



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
The Big Noisy
Sale AT-341-2020-W00743-01

District: Astoria

Date: December 12, 2019

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,083,446.10	\$21,965.28	\$1,105,411.38
		Project Work:	(\$349,899.00)
		Advertised Value:	\$755,512.38



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Timber Description

Location: Units 1, 2, 3, 4, 5, and 6 (R/W) are located in portions of Sections 1, T7N, R7W; Section 36, T8N, R7W and portions of Section 6, T7N, R6W, W.M.; Clatsop County, Oregon

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	17	0	98
Western Hemlock / Fir	20	0	97
Sitka Spruce	18	0	96
Alder (Red)	13	0	97

Volume by Grade	2S	3S & 4S 6"-11"	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	1,025	631	0	0	0	0	1,656
Western Hemlock / Fir	942	399	0	0	0	0	1,341
Sitka Spruce	97	59	0	0	0	0	156
Alder (Red)	0	0	17	22	19	76	134
Total	2,064	1,089	17	22	19	76	3,287

Comments: Pond Values Used: Local Pond Values, November 2019.

Expected Log Markets: Mist, Willamina, Banks, North Plains, Clatskanie, Tillamook, Garibaldi, Forest Grove, Warrenton, Elma, WA, Longview, WA, Vancouver, WA and Chehalis, WA

Western Red Cedar and other Cedars stumpage = pond value - (Douglas-fir) logging cost.
 $\$756.79/\text{MBF} = \$1,000/\text{mbf} - \$243.21/\text{MBF}$

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

Slash and Landing Piling (Includes move-in and pile materials) = \$11,494.00

Line-pulling in Unit 5 = 16 hours X \$45/hour = \$720

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

Ditch Filters:

20 bales of straw @ \$10.00/bale = \$200

8 hours of labor @ \$40/hr = \$320

TOTAL Other Costs (with Profit & Risk to be added): \$14,734.

Other Costs (No Profit & Risk added):

None.

ROAD MAINTENANCE

(See attached Road Maintenance Cost Summary Sheet)

TOTAL Road Maintenance: \$27,697/3,287 MBF = \$8.43/MBF



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Logging Conditions

Combination#: 1
Douglas - Fir 38.00%
Western Hemlock / Fir 38.00%
Sitka Spruce 38.00%
Alder (Red) 38.00%

Logging System: Shovel

Process: Feller Buncher

yarding distance: Medium (800 ft)

downhill yarding: No

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

loads / day: 12

bd. ft / load: 4500

cost / mbf: \$65.52

machines: Feller Buncher w/ Delimber

Combination#: 2
Douglas - Fir 17.00%
Western Hemlock / Fir 17.00%
Sitka Spruce 17.00%
Alder (Red) 17.00%

Logging System: Cable: Medium Tower >40 - <70

Process: Harvester Head 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: 4500

cost / mbf: \$172.90

machines: Log Loader (A)

Forwarder

Harvester

Tower Yarder (Medium)

Combination#: 3
Douglas - Fir 41.00%
Western Hemlock / Fir 41.00%
Sitka Spruce 41.00%
Alder (Red) 41.00%

Logging System: Shovel

Process: Harvester Head Delimbing

yarding distance: Medium (800 ft)

downhill yarding: No

tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

loads / day: 8

bd. ft / load: 3500

cost / mbf: \$190.86

machines: Forwarder

Harvester

Combination#: 4
Douglas - Fir 4.00%
Western Hemlock / Fir 4.00%
Sitka Spruce 4.00%
Alder (Red) 4.00%

Logging System: Cable: Medium Tower >40 - <70

Process: Manual Falling/Delimbing

yarding distance: Medium (800 ft)

downhill yarding: No

tree size: Small / Thinning 10in (90 Bft/tree), 18-20 logs/MBF

loads / day: 6

bd. ft / load: 3700

cost / mbf: \$297.30

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



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Logging Costs

Operating Seasons: 3.00	Profit Risk: 12%
Project Costs: \$349,899.00	Other Costs (P/R): \$14,734.00
Slash Disposal: \$0.00	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$8.43

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	4.0	4.5
Western Hemlock / Fir	\$0.00	3.0	4.5
Sitka Spruce	\$0.00	2.0	4.0
Alder (Red)	\$0.00	2.0	3.5



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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									
\$144.44	\$8.60	\$4.01	\$53.84	\$4.48	\$25.84	\$0.00	\$2.00	\$0.00	\$243.21
Western Hemlock / Fir									
\$144.44	\$8.68	\$4.01	\$72.48	\$4.48	\$28.09	\$0.00	\$2.00	\$0.00	\$264.18
Sitka Spruce									
\$144.44	\$8.77	\$4.01	\$123.50	\$4.48	\$34.22	\$0.00	\$2.00	\$0.00	\$321.42
Alder (Red)									
\$144.44	\$8.68	\$4.01	\$139.78	\$4.48	\$36.17	\$0.00	\$2.00	\$0.00	\$339.56

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$657.33	\$414.12	\$0.00
Western Hemlock / Fir	\$0.00	\$540.24	\$276.06	\$0.00
Sitka Spruce	\$0.00	\$497.49	\$176.07	\$0.00
Alder (Red)	\$0.00	\$503.48	\$163.92	\$0.00



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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	1,656	\$414.12	\$685,782.72
Western Hemlock / Fir	1,341	\$276.06	\$370,196.46
Sitka Spruce	156	\$176.07	\$27,466.92
Alder (Red)	134	\$163.92	\$21,965.28

Gross Timber Sale Value

Recovery: \$1,105,411.38

Prepared By: John Choate

Phone: 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: The Big Noisy
Date: June 25, 2019
By: Ella Salkeld *ES*

MBF: 3,287.00
\$/MBF: \$8.43

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations	Grader 14G	\$875	1	20	\$113	\$3,135
	Dump Truck 12CY	\$184	1	8	\$89	\$896
	Rubber Tired Backhoe	\$875	1	2	\$94	\$1,063
	Vibratory Roller	\$875	1	8	\$87	\$1,571
Final Road Maintenance	Grader 14G	\$875	1	55	\$113	\$7,090
	Dump Truck 12CY	\$184	1	20	\$89	\$1,964
	FE Loader C966	\$875	1	8	\$94	\$1,627
	Vibratory Roller	\$875	1	55	\$87	\$5,660
	Water Truck 2,500 gallon	\$214	1	25	\$101	\$2,739
	Rubber Tired Backhoe-small	\$361	1	10	\$87	\$1,231
	Labor			8	\$45	\$721
Total						\$27,697

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	2.5	7.0	2.8	22

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	10.3	6.9	55
Vibratory Roller	1.5	10.3	6.9	55

Process and compact: All crushed rock roads

East Big Noise Road 5.9 Miles

Bigfoot Road 2.5 Miles

Unnamed Spurs 1.9 Miles

Grade & Process Total = 10.3 Miles

Site Prep/Machine Piling Appraisal

Sale Number: AT-341-2020-W00-01

Sale Name: The Big Noisy

Date: 06/25/2019

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	6.0	10
Hemlock	D	1.8	6.0	8
Conifer/Hardwood	E	1.0	2.0	8
Whole Tree Yarding	F	0.5	0.5	12

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area	
2	MC	F	12	6	\$145	\$870	
3	MC	F	25	13	\$145	\$1,813	
5	MC	F	26	13	\$145	\$1,885	
				In-unit Piling	Sub Total =		\$4,568
Sale Area	Number of Landings to be Piled	Harvested acres per area	Total Cost/Area	Number of In-Unit Piles	Material Cost/Pile	Total Cost/Area	
2	1	12	\$696	7	\$5	\$35	
3	6	25	\$1,450	19	\$5	\$93	
5	10	56	\$3,248	23	\$5	\$115	
*Cost includes separating firewood				Materials	Sub Total =		\$243
Additonal Move-in allowance				Landing Piling	Sub Total =		\$5,394
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		
	\$89.00	\$0		\$145	\$0		
						Sub Total =	\$0
						Grand Total =	\$11,494.00

SUMMARY OF ALL PROJECT COSTS

SALE NAME: The Big Noisy

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length (Sta)</u>	<u>Length (Mile)</u>	<u>Cost</u>	
1A	1.00	0.02	\$1,003.87	
2A to 2B	5.25	0.10	\$5,765.01	
3A	1.00	0.02	\$1,046.88	
4A to 4B and 4C to 4D	10.55	0.20	\$10,556.71	
Move-In			\$828.32	
TOTALS	17.80	0.34		\$19,201

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length (Sta)</u>	<u>Length (Mile)</u>	<u>Cost</u>	
I1 to I2	316.85	6.00	\$74,193.86	
I3 to I4, I5 to I6, and I7 to I8	156.60	2.97	\$42,977.52	
I9 to I10 and I11 to I12	89.15	1.69	\$19,003.27	
I13 to I14	2.40	0.05	\$1,532.28	
I15 to I16 and I17 to I18	15.40	0.29	\$7,768.59	
I19 to I20	10.95	0.21	\$553.24	
Move-In			\$6,583.68	
TOTALS	591.35	11.20		\$152,612

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

<u>Description</u>	<u>Length/Vol.</u>	<u>Cost</u>	
Proj. 3 Road Vacating	0.75	\$542.00	
Proj. 4 Rock Crushing	16,186	\$177,544.00	
TOTAL			\$178,086

GRAND TOTAL **\$349,899**

Compiled By: Cole Hatcher

Date: 10/29/2019

Move In and Maintenance Calculator for Construction and Improvement

SALE NAME: The Big Noisy

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Length/Mile</u>	<u>Cost</u>
1A	1.00	0.02	\$1,003.87
2A to 2B	5.25	0.10	\$5,765.01
3A	1.00	0.02	\$1,046.88
4A to 4B and 4C to 4D	10.55	0.20	\$10,556.71
TOTALS	17.80	0.32	\$18,372.47

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Length/Mile</u>	<u>Cost</u>
I1 to I2	316.85	6.00	\$74,193.86
I3 to I4, I5 to I6, and I7 to I8	156.60	2.97	\$42,977.52
I9 to I10 and I11 to I12	89.15	1.69	\$19,003.27
I13 to I14,	2.40	0.05	\$1,532.28
I15 to I16 and I17 to I18	15.40	0.29	\$7,768.59
I19 to I20	10.95	0.21	\$553.24
TOTALS	591.35	11.20	\$146,028.77

MOVE IN (Construction & Improvement Only)

<u>Equipment</u>	<u>Cost</u>
Vibratory Roller	\$875.00
Dozer (D8)	\$1,581.00
Excavator (C315)	\$905.00
Excavator(C330)	\$1,581.00
Grader 14G	\$875.00
Dump Trucks (12cy x4)	\$736.00
Dump Trucks (20cy x3)	\$645.00
Water Truck (2,500 gal)	\$214.00
TOTAL	\$7,412.00

ROAD MAINTENANCE (Construction & Improvement Only)

	<u>Length/Mile</u>	<u>Cost</u>
-	-	-
TOTAL		

SALE NAME:	The Big Noisy	NEW CONSTRUCTION:	15.80 STATIONS	0.30 MILES
ROAD:	2A to 2B (5+25), 4A to 4B (1+75) and 4C to 4D (8+80)	IMPROVEMENT:	STATIONS	0.00 MILES

CLEARING & GRUBBING						
	Method	Acres/amount	X	Rate	=	Cost
1A	Scatter outside of right of way	0.10	X	\$ 1,503	=	\$150.30
2A to 2B	Scatter outside of right of way	0.54	X	\$ 1,503	=	\$811.62
3A	Scatter outside of right of way	0.10	X	\$ 1,503	=	\$150.30
4A to 4B and 4C to 4D	Scatter outside of right of way	1.10	X	\$ 1,503	=	\$1,653.30
SUB TOTAL FOR CLEARING & GRUBBING						\$2,766

EXCAVATION						
	Material	Cy/amount	x	Rate	=	Cost
1A	Landing construction (\$/ldg)	1	x	\$438.00	=	\$438.00
2A to 2B	Common drift (≤ 50% slopes) (\$/cy)	375	x	\$2.02	=	\$758.50
	Landing construction (\$/ldg)	1.00	x	\$438.00	=	\$438.00
	Embankment compaction (\$/cy)	385	x	\$0.79	=	\$303.08
	Cut slope rounding (\$/sta)	2.00	x	\$49.00	=	\$98.00
3A	Landing construction (\$/ldg)	1.00	x	\$438.00	=	\$438.00
4A to 4B	Drift earth up to 200' (\$/sta)	1.88	x	\$214.00	=	\$401.25
	Landing construction (\$/ldg)	1	x	\$438.00		\$438.00
4C to 4D	Common drift (≤ 50% slopes) (\$/cy)	558	x	\$2.02	=	\$1,127.93
	Landing construction (\$/ldg)	1	x	\$438.00	=	\$438.00
	Embankment compaction (\$/cy)	571	x	\$0.79	=	\$449.42
	Cut slope rounding (\$/sta)	1.00	x	\$49.00	=	\$49.00
SUB TOTAL FOR EXCAVATION						
						\$5,377

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
4C to 4D									
2+60	18" CPP	35	\$21.95	\$768.25					
Other/miscellaneous:					Description	Quantity	Rate	Cost	
Culvert stakes & markers:						1	\$23.00	\$23.00	
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION									
								Subtotal of Clearing, Exc., Culv.	\$8,934
									\$791

SURFACING									
Subgrade prep:				Description			Stations/ amount	Rate/ sta./amt	Cost
1A, 2A to 2B, 3A, 4A to 4B, and 4C to 4D				Grade, Shape and Ditch 16'					
				Subgrade Compaction					
								x	\$27.91
								x	\$22.69
								x	\$358.50

ROAD SEGMENT 1A									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Junction Rock	4"-0" Crushed	N/A	N/A	Junctions	22	Junctions	1.00	22	\$96
Landings	6"-0" Pit-Run	N/A	N/A	Landing	66	Landings	1	66	\$258
Total Rock for Road Segment:							88		\$354

ROAD SEGMENT 2A to 2B									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 5+25	10	station	63	stations	5.25	331	\$1,445
Junction Rock	1 1/2"-0" Crushed	0+00	N/A	Junctions	22	Junctions	1.00	22	\$96
Curve Widening	4"-0" Crushed	4+35	N/A	load	11	loads	3	33	\$144
Traction Rock	3/4"-0" Crushed	0+50 to 4+00	2	stations	13	stations	3.50	46	\$199
Turnout	4"-0" Crushed	1+75	10	TO	33	TO's	1	33	\$144
Turnaround	4"-0" Crushed	3+60	10	TA	33	TA's	1	33	\$144
Landings	6"-0" Pit-Run	5+25	N/A	Landing	77	Landings	1	77	\$301
Total Rock for Road Segment:							574		\$2,473

ROAD SEGMENT 3A									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Junction Rock	4"-0" Crushed	N/A	N/A	Junctions	22	Junctions	1.00	22	\$96
Landings	6"-0" Pit-Run	N/A	N/A	Landing	77	Landings	1	77	\$301
Total Rock for Road Segment:							99		\$397

ROAD SEGMENT 4A to 4B									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 1+00	10	station	63	stations	1.00	63	\$275
Curve Widening	4"-0" Crushed	0+00	10	load	11	loads	1.00	11	\$48
Turnaround	4"-0" Crushed	0+75	10	TA	33	TA's	1	33	\$144
Base Rock	6"-0" Pit-Run	1+00 to 1+75	12	station	75	stations	0.75	56	\$220
Landings	6"-0" Pit-Run	1+75	N/A	Landing	77	Landings	1	77	\$301
Total Rock for Road Segment:							240		\$988

