



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Sagar the Horrible  
Sale 341-12-24

District: Astoria

Date: July 29, 2011

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$455,719.05	\$266.77	\$455,985.82
		Project Work:	\$(64,500.00)
		Advertised Value:	\$391,485.82



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**timber description**

**Location:** Portions of Sections 22, 23, 27, & 34, T6N, R6W, and portions of Section 3, T5N, R6W, W.M., Clatsop County, Oregon.

**Stand Stocking:** 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	14	0	97
Western Hemlock / Fir	16	0	97
Red Cedar	26	0	95
Alder (Red)	10	0	95

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	337	968	180	0	1,485
Western Hemlock / Fir	54	51	15	0	120
Red Cedar	15	2	2	0	19
Alder (Red)	0	0	0	1	1
Total	406	1,021	197	1	1,625



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comments: Pond Values Used: Local Pond Values.

Expected Log Markets: Warrenton, OR; Mist, OR; Clatskanie, OR;  
Tillamook, OR; Forest Grove, OR.

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$740 daily truck cost.

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

100% Branding and Painting: \$1MBF x 1,625 MBF = \$1,625

Line Pulling in Areas 1 & 2: 6 hrs x \$25/Hr. = \$150

Machine washing for noxious weed compliance = \$2,000

3 Loggers Choice landings (Pit-run 20yds/LDG) in Area 5 along West  
Sagar Creek Road = \$980

TOTAL Other Costs (with Profit & Risk to be added) = \$4,755

Other Costs (No Profit & Risk added):

Waterbar and block dirt road segments after harvest:

\$13.85/station x 16.65 stations = \$231

Additional logging costs for falling along Highway 202:

2 Flaggers for 1 Day - \$160 Each/Day = \$320

TOTAL Other Costs (No Profit & Risk added) = \$551



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logging conditions

combination#: 1      Douglas - Fir      70.00%  
                          Western Hemlock / Fir      70.00%  
                          Red Cedar      70.00%  
                          Alder (Red)      70.00%

yarding distance: Medium (800 ft)      downhill yarding: No  
 logging system: Track Skidder      Process: Manual Falling/Delimiting  
 tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
 loads / day: 8.0      bd. ft / load: 3,700  
 cost / mbf: \$116.23

machines: Log Loader (B)  
 Track Skidder

combination#: 2      Douglas - Fir      30.00%  
                          Western Hemlock / Fir      30.00%  
                          Red Cedar      30.00%  
                          Alder (Red)      30.00%

yarding distance: Medium (800 ft)      downhill yarding: No  
 logging system: Cable: Medium Tower >40 - <70      Process: Manual Falling/Delimiting  
 tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
 loads / day: 6.0      bd. ft / load: 4,000  
 cost / mbf: \$144.17

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



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logging costs

Operating Seasons:	2.00	Profit Risk:	12.00%
Project Costs:	\$64,500.00	Other Costs (P/R):	\$4,755.00
Slash Disposal:	\$0.00	Other Costs:	\$551.00

Miles of Road

Road Maintenance: \$11.05

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.0
Western Hemlock / Fir	\$0.00	2.0	3.7
Red Cedar	\$0.00	2.0	4.0
Alder (Red)	\$0.00	2.0	3.5



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**Local Pond Values**

Date	Specie	Grade	Value
7/29/11	Douglas - Fir	2S	\$545.00
7/29/11	Douglas - Fir	3S	\$510.00
7/29/11	Douglas - Fir	4S	\$485.00
7/29/11	Western Hemlock / Fir	2S	\$455.00
7/29/11	Western Hemlock / Fir	3S	\$430.00
7/29/11	Western Hemlock / Fir	4S	\$415.00
7/29/11	Red Cedar	2S	\$950.00
7/29/11	Red Cedar	3S	\$950.00
7/29/11	Red Cedar	4S	\$950.00
7/29/11	Alder (Red)	Camprun	\$545.00



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
<b>Douglas - Fir</b>									
\$124.61	\$11.38	\$5.40	\$56.71	\$2.93	\$24.12	\$0.00	\$5.00	\$0.34	\$230.49
<b>Western Hemlock / Fir</b>									
\$124.61	\$11.38	\$5.40	\$91.97	\$2.93	\$28.35	\$0.00	\$5.00	\$0.34	\$269.98
<b>Red Cedar</b>									
\$124.61	\$11.60	\$5.40	\$86.72	\$2.93	\$27.75	\$0.00	\$5.00	\$0.34	\$264.35
<b>Alder (Red)</b>									
\$124.61	\$11.60	\$5.40	\$99.11	\$2.93	\$29.24	\$0.00	\$5.00	\$0.34	\$278.23

