



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Gazoo Combo
Sale AT-341-2025-W01181-01

District: Astoria

Date: April 25, 2025

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$3,217,148.83	\$100,612.26	\$3,317,761.09
		Project Work:	(\$99,236.00)
		Advertised Value:	\$3,218,525.09



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District: Astoria

Date: April 25, 2025

Timber Description

Location:

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	26	0	97
Western Hemlock / Fir	18	0	96
Sitka Spruce	26	0	95
Red Cedar	40	0	65
Alder (Red)	15	0	95

Volume by Grade	2S	3S & 4S 6"-11"	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	4,289	676	0	0	0	0	4,965
Western Hemlock / Fir	1,003	350	0	0	0	0	1,353
Sitka Spruce	0	9	0	0	0	0	9
Red Cedar	1	0	0	0	0	0	1
Alder (Red)	0	0	70	43	157	117	387
Total	5,293	1,035	70	43	157	117	6,715

Comments: Pond Values Used: Local Pond Values, February, 2025.

Expected Log Markets: Clatskanie, Warrenton, Forest Grove, Tillamook, Mist, Willamina, Noti, Eugene, Wauna, Longview, WA, and Chehalis, WA, Vancouver, WA.

PRICING:

Bigleaf maple stumpage = pond value - (Douglas-fir) logging cost.

$\$114.36/\text{MBF} = \$375.00/\text{MBF} - 260.64/\text{MBF}$

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

Machine Washing for Invasive Weed Compliance (entering and leaving) = \$2,000

Ditch Filters:

24 bales of straw @ \$12/bale = \$288.00

4 hours of labor (installation/removal) @ \$50/hr = \$200

Total P&R Cost = \$2,488.00

Other Costs (No Profit & Risk added): None

SLASH PILING

(See attached appraisal. Includes move-in and pile materials) = \$11,411.67

ROAD MAINTENANCE

(See attached Road Maintenance Cost Summary Sheet)

TOTAL Road Maintenance: $\$32,012/6,452 \text{ MBF} = \$4.77/\text{MBF}$



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Logging Conditions

Combination#: 1

Douglas - Fir	31.00%
Western Hemlock / Fir	31.00%
Sitka Spruce	31.00%
Red Cedar	31.00%
Alder (Red)	31.00%

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

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

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

loads / day: 19 **bd. ft / load:** 4900

cost / mbf: \$107.41

machines: Shovel Logger

Combination#: 2

Douglas - Fir	6.00%
Western Hemlock / Fir	6.00%
Sitka Spruce	6.00%
Red Cedar	6.00%
Alder (Red)	6.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual 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:** 4900

cost / mbf: \$162.82

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

Combination#: 3

Douglas - Fir	29.00%
Western Hemlock / Fir	29.00%
Sitka Spruce	29.00%
Red Cedar	29.00%
Alder (Red)	29.00%

Logging System: Shovel **Process:** Harvester Head Delimbing

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

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

loads / day: 13 **bd. ft / load:** 4900

cost / mbf: \$156.99

machines: Forwarder
Harvester

Combination#: 4

Douglas - Fir	34.00%
Western Hemlock / Fir	34.00%
Sitka Spruce	34.00%
Red Cedar	34.00%
Alder (Red)	34.00%

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

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

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

loads / day: 8

bd. ft / load: 4900

cost / mbf: \$203.52

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



"STEWARDSHIP IN FORESTRY"

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District: Astoria

Date: April 25, 2025

Logging Costs

Operating Seasons: 3.00	Profit Risk: 12%
Project Costs: \$99,236.00	Other Costs (P/R): \$2,488.00
Slash Disposal: \$11,411.67	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$4.77

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	5.0
Western Hemlock / Fir	\$0.00	4.0	4.8
Sitka Spruce	\$0.00	2.0	5.2
Red Cedar	\$0.00	2.0	4.9
Alder (Red)	\$0.00	3.0	3.9



"STEWARDSHIP IN FORESTRY"

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District: Astoria

Date: April 25, 2025

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$157.79	\$4.91	\$1.96	\$64.38	\$0.37	\$27.53	\$1.70	\$2.00	\$0.00	\$260.64
Western Hemlock / Fir									
\$157.79	\$4.96	\$1.96	\$67.70	\$0.37	\$27.93	\$1.70	\$2.00	\$0.00	\$264.41
Sitka Spruce									
\$157.79	\$5.01	\$1.96	\$126.20	\$0.37	\$34.96	\$1.70	\$2.00	\$0.00	\$329.99
Red Cedar									
\$157.79	\$6.44	\$1.96	\$172.19	\$0.37	\$40.65	\$1.70	\$2.00	\$0.00	\$383.10
Alder (Red)									
\$157.79	\$5.01	\$1.96	\$112.18	\$0.37	\$33.28	\$1.70	\$2.00	\$0.00	\$314.29

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$821.60	\$560.96	\$0.00
Western Hemlock / Fir	\$0.00	\$581.89	\$317.48	\$0.00
Sitka Spruce	\$0.00	\$500.00	\$170.01	\$0.00
Red Cedar	\$0.00	\$1,285.00	\$901.90	\$0.00
Alder (Red)	\$0.00	\$574.27	\$259.98	\$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
Red Cedar	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	4,965	\$560.96	\$2,785,166.40
Western Hemlock / Fir	1,353	\$317.48	\$429,550.44
Sitka Spruce	9	\$170.01	\$1,530.09
Red Cedar	1	\$901.90	\$901.90
Alder (Red)	387	\$259.98	\$100,612.26

Gross Timber Sale Value

Recovery: \$3,317,761.09

Prepared By: John Tillotson

Phone: 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Gazoo Combo
Date: March 17, 2025
By: John Czarnecki

MBF: 6,706
\$/MBF: \$4.77

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Road Maintenance or snow plowing	Grader 14G	\$972	2	16	\$126	\$3,960
	Rubber tired backhoe	\$401	2	6	\$97	\$1,384
	Dump Truck 12CY	\$205	2	12	\$99	\$1,598
	Vibratory Roller	\$972	1	4	\$97	\$1,360
Final Road Maintenance	Grader 14G	\$972	1	54	\$126	\$7,776
	Dump Truck 12CY	\$205	2	16	\$99	\$1,994
	FE Loader C966	\$931	1	8	\$108	\$1,795
	Vibratory Roller	\$972	1	54	\$97	\$6,210
	Water Truck 2,500 gallon	\$238	1	20	\$113	\$2,498
	C315 Excavator	\$1,005	1	16	\$127	\$3,037
	Labor			8	\$50	\$400
Total						\$32,012

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	2.5	5.0	2.0	16

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	10.2	6.8	54
Vibratory Roller	1.5	10.2	6.8	54

Process and compact: All crushed rock roads

Foster Mainline: 6.5 miles

Northrup Creek Road: 1.7 miles

Unnamed Spurs: 1.1 miles

New Construction - Surfaced: 0.89 miles

Grade & Process Total: 10.2 miles

Site Prep Appraisal

Sale Name: Gazoo Combo

Date: 03/13/2025

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	CC	B	47	61	\$145.00	\$8,859.50	
					In-unit Piling	Sub Total =	\$8,859.50
Sale Area	Number of Landings to be Piled	# cable acres per area	Total Cost/Area	Number of In-Unit Piles	Material Cost/Pile	Total Cost/Area	
2	10	4	\$154.67	221.5	\$5.00	\$1,107.50	
					Materials	Sub Total =	\$1,107.50
					Landing Piling	Sub Total =	\$154.67
Additional Move-in allowance							
Move-In Allowance	Number of Move-In's	Total Move-In Allowance					
\$1,290.00	1	\$1,290.00	Brush Piler				
					Move-In	Sub Total =	\$1,290.00
Slash Endhaul	Dump Truck hrs	Cost/Hour	Total	Loader hrs	Cost/Hour	Total	
						Sub Total =	\$0.00
						Grand Total =	\$11,411.67

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Gazoo Combo

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length (Sta)</u>	<u>Length (Mile)</u>	<u>Cost</u>
Unsurfaced	14.35	0.27	\$15,917.71
1A to 1B, 1C to 1D,			
2C to 2D, 2E to 2F			
Surfaced	46.90	0.89	\$20,119.29
2A to 2B, 2G to 2H			
Road Maint.			\$1,665.63
Move-In			\$4,308.87
TOTALS	61.25	1.16	\$42,011

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length (Sta)</u>	<u>Length (Mile)</u>	<u>Cost</u>
I1 to I2, I3 to I4,	336.55	6.37	\$44,101.57
I5 to I6, I7 to I8,			
I9 to I10, I11 to I12,			
Road Maint.			\$2,038.37
Move-In			\$5,273.13
TOTALS		6.37	\$51,413

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 Stream Enhancement		\$5,811.00
TOTAL		\$5,811

GRAND TOTAL **\$99,236**

Compiled By: Brittany West

Date: 03/13/2025

Move In and Maintenance Calculator for Construction and Improvement

SALE NAME: Gazoo Combo

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Length/Mile</u>	<u>Cost</u>
Unsurfaced	14.35	0.27	\$15,918
1A to 1B, 1C to 1D, 2C to 2D, 2E to 2F			
Surfaced	46.90	0.89	\$20,119
2A to 2B, 2G to 2H			
TOTALS	61.25	1.16	\$36,037

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Length/Mile</u>	<u>Cost</u>
I1 to I2, I3 to I4,	336.55	6.37	\$44,102
I5 to I6, I7 to I8,			
I9 to I10, I11 to I12,			
TOTALS		6.37	\$44,102

MOVE IN (Construction & Improvement Only)

<u>Equipment</u>	<u>Length/Mile</u>	<u>Cost</u>
Vibratory Roller		\$972
D8 Dozer		\$1,755
C315 Excavator		\$1,005
C330 Excavator		\$1,755
C966 Loader		\$972
14 G Grader		\$972
Water Truck (2,500 gal)		\$238
Dump Truck 10cy (x7)		\$1,435
Dump Truck 20cy (x2)		\$478
TOTAL		\$9,582.00

ROAD MAINTENANCE (Construction & Improvement Only)

	<u>Length/Mile</u>	<u>Cost</u>
Project Road Maintenance		\$3,704
TOTAL		\$3,704.00

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Gazoo Combo NEW CONSTRUCTION: 61.25 STATIONS 1.16 MILES
ROAD: 1A to 1B (20.4), 1C to 1D (1.0), 2A to 2B (13.35), 2C to 2D (20.0), STATIONS
2E to 2F (5.5), 2G to 2H (1.0) MILES

CLEARING & GRUBBING				
Method	Acres/amount	X	Rate	= Cost
Surfaced				
2A to 2B Scatter outside of right of way \$/acre	1.00	X	\$1,669.00	= \$1,669.00
Unsurfaced				
1A to 1B, 1C to 1D, 2C to 2D, 2E to 2F Scatter outside of right of way \$/acre	2.30	X	\$1,669.00	= \$3,838.70
2C to 2D Haul clearing debris \$/hr	8.00	X	\$99.00	= \$792.00
SUB TOTAL FOR CLEARING & GRUBBING				\$6,300

EXCAVATION				
Material	Cyl/amount	X	Rate	= Cost
1A to 1B				
0+00 to 8+55 Common drift (≤ 50% slopes) \$/cy	980	X	2.25	= \$2,205.00
8+55 to 20+40 Balanced construction \$/sta	12	X	154	= \$1,832.60
12+95, 20+40 Landing construction \$/landing	2	X	487	= \$974.00
1C to 1D				
0+00 to 1+00 Balanced construction \$/sta	1	X	\$154.00	= \$154.00
1+00 Landing construction \$/landing	1	X	\$487.00	= \$487.00
2A to 2B				
0+00 to 10+00 Common drift (≤ 50% slopes) \$/cy	650	X	\$2.25	= \$1,462.50
10+00 to 13+31 Balanced construction \$/sta	3	X	\$154.00	= \$515.90
0+00 to 10+00 Embankment compaction \$/cy	650	X	\$0.87	= \$565.50
6+90 to 7+90, 8+60 to 9+60 Cut slope rounding \$/sta	2	X	\$54.39	= \$108.78
8+20 to 8+60 Armor fill w/ C330 \$/hr	4	X	\$195.00	= \$780.00
2C to 2D				
0+00 to 10+00 Common drift (≤ 50% slopes) \$/cy	700	X	\$2.25	= \$1,575.00
10+00 to 20+00 Balanced construction \$/sta	10	X	\$154.00	= \$1,540.00
0+00 to 10+00 Embankment compaction \$/cy	350	X	\$0.87	= \$304.50
End-haul excavation (loading and haul up to 5,000')				
2+20 to 6+20 \$/cy	350	X	\$4.99	= \$1,746.50
2+20 to 6+20 Cut slope rounding \$/sta	6	X	\$54.39	= \$326.34
16+70 Construct turnaround w/ C330 \$/hr	1	X	\$195.00	= \$195.00
2E to 2F				
0+00 to 5+50 Balanced construction \$/sta	6	X	\$154.00	= \$847.00
SUB TOTAL FOR EXCAVATION				\$15,620