ROAD SEGMENT		4C to 4D		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	4C to 4D	8+80 Number of				
Junction Rock	4"-0" Crushed	0+00	N/A	Junctions	22	Junctions	1.00	22	\$4.37	\$96
Base Rock	4"-0" Crushed	0+00 to 8+05	10	station	63	stations	8.05	507	\$4.37	\$2,215
		2+35 to 2+75 & 5+00 to 5+60								
Curve Widening	4"-0" Crushed	5+60	10	load	11	loads	2	22	\$4.37	\$96
Turnout	4"-0" Crushed	4+00	10	TO	33	TO's	1	33	\$4.37	\$144
Turnaround	4"-0" Crushed	7+00	10	TA	33	TA's	1	33	\$4.37	\$144
Base Rock	6"-0" Pit-Run	8+05 to 8+80	12	station	75	stations	0.75	56	\$4.37	\$246
Landings	6"-0" Pit-Run	8+80	N/A	Landing	77	Landings	1	77	\$3.91	\$301
Total Rock for Road Segment:		4C to 4D						750		\$3,243
Processing:										
Description										
Water, Process & Compact Base Rock (4"-0"):										
Water, Process & Compact Base Rock (Traction Rock):										
Spread & Compact Pit Run Rock (6"-0 Pit-run):										

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: The Big Noisy NEW CONSTRUCTION: STATIONS 0.00 MILES

11 to 12 (316.85), 13 to 14 (138.70), 15 to 16 (12.35),
 17 to 18 (5.6), 19 to 110 (62.80), 111 to 112 (26.35),
 113 to 114 (2.4), 115 to 116 (7.50), 117 to 118 (7.9),
 and 119 to 120 (10.95) IMPROVEMENT: 591.35 STATIONS 11.20 MILES

ROAD:
POINTS:

CLEARING & GRUBBING		Acres/amount	x	Rate	=	Cost
Method						
I13 to I14	Scatter outside of right of way	0.22	x	\$1,503.00	=	\$330.66
I17 to I18	Scatter outside of right of way	0.73	x	\$1,503.00	=	\$1,097.19
SUB TOTAL FOR CLEARING & GRUBBING						\$1,428

EXCAVATION		Cy/amount	x	Rate	=	Cost
Material						
I1 to I2	Clean Inlets/Outlets w/315 (\$/hr)	7.0	x	\$114.00	=	\$798.00
267+15	Install Dissipator w/315 (\$/dissipator)	4.0	x	\$203.00	=	\$812.00
	Remove roadside reprod w/315 (\$/hr)	2.0	x	\$114.00	=	\$228.00
	Install Rock Filters w/315 (\$/hr)	3.5	x	\$114.00	=	\$399.00
	Remove tree on culvert outlet w/315 (\$/hr)	1.0	x	\$114.00	=	\$114.00
I3 to I4	Clean Inlets/Outlets w/315 (\$/hr)	1.5	x	\$114.00	=	\$171.00
19 to I10	Install Dissipator w/315 (\$/dissipator)	2.0	x	\$203.00	=	\$406.00
	Install Rock Filters w/315 (\$/hr)	0.5	x	\$114.00	=	\$57.00
I17 to I18	Remove tank trap w/315 (\$/hr)	1.0	x	\$114.00	=	\$114.00
I17 to I18	Clean Inlets/Outlets w/315 (\$/hr)	1.0	x	\$114.00	=	\$114.00
	Remove existing waterbars w/315 (\$/hr)	1.0	x	\$114.00	=	\$114.00
SUB TOTAL FOR EXCAVATION						\$3,327

SURFACING													
Subgrade prep:		Description		Stations/ amount		Rate/ sta./amt		Cost					
All "I" segments		Grade, Shape and Ditch 16"		591.35		x		\$27.91					
All "I" segments		Subgrade Compaction		591.35		x		\$22.69					
I7 to I8, I9 to I10 (58+60 to 62+80), I15 to I16		Sod removal w/14G grader (\$/sta)		17.30		x		\$26.20					
I7 to I8, I9 to I10 (58+60 to 62+80), I15 to I16		Scatter Sod w/315 (\$/sta)		17.30		x		\$17.07					
ROAD SEGMENT		11 to I2		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)		Rate/ Sta./ amt.		Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	11 to I2		Number of	stations	107.65	3,337	\$4.37	\$14,578		
				Volume (CY) per station	culvert								
Base Rock	3/4"-0" crushed	0+00 to 107+65 52+80, 69+45, 87+80, 126+10, 186+10, 250+20	5	station	31	culverts	6	6	198	\$4.37	\$865		
Culvert Bedding and Backfill	3/4"-0" crushed	3+05, 21+05, 41+80, 57+55, 67+00, 75+40, 86+10, 97+15	N/A	culvert	33	turnouts	8	8	176	\$4.37	\$769		
Turnouts	3/4"-0" crushed	7+10, 30+50, 51+80, 64+30, 106+20	5	turnout	22	junctions	6	6	132	\$4.37	\$577		
Junctions	3/4"-0" crushed	N/A	5	junction	22	loads	2	2	22	\$4.37	\$96		
Curve Widening Surface	3/4"-0" crushed	107+65 to 316+85	2	load	11	stations	209.2	209.2	2,720	\$4.37	\$11,880		
Base Rock	1 1/2"-0 crushed	122+60, 132+10, 155+00, 161+20, 172+10, 197+25, 215+20, 220+50, 239+15	2	station	13	turnouts	9	9	99	\$4.37	\$432		
Turnouts	1 1/2"-0 crushed	108+45, 138+25, 170+50, 186+85, 206+50, 213+00, 250+20, 292+80	2	turnout	11	junctions	8	8	88	\$4.37	\$384		
Junctions	1 1/2"-0 crushed	281+05, 307+85	2	junction	11	turnaround	2	2	44	\$4.37	\$192		
Turnaround	1 1/2"-0 crushed	N/A	2	turnaround	22	loads	4	4	44	\$4.37	\$192		
Curve Widening Surface	1 1/2"-0 crushed	267+15, 316+85	2	load	11	Landings	2	2	88	\$3.91	\$344		
Landings	6"-0" Pit-Run	74+15, 184+40, 219+50, 261+65	N/A	Landing	44	(see instructions)	loads	5	55	\$9.23	\$507		
Culvert Energy Dissipator	24"-6" rip rap	44+00, 71+20, 74+15, 241+85, 244+00, 245+25, 248+20	N/A	dissipator	11	3 filter series	7	7	77	\$3.91	\$301		
Rock Ditch Filters	6"-4" pit run	N/A	N/A	3 filter series	11	3 filter series	7	7	77	\$3.91	\$301		
Total Rock for Road Segment:								7,080		\$31,119			

ROAD SEGMENT				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				
Base Rock	1 1/2"-0" crushed	0+00 to 129+00	5	station	31	stations	129	3,999	\$4.37	\$17,469
Culvert Bedding and Backfill	3/4"-0" crushed	59+90, 89+90, 104+25, 116+40, 121+70	N/A	culvert	33	culverts	5	165	\$4.37	\$721
Turnouts	1 1/2"-0 crushed	7+45, 20+45, 37+35, 43+40, 75+30, 103+90, 112+50, 121+30	5	turnout	22	turnouts	8	176	\$4.37	\$769
Junctions	1 1/2"-0 crushed	0+00, 56+85, 67+50, 71+15, 77+65, 90+20, 124+65	5	junction	22	junctions	7	154	\$4.37	\$673
Culvert Energy Dissipator	24"-6" rip rap	17+30, 116+40	N/A	dissipator	11	dissipators	2	22	\$9.23	\$203
Curve Widening Surface	1 1/2"-0 crushed	N/A	5	load	11	loads	2	22	\$4.37	\$96
Rock Ditch Filters	6"-4" pit run	52+70	N/A	3 filter series	11	3 filter series	1	22	\$3.91	\$86
Total Rock for Road Segment:				13 to 14				4,560		\$19,931
ROAD SEGMENT				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				
Base Rock	4"-0" crushed	0+00 to 4+80	5	station	31	stations	4.8	149	\$4.37	\$650
Junctions	1 1/2"-0" crushed	0+00	5	junction	22	junctions	1	22	\$4.37	\$96
Total Rock for Road Segment:				15 to 16				171		\$746
ROAD SEGMENT				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				
Base Rock	4"-0" crushed	0+00 to 5+60	5	station	31	stations	5.6	174	\$4.37	\$758
Junctions	4"-0" crushed	0+00	5	junction	11	junctions	1	11	\$4.37	\$48
Turnouts	4"-0" crushed	3+40	5	turnout	11	turnouts	1	11	\$4.37	\$48
Landings	6"-0" pit run	5+60	N/A	Landing	44	Landings	1	44	\$3.91	\$172
Total Rock for Road Segment:				17 to 18				240		\$1,027
ROAD SEGMENT				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				
Base Rock	1 1/2"-0" crushed	0+00 to 48+30	2	station	13	stations	48.3	628	\$4.37	\$2,743
Junctions	1 1/2"-0 crushed	0+00, 21+75	2	junction	22	junctions	1	22	\$4.37	\$96
Turnouts	1 1/2"-0 crushed	5+75, 38+10	2	turnout	11	turnouts	2	22	\$4.37	\$96
Base Rock	4"-0" crushed	48+30 to 62+80	5	station	31	stations	14.5	450	\$4.37	\$1,964
Turnaround	4"-0" crushed	50+40	5	turnaround	22	turnaround	1	22	\$4.37	\$96
Culvert Bedding	3/4"-0" crushed	35+25, 58+60	N/A	culvert	33	culverts	2	66	\$4.37	\$288
Total Rock for Road Segment:				19 to 110				1,209		\$5,283
ROAD SEGMENT				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				
Leveling Rock	4"-0" crushed	0+00 to 26+35	N/A	load	11	loads	31	341	\$4.37	\$1,490
Junctions	4"-0" crushed	0+00, 5+50, 23+50	4	junction	22	junctions	3	66	\$4.37	\$288
Turnouts	4"-0" crushed	16+30	4	turnout	11	turnouts	2	22	\$4.37	\$96
Total Rock for Road Segment:				111 to 112				429		\$1,874

ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta. 0+00 to 2+40 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I13 to I14					
				Volume (CY) per station	junctions				
Base Rock Junctions	4'-0" crushed 1 1/2"-0 crushed	0+00 to 2+40 0+00	10 2	station junction	63 22	2.4 1	151 22	\$4.37 \$4.37	\$661 \$98
Landings	6'-0" pit run	2+40	N/A	Landing	44	1	44	\$3.91	\$172
Total Rock for Road Segment:				I13 to I14			217		\$929
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta. 0+00 to 7+50 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I15 to I16					
				Volume (CY) per station	junctions				
Base Rock Junctions	4'-0" crushed 1 1/2"-0 crushed	0+00 to 7+50 0+00	4 2	station junction	25 11	7.5 1	188 11	\$4.37 \$4.37	\$819 \$48
Culvert Bedding and Backfill Junctions	3/4'-0" crushed 4'-0" crushed	4+50 5+40	N/A 4	culvert junction	33 11	1 1	33 11	\$4.37 \$4.37	\$144 \$48
Total Rock for Road Segment:				I15 to I16			243		\$1,059
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta. 0+00 to 7+90 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I17 to I18					
				Volume (CY) per station	turnouts				
Base Rock Culvert Bedding and Backfill Turnouts	4'-0" crushed 3/4'-0" crushed 4'-0" crushed	0+00 to 8+15 4+00, 4+85 6+15, 8+15	4 N/A 4	station culvert turnout	25 33 11	7.9 2 2	198 66 22	\$4.37 \$4.37 \$4.37	\$863 \$288 \$96
Total Rock for Road Segment:				I17 to I18			286		\$1,247
Processing:									
				Description		No.sia	Rate/sta	Cost	
				Base Rock Water, Process & Compact:			69.05	\$63.48	\$4,383
				Traction Rock Water, Process & Compact			494.15	\$63.48	\$31,369
SUB TOTAL FOR SURFACING									
24"-12" rr	24"-6" rr	12"-6" rr	6"-4" pr	6"-0"pr	4"-0" crushed	1 1/2"-0" crushed drainrock	2"-1"	Total	
	77		99	176	1,814	8,073	4,195	14,434	\$129,638
SPECIAL PROJECTS									
				Description		Cy/Amount	Rate	Cost	
				pit-run development				\$0.00	
				riprap development				\$0.00	
SUB TOTAL FOR SPECIAL PROJECTS									
Subtotal of Surfacing & Spec. Proj. \$129,638									
Subtotal of Clearing, Exc.,Culv. \$16,391									
GRAND TOTAL \$146,029									

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTSPROJECT NO. AT-341-2020-W00743-01Timber Sale Name: The Big Noisy

Quarry: Big Noise Quarry
 Location: SW 1/4, SE 1/4, Sec. 14, T4N, R9W
 County: Clatsop
 By: Cole Hatcher
 Date: 10/29/2019

Swell: _____
 Shrink: 16%
 Loading Hopper: Yes

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR		4,241	4,241
1-1/2"-0"	5%	CR		8,095	8,095
4"-0"	5%	CR		3,012	3,012
6"-0"		PR		761	761
24"-6"		RR		77	77
36"		RR			
TOTAL CUBIC YARDS OF ROCK:				16,186	16,186

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Dump Trucks		\$184		Off Highway Dump Truck	1	\$622	\$622
Screening Plants	2	\$622	\$1,244				
D8 Cat		\$1,581		Loading Hopper	1	\$622	\$622
D6 Cat	1	\$875	\$875	Loader	1	\$905	\$905
Drill & Compressor		\$1,581					
Powder		\$395		3 Stage Crusher	1	\$3,250	\$3,250
Excavator	1	\$1,581	\$1,581				

SUB TOTAL FOR MOBILIZATION

\$9,099

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,866	\$3,866
Screening Plants	2	\$330	\$660
Loading Hopper	1	\$330	\$330
Original Calibration	1	\$612	\$612

SUB TOTAL FOR SET UP COSTS

\$5,468

TOTAL MOBILIZATION & SET UP COSTS**\$14,567****2) CLEARING & GRUBBING**

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Clear, Pile & Burn Slash and Stumps (1 exc.)	8.0	hr	\$3,038	\$24,304
exc)				
Move-in Fire Truck for the burning of the Clearing Debris	1.0	ea	\$101	\$101

TOTAL CLEARING & GRUBBING COSTS**\$24,405**

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread)	1,000	bcy	\$2.60	\$2,600
Rock Source Exploring	6	hr	\$175.00	\$1,050

TOTAL EXCAVATION COSTS

\$3,650

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping	80%	12,949	\$2.20	\$28,487
crushed	15,348	95%	Drill & shoot			\$2.30	
pit run	761	5%	Oversize red	20%	3,222	\$5.80	\$18,686
rip rap	77	0%	Other				
Total	16,186						
reject	555	3.4%					

TOTAL ROCK DEVELOPMENT COSTS

\$47,174

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	2	\$507.00	\$1,014
Calibrate			
Test	8	\$57.30	\$458
Test			

TOTAL CALIBRATION & TESTING COSTS

\$1,472

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	15,903	\$0.90	\$14,307
Shot Rock Handling(\$/hr)	120	\$155.00	\$18,600

TOTAL FEEDING & LOADING COSTS

\$32,907

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed	4,241	3 stage w/s	110	\$3.54	\$14,998
1-1/2"-0"	crushed	8,095	3 stage w/s	120	\$3.24	\$26,241
4"-0"	crushed	3,012	2 stage w/s	140	\$2.48	\$7,465

TOTAL ROCK CRUSHING COSTS

\$48,704

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader		\$90.00	
Excavator		\$138.00	

SUB TOTAL

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

HAUL & STOCKPILE		# of	CU. YDS.	RATE	COST
STOCKPILE LOCATION	SIZE				
1.		2			
2.					
3.					
4.					
5.		2			
6.					

