	44.3	183.3		79	328		83	34											
A		26	1	86	99	.467	1.72	.93	80.0	310.0		75	289		78	30											
A		27	1	86	87	.433	1.72	.87	78.5	295.0		68	255		71	27											
A		Totals	8	86	91	5.453	13.77	11.43	49.4	180.7		565	2,065		587	215											
H		10	1	90	17	3.092	1.69	3.09	6.0	20.0		19	62		19	6											
H		11	3	87	24	7.665	5.06	7.67	9.0	26.7		69	204		72	21											
H		12	1	85	43	2.147	1.69	2.15	15.0	40.0		32	86		33	9											
H		14	1	88	54	1.577	1.69	1.58	24.0	60.0		38	95		39	10											
H		15	1	86	41	1.374	1.69	1.37	22.0	50.0		30	69		31	7											
H		Totals	7	87	30	15.855	11.80	15.85	11.8	32.5		188	515		195	54											
Totals			89	87	101	51.154	178.36	119.93	74.1	350.3		8883	42,017		9,238	4,370											

LOGGING PLAN

OF TIMBER SALE CONTRACT NO.

AT-341-2022-W00537-01

BAM BAM

PORTIONS OF SECTION

31 of T7N, R6W, W.M.,

CLATSOP COUNTY, OREGON

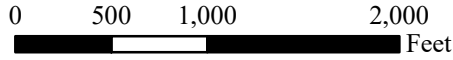
Approximate Net Acres

Unit 1 (MC) = 104

Logging Breakdown

Tractor Cable

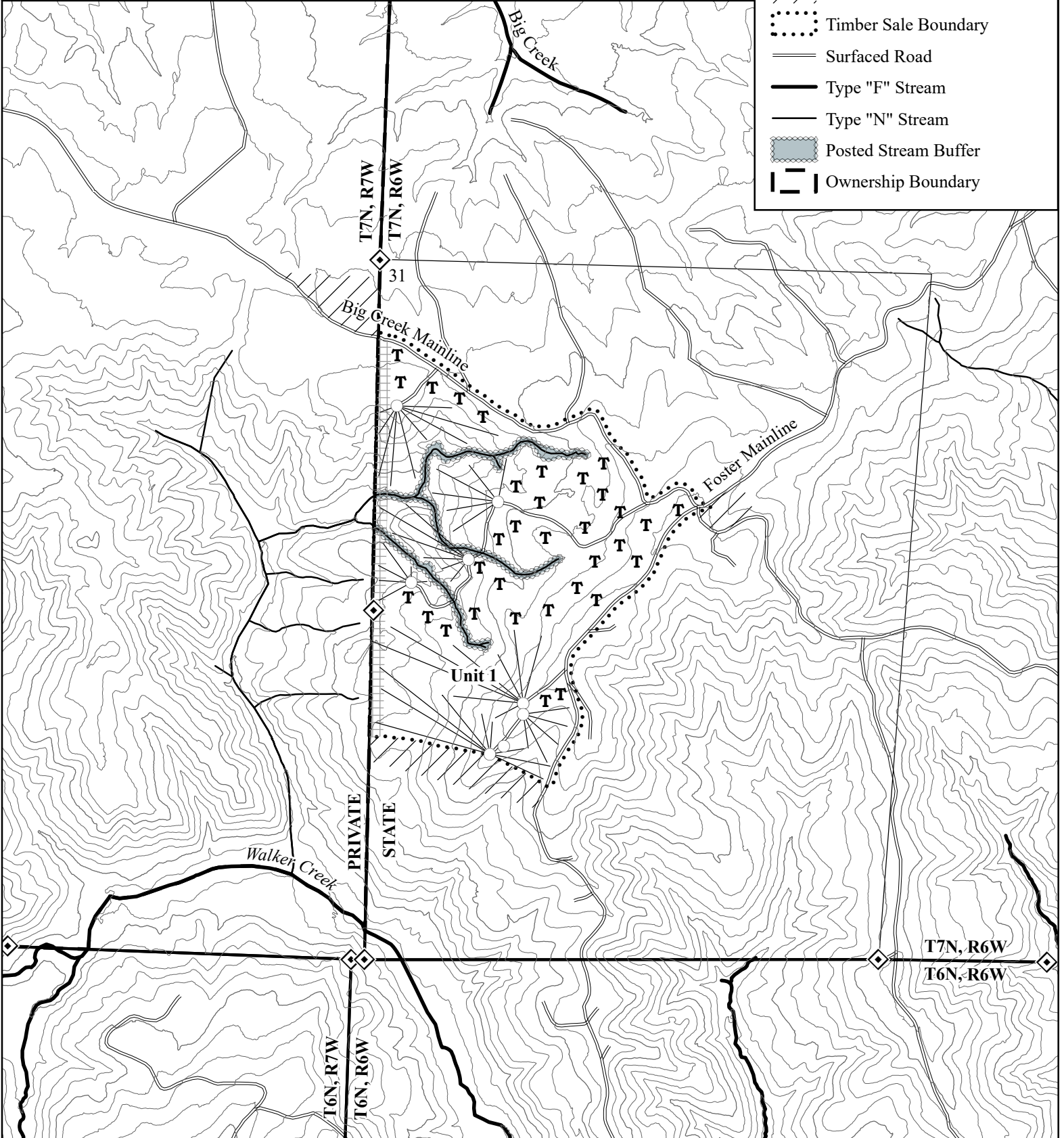
54% 46%



1 inch = 1,000 feet

Legend

- T** Yarding Area - Ground Based
- Existing Landings
- ◇ Survey Monument
- Yarding Area - Cable Based
- ▨ Controlled Felling
- ▨ Reforestation Area
- ⋯ Timber Sale Boundary
- Surfaced Road
- Type "F" Stream
- Type "N" Stream
- ▨ Posted Stream Buffer
- Ownership Boundary



LOGGING PLAN

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AT-341-2022-W00537-01

BAM BAM

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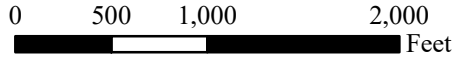
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