CULVERT MATERIALS AND INSTALLATION				
Location	Dia/type	Lineal ft.	Rate	Cost
2A to 2B				
8+35 18 50			\$18.75	\$937.50
Other/miscellaneous:				
Culvert stakes & markers:				
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION				\$938

Subtotal of Clearing, Exc., Culv. **\$22,857**

SURFACING								
Subgrade prep:		Description				Stations/ amount	Rate/ sta/amt	Cost
2A to 2B & 2G to 2H		Grade, Shape and Ditch 16'				14.35	x	\$30.98
2C to 2D, & 2E to 2F							x	
All segments		Grade, Shape and Outslope 14'				46.90	x	\$22.89
		Subgrade Compaction				61.25	x	\$25.19
								\$1,073.54
								\$1,542.89
ROAD SEGMENT		1A to 1B	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Depth of Rock (inches)	Location	Volume (CY) per	Number of			
Base Rock	4"-0" crushed	8	0+00 to 1+00	station	50	1	\$6.29	\$315
Junction Rock	3/4"-0" crushed	N/A	0+00	junction	22	1	\$6.29	\$138
Total Rock for Road Segment:		1A to 1B				72		\$453
ROAD SEGMENT		2A to 2B	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Depth of Rock (inches)	Location	Volume (CY) per	Number of			
Base Rock	4"-0" crushed	10	0+00 to 13+35	station	63	13.35	\$6.29	\$5,290
Traction Rock	3/4"-0" crushed	2	1+90 to 8+20	station	13	6.3	\$6.29	\$515
Fill Armorring	24"-6" riprap	N/A	8+20 to 8+60	load	11	5	\$6.88	\$378
Turnarounds	4"-0" crushed	N/A	11+15	turnaround	33	1	\$6.29	\$208
Turnouts	4"-0" crushed	N/A	3+30, 7+00	turnout	33	2	\$6.29	\$415
Total Rock for Road Segment:		2A to 2B				1,077		\$6,806
ROAD SEGMENT		2C to 2D	POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Depth of Rock (inches)	Location	Volume (CY) per	Number of			
Base Rock	4"-0" crushed	8	0+00 to 1+00	station	50	1	\$6.29	\$315
Junction Rock	3/4"-0" crushed	N/A	0+00	junction	22	1	\$6.29	\$138
Total Rock for Road Segment:		2C to 2D				72		\$453

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Gazoo Combo	NEW CONSTRUCTION: _____	STATIONS _____	MILES _____
ROAD: 11 to 12 (16.0), 13 to 14 (5.5), 15 to 16 (1.3), 17 to 18 (2	IMPROVEMENT: _____	336.55	6.37
19 to 110 (8.5), 111 to 112 (281+75)			

CLEARING & GRUBBING	Acres/amount	x	Rate	=	Cost
Method					

SUB TOTAL FOR CLEARING & GRUBBING **\$0**

EXCAVATION	Cyl/amount	x	Rate	=	Cost
11 to 12					
3+30 and 12+90 Construct turnarounds w/ C315	5.0	x	\$127.00	=	\$635.00
16+00 Extend landing (C315/hr)	4.0	x	\$127.00	=	\$508.00
111 to 112					
0+00 to 281+75 Remove debris from road prism (C315/hr)	8.0	x	\$127.00	=	\$1,016.00
Ditch reconstruction (C315/hr)	8.0	x	\$127.00	=	\$1,016.00
End haul waste (Dumptruck/hr)	8.0	x	\$99.00	=	\$792.00
2+40 to 9+25 Scrape asphalt edges (C380/hr)	5.0	x	\$97.00	=	\$485.00
End haul waste (Dumptruck/hr)	5.0	x	\$99.00	=	\$495.00
3+90 to 4+30 Clean bridge (laborer/hr)	8.0	x	\$50.00	=	\$400.00
End haul waste (Dumptruck/hr)	1.0	x	\$99.00	=	\$99.00
Remove vegetation from roadside					
4+30 to 9+25 and cutbanks (C315/hr)	5.0	x	\$127.00	=	\$635.00
4+65 Pump water from settling ponds (laborer/hr)	1.0	x	\$50.00	=	\$50.00
4+65 Excavate settling ponds (C315/hr)	5.0	x	\$127.00	=	\$635.00
End haul waste (Dumptruck/hr)	5.0	x	\$99.00	=	\$495.00
60+70 Clean plugged culvert (Laborer/hr)	1.0	x	\$50.00	=	\$50.00
12+00, 20+80, 27+80, 31+35, 97+10, 108+55, 111+45, 210+30 Clean culvert inlet and outlet (C315/hr)	16.0	x	\$127.00	=	\$2,032.00
31+35 Install dissipator (\$/dissipator)	3.00	x	\$225.33	=	\$675.99
19+15, 19+50, 35+85 Install a series of 3 rock ditch filters (C315/hr)	2.0	x	\$127.00	=	\$254.00
SUB TOTAL FOR EXCAVATION					\$10,273

CULVERT MATERIALS AND INSTALLATION					
Location	Dia/type	Lineal ft.	Rate	Cost	Cost
Other/miscellaneous:					
Culvert stakes & markers:					
					\$0.00
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION					\$0
<i>Subtotal of Clearing, Exc, Culv.</i>					\$10,273

SURFACING									
Subgrade prep: All "I" segments 12+90), I3 to I4 (0+00 to 5+50), I7 to I8 (3+30 to 14+15), I9 to I10 (0+00 to 8+50), & I11 to I12 (0+40 to 2+40, 9+25 to 11+25)	Description			14G Grader \$/hr		x	Rate/ sta./amt	Cost	
	Grade, Shape and Ditch 16'								
Subgrade Compaction				\$/sta.	x	\$25.19	\$968.56		
				38.45					
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				11 to 12	Sta. to Sta. 0+00 to 16+00				
Surface Leveling Rock	4'-0" crushed	14+50, 15+50	N/A	load	per 11 loads	22	\$6.29	\$138	
Surfacing	3/4"-0" crushed	3+30 to 12+90	2	station	per 13 stations	125	\$6.29	\$785	
Turnaround	4'-0" crushed	3+30, 12+90	N/A	turnaround	per 33 turnarounds	66	\$6.29	\$415	
Landing Rock	6'-0" pit-run	16+00	N/A	load	per 11 loads	33	\$6.29	\$208	
Total Rock for Road Segment:				11 to 12		246		\$1,546	
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				13 to 14	Sta. to Sta. 0+00 to 5+50				
Surfacing	3/4'-0" crushed	0+00 to 5+50	2	station	per 13 stations	72	\$6.29	\$450	
Total Rock for Road Segment:				13 to 14		72		\$450	
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				17 to 18	Sta. to Sta. 0+00 to 23+50				
Surfacing	3/4'-0" crushed	3+30 to 14+15	2	station	per 13 stations	141	\$6.29	\$887	
Turnaround	4'-0" crushed	21+60	N/A	turnaround	per 22 turnarounds	22	\$6.29	\$138	
Total Rock for Road Segment:				17 to 18		163		\$1,026	
ROAD SEGMENT									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				19 to 110	Sta. to Sta. 0+00 to 8+50				
Junctions	3/4'-0" crushed	0+00	N/A	junction	per 11 junctions	11	\$6.29	\$69	
Surfacing	3/4'-0" crushed	0+00 to 8+50	2	station	per 13 stations	111	\$6.29	\$695	
Turnaround	4'-0" crushed	7+30	N/A	turnaround	per 22 turnarounds	22	\$6.29	\$138	
Total Rock for Road Segment:				19 to 110		144		\$903	

ROAD SEGMENT		111 to 112		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application	Rock Size and Type	Location	Depth of Rock (inches)	111 to 112 Volume (CY) per	0+00 to 281+75 Number of								
		19+15, 21+20, 23+30, 31+35, 35+45, 43+30, 47+75, 63+00, 65+55, 75+50, 87+20, 93+90, 95+85, 99+10, 108+10, 111+20, 121+50, 228+75	N/A	load	11	loads	18	198	\$6.29	\$1,245			
Surface Leveling Rock	3/4"-0" crushed	0+40 to 2+40, 9+25 to 11+25, 11+25	2	station	13	stations	4	52	\$6.29	\$327			
Surfacing	3/4"-0" crushed	31+35	N/A	load	11	loads	1	11	\$6.29	\$69			
Curve Widening Surface	3/4"-0" crushed	19+15, 19+50, 35+85	N/A	dissipator	11	dissipators	1	11	\$6.88	\$76			
Culvert Energy Dissipator	24"-6" riprap			3 filter	11	series	3	33	\$6.88	\$227			
Rock Ditch Filters	6"-4" pit-run							305		\$1,944			
Total Rock for Road Segment:													
				Description		No.sta		Rate/sta		Cost			
				Water, Process & Compact:		336.55		\$70.47		\$23,717			
				SUB TOTAL FOR SURFACING		24"-6" rr		6"-4" pr		6"-0" pr	4"-0" crushed	3/4"-0" crushed	Total
				11		33		33		132	720	929	
\$33,578													
SPECIAL PROJECTS													
		Description		Cy/Amount		Rate		Cost					
		pit-run development		66 (\$/cy)		\$1.62		\$106.92					
		riprap development		33 (\$/cy)		\$2.68		\$88.44					
		Straw bales		4 (\$/bale)		\$13.39		\$53.56					
		Seed		1 (\$/lb)		\$2.00		\$2.00					
\$251													
SUB TOTAL FOR SPECIAL PROJECTS				Subtotal of Surfacing & Spec. Proj.							\$33,829		
				Subtotal of Cleaning, Exc., Culv.							\$10,273		
\$44,102													
GRAND TOTAL													

Projects Road Maintenance Cost Summary

Sale: Gazoo Combo
Date: 04-Feb-25
By: Cole H

Type	Equipment/Rationale			Hours	Rate	Cost
Project Work	Grader 14G			8	\$126	\$1,008
Final Haul	Vibratory Roller			8	\$97	\$776
Road	Water Truck 2,500 gallon			8	\$113	\$904
Maintenance	Excavator C315			8	\$127	\$1,016
Total						\$3,704

Production Rates

Grader

Vibratory Roller

Miles/day	Distance(miles)	Days
1.5	5.14	3.4
1.5	5.14	3.4

NOTE: Shingle Mill (Foster Mainline to Knob Point Quarry)	1.94	Miles
Foster Mainline (Shingle Mill to Big Creek)	3.20	Miles
TOTAL=		5.14 Miles

All unsurfaced spurs shall be waterbarred and blocked with excavator before October 1st.
 Project operations may be in conjunction with project work for the Pebbles and Shingle Knob timber sales and Foster Mainline WOC. There may be multiple operators perform these projects.

**Gazoo Combo
Stream Enhancement**

Location	Site	Number of Key Pieces	Smaller Pieces (tops)	Placement method	Helper/ Labor	Excavator/Yarder/ Rate/Hr.	Hours	\$/Location	Number of Straw Bales	\$/Bale	Cost per Site
SE1-SE2	1	3	2	Cable based	\$45	\$210	3	\$765	2	\$12.06	\$789.12
SE1-SE2	2	3	2	Cable based	\$45	\$210	3	\$765	2	\$12.06	\$789.12
SE1-SE2	3	3	2	Cable based	\$45	\$210	3	\$765	2	\$12.06	\$789.12
SE3-SE4	4	3	2	Ground based	\$45	\$175	4	\$880	2	\$12.06	\$904.12
SE3-SE4	5	3	2	Ground based	\$45	\$175	4	\$880	2	\$12.06	\$904.12
Subtotal										\$4,176	

Move-in: C330 Excavator
 Grass Seed: \$1.80 per lb. 30 lbs.

Ground Based = C.330 excavator

Project Total **\$5,811**

CRUSHED ROCK COST

SALE NAME:	Gazoo Combo
PROJECT:	Project No. 1 & 2
Stockpile:	Knob Point

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

DATE: 03/12/2025
BY: Cole H.

[illegible]

ROCK HAUL:

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

Ave haul:	\$4.89	/cy
Load:	\$0.53	/cy
Spread:	\$0.87	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>5</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 1,221

CRUSHED ROCK HAUL COSTS 2,135 cy @ \$6.29 /cy

PIT RUN ROCK COST

SALE NAME:	Gazoo Combo
PROJECT:	Project No. 1 & 2
QUARRY:	Knob Point

MATERIAL: Pit-run & Riprap

DATE: 03/16/2025
BY: Cole H.