SUB TOTAL

TOTAL STOCKPILING COSTS

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	\$2,099
\$3.78 /CY 555 CY	
Final Quarry Dev., Access Road Const., Waterbarring, Drainage,	\$2,565
Block Quarry Access	

TOTAL MISCELLANEOUS COSTS \$4,664

10) GRAND TOTAL: \$177,544

\$/Cubic Yard \$11.57

Footnotes:

CRUSHED ROCK COST

SALE NAME: The Big Noisy
PROJECT: AT-341-2020-W00743-01
Stockpile: Big Noise Quarry

MATERIAL: 3/4"-0", 1 1/2"-0" and 4"0"

DATE: 10/29/2019
BY: Cole Hatcher

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	316.85	6,860				1.50	1.20	0.20	0.10	3.00	
I3 to I4	129.00	4,516				1.80	1.30	0.30	0.10	3.50	
I5 to I6	4.80	171				2.00	2.00	0.50	0.15	4.65	
I7 to I8	5.60	196				2.00	2.00	0.55	0.15	4.70	
I9 to I10	62.80	1,209				0.60	0.50	0.20	0.10	1.40	
I11 to I12	26.35	339				1.00	0.90	0.20	0.10	2.20	
I13 to I14	2.40	53				0.10	0.05	0.05	0.10	0.30	
I15 to I16	7.50	288				0.80	0.60	0.30	0.10	1.80	
I17 to I18	7.90	292				0.80	0.60	0.30	0.20	1.90	
2A to 2B	5.25	497						0.10	0.10	0.20	
4A to 4B	1.75	107				0.8	0.6	0.4	0.20	2.00	
4C to 4D	8.80	595				0.6	0.7	0.6	0.20	2.10	
1A	1.00	22				2.0	2.0	0.5	0.2	4.65	
3A	1.00	22				0.8	0.6	0.3	0.1	1.80	

ROCK HAUL:

Truck type:	<u>D20</u>	No. trucks:	<u>3</u>
Delay min.:	<u>8</u>	Efficiency:	<u>85%</u>

Ave haul:	\$3.11	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

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

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

Production: cy/day = 1,177

CRUSHED ROCK HAUL COSTS 15,167 cy @ \$4.37 /cy

PIT RUN ROCK COST

SALE NAME:	The Big Noisy
PROJECT:	AT-341-2020-W00743-01
QUARRY:	Big Noise Quarry

MATERIAL: Pit Run

DATE: 10/29/2019
BY: Cole Hatcher

[illegible]

ROCK HAUL:

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

Ave haul:	\$2.58	/cy
Load:	\$0.48	/cy
Spread:	\$0.84	/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 = 978

PIT RUN ROCK HAUL COSTS

761 cy @ \$3.91 /cy

RIP RAP ROCK COST

SALE NAME:	The Big Noisy
PROJECT:	AT-341-2020-W00743-01
QUARRY:	Big Noise Quarry

MATERIAL: Rip Rap

DATE: 10/29/2019
BY: Cole Hatcher

[illegible]

ROCK HAUL:

Truck type:	<u>D12</u>	No. trucks:	<u>1</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

Ave haul:	\$3.82	/cy
Load:	\$5.41	/cy
Develop:	<u>0</u>	/cy

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

Production: cy/day = 165

RIP RAP ROCK HAUL COSTS 77 cy @ \$9.23 /cy

Note: Rip rap development has been accounted for within the crushing appraisal.

Timber Sale	
Vacating Costs (Total)	
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000
11	1100
12	1200
13	1300
14	1400
15	1500
16	1600
17	1700
18	1800
19	1900
20	2000
21	2100
22	2200
23	2300
24	2400
25	2500
26	2600
27	2700
28	2800
29	2900
30	3000
31	3100
32	3200
33	3300
34	3400
35	3500
36	3600
37	3700
38	3800
39	3900
40	4000
41	4100
42	4200
43	4300
44	4400
45	4500
46	4600
47	4700
48	4800
49	4900
50	5000
51	5100
52	5200
53	5300
54	5400
55	5500
56	5600
57	5700
58	5800
59	5900
60	6000
61	6100
62	6200
63	6300
64	6400
65	6500
66	6600
67	6700
68	6800
69	6900
70	7000
71	7100
72	7200
73	7300
74	7400
75	7500
76	7600
77	7700
78	7800
79	7900
80	8000
81	8100
82	8200
83	8300
84	8400
85	8500
86	8600
87	8700
88	8800
89	8900
90	9000
91	9100
92	9200
93	9300
94	9400
95	9500
96	9600
97	9700
98	9800
99	9900
100	10000

Work Description	Stations	Pump	C330	C315	D24 trk	D10/12 trk	D-8	Labor	Straw-bales	Seed-lbs
V1 to V2	0.75	0.00	0.00	3.50	0.00	0.00	0.00	2.00	4	2.5
Total Quantity (Hours)		0.00	0.00	3.50	0.00	0.00	0.00	2.00	4.00	2.50
Rates		\$10.00	\$155.00	\$114.00	\$127.00	\$99.00	\$158.00	\$45.00	\$12.06	\$1.80
Total Dollars		\$0	\$0	\$399	\$0	\$0	\$0	\$90	\$48	\$5

Total Cost		\$542
Total Stations	0.75	
Total Miles	0.01	

Timber Sale
Vacating Costs V1 to V2

Work Description	Station	Pump	C330	C315	D24 trk	D10/12 trk	D-8	Labor	Straw- bales	Seed-lbs
V1 to V2										
Walk equipment to back end of project				0.50						
V1:	0+00			0.00				0.00	0	0
Remove culvert, waterbar	0+30			2.00				2.00	4	2.5
V2: Road block/ Waterbar	0+75			1.00				0.00	0	0
Total Quantity (Hours)		0.00	0.00	3.50	0	0	0	2	4	2.5
Rates		\$10.00	\$155.00	\$114.00	\$127.00	\$99.00	\$158.00	\$45.00	\$12.06	\$1.80
Total Dollars		\$0	\$0	\$399	\$0	\$0	\$0	\$90	\$48	\$5

Total Cost

\$542

THE BIG NOISY Timber Sale
FY 2020
TIMBER CRUISE REPORT

1. **Sale Unit Location:** Units 1, 2, 3, 4, 5, and 6 are located in portions of Section 1, T7N, R7W, Section 36, T8N, R7W and portions of section 6, T7N, R6W, W.M., Clatsop County, Oregon
2. **Fund Distribution: Fund:** BOF 100% CSL 0%
Tax Code: 1-02 91.01%
1-03 8.99%
3. **Sale Acreage by Unit:**

Unit	Harvest Type	Gross Acres	Green Tree Area	Stream Buffer Acres	New Const.	Existing R/W	Net Acres
1	PC	42	0	5	0	4	33
2	MC	12	0	< 1	< 1	0	12
3	MC	32	4	0	0	3	25
4	PC	50	0	5	1	2	42
5	MC	66	2	4	0	4	56
6 R/W	R/W	1	0	0	0	0	1
Total		203	6	14	1	13	169

4. **Cruisers and Cruise Dates:** Unit 1 was cruised on 12/5/19 by Michele Huffman, John Choate, Bryce Rogers, and Justin Bush. Units 2 and 5 were cruised by Michele Huffman, John Choate, and Justin Bush on 12/4/2019 and 12/5/2019. Unit 4 was cruised on 11/21/2019 and 11/22/2019 by Michele Huffman and Kevin Berry. Unit 3 was cruised on 11/21/2019 by John Choate and Avery Petersen.
5. **Cruise Method and Computation:** Unit 1 and Unit 4 are partial cut units. A variable plot cruise with a 27.78 BAF was used in this unit. These plots were located on a 3 chain by 4 chain grid, with a count/grade plot ratio of 2:1. A total of 69 plots were sampled with 24 grade plots and 45 count plots.

Unit 2 is a modified clearcut unit. A variable plot cruise with a 40 BAF was used in this unit. These plots were located on a 3 chain by 2 chain grid, with a count/grade plot ratio of 1:0. A total of 20 plots were sampled with 20 grade plots and 0 count plots.

Unit 3 is a modified clearcut unit. A variable plot cruise with a 40 BAF was used in this unit. These plots were located on a 2 chain by 3 chain grid, with a count/grade plot ratio of 2:1. A total of 43 plots were sampled with 14 grade plots and 29 count plots.

Unit 5 is a modified clearcut unit. A variable plot cruise with a 33.61 BAF was used in this unit. These plots were located on a 3 chain by 4 chain grid, with a count/grade plot ratio of 2:1. A total of 50 plots were sampled with 16 grade plots and 34 count plots.

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

<u>UNITS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1 and 4	BIGNOISY	A14	14PC, TAKE, LV
2	BIGNOISY	A2	O2MC and TAKE
3	BIGNOISY	A3MC	O3MC and TAKE
5	BIGNOISY	A5MC	O5MC and TAKE
6 (R/W)	BIGNOISY	A6RW	RW

6. **Timber Description:** Unit 1 and Unit 4 is an approximately 40 year old stand of Douglas-fir and western hemlock. The average take Douglas-fir tree size for harvest is approximately 14 inches DBH, with an average merchantable tree height of 44 feet. The average take hemlock tree size is approximately 15 inches DBH, with an average merchantable tree height of 39 feet. The average take red alder tree size is approximately 11 inches DBH, with an average merchantable tree height of 26 feet. The average volume per acre to be harvested (net) is approximately 5.5 MBF. All trees were cruised to a merchantable top of 7 inch DOB or 40% fp.

Unit 2 is an approximately 78 year old stand of Douglas-fir and western hemlock. The average take Douglas-fir tree size for harvest is approximately 22 inches DBH, with an average merchantable tree height of 79 feet. The average take hemlock tree size is approximately 19 inches DBH, with an average merchantable tree height of 57 feet. The average take red alder tree size is approximately 13 inches DBH, with an average merchantable tree height of 39 feet. The average volume per acre to be harvested (net) is approximately 43 MBF. All trees were cruised to a merchantable top of 7 inch DOB or 40% fp.

Unit 3 is an approximately 55 year old stand of Douglas-fir and western hemlock. The average take Douglas-fir tree size for harvest is approximately 19 inches DBH, with an average merchantable tree height of 58 feet. The average take hemlock tree size is approximately 24 inches DBH, with an average merchantable tree height of 59 feet. The average take Sitka spruce tree size is approximately 30 inches DBH, with an average merchantable tree height of 63 feet. The average volume per acre to be harvested (net) is approximately 24 MBF. All trees were cruised to a merchantable top of 7 inch DOB or 40% fp.

Unit 5 is an approximately 82 year old stand of Douglas-fir and western hemlock. The average take Douglas-fir tree size for harvest is approximately 20 inches DBH, with an average merchantable tree height of 68 feet. The average take hemlock tree size is approximately 21 inches DBH, with an average merchantable tree height of 80 feet. The average take Sitka spruce tree size is approximately 17 inches DBH, with an average merchantable tree height of 40 feet. The average take red alder tree size is approximately 15 inches DBH, with an average merchantable tree height of 38 feet. The average volume per acre to be harvested (net) is approximately 31 MBF. All trees were cruised to a merchantable top of 7 inch DOB or 40% fp.

Unit 6 (R/W) contains portions of 45 to 78 year old stands of Douglas-fir and western hemlock. The average take Douglas-fir tree size for harvest is approximately 18 inches DBH, with an average merchantable tree height of 58 feet. The average take hemlock tree size is approximately 17 inches DBH, with an average merchantable tree height of 48 feet. The average volume per acre to be harvested (net) is approximately 26 MBF. All trees were cruised to a merchantable top of 7 inch DOB or 40% fp.

Cedar is a reserved species.

7. **Statistical Analysis:** (See also "Statistics Reports," attached.)

Unit	Target CV	Target SE%	Actual CV	Actual SE%
1 and 4	30	15	38.2	4.6
2	55	10	30.4	7.0
3	60	12	44.8	6.8
5	50	11	46.6	6.6

The statistics are for all units and Take and Leave trees combined based on Net BF/Acre.

8. **Take Volumes by Species and Log Grades for All Sale Units by MBF:** (See "Species, Sort Grade-Board Feet Volumes (Project)", "Statistics (Project)", and the "Stand Table Summary" attached). Volumes do not include "in-growth." The majority of defect and breakage was taken out during the cruise.

Conifer

Species	DBH	Net Vol. MBF	2 Saw	3Saw	4 Saw	% D&B	% Sale
Douglas-fir	17	1,656	1,025	531	100	1.6	50%
W. Hemlock	20	1,341	942	338	61	1.3	41%
Sitka Spruce	18	156	97	42	17	0	5%

Hardwoods

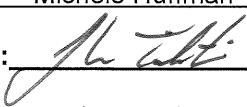
Species	DBH	Net Vol. MBF	12"+	10-12"	8-10"	6-8"	% D&B	% Sale
Red Alder	13	134	19	22	17	76	1.7	4%

TOTAL NET VOLUME

3,287

9. **Prepared by:** Michele Huffman

Date: 12/11/19

10. **Approved by:** 

Date: 12/17/19

11. **Attachments:** Cruise Plans & Maps (13)
Species, Sort, Grade Report (6)
Statistics Reports (6)
Stand Table Summary Report (2)
Log Stock Table Report MBF (3)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: The Big Noisy **Area** 1 & 4

Harvest Type: (PC) Partial Cut

Approx. Cruise Acres: 75 **Estimated CV%** 30 Net BF/Acre **SE% Objective** 15 Net BF/Acre

Planned Sale Volume : 462 MBF **Estimated Sale Area Value/Acre:** \$2,100/Acre
(6 MBF/Ac. @ \$350/Acre)

A. Cruise Goals: (a) Grade minimum 80 conifer and 10 hardwood trees
(b) Sample 69 cruise plots (24 grade/ 45 count); (c) Other goals (Determine "automark"
thinning standards; X Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 27.78 for conifers and hardwoods (Full point)
Cruise Line Directions Area 1: 100°/280° Area 4: 50°/230°
Cruise Line Spacing 4 (chains) 264 (Feet)
Cruise Plot Spacing 3 (chains) 198 (Feet)
Grade/Count Ratio 1:2

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.

DO NOT RECORD 12', 22' and 32' (for Hardwoods).

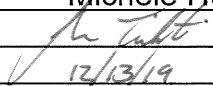
DO NOT RECORD 22' LENGTHS.