[illegible]

ROCK HAUL:

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

Ave haul:	\$5.48	/cy
Load:	\$0.53	/cy
Spread:	\$0.87	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>7</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 1,010

PIT RUN ROCK HAUL COSTS

176 cy @ \$6.88 /cy

**Gazoo Combo
TIMBER CRUISE REPORT
FY 2025**

1. **Sale Area Location:** Portions of Sections 29, 31 & 32 of T7N, R6W, W.M., Clatsop County, OR.
2. **Fund Distribution:** BOF 100% Tax Code: 30-05 (100%)
3. **Sale Acreage by Area:**

Unit	Harvest Type	Gross Acres	Stream Buffer Acres	Reserve Tree Area	Existing R/W Acres	New R/W	Net Acres	Survey Method
1	Partial Cut	107	21	6	2	2	76	GIS
1A	Group Selection	6	-	-	-	-	6	GIS
2	Clearcut	66	10	-	4	1	51	GIS
3	Partial Cut	42	9	1	-	1	31	GIS
3A	Group Selection	1	-	-	-	-	1	GIS
4 (R/W)	Right-of-Way	4	-	-	-	-	4	LxW
TOTALS		226	40	7	6	4	169	

4. Cruisers and Cruise Dates: John Czarnecki, Ryan Simpson, Chris Scott, and Kevin Berry (03/03/2025-03/05/2025)

5. Cruise Method and Computation:

Unit 1: Unit 1 was variable plot cruised with a 40 BAF. A total of 44 plots were sampled on a six chain by three and a half chain spacing with a count to grade ratio of 2:1, resulting in 18 grade plots and 26 count plots.

Unit 2: Unit 2 was variable plot cruised with 40 BAF. A total of 28 plots were sampled on a six and a half chain by three and a half chain spacing with a count to grade ratio of 2:1, resulting in 12 grade plots and 16 count plots.

Unit 3: Unit 3 was variable plot cruised with 33.61 BAF. A total of 28 plots were sampled on a four chain by three and a half chain spacing with a count to grade ratio of 2:1, resulting in 10 grade plots and 18 count plots.

Unit 4 (R/W): In-unit Right-of-Way consists of new spur roads and landings within Units 1 and 2. Cruise data for Unit 4 R/W was obtained from the U1 and U2 cruises respectively.

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

UNIT(s)	CRUISE	TRACT	TYPE	ACRES
1	GAZOO	U1	PC	76
1A	GAZOO	U1	GSPC	6
2	GAZOO	U2	CC	51
3	GAZOO	U3	PC	31
3A	GAZOO	U3	GSPC	1
4 (R/W)	GAZOO	R/W	RW	4

6. Timber Description:

Unit 1: A partial cut with an average age of 75 years. The stand consists of Douglas-fir, western hemlock, and red alder. Minor components of western redcedar and bigleaf maple are present in the unit. The average take Douglas-fir is approximately 26 inches DBH and 143 feet for a total height. The average take western hemlock is approximately 17 inches DBH and 83 feet for a total height. The average take red alder is approximately 16 inches DBH and 67 feet for a total height. Average net volume to be harvested per acre is 39 MBF. All trees were cruised to a merchantable top of six inches DIB, 40% of form point, or an otherwise anticipated break point.

Unit 1A: Consists of two group selection patch cuts within Unit 1 with a combined acreage of six acres. They are similar to the timber description above in Unit 1.

Unit 2: A clearcut with an average age of 73 years. The stand consists of Douglas-fir, western hemlock, and red alder, with minor components of Sitka spruce. The average take Douglas-fir is approximately 28 inches DBH and 126 feet for a total height. The average take western hemlock is approximately 20 inches DBH and 74 feet for a total height. The average take red alder is approximately 14 inches DBH and 55 feet for a total height. The average take Sitka spruce is 26 inches DBH and 76 feet for a total height. Average net volume to be harvested per acre is 43 MBF. All trees were cruised to a merchantable top of six inches DBH, 40% of form point, or an otherwise anticipated break point.

Unit 3: A partial cut with an average age of 73 years. The stand consists of Douglas-fir, western hemlock, and red alder. The average take Douglas-fir is approximately 24 inches DBH and 129 feet for a total height. The average take western hemlock is approximately 21 inches DBH and 113 feet for a total height. The average take red alder is approximately 15 inches DBH and 69 feet for a total height. Average net volume to be harvested per acre is 27 MBF. All trees were cruised to a merchantable top of six inches DBH, 40% of form point, or an otherwise anticipated break point.

Unit 3A: Consists of two group selection patch cuts within Unit 3 with a combined acreage of one acre. It is similar to the timber description above in Unit 3.

Unit 4 (R/W): Four acres of new R/W, it is similar to the timber description of Units 1 and 3.

7. Statistical Analysis and Stand Summary:

Statistics for Stand B.F. volumes

Type	Estimated CV	Target SE%	Actual CV	Actual SE%
Unit 1	40%	11%	36%	5.43%
Unit 2	35%	9%	44%	8.31%
Unit 3	35%	12%	45%	8.59%

8. Volumes by Species and Log Grade:

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

Conifer

Species	DBH	Net Vol.	2 Saw	3 Saw	4 Saw	% D & B	% Sale
Douglas-fir	26"	4,965	4,289	607	69	0.8%	74%
Western hemlock	18"	1,353	1,003	275	75	0.8%	20%
Sitka spruce	26"	9	-	9	-	0%	<1%
Red Cedar	40"	1	1	0	0	1.5	<1%
TOTALS	--	6,328	5,293	891	144	--	--

Hardwood

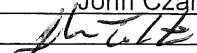
Species	DBH	Net Vol.	12"+	10"-11"	8"-9"	6"-7"	% D & B	% Sale
Red alder	15"	387	157	43	70	117	1.7%	6%
Maple	24			<1			9.1	<1%
TOTALS	--	387	157	43	70	117	--	--

TOTAL VOLUME	6,715 MBF
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9. Approvals:

Prepared by: John Czarnecki

Date: 03/17/2025

Unit Forester Approval: 

Date: 3/24/2025

10. Attachments: Cruise Design and Map (9 pages)
Volume Report 12 page)
Statistics Report (10 pages)
Log Stock Table (2 pages)
Stand Table Summary (2 pages)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Gazoo Combo

Unit U1

Harvest Type: Partial Cut

Approx. Cruise Acres: 87 **Estimated CV%** 40 Net BF/Acre **SE% Objective** 11% Net BF/Acre

Planned Sale Volume: 1,566 MBF **Estimated Sale Area Value/Acre:** \$9,000/Acre

A. Cruise Goals: (a) Grade minimum 70 conifer trees.

(b) Sample 44 plots (18 grade / 26 count); (c) Other goals (X 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

Unit 1:

Cruise Line Direction: 104°/284°

Cruise Line Spacing 6 (chains) 396 (feet)

Cruise Plot Spacing 3.5 (chains) 231 (feet)

Grade/Count Ratio 1:2

Basal Area leave target is 130 sq. ft. Cruiser needs to select 3 to 4 leave trees per plot. Cruise all take and leave trees.

All cedar will be reserved. All minor species will be the first priority leave trees. Take trees should be Douglas-fir where available. Record all snags as SN.

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

Take plots as marked on cruise map.

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

DO NOT: record snags < 15" DBH or record snag measurements on count plots.

C. Tree Measurements:

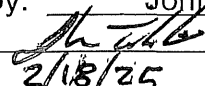
1. Diameter: Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.

Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16" - 24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.

2. Bole Length: Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.

3. Top Cruise Diameter (TCD): Minimum top outside bark is 7" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 20" dbh and 40% of dob @ FP for conifer trees > 20" dbh.

4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree. Hardwoods shall be recorded in 8' and 10' multiples.
6. **Species, Sort, and Grade Codes:**
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); GF (Grand fir); SF (Silver fir); A (Red alder); M (Bigleaf maple); SN (Snag). For "leave trees", add an "L" to the species code (such as DL, HL, CL, etc.).
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
Hardwoods: Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.
All Maple Camp Run = R
- Grade oversized 3-SAW (DIB $\geq$ 12", knots $>$ 2½" inside scaling cylinder affecting $>$ 50% of log)
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees $>$ 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
9. **Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back), Compass, Allegro II Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint, Permanent Marker.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.)

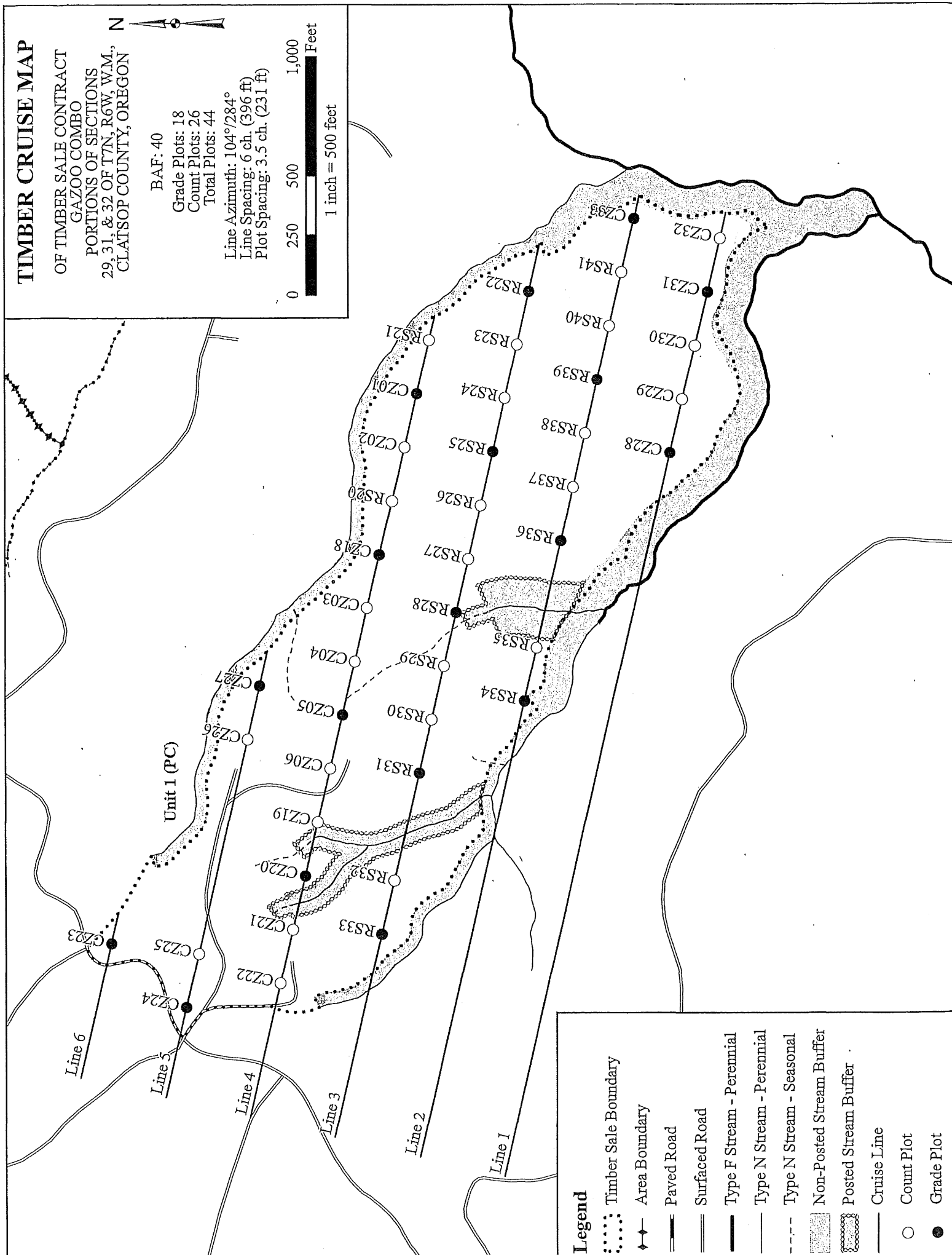
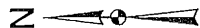
Cruise Design by: John Czarnecki
Approved by: 
Date: 2/18/25

OF TIMBER SALE CONTRACT
GAZOO COMBO
PORTIONS OF SECTIONS
29, 31, & 32 OF T7N, R6W, W.M.,
CLATSOP COUNTY, OREGON

Grade Plots: 18
Count Plots: 26
Total Plots: 44

Line Spacing: 6 ch. (396 ft)

Plot Spacing: 3.5 ch. (231 ft)



Timber Sale Boundary
Area Boundary
Paved Road
Surfaced Road
Type F Stream - Perennial
Type N Stream - Perennial
Type N Stream - Seasonal
Non-Posted Stream Buffer
Posted Stream Buffer

○ Count Plot

- Grade Plot

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Gazoo Combo

Unit U2

Harvest Type: Clear Cut

Approx. Cruise Acres: 56 **Estimated CV%** 35 Net BF/Acre **SE% Objective** 9% Net BF/Acre

Planned Sale Volume: 2,520 MBF **Estimated Sale Area Value/Acre:** \$22,500/Acre

A. Cruise Goals: (a) Grade minimum 70 conifer trees.

(b) Sample 28 plots (12 grade / 16 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; Determine snag and leave tree species and sizes)

B. Cruise Design:

1. Plot Cruises: BAF: 40

Unit 1:

Cruise Line Direction: 104°/284°

Cruise Line Spacing 6.5 (chains) 429 (feet)

Cruise Plot Spacing 3.5 (chains) 231 (feet)

Grade/Count Ratio 1:2

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

Take plots as marked on cruise map.