All hardwood will be measured to a G, or as appropriate.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" 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" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for conifer trees > 18" 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). For "leave trees" in partial cuts, or for marked "wildlife 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
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) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
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: Michele Huffman
Approved by: 
Date: 12/13/19

Legend

- Count Plot
- Grade Plot
- Ownership Boundary
- Reforestation Area
- RightofWayBndry
- Nonbuffered Stream
- Buffered Stream
- Existing Surfaced Road
- New Construction
- Fish
- Nonfish
- Unknown
- TSB
- Survey Monument

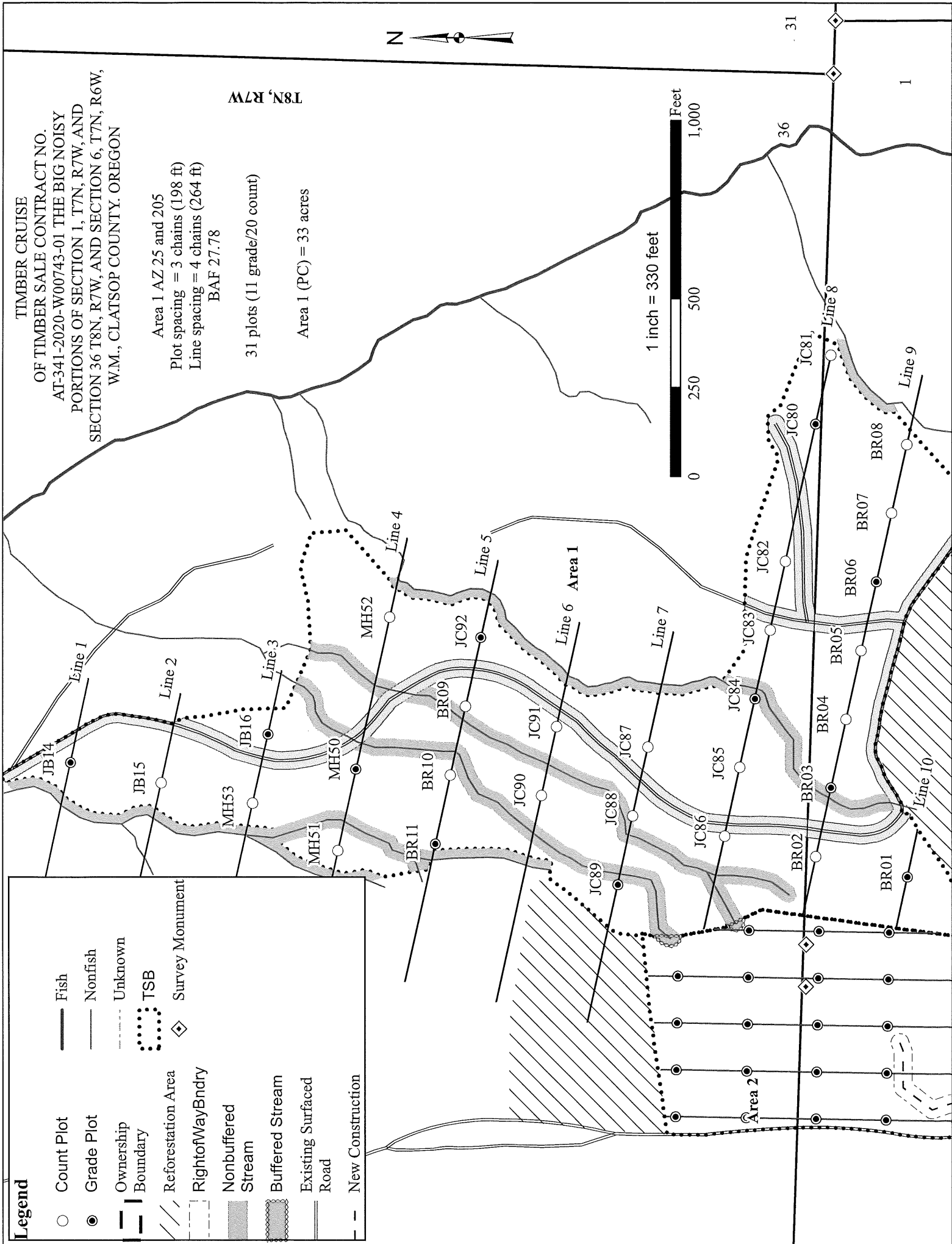
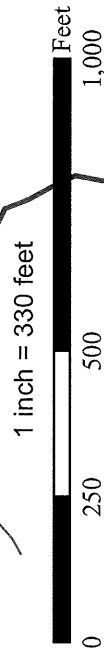
TIMBER CRUISE
OF TIMBER SALE CONTRACT NO.
AT-341-2020-W00743-01 THE BIG NOISY
PORTIONS OF SECTION 1, T7N, R7W, AND
SECTION 36 T8N, R7W, AND SECTION 6, T7N, R6W,
W.M., CLATSOP COUNTY, OREGON

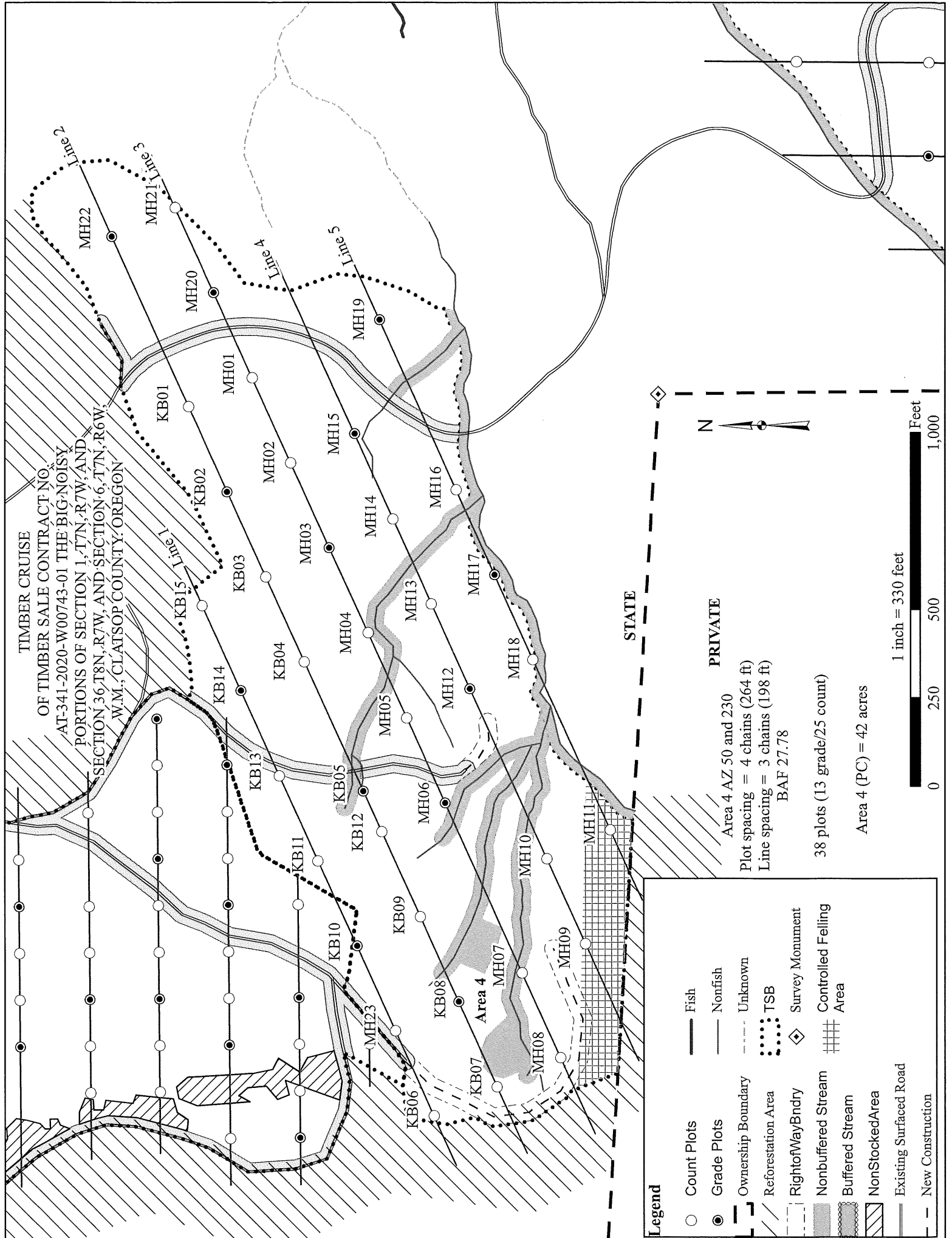
Area 1 AZ 25 and 205
Plot spacing = 3 chains (198 ft)
Line spacing = 4 chains (264 ft)
BAF 27.78

31 plots (11 grade/20 count)

Area 1 (PC) = 33 acres

T8N, R7W





**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: The Big Noisy

Area 2

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 12 **Estimated CV%** 55 Net BF/Acre **SE% Objective** 10 Net BF/Acre

Planned Sale Volume : 363 MBF **Estimated Sale Area Value/Acre:** \$13,200/Acre
(33 MBF/Ac. @ \$400/Acre)

A. Cruise Goals: (a) Grade minimum 80 conifer and 10 hardwood trees
(b) Sample 20 cruise plots (20 grade/ 0 count); (c) Other goals (Determine "automark"
thinning standards; X Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 for conifers and hardwoods (Full point)
Cruise Line Directions: 0°/180°
Cruise Line Spacing 2 (chains) 132 (Feet)
Cruise Plot Spacing 3 (chains) 198 (Feet)
Grade/Count Ratio 1:0

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.

DO NOT RECORD 12', 22' and 32' (for Hardwoods).

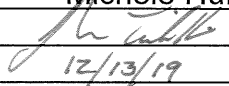
DO NOT RECORD 22' LENGTHS.

All hardwood will be measured to a G, or as appropriate.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" 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" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for conifer trees > 18" 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). For "leave trees" in partial cuts, or for marked "wildlife 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
- 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) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
- 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: Michele Huffman
Approved by: 
Date: 12/13/19

TIMBER CRUISE
OF TIMBER SALE CONTRACT NO.
AT-341-2020-W00743-01 THE BIG NOISY
PORTIONS OF SECTION 1, T7N, R7W, AND
SECTION 36 T8N, R7W, AND SECTION 6, T7N, R6W,
W.M., CLATSOP COUNTY, OREGON

Legend

- Grade Plots
- Ownership Boundary
- - RightofWayBndry
- Nonbuffered Stream
- Buffered Stream
- Existing Surfaced Road
- - New Construction
- Fish
- Nonfish
- Unknown
- TSB
- ◇ Survey Monument

Area 2 AZ 0 and 180

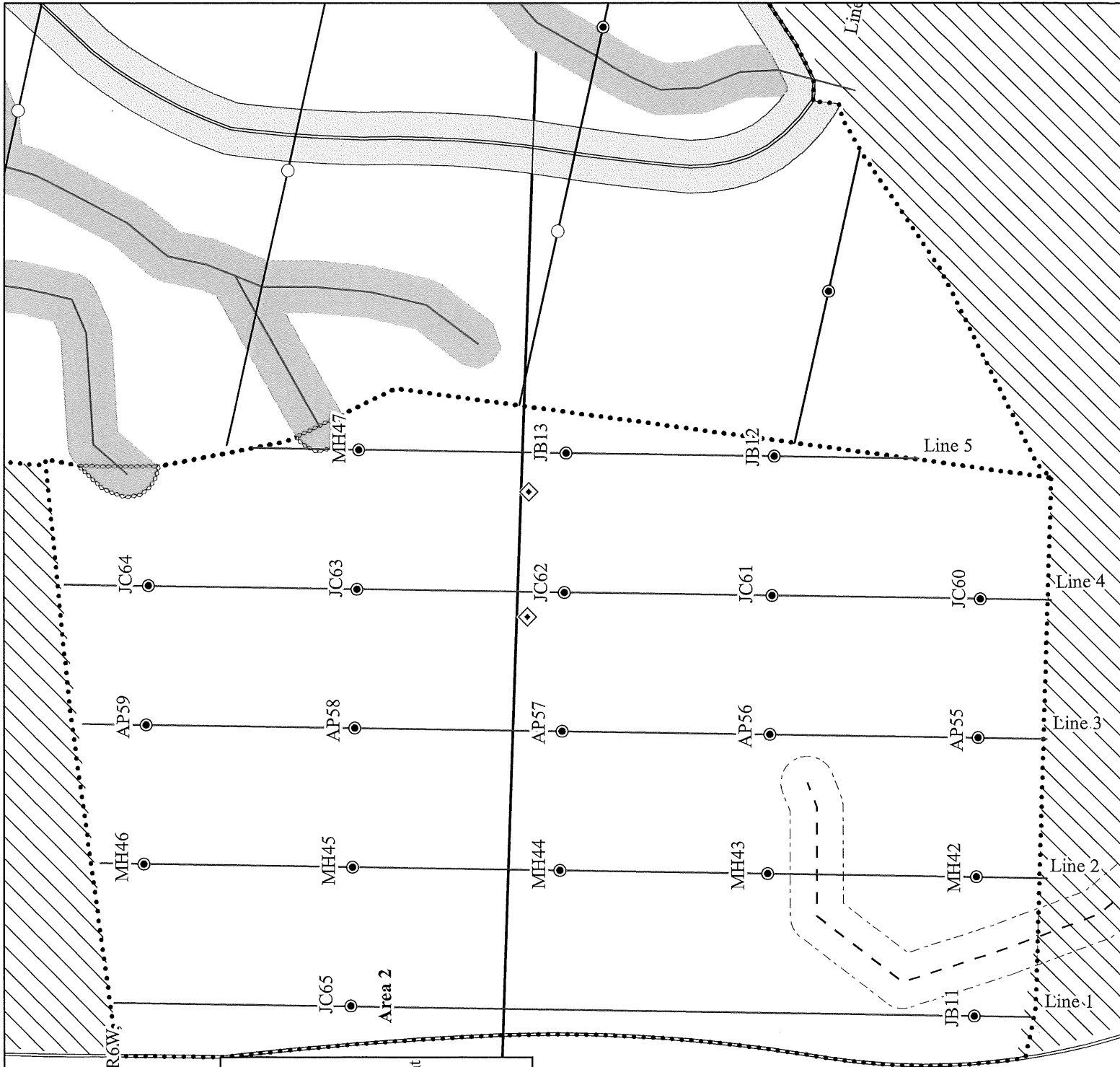
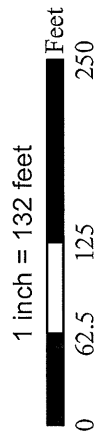
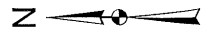
Plot spacing = 3 chains (198 ft)

Line spacing = 2 chains (132 ft)

BAF 40

20 plots (20 grade/0 count)

Area 2 (MC) = 12 acres



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: The Big Noisy **Area** 3

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 25 **Estimated CV%** 60 Net BF/Acre **SE% Objective** 12 Net BF/Acre

Planned Sale Volume : 750 MBF **Estimated Sale Area Value/Acre:** \$10,500/Acre
(30 MBF/Ac. @ \$350/Acre)

A. Cruise Goals: (a) Grade minimum 80 conifer and 10 hardwood trees
(b) Sample 43 cruise plots (14 grade/ 29 count); (c) Other goals (Determine "automark"
thinning standards; X Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 for conifers and hardwoods (Full point)
Cruise Line Directions: 90°/270°
Cruise Line Spacing 3 (chains) 198 (Feet)
Cruise Plot Spacing 2 (chains) 132 (Feet)
Grade/Count Ratio 1:2

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.

DO NOT RECORD 12', 22' and 32' (for Hardwoods).

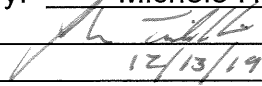
DO NOT RECORD 22' LENGTHS.