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

DO NOT: record snags < 15" DBH or record snag measurements on count plots.

C. Tree Measurements:

1. Diameter: Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.

Record dbh to nearest $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16" - 24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.

2. Bole Length: Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.

3. Top Cruise Diameter (TCD): Minimum top outside bark is 7" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 20" dbh and 40% of dob @ FP for conifer trees > 20" dbh.

4. Form Factors: (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. Tree Segments: Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull

segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree. Hardwoods shall be recorded in 8' and 10' multiples.

6. Species, Sort, and Grade Codes:

- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); GF (Grand fir); SF (Silver fir); A (Red alder); M (Bigleaf maple); SN (Snag). For "leave trees", add an "L" to the species code (such as DL, HL, CL, etc.).
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
Hardwoods: Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.
All Maple Camp Run = R

Grade oversized 3-SAW (DIB $\geq$ 12", knots $> 2\frac{1}{2}$ " inside scaling cylinder affecting $> 50\%$ of log)

7. **Deductions**: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures: Plot Type Cruises**: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
9. **Cruising Equipment**: Relaskop, Rangefinder, Logger's Tape (with dbh on back), Compass, Allegro II Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint, Permanent Marker.
10. **Attachments**: A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.)

Cruise Design by: Ryan Simpson
Approved by: [Signature]
Date: 2/18/25

TIMBER CRUISE MAP

OF TIMBER SALE CONTRACT
GAZOO COMBO
PORTIONS OF SECTIONS
29, 31, & 32 OF T7N, R6W, W.M.,
CLATSOP COUNTY, OREGON

BAF: 40

Grade Plots: 12

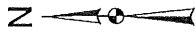
Count Plots: 16

Total Plots: 28

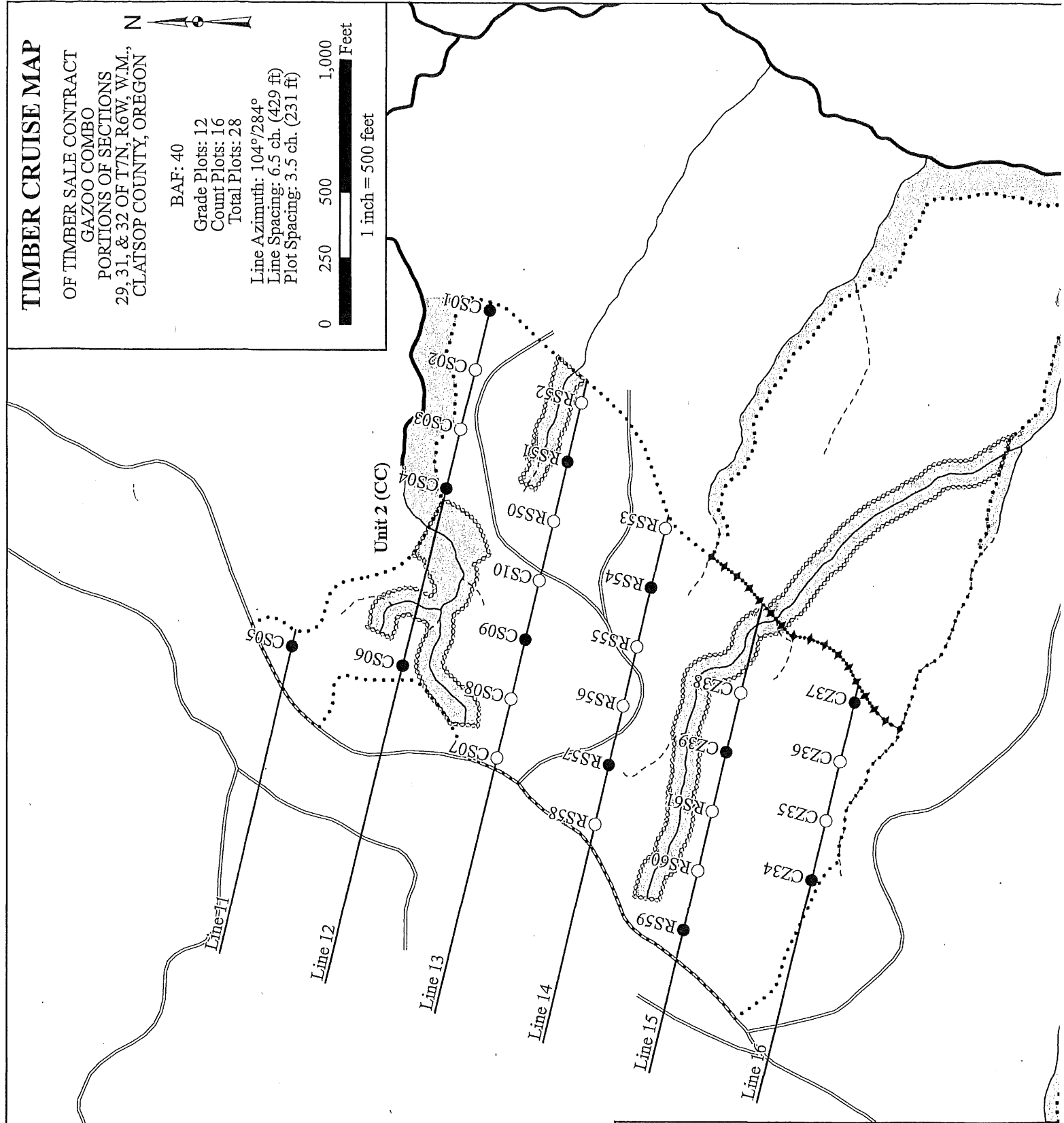
Line Azimuth: 104°/284°

Line Spacing: 6.5 ch. (429 ft)

Plot Spacing: 3.5 ch. (231 ft)



1 inch = 500 feet



Legend

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

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Gazoo Combo

Unit U3

Harvest Type: Partial Cut

Approx. Cruise Acres: 34 **Estimated CV%** 35 Net BF/Acre **SE% Objective** 12% Net BF/Acre

Planned Sale Volume: 680 MBF **Estimated Sale Area Value/Acre:** \$10,000/Acre

A. Cruise Goals: (a) Grade minimum 70 conifer trees.
(b) Sample 28 plots (10 grade / 18 count); (c) Other goals (X 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: 33.61

Unit 1:

Cruise Line Direction: 111°/291°
Cruise Line Spacing 4 (chains) 264 (feet)
Cruise Plot Spacing 3.5 (chains) 231 (feet)
Grade/Count Ratio 1:2

Basal Area leave target is 130 sq. ft. Cruiser needs to select 3 to 4 leave trees per plot. Cruise all take and leave trees.

All cedar will be reserved. All minor species will be the first priority leave trees. Take trees should be Douglas-fir where available. Record all snags as SN.

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

Take plots as marked on cruise map.

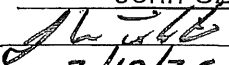
DO NOT: record any 22' log lengths, or any 12', 24', or 32' log lengths for hardwoods.

DO NOT: record snags < 15" DBH or record snag measurements on count plots.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods.
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16" - 24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 20" dbh and 40% of dob @ FP for conifer trees > 20" dbh.

4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree. Hardwoods shall be recorded in 8' and 10' multiples.
6. **Species, Sort, and Grade Codes:**
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); GF (Grand fir); SF (Silver fir); A (Red alder); M (Bigleaf maple); SN (Snag). For "leave trees", add an "L" to the species code (such as DL, HL, CL, etc.).
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
Hardwoods: Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.
All Maple Camp Run = R
- Grade oversized 3-SAW (DIB $\geq$ 12", knots $>$ 2½" inside scaling cylinder affecting $>$ 50% of log)
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees $>$ 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
9. **Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back), Compass, Allegro II Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint, Permanent Marker.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.)

Cruise Design by: John Czarnecki
Approved by: 
Date: 2/18/25

TIMBER CRUISE MAP

OF TIMBER SALE CONTRACT
GAZOO COMBO
PORTIONS OF SECTIONS
29, 31, & 32 OF T7N, R6W, W.M.,
CLATSOP COUNTY, OREGON

BAF: 33.61

Grade Plots: 10

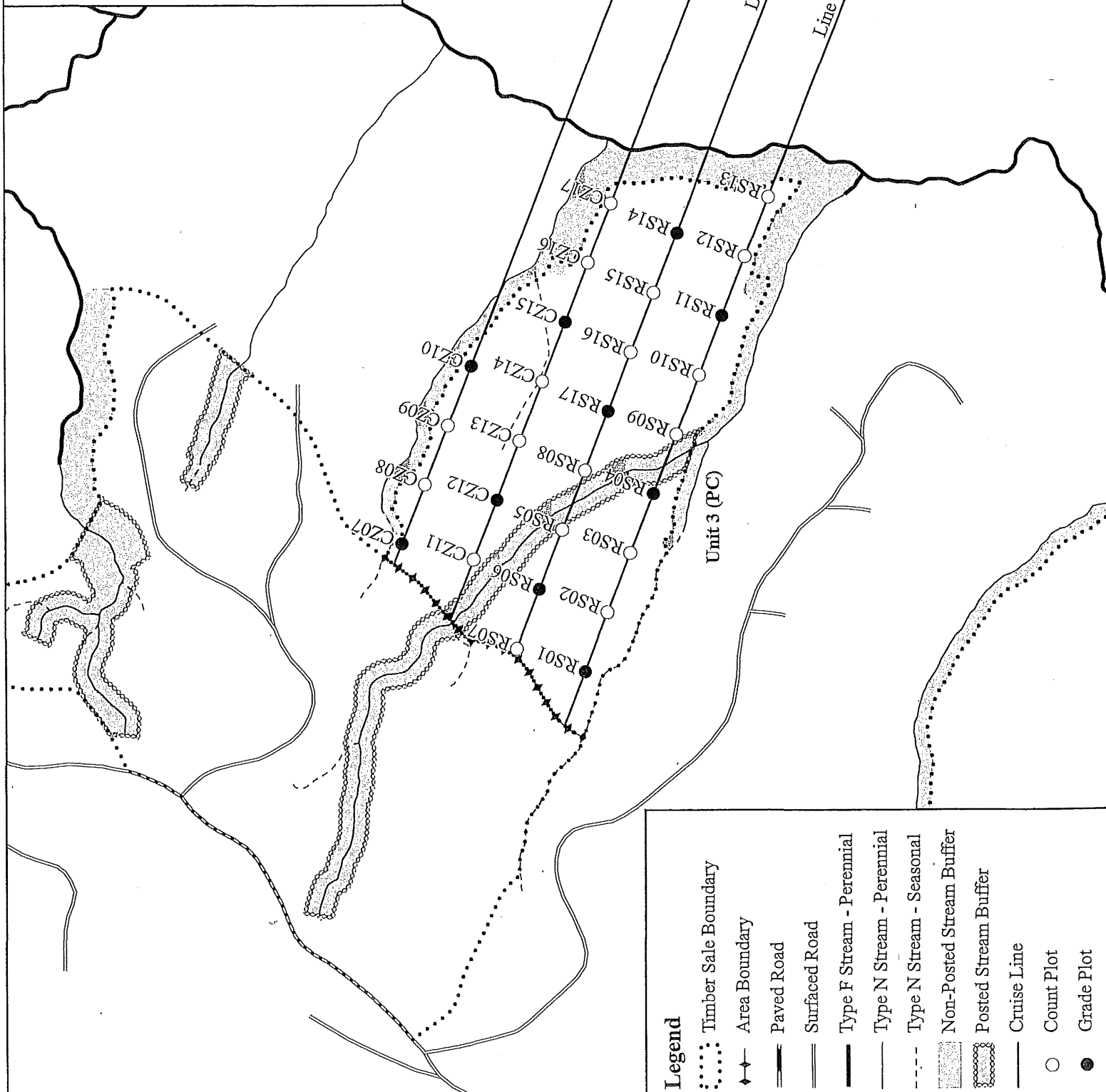
Count Plots: 18

Total Plots: 28

Line Azimuth: 111°/291°

Line Spacing: 4 ch. (264 ft)

Plot Spacing: 3.5 ch. (231 ft)



Legend

- Timber Sale Boundary
- ◆ Area Boundary
- == Paved Road
- == Surfaced Road
- Type F Stream - Perennial
- Type N Stream - Perennial
- - - Type N Stream - Seasonal
- ▨ Non-Posted Stream Buffer
- ▤ Posted Stream Buffer
- Cruise Line
- Count Plot
- Grade Plot

Species, Sort, Grade - Mbf by Species, Sort, Grade; Summarized: Len, Dia Classes

State, County: OR CLATSOP

Lths and Dias: ACI-2023

Species: CLATSOP

Page: 1/6

Project: GAZOO

Plots: 44

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1

Trees: 370

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: GSPC

Meas Trees: 143

Price: ACI-2018

Grown:

Acres: 6.00

Count Trees: 227

Cost: ACI-2023

Edited: 03/25/2025

Species Stat				BdFt per Acre				Percent (%) of Net BdFt Volume														Average Log				Logs /Acre																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Species, Sort, Grade - MbF by Species, Sort, Grade; Summarized: Len, Dia Classes

State, County:

Lths and Dias: ACI-2023

Species: CLATSOP

Page: 3/6

Project: GAZOO

Plots: 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U2

Trees: 162

Grade: ODF-C.CUT

Cruised: 03/01/2025

Stand: 00CC

Meas Trees: 73

Price: ACI-2018

Grown:

Acres: 51.00

Count Trees: 89

Cost: ACI-2023

Edited: 04/24/2025

Species Stat Srt Grd				% Net BdFt		BdFt per Acre			Total Net MbF	Percent (%) of Net BdFt Volume										Average Log				Logs /Acre																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Species, Sort, Grade - Mbf by Species, Sort, Grade; Summarized: Len, Dia Classes

State, County: OR CLATSOP

Lths and Dias: ACI-2023

Species: CLATSOP

Page: 4/6

Project: GAZOO

Plots: 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U3

Trees: 226

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: GSPC

Meas Trees: 87

Price: ACI-2018

Grown:

Acres: 1.00

Count Trees: 139

Cost: ACI-2023

Edited: 03/20/2025

Species Stat Srt Grd				% Net BdFt	BdFt per Acre				Total Net Mbf	Percent (%) of Net BdFt Volume										Average Log				Logs /Acre																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Species, Sort, Grade - MbF by Species, Sort, Grade; Summarized: Len, Dia Classes

State, County: OR CLATSOP

Lths and Dias: ACL-2023

Species: CLATSOP

Page: 5/6

Project: GAZOO

Plots: 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U3

Trees: 116

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: TKPC

Meas Trees: 49

Price: ACL-2018

Grown:

Acres: 31.00

Count Trees: 67

Cost: ACL-2023

Edited: 04/24/2025

Species Stat Srt Grd				% Net BdFt		BdFt per Acre				Total Net Mbf	Percent (%) of Net BdFt Volume										Average Log				Logs /Acre						
						% Def Gross Net					Log Scale Dia					Log Length					Len (Ft)	Dia (In)	CuFt / Len								
											2-4	5-7	8-11	12-17	18-23	24-29	30-39	40-99	12-15	16-21			22-23	24-27		28-31	32-35	36-39	40+	BdFt	CuFt
D	DO	2S		80.8	0.8	14,770	14,648	454					44	53	3				1	1	3	5	6	15	68	99	39	17.0	455	2.5	32.167
D	DO	3S		17.3	0.7	3,148	3,125	97		6	91	3						3	3							36	36	9.5	111	0.9	28.105
D	DO	4S		1.9		344	344	11		93	7						15	63	22							18	18	7.0	27	0.5	12.602
D	Totals			100.0	1.0	18,262	18,118	562		3	16	36	43	2			2		1	1	2	3	92	3	92	35	35	12.4	249	1.6	72.874
A	DO	1S		42.9	1.7	682	670	21				100							30	38					32	31	31	13.8	207	1.7	3.238
A	DO	2S		13.3		209	209	6			100								100							24	24	11.2	100	1.0	2.085
A	DO	3S		21.9		343	343	11		12	88								36	12					51	29	29	9.2	76	0.8	4.526
A	DO	4S		21.8		341	341	11		100							7		21						22	31	31	6.8	45	0.6	7.651
A	Totals			100.0	1.0	1,574	1,563	48		25	33	43					1		39	19					16	30	30	9.2	89	0.9	17.500
H	DO	2S		64.6	0.2	4,950	4,939	153				74	26												100	40	40	15.4	363	2.1	13.605
H	DO	3S		31.4		2,401	2,401	74		9	91									6	4			3	87	37	37	9.9	133	1.0	18.006
H	DO	4S		4.1	0.0	312	312	10		86	14						100									18	18	7.2	28	0.5	11.340
H	Totals			100.0		7,662	7,652	237		6	29	48	17				4			2	1	1	92	1	92	33	33	11.0	178	1.3	42.951
Totals All Species				100.0	1.0	27,499	27,333	847		5	21	40	33	1			2		3	2	1	3	88	3	88	34	34	11.5	205	1.5	133.326

Species, Sort, Grade - Mbf by Species, Sort, Grade; Summarized: Len, Dia Classes

State, County: OR CLATSOP

Lths and Dias: ACI-2023

Species: CLATSOP

Page: 6/6

Project: GAZOO

Plots: 100

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U4

Trees: 759

Grade: ODF-C.CUT

Cruised: 04/24/2025

Stand: RW

Meas Trees: 304

Price: ACI-2018

Grown:

Acres: 4.00

Count Trees: 455

Cost: ACI-2023

Edited: 04/24/2025

Species Stat Srt Grd				% Net BdFt	BdFt per Acre				Total Net Mbft	Percent (%) of Net BdFt Volume												Average Log				Logs /Acre	
										Log Scale Dia								Log Length				Len		Dia			CuFt /Len
					% Def	Gross	Net			2-4	5-7	8-11	12-17	18-23	24-29	30-39	40-99	12-15	16-21	22-23	24-27	28-31	32-35	36-39	40+		
D	DO	2S		85.3	0.7	39,226	38,947	156			0	36	52	10	2		0	1	0	3	0	95	38	17.5	489	2.6	79.637
D	DO	3S		13.7	1.9	6,379	6,256	25	6	66	4	9	14			5	6	4	8	10	68	34	10.1	133	1.1	46.934	
D	DO	4S		1.0	0.0	477	477	2	57	43						6	59	28	7			20	7.6	31	0.5	15.281	
D	Totals			100.0	1.0	46,082	45,680	183	1	10	31	45	11	1		2	2	1	4	2	90	35	14.0	322	2.0	141.852	
H	DO	2S		74.2	0.7	10,463	10,388	42			58	41	1			1	1	1	8	1	89	38	15.8	368	2.2	28.253	
H	DO	3S		20.7	0.5	2,921	2,905	12	14	86						2	6	7	18	7	60	35	9.5	106	0.9	27.467	
H	DO	4S		5.1	1.1	720	711	3	75	25						3	62	30	5			20	7.4	29	0.5	24.652	
H	Totals			100.0	1.0	14,103	14,004	56	7	19	43	30	1			4	4	3	9	2	78	32	11.0	174	1.4	80.372	
A	DO	1S		40.2	3.4	953	920	4			100							27	23	7	43	31	13.5	193	1.6	4.772	
A	DO	2S		16.8	1.5	390	384	2		100								49	33	18		27	11.0	107	1.0	3.589	
A	DO	3S		12.6	0.0	287	287	1	5	95								14	5	20	61	34	9.2	98	0.8	2.937	
A	DO	4S		30.5	0.0	697	697	3	100							2	26	18	6	9	19	20	26	7.2	41	0.6	17.102
A	Totals			100.0	2.0	2,326	2,288	9	31	29	40					1	8	26	17	9	8	31	28	8.9	81	0.9	28.400
M	DO	2S		100.0	9.1	14	13			100									100			30	10.3	100	1.7	1.127	
M	Totals			100.0	9.0	14	13			100									100			30	10.3	100	1.7	0.127	
S	DO	3S		100.0		43	43			100											100	40	16.6	400	2.8	1.108	
S	Totals			100.0		43	43			100											100	40	16.6	400	2.8	0.108	
C	DO	2S		100.0	1.5	59	58				29	71						13			87	34	16.6	427	2.8	1.135	
C	Totals			100.0	1.0	59	58				29	71						13			87	34	16.6	427	2.8	0.135	
Totals All Species				100.0	1.0	62,627	62,086	248	4	13	34	40	8	1		2		3	2	5	2	85	33	12.5	247	1.7	250.995

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

Page: 1/3

Project: GAZOO

#Plots 44

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1

Trees: 375

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: PC

Measured Trees: 146

Price: ACI-2018

Grown To:

Acres: 76.00

Count Trees: 229

Cost: ACI-2023

Edited: 04/25/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	20	146	7.30	46.859	3,561	4.10
Basal DBH Count Plots (B)	24	229	9.54	77.313	5,875	3.90

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		54	25.3	142	36.011	125.45	24.95	68.5	10.8	162	66.96	29.469	5,089	2,240
WHEMLOCK		14	16.7	83	33.923	51.82	12.67	65.9	12.7	54	20.79	7.684	1,580	584
DOUGLEAV		44	31.5	149	17.843	96.36	17.18	35.4	5.5	127	52.57	25.020	3,995	1,902
R ALDER		12	15.8	67	16.090	21.82	5.49	66.0	19.9	17	6.76	2.257	514	172
HEMLEAV		16	21.2	91	15.512	38.18	8.28	47.9	8.8	42	16.04	6.378	1,219	485
MAPLELV		1	24.0	37	0.289	0.91	0.19				0.15	.029	11	2
CEDLEAV		2	40.0	137	0.209	1.82	0.29			2	0.85	.403	64	31
		143	22.7	109	119.876	336.36	69.05	36.0	5.4	403	164.11	71.240	12,472	5,414

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	36.00	5.43	67.37	71.24	75.11	51	12	5	5,120	5,414	5,708
Net Ccf (100 CuFt)	1.00	68.26	34.95	5.27	155.46	164.11	172.75	48	12	5	11,815	12,472	13,129
Net Tons	1.00	68.26	34.82	5.25	382.11	403.28	424.46	48	12	5	29,041	30,650	32,259
Basal Area	1.00	68.26	31.66	4.77	324.64	340.91	357.18	40	10	4			
Trees	1.00	68.26	45.82	6.91	115.59	124.17	132.75	83	20	9			

	SD	CL	CV%	SE%	per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	69.90	4.54	824	864	903	195	48	21
Sample Trees CF	1.00	68.26	61.15	3.97	183	191	198	149	37	16

Trees per Plot					Number Required		
Required Measured Trees per Plot - BdFt per Acre					3	4	4
Required Measured Trees per Plot - CuFt per Acre					3	3	3

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U2

Trees: 162

Grade: ODF-C.CUT

Cruised: 03/01/2025

Stand: CC

Measured Trees: 73

Price: ACI-2018

Grown To:

Acres: 51.00

Count Trees: 89

Cost: ACI-2023

Edited: 04/25/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	14	73	5.21	41.963	2,140	3.41
Basal DBH Count Plots (B)	14	89	6.36	42.493	2,167	4.11

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		43	27.8	126	36.714	154.29	29.28	56.1	10.8	175	72.53	32.418	3,699	1,653
R ALDER		13	14.1	55	27.559	30.00	7.98	39.2	14.8	22	8.69	2.801	443	143
WHEMLOCK		14	20.2	74	17.974	40.00	8.90	50.6	12.3	46	17.73	7.582	904	387
SNAG		2	24.0	96	1.821	5.71	1.17				0.00	.000		
S SPRUCE		1	26.0	76	0.387	1.43	0.28			1	0.45	.209	23	11
		73	22.4	91	84.456	231.43	47.61	44.0	8.3	244	99.40	43.010	5,069	2,193

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	43.96	8.31	39.44	43.01	46.58	77	19	8	2,011	2,193	2,376
Net Ccf (100 CuFt)	1.00	68.26	43.35	8.19	91.26	99.40	107.54	75	18	8	4,654	5,069	5,485
Net Tons	1.00	68.26	42.88	8.10	224.25	244.02	263.79	73	18	8	11,437	12,445	13,453
Basal Area	1.00	68.26	45.69	8.64	211.44	231.43	251.41	83	20	9			
Trees	1.00	68.26	76.58	14.47	72.23	84.46	96.68	234	58	26			

					per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	78.34	7.80	760	824	889	245	61	27
Sample Trees CF	1.00	68.26	69.93	6.96	169	182	195	195	48	21

Trees per Plot					Number Required		
Required Measured Trees per Plot - BdFt per Acre					3	3	3
Required Measured Trees per Plot - CuFt per Acre					2	2	2

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U3

Trees: 226

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: PC

Measured Trees: 87

Price: ACI-2018

Grown To:

Acres: 31.00

Count Trees: 139

Cost: ACI-2023

Edited: 04/25/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	10	87	8.70	39.181	1,214	7.17
Basal DBH Count Plots (B)	18	139	7.72	58.013	1,798	7.73

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		29	23.6	129	27.244	82.82	17.05	64.1	14.3	104	43.13	18.659	1,337	578
HEMLEAV		12	19.9	113	19.996	43.21	9.69	53.4	11.6	56	21.70	8.905	673	276
WHEMLOCK		13	20.9	113	16.580	39.61	8.66	61.7	16.5	49	18.99	7.652	589	237
DOUGLEAV		24	31.1	150	16.185	85.23	15.29	35.0	6.6	108	44.55	20.766	1,381	644
R ALDER		7	15.3	69	12.177	15.60	3.99	35.2	11.1	12	4.71	1.563	146	48
SNAG		2	13.3	65	5.013	4.80	1.32	81.6	40.8		0.43	.122	13	4
		87	22.6	116	97.194	271.28	55.98	45.5	8.6	329	133.50	57.667	4,139	1,788