All hardwood will be measured to a G, or as appropriate.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" 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" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for conifer trees > 18" 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). For "leave trees" in partial cuts, or for marked "wildlife 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
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) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
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: Michele Huffman
Approved by: 
Date: 12/13/19

TIMBER CRUISE

OF TIMBER SALE CONTRACT NO.
AT-341-2020-W00743-01 THE BIG NOISY
PORTIONS OF SECTION 1, T7N, R7W, AND
SECTION 36 T8N, R7W, AND SECTION 6, T7N, R6W,
W.M., CLATSOP COUNTY, OREGON

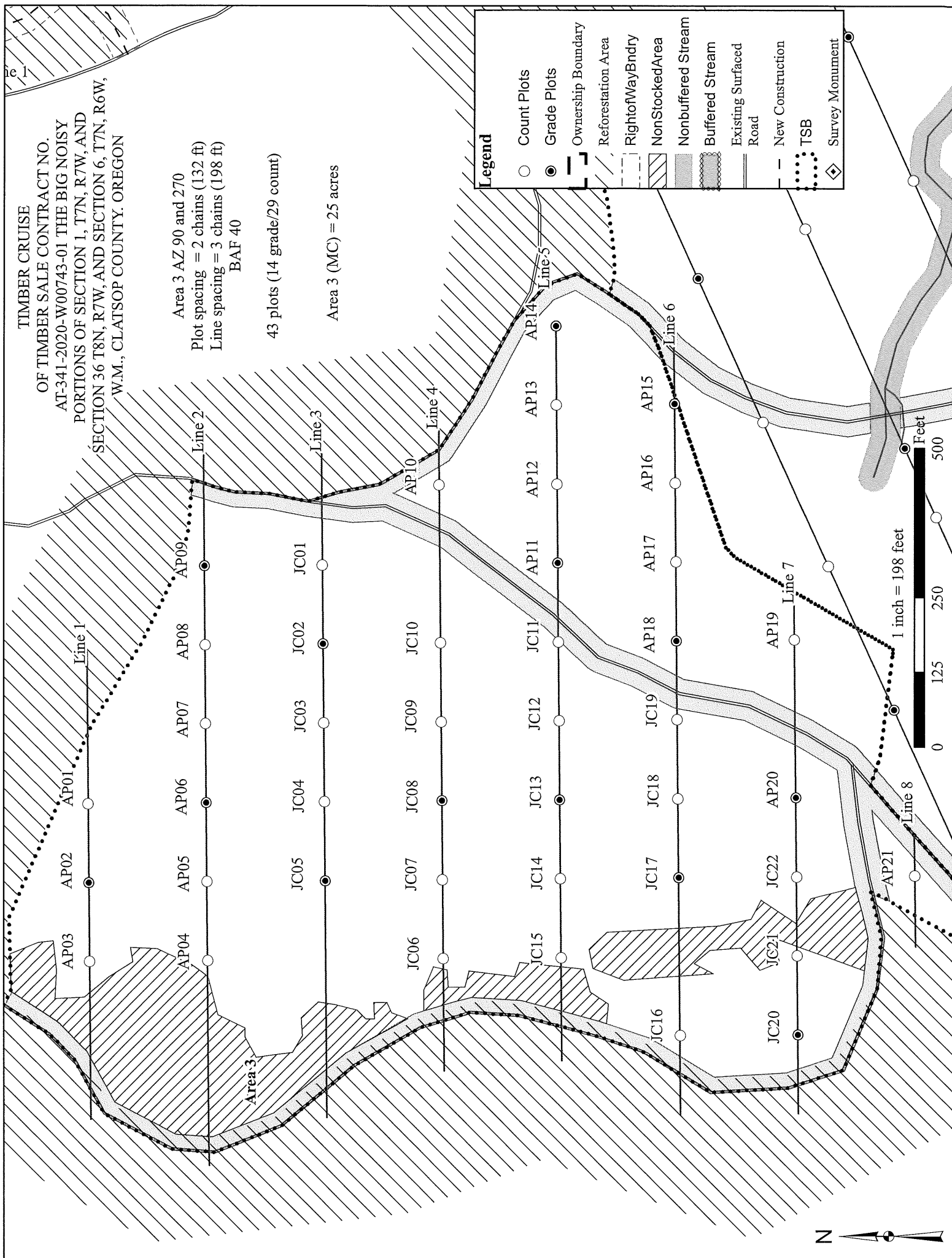
Area 3 AZ 90 and 270
Plot spacing = 2 chains (132 ft)
Line spacing = 3 chains (198 ft)
BAF 40

43 plots (14 grade/29 count)

Area 3 (MC) = 25 acres

Legend

- Count Plots
- Grade Plots
- Ownership Boundary
- ▨ Reforestation Area
- - - RightofWayBndry
- ▨ NonStockedArea
- ▨ Nonbuffered Stream
- ▨ Buffered Stream
- ▨ Existing Surfaced
- ▨ Road
- - - New Construction
- ⋯ TSB
- ◇ Survey Monument



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: The Big Noisy

Area 5

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 56 **Estimated CV%** 50 Net BF/Acre **SE% Objective** 11 Net BF/Acre

Planned Sale Volume : 1.7 MMBF **Estimated Sale Area Value/Acre:** \$11,250/Acre
(30 MBF/Ac. @ \$375/Acre)

A. Cruise Goals: (a) Grade minimum 80 conifer and 10 hardwood trees
(b) Sample 50 cruise plots (16 grade/ 34 count); (c) Other goals (Determine "automark"
thinning standards; Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 33.61 for conifers and hardwoods (Full point)
Cruise Line Directions: 0°/180°
Cruise Line Spacing 4 (chains) 264 (Feet)
Cruise Plot Spacing 3 (chains) 198 (Feet)
Grade/Count Ratio 1:2

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.

DO NOT RECORD 12', 22' and 32' (for Hardwoods).

DO NOT RECORD 22' LENGTHS.

All hardwood will be measured to a G, or as appropriate.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" 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" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for conifer trees > 18" 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). For "leave trees" in partial cuts, or for marked "wildlife 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
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) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
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: Michele Huffman
Approved by: 
Date: 12/13/19

TIMBER CRUISE

OF TIMBER SALE CONTRACT NO.
AT-341-2020-W00743-01 THE BIG NOISY
PORTIONS OF SECTION 1, T7N, R7W, AND
SECTION 36 T8N, R7W, AND SECTION 6, T7N, R6W,
W.M., CLATSOP COUNTY, OREGON

Area 5 AZ 0 and 180

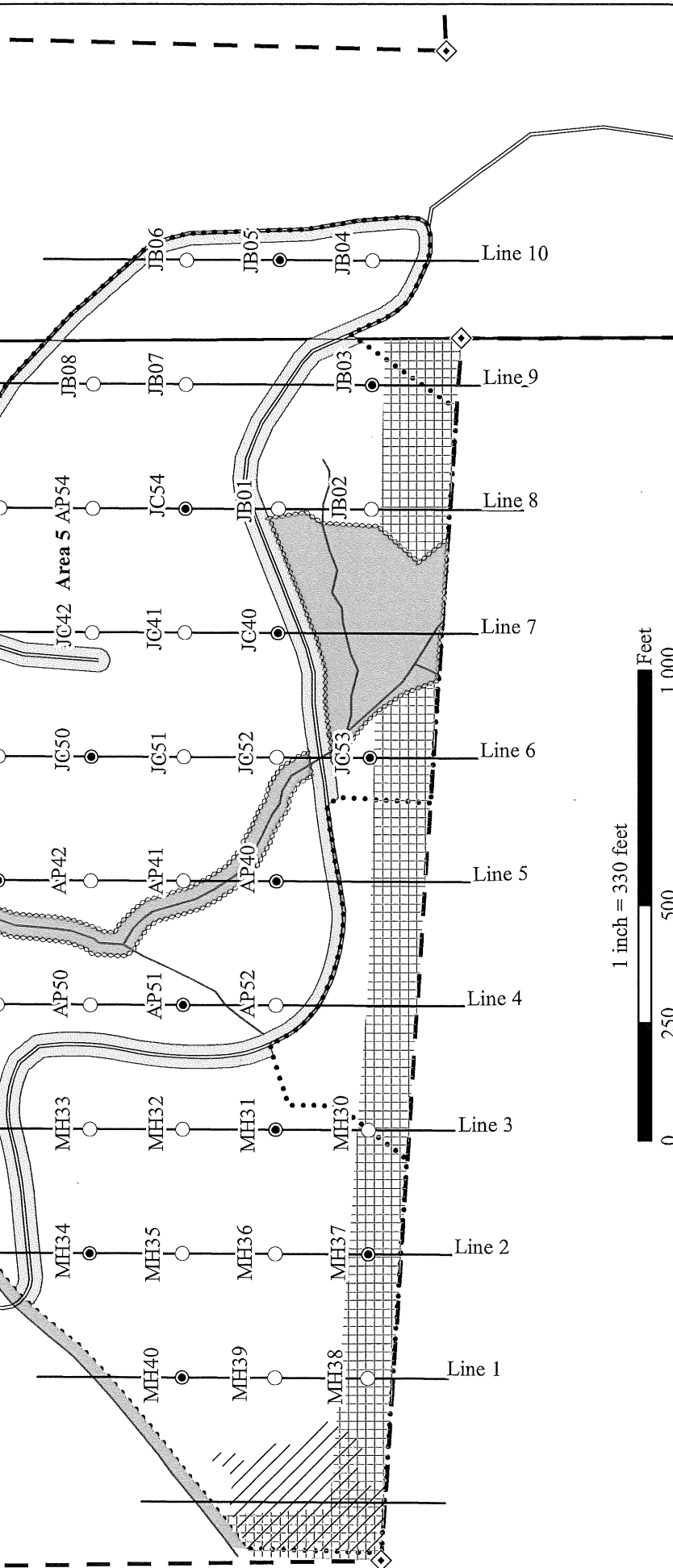
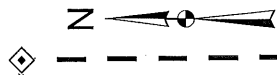
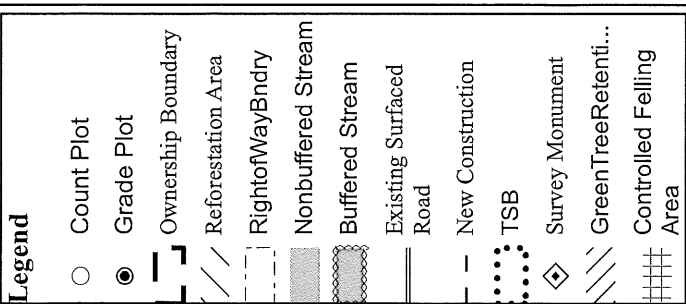
Plot spacing = 3 chains (198 ft)
Line spacing = 4 chains (264 ft)
BAF 33.61

50 plots (16 grade/34 count)

Area 5 (MC) = 56 acres

T7N, R7W

T7N, R6W



1 inch = 330 feet



TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T08N R07W S36 Ty14TK THRU T08N R07W S36 TyRW				Project: BIGNOISY												Page 1					
				Acres 169.00												Date 12/20/2019					
																Time 11:25:27AM					
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%GrossNet			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
									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					
D		DO	CU														24	16		0.00	1.6
D		DO	2S	61	1.4	6,150	6,063	1,025		4	28	68	1	1	1	97	39	16	451	2.47	13.5
D		DO	3S	32	2.0	3,208	3,143	531	0	77	18	4	3	5	29	64	35	8	95	0.80	33.2
D		DO	4S	7	.6	597	593	100	2	98			42	41	6	12	23	6	30	0.47	19.7
D Totals				50	1.6	9,954	9,800	1,656	0	33	23	43	4	5	10	81	32	9	144	1.12	67.9
H		DO	CU														17	17		0.00	2.2
H		DO	2S	70	1.2	5,646	5,576	942		4	24	72	0	1	6	93	39	16	446	2.50	12.5
H		DO	3S	25	1.1	2,025	2,001	338		66	27	7	6	4	25	66	35	9	109	0.93	18.4
H		DO	4S	5	4.1	378	362	61		100			58	33		9	21	7	30	0.54	12.1
H Totals				41	1.3	8,048	7,940	1,342		24	24	53	4	3	10	82	31	11	176	1.37	45.2
A		DO	CU														24	6		0.00	1.5
A		DO	1S	14	6.0	119	112	19			100		38	11	51		26	13	147	1.62	.8
A		DO	2S	16	.9	133	131	22		100			0		21	79	38	11	157	1.19	.8
A		DO	3S	13	1.4	99	98	17		100			3	72		25	28	8	64	0.79	1.5
A		DO	4S	57	.9	454	449	76		100			20	39	4	37	28	6	40	0.56	11.2
A Totals				4	1.7	804	790	134		86	14		17	33	13	37	28	7	50	0.63	15.8
S		DO	CU														12	15		0.00	.4
S		DO	2S	62		572	572	97			48	52		10	9	81	38	15	374	2.29	1.5
S		DO	3S	27	.0	248	248	42		36	64	0	3	28	24	44	31	9	121	1.38	2.1
S		DO	4S	11		101	101	17		100			57	43			22	7	32	0.56	3.2
S Totals				5	.0	921	921	156		21	47	33	7	18	12	62	27	10	128	1.31	7.2
SN		DO	CU														33	6		0.00	.0
SN Totals																	33	6		0.00	.0
Totals					1.4	19,728	19,451	3,287	0	31	24	45	5	6	11	79	31	10	143	1.16	136.0

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page		1				
				Project: BIGNOISY										Date		12/12/2019				
														Time		9:36:57AM				
T08N R07W S36 T14TK										T08N R07W S36 T14TK										
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt		
08N		07W		36		A14T		14TK		75.00		69		59		1		W		
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln Dia Bd CF/ Ft In Ft Lf				
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D DO CU				100.0	86											32	7		0.00	
D DO 2S			24	.7	921	915	69		26	74					100	40	11	200	1.22	
D DO 3S			57	4.1	2,167	2,077	156		96	4			3	26	71	37	7	77	0.70	
D DO 4S			19		684	684	51		100			35	47		19	24	6	31	0.44	
D Totals			67	4.7	3,858	3,676	276		79	21		6	10	15	69	32	7	67	0.65	
H DO CU				100.0	52											8	30		0.00	
H DO 2S			38	1.1	542	536	40			22	78			19	81	39	17	472	2.66	
H DO 3S			51	1.2	715	707	53		100				3	16	81	38	8	86	0.78	
H DO 4S			11	11.6	166	147	11		100			65	35			21	6	23	0.46	
H Totals			25	5.8	1,475	1,390	104		61	9	30	7	5	16	72	31	8	87	0.86	
A DO CU				100.0	98											24	6		0.00	
A DO 3S			16		70	70	5		100				100			30	8	60	0.80	
A DO 4S			84		350	350	26		100			34	66			25	6	34	0.47	
A Totals			8	18.9	517	420	31		100			29	71			25	6	29	0.40	
Type Totals				6.2	5,851	5,486	411		76	16	8	8	14	14	64	30	7	64	0.66	