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	45.46	8.59	52.71	57.67	62.62	82	20	9	1,634	1,788	1,941
Net Ccf (100 CuFt)	1.00	68.26	46.13	8.72	121.87	133.50	145.14	85	21	9	3,778	4,139	4,499
Net Tons	1.00	68.26	46.13	8.72	300.60	329.31	358.02	85	21	9	9,319	10,209	11,099
Basal Area	1.00	68.26	43.96	8.31	248.75	271.28	293.82	77	19	8			
Trees	1.00	68.26	47.34	8.95	88.50	97.19	105.89	89	22	9			

					per-Tree Range			Sample Trees Required		
					Low	Avg	High	175	43	19
Sample Trees BF	1.00	68.26	66.26	5.43	746	789	832	175	43	19
Sample Trees CF	1.00	68.26	57.57	4.72	169	177	185	132	33	14

Trees per Plot					Number Required		
Required Measured Trees per Plot - BdFt per Acre					2	2	2
Required Measured Trees per Plot - CuFt per Acre					1	1	1

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 272

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1 : U4

Trees: 1850

Grade: ODF-C.CUT

Cruised:

Stand: 00CC : TKPC

Measured Trees: 735

Price: ACI-2018

Grown To:

Acres: 169.00

Count Trees: 1115

Cost: ACI-2023

Edited:

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	115	735	6.39	33.740	5,702	12.89
Basal DBH Count Plots (B)	153	1,112	7.27	47.297	7,993	13.91
Basal Count Plots (B)	1	3	3.00	.000		.00
Blank Plots (B)	4		.00	.000		.00

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		471	26.2	135	34.758	130.48	25.47	159.5	9.9	160	66.23	29.380	11,192	4,965
WHEMLOCK		163	18.3	85	26.174	47.73	11.16	156.7	11.6	53	20.39	8.020	3,446	1,355
R ALDER		83	15.0	62	18.880	23.14	5.98	167.3	19.1	17	6.96	2.290	1,176	387
SNAG		6	19.5	74	1.082	2.25	0.51				0.00	.000		
S SPRUCE		2	26.0	76	0.119	0.44	0.09	136.9	96.8		0.14	.064	23	11
BL MAPLE		2	24.0	37	0.013	0.04	0.01	77.3	54.6		0.01	.001	1	
WR CEDAR		4	40.0	137	0.010	0.08	0.01	77.3	54.6		0.01	.006	2	1
		731	21.5	101	81.037	204.17	43.23	146.1	8.9	231	93.73	39.762	15,840	6,720

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	146.11	8.86	36.24	39.76	43.28	853	213	94	6,124	6,720	7,315
Net Ccf (100 CuFt)	1.00	68.26	144.96	8.79	85.49	93.73	101.97	840	210	93	14,448	15,840	17,233
Net Tons	1.00	68.26	144.52	8.76	210.49	230.71	250.92	835	208	92	35,573	38,989	42,406
Basal Area	1.00	68.26	145.37	8.81	186.77	204.83	222.88	845	211	93			
Trees	1.00	68.26	165.18	10.02	72.92	81.04	89.15	1,091	272	121			

					per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	70.03	2.05	758	774	790	196	49	21
Sample Trees CF	1.00	68.26	60.99	1.78	170	174	177	148	37	16

Trees per Plot		Number Required
Required Measured Trees per Plot - BdFt per Acre		
Required Measured Trees per Plot - CuFt per Acre		

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 44

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1

Trees: 152

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: LVPC

Measured Trees: 66

Price: ACI-2018

Grown To:

Acres: 76.00

Count Trees: 86

Cost: ACI-2023

Edited: 03/25/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	20	66	3.30	16.391	1,245	5.30
Basal DBH Count Plots (B)	23	86	3.74	21.084	1,602	5.37
Blank Plots (B)	1		.00	.000		.00

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUGLEAV		44	31.5	149	17.170	92.73	16.53	36.4	5.7	122	50.58	24.076	3,844	1,830
HEMLEAV		16	21.2	91	15.512	38.18	8.28	52.1	9.4	42	16.04	6.378	1,219	485
MAPLELV		1	24.0	37	0.289	0.91	0.19				0.15	.029	11	2
CEDLEAV		2	40.0	137	0.209	1.82	0.29			2	0.85	.403	64	31
		63	27.2	121	33.180	133.64	25.29	28.4	4.3	166	67.62	30.885	5,139	2,347

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	28.42	4.28	29.56	30.89	32.21	32	8	3	2,247	2,347	2,448
Net Ccf (100 CuFt)	1.00	68.26	26.02	3.92	64.97	67.62	70.27	27	6	3	4,937	5,139	5,341
Net Tons	1.00	68.26	25.56	3.85	159.46	165.85	172.24	26	6	2	12,119	12,604	13,090
Basal Area	1.00	68.26	22.03	3.32	133.59	138.18	142.77	19	4	2			
Trees	1.00	68.26	40.11	6.05	35.21	37.48	39.74	64	16	7			

	SD	CL	CV%	SE%	per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	62.26	5.91	1,032	1,097	1,162	155	38	17
Sample Trees CF	1.00	68.26	55.73	5.29	222	235	247	124	31	13

Trees per Plot	Number Required		
Required Measured Trees per Plot - BdFt per Acre	4	4	5
Required Measured Trees per Plot - CuFt per Acre	4	5	4

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U3

Trees: 112

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: LVPC

Measured Trees: 38

Price: ACI-2018

Grown To:

Acres: 31.00

Count Trees: 74

Cost: ACI-2023

Edited: 03/25/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	10	38	3.80	14.643	453	8.39
Basal DBH Count Plots (B)	18	73	4.06	26.551	823	8.87
Basal Count Plots (B)	1	1	1.00	.000		.00

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
HEMLEAV		12	19.9	113	19.996	43.21	9.69	53.4	11.6	56	21.70	8.905	673	276
DOUGLEAV		24	31.1	150	16.185	85.23	15.29	34.5	6.5	111	45.77	21.389	1,419	663
SNAG		2	13.3	65	5.013	4.80	1.32	39.6	19.8		1.35	.474	42	15
		38	24.4	122	41.194	133.24	26.29	21.4	4.0	167	68.82	30.768	2,133	954

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%				Total Volume Range		
					Low	Avg	High	5%	10%	15%		Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	21.37	4.04	29.53	30.77	32.01	18	4	2		915	954	992
Net Ccf (100 CuFt)	1.00	68.26	22.95	4.34	65.84	68.82	71.81	21	5	2		2,041	2,133	2,226
Net Tons	1.00	68.26	22.52	4.26	159.86	166.96	174.07	20	5	2		4,956	5,176	5,396
Basal Area	1.00	68.26	25.62	4.84	128.17	134.69	141.21	26	6	2				
Trees	1.00	68.26	49.31	9.32	37.35	41.19	45.03	97	24	10				

					per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	61.36	7.13	904	973	1,042	150	37	16
Sample Trees CF	1.00	68.26	54.22	6.30	199	212	225	117	29	13

Trees per Plot					Number Required		
Required Measured Trees per Plot - BdFt per Acre					8	9	8
Required Measured Trees per Plot - CuFt per Acre					5	5	6

Edited: 03/25/2025

Trees per Plot	Number Required
Required Measured Trees per Plot - BdFt per Acre	1
Required Measured Trees per Plot - CuFt per Acre	1

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 44

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1

Trees: 370

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: GSPC

Measured Trees: 143

Price: ACI-2018

Grown To:

Acres: 6.00

Count Trees: 227

Cost: ACI-2023

Edited: 03/25/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	19	143	7.53	44.282	265	53.96
Basal DBH Count Plots (B)	25	227	9.08	73.044	438	51.83

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		99	27.3	141	54.813	222.73	42.63	50.1	7.6	285	117.92	53.622	708	322
WHEMLOCK		29	18.9	88	45.925	89.09	20.51	57.9	10.2	96	36.75	14.195	221	85
R ALDER		12	15.8	67	16.090	21.82	5.49	66.0	19.9	17	6.76	2.257	41	14
BL MAPLE		1	24.0	37	0.289	0.91	0.19				0.15	.029	1	
WR CEDAR		2	40.0	137	0.209	1.82	0.29			1	0.29	.131	2	1
		143	22.9	110	117.326	336.36	69.11	36.9	5.6	398	161.87	70.234	971	421

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	36.94	5.57	66.32	70.23	74.15	54	13	6	398	421	445
Net Ccf (100 CuFt)	1.00	68.26	35.32	5.32	153.26	161.87	170.49	49	12	5	920	971	1,023
Net Tons	1.00	68.26	35.01	5.28	377.27	398.29	419.32	49	12	5	2,264	2,390	2,516
Basal Area	1.00	68.26	31.76	4.79	320.26	336.36	352.47	40	10	4			
Trees	1.00	68.26	44.21	6.66	109.51	117.33	125.15	78	19	8			
					per-Tree Range			Sample Trees Required					
					Low	Avg	High	5%	10%	15%			
Sample Trees BF	1.00	68.26	67.29	4.42	796	832	869	181	45	20			
Sample Trees CF	1.00	68.26	58.25	3.82	178	185	192	135	33	15			
Trees per Plot								Number Required					
Required Measured Trees per Plot - BdFt per Acre								3	3	3			
Required Measured Trees per Plot - CuFt per Acre								2	2	3			

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Date: 04/25/2025

Cruised: 03/01/2025

Grown To:

Edited: 04/24/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	14	73	5.21	41.963	2,140	3.41
Basal DBH Count Plots (B)	14	89	6.36	42.493	2,167	4.11

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		43	27.8	126	36.714	154.29	29.28	56.1	10.8	175	72.53	32.418	3,699	1,653
R ALDER		13	14.1	55	27.559	30.00	7.98	39.2	14.8	22	8.69	2.801	443	143
WHEMLOCK		14	20.2	74	17.974	40.00	8.90	50.6	12.3	46	17.73	7.582	904	387
SNAG		2	24.0	96	1.821	5.71	1.17				0.00	.000		
S SPRUCE		1	26.0	76	0.387	1.43	0.28			1	0.45	.209	23	11
		73	22.4	91	84.456	231.43	47.61	44.0	8.3	244	99.40	43.010	5,069	2,193

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

					per-Acre Range			Plots Required for SE%			Total Volume Range		
Measured Unit	SD	CL	CV%	SE%	Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	43.96	8.31	39.44	43.01	46.58	77	19	8	2,011	2,193	2,376
Net Ccf (100 CuFt)	1.00	68.26	43.35	8.19	91.26	99.40	107.54	75	18	8	4,654	5,069	5,485
Net Tons	1.00	68.26	42.88	8.10	224.25	244.02	263.79	73	18	8	11,437	12,445	13,453
Basal Area	1.00	68.26	45.69	8.64	211.44	231.43	251.41	83	20	9			
Trees	1.00	68.26	76.58	14.47	72.23	84.46	96.68	234	58	26			

					per-Tree Range			Sample Trees Required		
Sample Trees BF	1.00	68.26	78.34	7.80	760	824	889	245	61	27
Sample Trees CF	1.00	68.26	69.93	6.96	169	182	195	195	48	21

Trees per Plot	Number Required		
Required Measured Trees per Plot - BdFt per Acre	3	3	3
Required Measured Trees per Plot - CuFt per Acre	2	2	2

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

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Project: GAZOO

#Plots 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U3

Trees: 226

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: GSPC

Measured Trees: 87

Price: ACI-2018

Grown To:

Acres: 1.00

Count Trees: 139

Cost: ACI-2023

Edited: 03/20/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	10	87	8.70	39.181	39	223.08
Basal DBH Count Plots (B)	18	139	7.72	59.129	59	235.59

Stand Summary - Averages

Species Group	St	Sample Trees	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		53	26.3	136	44.698	168.05	32.80	57.8	10.9	211	87.22	39.045	87	39
WHEMLOCK		25	20.4	113	36.422	82.82	18.33	71.1	15.2	106	40.61	16.512	41	17
R ALDER		7	15.3	69	12.177	15.60	3.99	35.2	11.1	12	4.71	1.563	5	2
SNAG		2	13.3	65	5.013	4.80	1.32				0.00	.000		
		87	22.5	115	98.310	271.28	56.43	46.0	8.7	328	132.55	57.120	133	57

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	45.99	8.69	52.16	57.12	62.08	84	21	9	52	57	62
Net Ccf (100 CuFt)	1.00	68.26	46.12	8.72	120.99	132.55	144.10	85	21	9	121	133	144
Net Tons	1.00	68.26	46.22	8.74	299.36	328.01	356.67	85	21	9	299	328	357
Basal Area	1.00	68.26	43.96	8.31	248.75	271.28	293.82	77	19	8			
Trees	1.00	68.26	45.69	8.64	89.82	98.31	106.80	83	20	9			

	SD	CL	CV%	SE%	per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	65.57	5.37	714	754	795	171	42	19
Sample Trees CF	1.00	68.26	56.66	4.64	162	170	178	128	32	14

Trees per Plot		Number Required		
Required Measured Trees per Plot - BdFt per Acre		2	2	2
Required Measured Trees per Plot - CuFt per Acre		1	1	1

Statistics of Sampled Population

State, County: OR CLATSOP

Lths: ACI-2023

Species: CLATSOP

Page: 5/6

Project: GAZOO

#Plots 28

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U3

Trees: 116

Grade: ODF-C.CUT

Cruised: 02/01/2025

Stand: TKPC

Measured Trees: 49

Price: ACI-2018

Grown To:

Acres: 31.00

Count Trees: 67

Cost: ACI-2023

Edited: 04/24/2025

Sample data collection information

	Total Plots	Sample Trees	Trees /Plot	Trees /Acre	Est Total Trees	% Sample Trees
Basal Plots (B)	10	49	4.90	24.538	760	6.45
Basal DBH Count Plots (B)	15	64	4.27	30.672	950	6.74
Basal Count Plots (B)	1	3	3.00	.000		.00
Blank Plots (B)	3		.00	.000		.00

Stand Summary - Averages

Species Group	St	Sample Tres	QM Dbh	Avg Total Ht	Trees /Acre	Basal Area /Acre	RD %	Mbf CV %	Mbf SE %	Tons /Acre	Net Ccf /Acre	Net Mbf /Acre	Total Net Ccf	Total Net Mbf
DOUG FIR		29	23.6	129	26.454	80.42	16.55	79.4	16.9	101	41.88	18.118	1,298	562
WHEMLOCK		13	20.9	113	16.580	39.61	8.66	61.7	16.5	49	18.99	7.652	589	237
R ALDER		7	15.3	69	12.177	15.60	3.99	35.2	11.1	12	4.71	1.563	146	48
		49	21.2	111	55.210	135.64	29.20	79.5	15.0	162	65.58	27.333	2,033	847

Confidence Level (CL) 68.26 out of 100.

Standard Deviation (SD) 1.00

Coefficient of Variation % (CV) and Stand Error of Estimate % (SE) are both computed from plot data

Measured Unit	SD	CL	CV%	SE%	per-Acre Range			Plots Required for SE%			Total Volume Range		
					Low	Avg	High	5%	10%	15%	Low	Avg	High
Net Mbf (1000 BdFt)	1.00	68.26	79.52	15.03	23.23	27.33	31.44	252	63	28	720	847	975
Net Ccf (100 CuFt)	1.00	68.26	77.86	14.71	55.93	65.58	75.23	242	60	26	1,734	2,033	2,332
Net Tons	1.00	68.26	77.51	14.65	138.51	162.29	186.06	240	60	26	4,294	5,031	5,768
Basal Area	1.00	68.26	73.07	13.81	120.01	139.24	158.47	213	53	23			
Trees	1.00	68.26	66.00	12.47	48.32	55.21	62.10	174	43	19			

	SD	CL	CV%	SE%	per-Tree Range			Sample Trees Required		
					Low	Avg	High	5%	10%	15%
Sample Trees BF	1.00	68.26	70.41	7.92	549	597	644	198	49	22
Sample Trees CF	1.00	68.26	61.74	6.95	130	139	149	152	38	16

Trees per Plot								Number Required	
Required Measured Trees per Plot - BdFt per Acre									
Required Measured Trees per Plot - CuFt per Acre									

Edited: 04/24/2025

Trees per Plot	Number Required		
Required Measured Trees per Plot - BdFt per Acre	2	2	2
Required Measured Trees per Plot - CuFt per Acre	1	1	2

Stand Summary Report

State, County: OR CLATSOP

Lths & Dias: ACI-2023

Species CLATSOP

Page: 1/2

Project: GAZOO

Plots: 272

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1 : U4

Trees: 1850

Grade: ODF-C.CUT

Cruised:

Stand: 00CC : TKPC

Measured Trees: 735

Price: ACI-2018

Grown To:

Acres: 169.00

Count Trees: 1115

Cost: ACI-2023

Edited:

Spp	St	Dbh	Smpl Trees	Avg Age	Avg FF	Avg Total Ht	Trees /Ac	BA /Ac	Logs /Ac	Ht/D Inches	Net Per Log		Net Per Acre			BdFt Def %	Total Net		
											CuFt	BdFt	Tons	CuFt	BdFt		Tons	Ccf	Mbf
D		14	3	70	83	78	0.221	0.24	0.443	67.0	17	50		7	22	0.0	30	12	4
D		15	6	70	85	101	0.560	0.69	1.120	80.5	24	88	1	27	99	2.0	110	45	17
D		16	4	74	86	116	0.345	0.48	0.977	87.2	23	79	1	22	78	0.0	90	37	13
D		17	7	73	86	101	0.456	0.72	0.912	71.0	29	102	1	27	93	0.0	110	45	16
D		18	3	70	89	138	0.255	0.45	0.765	92.1	31	127	1	24	97	0.0	98	41	16
D		19	9	73	86	119	0.698	1.37	1.864	75.0	33	119	1	61	223	0.0	250	104	38
D		20	10	73	86	111	0.719	1.57	1.644	66.7	40	143	2	66	234	1.7	271	112	40
D		21	11	70	87	137	0.402	0.97	1.205	78.1	42	175	1	51	211	0.2	207	86	36
D		22	8	72	87	119	0.346	0.91	1.039	65.2	41	173	1	43	179	0.0	174	72	30
D		23	23	70	86	138	0.959	2.77	2.878	71.9	50	209	3	145	602	0.3	591	245	102
D		24	5	70	85	130	2.901	8.83	8.022	66.1	58	250	11	463	2,007	0.7	1,889	782	339
D		25	26	72	86	129	1.123	3.83	3.237	62.0	57	234	4	186	757	0.7	757	314	128
D		26	55	70	86	144	11.567	41.81	34.539	67.0	65	285	54	2,233	9,842	0.6	9,114	3,774	1,663
D		27	30	70	86	144	2.789	11.21	8.333	63.6	72	326	15	601	2,719	0.6	2,453	1,016	459
D		28	28	75	86	128	7.486	31.52	21.115	55.3	71	319	36	1,505	6,740	1.1	6,143	2,544	1,139
D		29	32	71	85	136	0.584	2.68	1.767	56.2	77	338	3	137	598	1.3	558	231	101
D		30	41	72	86	142	1.123	5.51	3.368	56.9	86	396	7	291	1,333	0.4	1,187	492	225
D		31	28	70	85	156	0.460	2.41	1.513	60.2	88	405	3	133	613	1.5	543	225	104
D		32	36	72	84	151	0.360	2.01	1.145	56.5	86	406	2	99	464	0.3	403	167	78
D		33	20	74	82	142	0.259	1.54	0.777	51.6	79	377	1	61	293	0.6	250	104	50
D		34	15	72	86	143	0.170	1.07	0.518	50.4	110	527	1	57	273	0.0	233	96	46
D		35	15	74	85	147	0.340	2.27	1.020	50.3	118	562	3	120	573	1.4	490	203	97
D		36	6	74	83	140	0.074	0.52	0.222	46.8	114	467	1	25	104	13.2	103	43	18
D		37	9	73	76	149	0.099	0.74	0.327	48.3	86	431	1	28	141	1.4	115	48	24
D		38	11	72	86	156	0.129	1.02	0.392	49.4	137	722	1	54	283	0.3	220	91	48
D		39	4	70	84	148	0.007	0.06	0.021	45.7	147	708		3	15	1.9	13	5	3
D		40	8	70	85	156	0.016	0.14	0.054	46.7	143	742		8	40	0.0	31	13	7
D		41	6	75	83	151	0.144	1.32	0.432	44.1	149	738	2	64	319	2.9	263	109	54
D		43	2	75	86	151	0.044	0.44	0.131	42.0	184	904	1	24	118	3.3	98	41	20
D		44	4	75	86	157	0.043	0.46	0.131	42.9	197	1,018	1	26	134	0.0	106	44	23
D		45	2	70	83	153	0.004	0.04	0.011	40.9	199	947		2	11	4.9	9	4	2
D		46	4	75	80	141	0.076	0.88	0.229	36.7	130	722	1	30	165	0.0	122	50	28
D			471	72	86	135	34.759	130.48	100.154	63.6	66	293	160	6,623	29,380	0.8	27,029	11,192	4,965
H		10	5	72	87	31	1.634	0.89	1.634	36.8	8	20		13	33	0.0	58	22	6
H		11	2	75	86	63	0.668	0.44	0.668	69.2	18	60		12	40	0.0	53	20	7
H		12	6	70	88	79	1.147	0.90	1.721	79.4	17	53	1	29	92	0.0	126	48	16
H		14	3	70	86	94	0.421	0.45	0.843	80.8	22	75		18	63	0.0	80	31	11
H		15	9	70	88	117	0.254	0.31	0.714	93.3	22	87		16	62	0.0	69	27	11
H		16	4	70	83	49	0.060	0.08	0.090	37.1	20	53		2	5	12.5	8	3	1
H		17	8	70	87	83	11.823	18.09	20.422	59.3	35	129	19	721	2,643	1.3	3,169	1,219	447
H		18	12	70	87	102	0.325	0.57	0.682	67.8	38	135	1	26	92	0.0	113	43	16
H		19	6	70	86	91	1.497	2.91	3.181	58.0	38	147	3	122	467	1.1	537	207	79
H		20	3	74	86	80	3.528	7.79	7.103	48.0	49	207	9	348	1,472	0.6	1,530	589	249
H		21	9	70	87	115	2.138	5.11	5.661	65.8	44	180	7	250	1,019	0.1	1,099	423	172
H		22	8	70	87	123	0.025	0.07	0.075	67.2	46	193		3	14	0.0	15	6	2
H		23	15	72	87	109	0.493	1.42	1.323	57.0	51	206	2	68	273	0.3	298	115	46
H		24	14	72	87	118	0.586	1.84	1.471	59.0	61	248	2	89	365	2.4	391	151	62
H		25	6	70	86	127	0.264	0.90	0.793	60.8	59	252	1	47	200	0.0	207	80	34
H		26	8	74	89	115	0.140	0.52	0.419	53.0	63	285	1	26	119	0.0	116	45	20
H		27	12	73	85	109	0.559	2.22	1.561	48.4	66	270	3	103	422	0.3	453	174	71
H		29	13	73	86	108	0.271	1.24	0.759	44.9	77	339	2	58	257	0.1	256	99	43

Stand Summary Report

State, County: OR CLATSOP

Lths & Dias: ACI-2023

Species CLATSOP

Page: 2/2

Project: GAZOO

Plots: 272

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1 : U4

Trees: 1850

Grade: ODF-C.CUT

Cruised:

Stand: 00CC : TKPC

Measured Trees: 735

Price: ACI-2018

Grown To:

Acres: 169.00

Count Trees: 1115

Cost: ACI-2023

Edited:

Spp	St	Dbh	Smpl Trees	Avg Age	Avg FF	Avg Total Ht	Trees /Ac	BA /Ac	Logs /Ac	Ht/D Inches	Net Per Log		Net Per Acre			BdFt Def %	Total Net		
											CuFt	BdFt	Tons	CuFt	BdFt		Tons	Ccf	Mbf
H		30	10	74	88	123	0.124	0.61	0.354	49.3	87	410	1	31	145	0.5	136	52	25
H		31	3	70	86	101	0.045	0.24	0.090	39.2	111	455		10	41	0.0	44	17	7
H		32	5	73	84	111	0.121	0.68	0.243	41.8	109	502	1	26	122	0.0	116	45	21
H		40	2	75	78	105	0.050	0.44	0.150	31.5	126	482		19	73	8.4	83	32	12
H			163	71	87	85	26.174	47.73	49.959	58.0	41	161	53	2,039	8,020	0.8	8,958	3,446	1,355
A		10	2	75	87	21	0.808	0.44	0.808	25.6	7	30		6	24	0.0	24	10	4
A		11	2	75	87	37	0.668	0.44	0.668	40.5	12	40		8	27	0.0	34	14	5
A		12	6	70	87	55	0.875	0.69	0.875	54.5	19	53		16	47	0.0	69	28	8
A		13	13	72	87	59	2.190	2.02	2.679	54.4	20	61	1	54	163	0.0	228	91	28
A		14	10	74	87	62	4.635	5.02	6.930	52.5	22	71	4	151	495	1.5	639	256	84
A		15	9	72	87	66	2.710	3.38	4.360	52.6	23	77	3	102	334	1.5	432	173	56
A		16	5	70	87	67	4.389	5.97	7.288	50.5	25	84	5	184	610	1.9	777	311	103
A		17	5	72	87	63	0.565	0.89	0.845	44.6	29	97	1	25	82	3.4	105	42	14
A		18	9	70	87	68	0.644	1.14	1.288	45.3	28	94	1	36	121	2.1	153	61	20
A		19	9	70	87	79	0.578	1.14	1.156	50.1	36	111	1	42	128	2.7	177	71	22
A		20	3	70	87	67	0.207	0.45	0.413	40.2	34	110		14	45	0.0	58	23	8
A		21	3	70	87	57	0.187	0.45	0.375	32.4	34	130		13	49	0.0	54	22	8
A		22	7	74	87	90	0.423	1.12	0.847	48.8	53	195	1	45	165	4.0	190	76	28
A			83	72	87	62	18.880	23.14	28.531	49.8	24	80	17	696	2,290	1.7	2,940	1,176	387
SN		12	1	70	89	46	0.009	0.01	0.000	46.0						0.0			
SN		13	0	70	3	50	0.469	0.43	0.000	46.6						0.0			
SN		14	0	70		30	0.009	0.01	0.000	25.7						0.0			
SN		15	1	70	89	64	0.014	0.02	0.000	51.4						0.0			
SN		16	0	70	37	51	0.026	0.04	0.000	37.8						0.0			
SN		20	2	75	86	80	0.202	0.44	0.000	48.0						0.0			
SN		24	0	75	87	96	0.275	0.86	0.000	48.2						0.0			
SN		32	2	75	89	138	0.079	0.44	0.000	51.8						0.0			
SN			6	73	49	74	1.082	2.25	0.000	47.3	0	0				0.0			
S		26	2	75	87	76	0.119	0.44	0.236	34.9	58	271		14	64	0.0	53	23	11
S			2	75	87	76	0.119	0.44	0.236	34.9	58	271		14	64	0.0	53	23	11
M		24	2	70	87	37	0.013	0.04	0.013	18.5	52	100		1	1	10.0	3	1	
M			2	70	87	37	0.013	0.04	0.013	18.5	52	100		1	1	9.1	3	1	
C		39	2	70	83	133	0.005	0.04	0.005	40.9	38	150			1	0.0	1		
C		41	2	70	83	141	0.005	0.04	0.009	41.4	127	580		1	5	1.7	5	2	1
C			4	70	83	137	0.010	0.08	0.014	41.1	95	427		1	6	1.5	5	2	1
HL			0	0		0	0.000	0.66	0.000							0.0			
HL			0	0	0	0	0.000	0.66	0.000		0	0				0.0			
Stands/Project:		731	72	86	101	81.037	204.83	178.908	58.3	52	222	231	9,373	39,762	0.9	38,989	15,840	6,720	