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)												Page		1						
				Project: BIGNOISY												Date		12/12/2019						
																Time		9:36:41AM						
T08N R07W S36 T02TK												T08N R07W S36 T02TK												
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt						
08N		07W		36		A2MCTK		02TK		12.00		20		132		1		W						
S So Gr T rt ad Spp				% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf				
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft					
D				DO	CU			00.0	961								9	23		0.00	5.1			
D				DO	2S		78	1.8	21,665	21,279	255	4	27	69		4	96	39	16	423	2.37	50.3		
D				DO	3S		18	1.3	5,238	5,168	62	54	30	15	10	10	17	62	33	9	111	0.94	46.5	
D				DO	4S		4		822	822	10	15	85		57	15	4	24	21	6	30	0.50	27.4	
D Totals							63	4.9	28,686	27,269	327	0	16	27	57	4	2	6	87	32	12	211	1.55	129.3
H				DO	CU			00.0	449								31	8		0.00	3.7			
H				DO	2S		70	1.6	9,137	8,990	108	3	26	72		2	98	39	17	505	2.81	17.8		
H				DO	3S		23	1.1	2,994	2,961	36	81	11	8	3	16	6	74	34	9	107	0.98	27.7	
H				DO	4S		7		767	767	9	100			40	28		32	24	6	34	0.50	22.5	
H Totals							30	4.7	13,347	12,718	153	27	21	53	3	6	3	89	32	10	177	1.38	71.8	
A				DO	1S		6		166	166	2	100			100			24	16	240	2.33	.7		
A				DO	2S		31	1.9	839	823	10	100				46	54	36	10	137	1.06	6.0		
A				DO	3S		14	4.8	389	371	4	100		9		91		34	8	76	0.77	4.9		
A				DO	4S		49	4.1	1,362	1,307	16	100		17	34	18	31	29	6	39	0.49	33.5		
A Totals							6	3.3	2,757	2,667	32	94	6		10	23	23	45	30	7	59	0.64	45.1	
S				DO	2S		95		413	413	5	100			27	73		36	21	690	4.21	.6		
S				DO	4S		5		21	21	0	100		100				16	11	70	1.25	.3		
S Totals							1		434	434	5	5	95		5	26	70	29	17	483	3.67	.9		
Type Totals								4.7	45,224	43,088	517	0	24	24	52	4	5	7	85	32	10	174	1.35	247.1

T		Species, Sort Grade - Board Foot Volumes (Type)										Page		1								
TSPCSTGR		Project: BIGNOISY										Date		12/12/2019								
												Time		9:35:37AM								
T08N R07W S36 T03TK										T08N R07W S36 T03TK												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
08N	07W	36	A3MCTK	03TK	25.00	43	62	1	W													
Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs			
				Def	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/		
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						Ft	In
D	DO	CU		00.0	421												14	25		0.00	1.0	
D	DO	2S	57	2.6	6,640	6,469	162			37	63	5		2	93		39	17	441	2.60	14.7	
D	DO	3S	36	.5	4,148	4,127	103		75	25		2	8	19	71		35	9	106	0.88	39.0	
D	DO	4S	7		707	707	18		100			55	45				20	7	27	0.49	26.6	
D Totals			47	5.2	11,917	11,303	283		34	30	36	7	6	8	79		31	10	139	1.18	81.3	
H	DO	CU		00.0	716												11	16		0.00	4.2	
H	DO	2S	74	2.5	8,160	7,954	199		1	25	74		6		94		39	17	462	2.76	17.2	
H	DO	3S	24	.7	2,599	2,580	64		34	33	33	17	10	23	50		29	11	143	1.54	18.1	
H	DO	4S	2		209	209	5		100			80	20				17	7	27	0.62	7.7	
H Totals			45	8.1	11,684	10,743	269		11	27	63	6	7	5	82		29	13	228	1.99	47.1	
S	DO	CU		00.0	409												14	32		0.00	.6	
S	DO	2S	76		1,053	1,053	26			34	66			28	72		38	20	634	3.45	1.7	
S	DO	3S	24		329	329	8		39	61				56	44		33	10	128	1.86	2.6	
S Totals			6	22.8	1,791	1,382	35		9	41	50			35	65		33	16	286	2.40	4.8	
A	DO	4S	100		424	424	11		100					100			40	7	70	0.80	6.1	
A Totals			2		424	424	11		100					100			40	7	70	0.80	6.1	
Type Totals					7.6	25,816	23,852	596		23	29	48	6	6	8	80		31	11	171	1.47	139.3

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1								
				Project: BIGNOISY										Date 12/12/2019								
														Time 9:35:54AM								
T08N R07W S36 T05TK										T08N R07W S36 T05TK												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
08N	07W	36	A5MCTK	05TK	56.00	50	81	1	W													
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log		Logs Per /Acre				
			Log Scale Dia.					Log Length				Ln Dia	Bd	CF/ Lf								
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		
H	DO	CU		00.0	716													17	19		0.00	3.8
H	DO	2S	72	.7	10,658	10,580	593				5	23	72	0		8	92	38	16	430	2.36	24.6
H	DO	3S	23	1.3	3,327	3,284	184				64	36		4		32	65	35	9	108	0.85	30.3
H	DO	4S	5	3.2	654	633	35				100			57	35		8	22	7	33	0.57	19.3
H	Totals		47	5.6	15,355	14,498	812				23	25	52	4	2	13	82	32	11	186	1.35	78.0
D	DO	CU		00.0	408													28	22		0.00	1.0
D	DO	2S	70	.9	9,514	9,425	528				3	20	77		2		98	40	18	569	2.96	16.6
D	DO	3S	27	1.3	3,680	3,630	203			1	71	22	6	2	3	40	55	35	8	102	0.83	35.7
D	DO	4S	3	3.0	369	358	20				100			39	34	27		24	6	33	0.50	10.9
D	Totals		43	4.0	13,971	13,413	751			0	24	20	56	2	3	11	84	34	11	209	1.42	64.2
S	DO	CU		00.0	43													11	11		0.00	1.1
S	DO	2S	56		1,166	1,166	65					57	43		14		86	37	14	312	1.99	3.7
S	DO	3S	29		599	599	34			35	65			4	35	17	44	30	9	119	1.25	5.1
S	DO	4S	15		300	300	17			100				56	44			22	7	32	0.55	9.5
S	Totals		7	2.0	2,108	2,065	116			25	51	24		9	25	5	61	26	9	107	1.14	19.4
A	DO	1S	28	6.7	322	300	17				100			43		57		26	13	140	1.58	2.1
A	DO	2S	21		215	215	12			100							100	40	11	180	1.33	1.2
A	DO	3S	12		119	119	7			100					100			24	9	60	0.79	2.0
A	DO	4S	39		405	405	23			100				14	30		56	29	6	41	0.62	9.8
A	Totals		3	2.0	1,061	1,040	58			71	29			18	23	17	42	29	8	69	0.84	15.1
Type Totals				4.6	32,494	31,016	1,737			0	25	25	50	4	4	12	80	32	10	176	1.32	176.7

Species, Sort Grade - Board Foot Volumes (Type)										Page 1												
Project: BIGNOISY										Date	12/12/2019											
										Time	9:08:59AM											
T08N R07W S36 TRW										T08N R07W S36 TRW												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
08N	07W	36	A6RW	RW	1.00	89	321	1	W													
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
			Def%	Gross	Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf					
D	DO	CU																16	15		0.00	4.2
D	DO	2S	57	1.5	11,396	11,226	11		7	35	57		0	0	6	93		39	15	357	2.08	31.4
D	DO	3S	36	1.8	7,053	6,928	7		86	10	4		4	5	19	72		36	8	100	0.85	69.4
D	DO	4S	7	.2	1,350	1,347	1	4	96				47	41	1	11		22	6	28	0.47	49.0
D Totals			76	1.5	19,799	19,501	20	0	41	24	34		5	5	10	80		31	9	127	1.06	154.0
H	DO	CU																27	12		0.00	1.2
H	DO	2S	64	1.5	2,984	2,939	3		3	33	63				4	96		39	16	448	2.58	6.6
H	DO	3S	28	.9	1,324	1,311	1		89	6	4		3	10	9	78		35	8	96	0.89	13.7
H	DO	4S	8	2.7	340	331	0		100				55	27		18		21	6	28	0.50	11.9
H Totals			18	1.4	4,648	4,581	5		35	23	42		5	5	5	85		31	9	137	1.20	33.4
A	DO	CU																20	8		0.00	1.9
A	DO	1S	4		50	50	0			100					100			24	16	240	2.33	.2
A	DO	2S	22	1.8	277	272	0		100				8		42	50		31	9	105	0.96	2.6
A	DO	3S	13	3.3	173	168	0		100				22	18		61		30	8	64	0.76	2.6
A	DO	4S	61	2.2	762	745	1		100				21	39	9	30		28	6	39	0.50	19.0
A Totals			5	2.2	1,262	1,234	1		96	4			18	30	15	37		28	7	47	0.57	26.3
SN	DO	CU																33	6		0.00	1.0
SN Totals																		33	6		0.00	1.0
S	DO	CU																6	24		0.00	.1
S	DO	2S	46		107	107	0				100				27	73		36	21	690	4.21	.2
S	DO	3S	51	11.0	135	120	0		4	8	88				12	88		35	19	636	5.87	.2
S	DO	4S	3		5	5	0		100				100					16	11	70	1.25	.1
S Totals			1	6.0	248	233	0		4	4	92		2		18	79		29	19	492	4.64	.5
Type Totals				1.6	25,957	25,550	26	0	42	23	35		5	6	10	79		31	9	119	1.03	215.1

TC PSTATS				PROJECT STATISTICS				PAGE 1				
				PROJECT				BIGNOISY				
								DATE 12/12/2019				
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
08N	07	36	A14T	14TK	THR	169.00	271	1,413	1	W		
08N	07W	36	A6RW	RW								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			271	1413	5.2							
CRUISE			116	655	5.6	13,936	4.7					
DBH COUNT												
REFOREST												
COUNT			139	727	5.2							
BLANKS			16									
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			374	40.3	17.3	56	15.8	65.6	9,954	9,800	2,453	2,453
WHEMLOCK			193	23.4	19.7	63	11.2	49.5	8,048	7,940	1,946	1,946
R ALDER			62	14.0	13.0	33	3.6	12.9	804	790	278	278
S SPRUCE			19	4.8	18.1	42	2.0	8.6	921	921	257	257
SNAG			7	.0	17.5	30	0.0	.0				
TOTAL			655	82.5	17.4	54	32.7	136.6	19,728	19,451	4,934	4,934
CONFIDENCE LIMITS OF THE SAMPLE												
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR												
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			138.8	8.4	37	40	44					
WHEMLOCK			175.6	10.7	21	23	26					
R ALDER			287.7	17.5	12	14	16					
S SPRUCE			401.9	24.4	4	5	6					
SNAG			706.1	42.9	0	0	0					
TOTAL			108.2	6.6	77	82	88	468	117	52		
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			129.5	7.9	60	66	71					
WHEMLOCK			165.2	10.0	45	50	54					
R ALDER			296.0	18.0	11	13	15					
S SPRUCE			359.3	21.8	7	9	10					
SNAG			699.7	42.5	0	0	0					
TOTAL			103.7	6.3	128	137	145	429	107	48		
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			151.6	9.2	8,898	9,800	10,702					
WHEMLOCK			189.9	11.5	7,025	7,940	8,855					
R ALDER			342.2	20.8	626	790	954					
S SPRUCE			366.1	22.2	716	921	1,126					
SNAG												
TOTAL			125.0	7.6	17,976	19,451	20,926	623	156	69		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT BIGNOISY				DATE 12/12/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
08N	07W	36	A14	14PC	75.00	69	516	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	69	516	7.5							
CRUISE	28	186	6.6		12,016		1.5			
DBH COUNT										
REFOREST										
COUNT	41	303	7.4							
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
DOUGLEAV	95	71.1	17.2	57	27.7	114.7	13,243	13,106	3,707	3,707
DOUG FIR	38	40.9	13.7	44	11.3	41.9	3,809	3,715	1,155	1,155
WHEMLOCK	15	13.1	14.6	39	4.0	15.3	1,387	1,354	411	411
HEMLEAV	17	9.7	16.9	42	3.7	15.1	1,410	1,399	422	422
R ALDER	8	16.3	10.9	25	3.2	10.5	471	471	151	151
ALDRLEAV	7	7.9	13.0	33	2.0	7.2	363	363	141	141
SNAG	4	1.0	17.3	34	0.4	1.6				
S SPRUCE	1	.1	43.0	78	0.2	1.2	145	141	42	42
SPRUCELV	1	.0	47.0	74	0.1	.4	56	46	16	16
TOTAL	186	160.2	15.4	47	53.0	208.0	20,883	20,594	6,045	6,045
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	44.0	5.3	67	71	75					
DOUG FIR	93.9	11.3	36	41	46					
WHEMLOCK	170.9	20.6	10	13	16					
HEMLEAV	177.2	21.3	8	10	12					
R ALDER	185.9	22.4	13	16	20					
ALDRLEAV	276.9	33.3	5	8	11					
SNAG	441.9	53.1	0	1	2					
S SPRUCE	472.5	56.8	0	0	0					
SPRUCELV	830.7	99.9	0	0	0					
TOTAL	28.3	3.4	155	160	166	32	8	4		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	38.9	4.7	109	115	120					
DOUG FIR	93.6	11.3	37	42	47					
WHEMLOCK	163.4	19.7	12	15	18					
HEMLEAV	154.6	18.6	12	15	18					
R ALDER	188.2	22.6	8	10	13					
ALDRLEAV	276.2	33.2	5	7	10					
SNAG	406.1	48.8	1	2	2					
S SPRUCE	472.5	56.8	1	1	2					
SPRUCELV	830.7	99.9	0	0	1					
TOTAL	23.9	2.9	202	208	214	23	6	3		
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	46.4	5.6	12,374	13,106	13,837					
DOUG FIR	102.7	12.4	3,256	3,715	4,174					
WHEMLOCK	172.8	20.8	1,073	1,354	1,636					
HEMLEAV	156.1	18.8	1,136	1,399	1,661					

TC TSTATS				STATISTICS				PAGE	2
				PROJECT				DATE	12/12/2019
				BIGNOISY					
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
08N	07W	36	A14	14PC	75.00	69	516	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
R ALDER		191.3	23.0	363	471	579			
ALDRLEAV		281.0	33.8	240	363	485			
SNAG									
S SPRUCE		472.5	56.8	61	141	222			
SPRUCELV		830.7	99.9	0	46	92			
TOTAL		38.2	4.6	19,649	20,594	21,540	58	15	6

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	BIGNOISY			DATE	12/19/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
08N	07W	36	A14T	14TK	75.00	69	167	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
PLOTS		TREES								
TOTAL		69		167		2.4				
CRUISE		17		59		3.5		5,189		
DBH COUNT								1.1		
REFOREST										
COUNT		37		108		2.9				
BLANKS		15								
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		37	41.1	13.6	44	11.2	41.5	3,858	3,676	1,173
WHEMLOCK		15	13.5	14.6	39	4.1	15.7	1,475	1,390	431
R ALDER		7	14.6	11.2	26	3.0	10.1	517	420	176
TOTAL		59	69.2	13.3	39	18.4	67.2	5,851	5,486	1,779
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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		94.8	11.4	36	41	46				
WHEMLOCK		169.1	20.3	11	13	16				
R ALDER		193.1	23.2	11	15	18				
TOTAL		71.4	8.6	63	69	75	204	51	23	
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		95.2	11.4	37	41	46				
WHEMLOCK		161.9	19.5	13	16	19				
R ALDER		195.0	23.5	8	10	12				
TOTAL		70.6	8.5	62	67	73	199	50	22	
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		104.4	12.6	3,215	3,676	4,138				
WHEMLOCK		170.9	20.6	1,104	1,390	1,676				
R ALDER		199.6	24.0	319	420	521				
TOTAL		81.2	9.8	4,950	5,486	6,022	263	66	29	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT				BIGNOISY			
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TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
08N	07W	36	A14L	14LV	75.00	69	345	1	W		
			PLOTS	TREES	TREES	ESTIMATED TOTAL	PERCENT SAMPLE				
				PER PLOT		TREES	TREES				
TOTAL		69	345	5.0							
CRUISE		28	124	4.4	6,730	1.8					
DBH COUNT											
REFOREST											
COUNT		41	201	4.9							
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
DOUGLEAV		95	71.1	17.2	57	27.7	114.7	13,436	13,106	3,757	3,707
HEMLEAV		17	9.7	16.9	42	3.7	15.1	1,501	1,399	439	422
ALDRLEAV		7	7.9	13.0	33	2.0	7.2	411	363	152	141
SNAG		4	1.0	17.3	34	0.4	1.6	50		30	
SPRUCELV		1	.0	47.0	74	0.1	.4	56	46	16	16
TOTAL		124	89.7	16.9	53	33.9	139.1	15,454	14,913	4,394	4,286
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV		44.0	5.3	67	71	75					
HEMLEAV		177.2	21.3	8	10	12					
ALDRLEAV		276.9	33.3	5	8	11					
SNAG		441.9	53.1	0	1	2					
SPRUCELV		830.7	99.9	0	0	0					
TOTAL		23.1	2.8	87	90	92	21	5	2		
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV		38.9	4.7	109	115	120					
HEMLEAV		154.6	18.6	12	15	18					
ALDRLEAV		276.2	33.2	5	7	10					
SNAG		406.1	48.8	1	2	2					
SPRUCELV		830.7	99.9	0	0	1					
TOTAL		13.2	1.6	137	139	141	7	2	1		
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		46.4	5.6	12,374	13,106	13,837					
HEMLEAV		156.1	18.8	1,136	1,399	1,661					
ALDRLEAV		281.0	33.8	240	363	485					
SNAG											
SPRUCELV		830.7	99.9	0	46	92					
TOTAL		33.3	4.0	14,315	14,913	15,511	44	11	5		

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT BIGNOISY				DATE	12/12/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
08N	07W	36	A2	02MC	12.00	20	135	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
PLOTS		TREES									
TOTAL		20		135		6.8					
CRUISE		20		135		6.8		1,646		8.2	
DBH COUNT											
REFOREST											
COUNT											
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		73		54.4	22.2	79	31.0	146.0	27,725	27,269	6,395
WHEMLOCK		42		42.4	19.1	57	19.2	84.0	12,898	12,718	3,184
R ALDER		16		36.5	12.7	39	9.0	32.0	2,757	2,667	867
SNAG		3		3.5	17.8	24	1.4	6.0			
S SPRUCE		1		.3	35.0	91	0.3	2.0	434	434	97
TOTAL		135		137.1	19.0	60	61.9	270.0	43,814	43,088	10,543
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
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		101.4	23.2	42	54	67					
WHEMLOCK		132.7	30.4	30	42	55					
R ALDER		221.0	50.7	18	37	55					
SNAG		308.9	70.8	1	3	6					
S SPRUCE		447.2	102.5		0	1					
TOTAL		69.7	16.0	115	137	159		204	51	23	
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		63.0	14.4	125	146	167					
WHEMLOCK		98.8	22.7	65	84	103					
R ALDER		231.6	53.1	15	32	49					
SNAG		326.2	74.8	2	6	10					
S SPRUCE		447.2	102.5		2	4					
TOTAL		24.4	5.6	255	270	285		25	6	3	
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		65.7	15.1	23,162	27,269	31,377					
WHEMLOCK		104.5	24.0	9,671	12,718	15,765					
R ALDER		242.1	55.5	1,186	2,667	4,147					
SNAG											
S SPRUCE		447.2	102.5		434	879					
TOTAL		30.4	7.0	40,084	43,088	46,092		39	10	4	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT BIGNOISY				DATE	12/11/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
08N	07W	36	A3MC	03MC	25.00	43	199	1	W		
			PLOTS	TREES	TREES	ESTIMATED TOTAL	PERCENT SAMPLE				
				PER PLOT		TREES	TREES				
TOTAL		43	199	4.6							
CRUISE		15	65	4.3	1,961		3.3				
DBH COUNT											
REFOREST											
COUNT		28	133	4.8							
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		28	44.6	18.6	58	19.4	83.7	11,917	11,303	3,020	2,949
WHEMLOCK		28	24.1	24.2	59	15.7	77.2	11,684	10,743	2,873	2,735
S SPRUCE		5	2.6	30.5	63	2.4	13.0	1,791	1,382	451	378
R ALDER		1	6.1	15.0	42	1.9	7.4	424	424	194	194
SNAG		3	1.1	24.7	39	0.7	3.7				
TOTAL		65	78.5	20.8	57	40.6	185.1	25,816	23,852	6,538	6,257
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
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	95.4	14.5	38	45	51						
WHEMLOCK	94.7	14.4	21	24	28						
S SPRUCE	266.8	40.7	2	3	4						
R ALDER	315.9	48.1	3	6	9						
SNAG	435.6	66.4	0	1	2						
TOTAL	52.8	8.0	72	78	85	111	28	12			
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	85.2	13.0	73	84	95						
WHEMLOCK	88.6	13.5	67	77	88						
S SPRUCE	257.2	39.2	8	13	18						
R ALDER	315.9	48.1	4	7	11						
SNAG	393.5	60.0	1	4	6						
TOTAL	40.3	6.1	174	185	196	65	16	7			
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	85.3	13.0	9,834	11,303	12,772						
WHEMLOCK	90.3	13.8	9,265	10,743	12,220						
S SPRUCE	254.3	38.7	847	1,382	1,918						
R ALDER	315.9	48.1	220	424	629						
SNAG											
TOTAL	44.8	6.8	22,224	23,852	25,481	80	20	9			

TC TSTATS				STATISTICS				PAGE 1			
				PROJECT BIGNOISY				DATE, 12/11/2019			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
08N	07W	36	A5MC	05MC	56.00	50	274	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL		50	274	5.5							
CRUISE		18	85	4.7	5,192	1.6					
DBH COUNT											
REFOREST											
COUNT		32	185	5.8							
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	
WHEMLOCK		34	32.2	20.7	80	16.5	75.3	15,355	14,498	3,528	3,382
DOUG FIR		30	33.4	19.8	68	16.0	71.3	13,971	13,413	3,170	3,093
S SPRUCE		10	13.3	16.5	40	4.8	19.7	2,108	2,065	594	585
R ALDER		7	11.8	15.2	38	3.8	14.8	1,061	1,040	364	364
SNAG		3	1.4	18.5	53	0.6	2.7				
CEDLEAV		1	.6	20.0	72	0.3	1.3	148	148	49	49
TOTAL		85	92.7	19.1	64	42.3	185.0	32,642	31,164	7,706	7,472
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15			
WHEMLOCK		98.8	14.0	28	32	37					
DOUG FIR		102.9	14.5	29	33	38					
S SPRUCE		165.6	23.4	10	13	16					
R ALDER		220.4	31.1	8	12	15					
SNAG		383.2	54.1	1	1	2					
CEDLEAV		494.9	69.9	0	1	1					
TOTAL		50.8	7.2	86	93	99	103	26	11		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15			
WHEMLOCK		90.0	12.7	66	75	85					
DOUG FIR		88.2	12.5	62	71	80					
S SPRUCE		165.0	23.3	15	20	24					
R ALDER		216.1	30.5	10	15	19					
SNAG		342.6	48.4	1	3	4					
CEDLEAV		494.9	69.9	0	1	2					
TOTAL		39.9	5.6	175	185	195	64	16	7		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15			
WHEMLOCK		93.6	13.2	12,579	14,498	16,416					
DOUG FIR		90.2	12.8	11,703	13,413	15,123					
S SPRUCE		173.1	24.5	1,560	2,065	2,570					
R ALDER		223.0	31.5	712	1,040	1,367					
SNAG											
CEDLEAV		494.9	69.9	44	148	251					
TOTAL		46.6	6.6	29,112	31,164	33,215	87	22	10		

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	BIGNOISY			DATE	12/12/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
08N	07W	36	A6RW	RW	1.00	89	651	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
PLOTS		TREES									
TOTAL		89	651	7.3							
CRUISE		48	321	6.7		133	241.0				
DBH COUNT											
REFOREST											
COUNT		41	303	7.4							
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		206	86.2	17.5	58	34.5	144.2	19,799	19,501	5,120	
WHEMLOCK		74	22.3	17.4	48	8.8	36.6	4,648	4,581	1,222	
R ALDER		31	23.2	12.2	33	5.4	18.7	1,262	1,234	414	
SNAG		7	1.3	17.5	30	0.5	2.2				
S SPRUCE		3	.2	40.7	83	0.2	1.6	248	233	64	
TOTAL		321	133.2	16.7	52	49.7	203.3	25,957	25,550	6,821	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
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	64.9	6.9	80	86	92						
WHEMLOCK	129.3	13.7	19	22	25						
R ALDER	174.3	18.5	19	23	27						
SNAG	397.7	42.1	1	1	2						
S SPRUCE	474.8	50.3	0	0	0						
TOTAL	38.6	4.1	128	133	139	59 15		7			
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	50.1	5.3	137	144	152						
WHEMLOCK	115.4	12.2	32	37	41						
R ALDER	184.1	19.5	15	19	22						
SNAG	394.0	41.7	1	2	3						
S SPRUCE	491.9	52.1	1	2	2						
TOTAL	24.3	2.6	198	203	209	24 6		3			
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	53.4	5.7	18,398	19,501	20,603						
WHEMLOCK	132.1	14.0	3,940	4,581	5,222						
R ALDER	212.4	22.5	957	1,234	1,512						
SNAG											
S SPRUCE	473.4	50.1	116	233	350						
TOTAL	36.9	3.9	24,551	25,550	26,549	54 14		6			

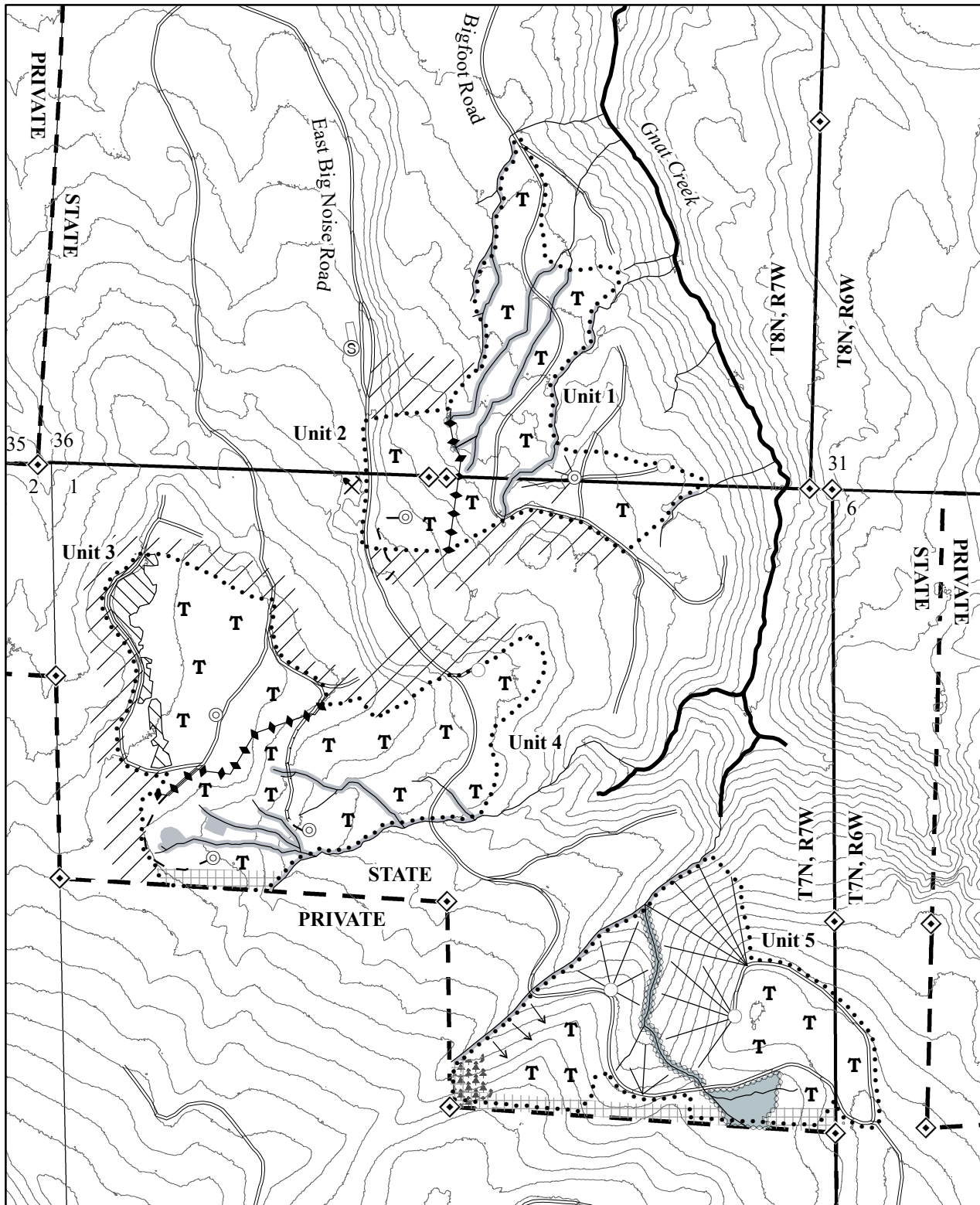
TC		PSTNDSUM		Stand Table Summary										Page		1		
														Date:		12/20/2019		
T08N R07W S36 Ty14TK THRU T08N R07W S36 TyRW					Project					BIGNOISY					Time:		11:25:27AM	
					Acres					169.00					Grown Year:			
S SpC	T	Tot							Average Log		Net		Net		Totals			
		DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF		
D		9	7	86	60	4.383	1.94	4.38	10.2	40.0		45	175		75	30		
D		10	9	85	55	4.470	2.44	4.47	11.9	43.5		53	195		90	33		
D		11	4	85	43	1.353	.89	1.35	12.0	40.0		16	54		27	9		
D		12	13	85	73	2.862	2.25	3.61	17.4	51.1		63	184		106	31		
D		13	19	88	75	4.396	4.05	5.52	19.6	61.4		108	339		182	57		
D		14	18	87	68	3.648	3.90	5.33	19.8	63.0		105	336		178	57		
D		15	27	85	70	4.181	5.13	6.49	21.9	68.8		142	447		240	76		
D		16	21	88	87	1.997	2.79	4.19	22.7	78.1		95	327		161	55		
D		17	15	89	91	.683	1.08	1.36	29.3	105.0		40	142		67	24		
D		18	33	88	97	2.470	4.36	5.63	30.2	106.6		170	600		288	101		
D		19	19	89	104	1.273	2.51	2.94	35.5	129.8		105	382		177	65		
D		20	18	88	96	1.142	2.49	2.35	40.7	140.9		96	331		162	56		
D		21	10	88	105	1.033	2.48	2.72	38.7	154.3		105	420		178	71		
D		22	10	87	108	.656	1.73	1.48	48.0	178.9		71	264		120	45		
D		24	11	90	94	.831	2.61	1.46	51.2	192.4		75	281		126	47		
D		25	15	87	103	.751	2.56	1.80	57.6	220.5		104	398		176	67		
D		26	14	87	115	.571	2.11	1.55	59.8	246.6		93	383		157	65		
D		27	12	90	109	.296	1.18	.78	63.0	281.0		49	218		83	37		
D		28	10	83	111	.575	2.46	1.32	77.5	291.6		103	386		173	65		
D		29	18	85	115	.397	1.82	.95	80.6	333.4		77	318		130	54		
D		30	10	89	105	.280	1.38	.59	89.6	388.5		53	230		90	39		
D		31	14	89	135	.402	2.11	1.21	89.4	437.5		108	527		182	89		
D		32	11	87	127	.466	2.60	1.32	95.4	428.0		126	564		213	95		
D		33	3	92	121	.025	.15	.08	97.0	502.2		7	38		12	6		
D		34	5	90	137	.171	1.08	.49	115.9	578.8		57	284		96	48		
D		35	3	86	110	.133	.89	.33	83.8	373.4		28	124		47	21		
D		36	9	85	144	.439	3.10	1.34	120.4	604.7		162	812		273	137		
D		37	3	91	146	.020	.15	.06	142.8	762.8		9	46		15	8		
D		38	3	84	118	.075	.59	.22	117.9	554.0		26	124		45	21		
D		41	8	86	161	.220	2.01	.74	148.8	771.5		111	574		187	97		
D		47	2	86	194	.066	.79	.26	203.7	1125.9		53	295		90	50		
D		Totals	374	87	80	40.263	65.62	66.35	37.0	147.7		2,453	9,800		4,146	1,656		
H		9	3	86	20	.335	.15	.33	5.0	20.0		2	7		3	1		
H		10	4	86	36	1.714	.93	1.71	8.5	20.0		15	34		25	6		
H		11	4	86	118	1.950	1.29	4.39	12.4	47.3		54	208		92	35		
H		12	2	88	58	.595	.47	.60	18.0	60.0		11	36		18	6		
H		13	13	86	64	3.081	2.84	4.03	19.3	62.6		78	253		132	43		
H		14	15	89	55	1.857	1.99	1.72	24.3	68.6		42	118		71	20		
H		15	4	89	50	.386	.47	.39	27.9	60.0		11	23		18	4		
H		16	8	88	102	1.787	2.49	3.57	31.4	117.6		112	420		189	71		
H		17	3	85	104	.557	.88	1.11	33.7	118.4		38	132		63	22		
H		18	8	85	83	.996	1.76	2.18	30.1	96.1		65	209		111	35		
H		19	7	86	80	.687	1.35	1.30	37.4	121.3		49	158		82	27		
H		20	14	84	61	1.315	2.87	2.17	36.7	110.8		80	241		135	41		
H		21	6	87	108	.731	1.76	2.01	39.7	161.5		80	325		135	55		
H		22	6	88	84	.643	1.70	1.41	46.7	179.4		66	253		111	43		
H		23	10	88	96	1.512	4.36	3.02	54.7	220.3		165	666		279	113		
H		24	8	87	104	.922	2.90	2.31	57.2	236.4		132	546		223	92		
H		25	7	89	103	.421	1.43	1.06	62.2	269.1		66	284		111	48		
H		26	7	86	98	.586	2.16	1.29	68.6	276.7		89	358		150	60		
H		27	5	90	90	.426	1.69	.85	77.5	319.8		66	273		112	46		
H		28	6	88	110	.568	2.43	1.40	81.0	358.3		114	503		192	85		
H		29	6	88	105	.370	1.70	.99	78.5	341.8		78	338		131	57		