Log Stock - Mbf by Species, Sort, Grade, Len, Dia Class

State, County: OR CLATSOP

Lths And Dias ACI-2023

Species: CLATSOP

Page: 1/2

Project: GAZOO

Plots: 272

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1 : U4

Trees: 1850

Grade: ODF-C.CUT

Cruised:

Stand: 00CC : TKPC

Measured Trees: 735

Price: ACI-2018

Grown To:

Acres: 169.00

Count Trees: 1115

Cost: ACI-2023

Edited:

Species	Stat	Srt	Grd	Log Len Class	Gross Mbf	% Def	Net Mbf	% Spp	BdFt Per Acre	Net Mbf by Scaling Diameter in Inches							
										2-4	5-7	8-11	12-17	18-23	24-29	30-39	40-99
D		DO	2S	16-21	21	.0	21	0.4	124				5		16		
D		DO	2S	24-27	16	.0	16	0.3	95				16				
D		DO	2S	28-31	2	.0	2	0.0	9				2				
D		DO	2S	32-35	95	2.6	93	1.9	549				82	10	1		
D		DO	2S	36-39	14	1.3	14	0.3	83				14				
D		DO	2S	40+	4,170	.6	4,144	83.5	24,518			1	1,645	2,053	381	64	
D		DO	3S	16-21	19	.0	19	0.4	110				18				
D		DO	3S	24-27	43	.0	43	0.9	256				40	3			
D		DO	3S	28-31	38	.0	38	0.8	222		4		33				
D		DO	3S	32-35	79	.0	79	1.6	469		20		59				
D		DO	3S	36-39	60	.0	60	1.2	353		10		49				
D		DO	3S	40+	380	3.0	368	7.4	2,180		14		287	2	8	57	
D		DO	4S	12-15	3	.0	3	0.1	19		2		1				
D		DO	4S	16-21	42	.0	42	0.8	247		20		22				
D		DO	4S	24-27	17	.0	17	0.3	102		6		11				
D		DO	4S	28-31	7	.0	7	0.1	39		7						
D			Total		5,005	0.8	4,964	73.9	29,375		83	523	1,768	2,071	455	64	
A		DO	1S	24-27	32	2.8	31	8.0	183				31				
A		DO	1S	28-31	46	3.5	45	11.6	265				45				
A		DO	1S	32-35	13	.0	13	3.4	78				13				
A		DO	1S	40+	71	4.2	68	17.7	404				68				
A		DO	2S	24-27	31	4.0	29	7.6	174				29				
A		DO	2S	28-31	13	.0	13	3.3	76				13				
A		DO	2S	32-35		.0		0.1	2								
A		DO	3S	24-27	4	.0	4	1.1	25				4				
A		DO	3S	28-31	12	.0	12	3.1	71		1		11				
A		DO	3S	32-35	12	.0	12	3.0	68				12				
A		DO	3S	36-39	6	.0	6	1.5	35				6				
A		DO	3S	40+	37	.0	37	9.5	218				37				
A		DO	4S	12-15	3	.0	3	0.7	17		3						
A		DO	4S	16-21	33	.0	33	8.6	197		33						
A		DO	4S	24-27	20	.0	20	5.0	116		20						
A		DO	4S	28-31	8	.0	8	2.1	49		8						
A		DO	4S	32-35	12	.0	12	3.2	73		12						
A		DO	4S	36-39	21	.0	21	5.4	124		21						
A		DO	4S	40+	19	.0	19	5.0	115		19						
A			Total		394	1.7	387	5.8	2,290		118	111	157				
H		DO	2S	16-21	8	.0	8	0.6	48					8			
H		DO	2S	24-27	1	.0	1	0.1	9				1				
H		DO	2S	28-31	8	.0	8	0.6	45				8				
H		DO	2S	32-35	117	.0	117	8.6	691				98	19			

Log Stock - Mbf by Species, Sort, Grade, Len, Dia Class

State, County: OR CLATSOP

Lths And Dias ACI-2023

Species: CLATSOP

Page: 2/2

Project: GAZOO

Plots: 272

Sort: ODF-C.CUT

Date: 04/25/2025

Tract: U1 : U4

Trees: 1850

Grade: ODF-C.CUT

Cruised:

Stand: 00CC : TKPC

Measured Trees: 735

Price: ACI-2018

Grown To:

Acres: 169.00

Count Trees: 1115

Cost: ACI-2023

Edited:

Species	Stat us	Srt	Grd	Log Len Class	Gross Mbf	% Def	Net Mbf	% Spp	BdFt Per Acre	Net Mbf by Scaling Diameter in Inches							
										2-4	5-7	8-11	12-17	18-23	24-29	30-39	40-99
H		DO	2S	36-39		.0		0.0	3								
H		DO	2S	40+	878	1.0	869	64.2	5,139				486	365	18		
H		DO	3S	16-21	6	.0	6	0.4	35			6					
H		DO	3S	24-27	17	.0	17	1.2	99			17					
H		DO	3S	28-31	12	1.3	12	0.9	71			12					
H		DO	3S	32-35	54	.0	54	4.0	320		12	30	12				
H		DO	3S	36-39	24	.0	24	1.8	143		14	10					
H		DO	3S	40+	164	1.2	162	12.0	958		31	131					
H		DO	4S	12-15	3	.0	3	0.2	16		3						
H		DO	4S	16-21	36	.0	36	2.6	211		18	17					
H		DO	4S	24-27	36	.5	36	2.7	213		32	4					
H		DO	4S	28-31	1	.0	1	0.1	4		1						
H Total					1,364	0.8	1,353	20.2	8,006		112	226	605	392	18		
S		DO	3S	32-35	8	.0	8	98.0	50					8			
S		DO	3S	40+		.0		2.0	1								
S Total					9		9	0.1	51					8			
M		DO	2S	28-31		9.1		100.0	1								
M Total						9.1		0.0	1								
C		DO	2S	24-27		.0		12.5	1								
C		DO	2S	40+	1	1.7	1	87.5	5					1			
C Total					1	1.5	1	0.0	6					1			
Stand(s)/Project Totals					6,773	0.9	6,714	100.0	39,729								
Percent Measured Tree Net Mbf =								100.0			313	862	2,531	2,472	472	64	

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT
NO. AT-341-2025-W01181-01
GAZOO COMBO
PORTIONS OF SECTIONS
29, 31, & 32 OF T7N, R6W, W.M.,
CLATSOP COUNTY, OREGON



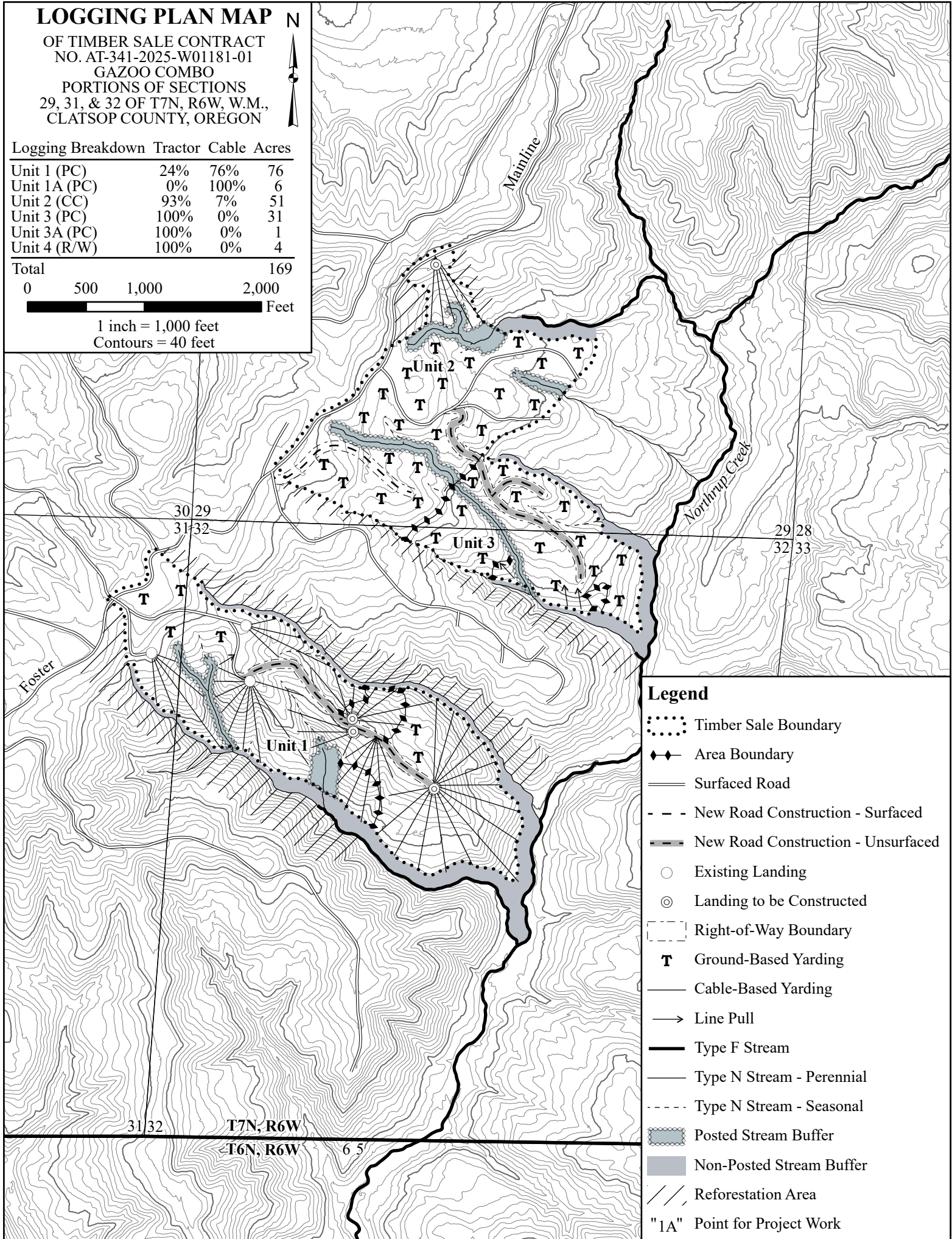
Logging Breakdown Tractor Cable Acres

Unit 1 (PC)	24%	76%	76
Unit 1A (PC)	0%	100%	6
Unit 2 (CC)	93%	7%	51
Unit 3 (PC)	100%	0%	31
Unit 3A (PC)	100%	0%	1
Unit 4 (R/W)	100%	0%	4

Total 169

0 500 1,000 2,000 Feet

1 inch = 1,000 feet
Contours = 40 feet



Legend

- Timber Sale Boundary
- Area Boundary
- Surfaced Road
- New Road Construction - Surfaced
- New Road Construction - Unsurfaced
- Existing Landing
- Landing to be Constructed
- Right-of-Way Boundary
- Ground-Based Yarding
- Cable-Based Yarding
- Line Pull
- Type F Stream
- Type N Stream - Perennial
- Type N Stream - Seasonal
- Posted Stream Buffer
- Non-Posted Stream Buffer
- Reforestation Area
- "1A" Point for Project Work