TC		PSTNDSUM		Stand Table Summary										Page		2	
														Date:		12/20/2019	
T08N R07W S36 Ty14TK THRU T08N R07W S36 TyRW				Project				BIGNOISY				Time:		11:25:27AM			
				Acres				169.00				Grown Year:					
S Spc	T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	T o t a l s			
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
H		30	2	86	125	.150	.74	.45	73.3	359.6		33	162		56	27	
H		31	8	87	108	.491	2.57	1.18	92.5	421.7		109	496		184	84	
H		32	10	87	122	.428	2.39	1.26	98.3	468.5		124	590		209	100	
H		33	2	85	121	.024	.14	.07	99.0	446.7		7	33		12	6	
H		34	6	89	131	.279	1.76	.72	115.7	580.2		83	418		141	71	
H		35	6	86	110	.263	1.75	.63	110.9	537.5		70	341		119	58	
H		36	1	80	124	.000	.00	.00	84.3	443.3		0	1		0	0	
H		37	2	89	146	.019	.14	.06	153.7	826.7		9	48		15	8	
H		38	4	85	114	.163	1.29	.44	141.2	669.6		62	293		105	50	
H		39	1	83	74	.049	.41	.10	86.0	390.0		8	38		14	6	
H		41	2	83	120	.016	.14	.05	150.7	700.0		7	33		12	6	
H		42	3	84	96	.057	.55	.13	176.0	798.5		23	104		39	18	
H		Totals	193	87	83	23.379	49.52	42.95	45.3	184.9		1,946	7,940		3,289	1,342	
S		11	1	92	27	.945	.62	.95	10.0	30.0		9	28		16	5	
S		12	1	83	45	.794	.62	.79	16.0	40.0		13	32		21	5	
S		13	1	83	29	.982	.91	.98	7.0	20.0		7	20		12	3	
S		18	2	87	93	.706	1.25	1.41	35.3	120.0		50	169		84	29	
S		22	1	83	87	.236	.62	.47	53.0	170.0		25	80		42	14	
S		23	2	85	91	.350	1.01	.70	60.7	222.6		42	156		72	26	
S		24	2	83	58	.397	1.25	.79	45.5	165.0		36	131		61	22	
S		27	1	86	42	.097	.39	.10	76.0	100.0		7	10		12	2	
S		31	1	92	94	.119	.62	.24	116.0	550.0		28	131		47	22	
S		35	3	85	95	.079	.53	.18	127.7	548.3		23	99		39	17	
S		36	1	86	93	.055	.39	.11	104.5	485.0		11	53		19	9	
S		43	1	74	86	.000	.00	.00	176.0	590.0		0	0		0	0	
S		44	1	83	69	.036	.39	.04	134.0	320.0		5	12		8	2	
S		47	1	74	89	.000	.00	.00	239.5	690.0		0	0		0	0	
S		Totals	19	86	54	4.797	8.60	6.76	38.0	136.2		257	921		434	156	
A		9	5	87	45	1.790	.79	.34	6.0	30.0		2	10		3	2	
A		10	2	86	53	.267	.15	.27	12.0	30.0		3	8		5	1	
A		11	13	86	43	3.584	2.37	3.58	12.5	38.5		45	138		76	23	
A		12	14	87	39	3.982	3.13	3.98	14.8	38.6		59	154		100	26	
A		13	1	86	29	.004	.00	.00	13.0	40.0		0	0		0	0	
A		14	7	86	51	.934	1.00	1.07	20.8	62.5		22	67		38	11	
A		15	9	86	57	1.776	2.18	2.13	27.0	71.4		58	152		97	26	
A		17	1	87	50	.002	.00	.00	32.0	60.0		0	0		0	0	
A		18	5	87	70	.561	.99	1.04	31.1	97.6		32	101		55	17	
A		19	3	87	55	1.067	2.10	1.78	30.0	82.0		53	146		90	25	
A		23	2	86	52	.050	.15	.10	37.0	135.0		4	14		6	2	
A		Totals	62	87	47	14.017	12.85	14.30	19.5	55.3		278	790		470	134	
SN		14	2	87	31	.003	.00										
SN		16	1	89	36	.001	.00										
SN		18	1	88	47	.001	.00										
SN		21	1	89	21	.001	.00										
SN		22	1	89	47	.001	.00										
SN		28	1	89	60	.000	.00										
SN		Totals	7	88	36	.008	.01										
Totals			655	87	74	82.463	136.60	130.36	37.9	149.2		4,934	19,451		8,339	3,287	

TC PLOGSTVB		Log Stock Table - MBF																	
T08N R07W S36 Ty14TK THRU T08N R07W S36 TyRW				Project: BIGNOISY										Page 1					
				Acres 144.00										Date 12/20/2019					
														Time 11:25:26AM					
Spp	S T	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+
D		DO 2S	16	0		0	.0							0					
D		DO 2S	20	8		8	.5										8		
D		DO 2S	26	3		3	.2							3					
D		DO 2S	28	0		0	.0					0							
D		DO 2S	30	6		6	.3								6				
D		DO 2S	32	14		14	.8					1	5	1	7	0			
D		DO 2S	36	11		11	.7						1		10				
D		DO 2S	38	14		14	.8								14				
D		DO 2S	40	984	1.5	970	58.5				18	22	108	109	266	224	201	22	
D		DO 3S	14	0		0	.0					0							
D		DO 3S	16	6		6	.4			0	0	1	3		1				
D		DO 3S	18	1		1	.0			0		0	0						
D		DO 3S	20	7		7	.4			1	2	2	2						
D		DO 3S	24	7		7	.4			0	0	7							
D		DO 3S	26	3		3	.2			3	0								
D		DO 3S	28	6		6	.4			3		2	0						
D		DO 3S	30	10		10	.6			0	8	1			2				
D		DO 3S	32	137	2.2	134	8.1		2	37	19	58	13		4				
D		DO 3S	34	19		19	1.1			2	8	2	7						
D		DO 3S	36	60		59	3.6			19	1	15	23						
D		DO 3S	38	14		14	.8			6	0	8							
D		DO 3S	40	273	2.7	265	16.0			73	78	53	28	11	18		4		
D		DO 4S	12	0	22.4	0	.0			0									
D		DO 4S	14	2		2	.1				2								
D		DO 4S	16	22		22	1.4		1	17	4	1							
D		DO 4S	18	6		6	.3		0	5	1								
D		DO 4S	20	11		11	.7			11	0								
D		DO 4S	24	9		9	.6			8	1								
D		DO 4S	26	12		12	.7			12									
D		DO 4S	28	0		0	.0			0									
D		DO 4S	30	20	3.1	19	1.2			19	0								
D		DO 4S	32	6		6	.3		0	5									
D		DO 4S	40	12		12	.7		1	12									
D		Totals		1,682	1.6	1,656	50.4		4	233	144	175	191	124	327	224	213	22	
H		DO 2S	20	2		2	.2						2						
H		DO 2S	30	11		11	.8								11				
H		DO 2S	32	57	2.2	56	4.2			0			12		10	33			

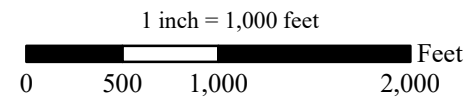
TC		PLOGSTVB		Log Stock Table - MBF																	
T08N R07W S36 Ty14TK THRU T08N R07W S36 TyRW						Project: Acres		BIGNOISY 144.00								Page Date Time				2 12/20/2019 11:25:26AM	
S T	Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
H		DO	2S	36	73		73	5.4					18	7		49					
H		DO	2S	38	26	3.1	25	1.9						11	7	7					
H		DO	2S	40	784	1.2	775	57.7			2		33	65	77	269	198	127	5		
H		DO	3S	14	0		0	.0					0								
H		DO	3S	16	9		9	.7					4		5						
H		DO	3S	18	1		1	.1					1								
H		DO	3S	20	8		8	.6			1	0	5	0	2						
H		DO	3S	24	3		3	.2				2	0	1							
H		DO	3S	28	4		4	.3			1	2	1								
H		DO	3S	30	6	1.7	6	.5				3	3								
H		DO	3S	32	83	2.9	81	6.0			17	15	15	22	7		6				
H		DO	3S	34	3		3	.2				3									
H		DO	3S	36	31		30	2.3			5	2	16	1	7						
H		DO	3S	38	20	3.2	20	1.5			10	5	5								
H		DO	3S	40	172		172	12.8			37	44	26	28	11	23	3				
H		DO	4S	12	0		0	.0			0										
H		DO	4S	14	0		0	.0			0										
H		DO	4S	16	15	4.0	14	1.1			10	4	0								
H		DO	4S	18	8		8	.6			4	4									
H		DO	4S	20	13		13	1.0			7	6	0								
H		DO	4S	24	8	17.4	7	.5			5	1									
H		DO	4S	26	0		0	.0			0										
H		DO	4S	28	1		1	.0			1										
H		DO	4S	30	13		13	.9			13										
H		DO	4S	36	6	8.9	6	.4			6										
H		Totals			1,360	1.3	1,342	40.8			118	90	110	149	126	320	295	127	5		
A		DO	1S	20	8	14.3	7	5.4						7							
A		DO	1S	24	2		2	1.5							2						
A		DO	1S	32	10		10	7.2					10								
A		DO	2S	20	0		0	.0			0										
A		DO	2S	32	5	4.2	5	3.5					5								
A		DO	2S	40	18		18	13.2					18								
A		DO	3S	14	0		0	.3				0									
A		DO	3S	20	0		0	.0				0									
A		DO	3S	24	7		7	5.0			7										
A		DO	3S	30	5		5	4.0			5										

TC		PLOGSTVB		Log Stock Table - MBF																	
T08N R07W S36 Ty14TK THRU T08N R07W S36 TyRW				Project: Acres		BIGNOISY 144.00										Page		3			
																Date		12/20/2019			
																Time		11:25:26AM			
S T	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	20-23	24-29	30-39	40+	
A		DO	3S	40	4	5.3	4	3.1			2	3									
A		DO	4S	16	2		2	1.3			2										
A		DO	4S	18	8		8	6.0			8										
A		DO	4S	20	5		5	3.9			5										
A		DO	4S	24	12		12	8.9			12										
A		DO	4S	28	1		1	1.0			1										
A		DO	4S	30	17	4.0	17	12.4			17										
A		DO	4S	32	1		1	.8			1										
A		DO	4S	34	2		2	1.4			2										
A		DO	4S	36	1		1	.6			1										
A		DO	4S	40	27		27	20.6			27										
A		Totals			136	1.7	134	4.1			78	15	22	10	7	2					
S		DO	2S	24	9		9	6.0							9						
S		DO	2S	32	9		9	5.7							1		7				
S		DO	2S	40	78		78	50.4					24	13	9	19	14				
S		DO	3S	20	1		1	.9				1									
S		DO	3S	24	2		2	1.1			2										
S		DO	3S	30	10		10	6.5							10						
S		DO	3S	32	10		10	6.5			3	4		3	0						
S		DO	3S	36	7		7	4.4				2	3		2			0			
S		DO	3S	40	12		12	7.5							12			0			
S		DO	4S	16	4		4	2.3			3		0								
S		DO	4S	20	6		6	3.9			5	1									
S		DO	4S	30	7		7	4.7			7										
S		Totals			156		156	4.7			20	8	3	27	27	30	19	21			
Total		All Species			3,334	1.4	3,287	100.0		4	450	257	311	377	284	679	538	362	27		



LOGGING PLAN MAP

OF TIMBER SALE CONTRACT
 NO. AT-341-2020-W00743-01
 THE BIG NOISY
 PORTIONS OF SECTION 1, T7N, R7W;
 SECTION 36 T8N, R7W;
 AND SECTION 6, T7N, R6W,
 W.M.; CLATSOP COUNTY, OREGON



Approximate Net Acreage:	MC Acres	PC Acres
Unit 1 (PC) =		33
Unit 2 (MC) =	12	
Unit 3 (MC) =	25	
Unit 4 (PC) =		42
Unit 5 (MC) =	56	
Unit 6 (R/W) =	1	
Total =	94	75

Total Sale Acreage = 169

Logging Breakdown	Tractor	Cable
Unit 1	85%	15%
Unit 2	100%	0%
Unit 3	100%	0%
Unit 4	100%	0%
Unit 5	46%	54%
Unit 6	100%	0%
Total	79%	21%

Legend

- Ownership Boundary
- Timber Sale Boundary
- Unit Boundary
- Surfaced Road
- New Road Construction
- New Landing
- Yarding Area - Ground Based
- Yarding Area - Cable
- Line Pull
- Existing Landings
- Controlled Felling Area
- Type "F" Stream
- Type "N" Stream
- Nonposted Buffer
- Posted Buffer
- Nonstocked Area
- Reforestation Area
- Green Tree Retention Area
- Rock Quarry
- Stockpile Site
- Survey Monument