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$514.91	\$284.42	\$0.00
Western Hemlock / Fir	\$0.00	\$439.38	\$169.40	\$0.00
Red Cedar	\$0.00	\$950.00	\$685.65	\$0.00
Alder (Red)	\$0.00	\$545.00	\$266.77	\$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
Red Cedar	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	1,485	\$284.42	\$422,363.70
Western Hemlock / Fir	120	\$169.40	\$20,328.00
Red Cedar	19	\$685.65	\$13,027.35
Alder (Red)	1	\$266.77	\$266.77

**Gross Timber Sale Value**

Recovery: \$455,985.82

Prepared by: Jenny Johnson

Phone: 503-325-5451



**Road Maintenance (Harvest) Cost Summary**

Sale: Sagat the Horrible  
 Date: 07-Jun-11  
 By: J. Johnson FL

MBF: 1,625  
 \$\$/MBF: \$11.05

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Production Rates	Miles/day	Distance(miles)	Days
Progressive Operations 1st Entry	Grader 14G	\$675	1	16	\$93	\$2,163	Grader	2.5	4.0	1.6
	Dump Truck 12CY x 2	\$141	2	8	\$73	\$1,309				
	FE Loader C966	\$675	1	8	\$77	\$1,291				
Final Road Maintenance	Grader 14G	\$675	1	40	\$93	\$4,395	Grader	1.5	6.0	4.0
	Dump Truck 12CY x 2	\$141	2	10	\$73	\$1,601				
	FE Loader C966	\$675	1	10	\$77	\$1,445	Vibratory Roller*	1.5	6.0	4.0
	Vibratory Roller	\$675	1	40	\$72	\$3,555				
	Water Truck 2,500 gallon Labor	\$165	1	20	\$63	\$1,825				
				10	\$38	\$380				
<b>Total</b>										\$17,964

\*Final Road Maintenance Only

**SUMMARY OF ALL PROJECT COSTS**

**SALE NAME:** Sagar the Horrible

**NEW CONSTRUCTION:**

Project No. 1

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Dirt Roads	1A-1B, 2A to 2B, 2C to 2D, & 3A to 3B	18.25	\$4,948
<b>TOTALS</b>	0.35 miles	18.25	\$4,948

Rock Roads	5B- 5C	1.1	\$572
<b>TOTALS</b>	0.02 miles	1.10	\$572

**ROAD IMPROVEMENT:**

Project No. 1

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	I1-I2, I2-I3, I3-I4	235.00	\$52,338
<b>TOTALS</b>	4.45 miles	235.00	\$52,338

**SPECIAL PROJECTS:**

Project Work Road Maintenance	\$837
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**MOVE IN:**

	<u>Equipment</u>	<u>Cost</u>
	Dozer (D8)	\$1,220
	Dump Trucks (10 -12 cy x 4 )	\$564
	Dump Trucks (20 cy x 2)	\$332
	F E Loader (C966)	\$675
	Grader (14G)	\$675
	Vibratory Roller	\$675
	Water Truck (2,500 gallon)	\$165
	Backhoe (C 580)	\$279
	Excavator (C330)	\$1,220
<b>TOTAL</b>		\$5,805

**GRAND TOTAL** **\$64,500**

Compiled By: J. Johnson FL

Date: 06/15/2011

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Sagar the Horrible (Field Design) NEW CONSTRUCTION: 18.25 STATIONS 0.35 MILES  
 ROAD: 1A to 1B (1.6), 2A to 2B (8.9), 2C to 2D (3.75), 3A to 3B (4.0) IMPROVEMENT: 0.00 MILES  
 14' Outslped Dirt Spurs

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of RW	1.25	x	\$1,161.00	=	\$1,451.25
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$1,451</b>

Material	Sta/amount	x	Rate	=	Cost
Balanced Construction	18.25	x	\$106.00	=	\$1,934.50
Landing Construction \$\$/landing (2B,2D)	2	x	\$338.00	=	\$676.00
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$2,611</b>

Description	Stations/amount	x	Rate/ sta/amt	=	Cost
Subgrade prep: Grade, 14' Outsllope	16.65	x	\$15.93	=	\$265.23
<b>SUB TOTAL FOR SUBGRADE PREP</b>					<b>\$265</b>

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
3A	18" CPP	30	\$17.64	\$529.20	0		

Description	Quantity	Rate	Cost
Other/miscellaneous: Seed and Mulch Sta 3+90 on 2A to 2B			
Seed & Mulch (Bates)	4	\$10.00	\$40.00
Seed & Mulch (Labor)	1	\$38.00	\$38.00
Seed & Mulch (Seed)	10	\$1.40	\$14.00
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>			<b>\$821</b>

**GRAND TOTAL FOR EXCAVATION & CULVERTS \$4,948**



**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Sagar The Horrible  
 ROAD: 11 to 12, 12 to 13, 13 to 14, 15 to 16  
 POINTS: 11 to 12 (49+20), 12 to 13 (157+75), 13 to 14 (25+51), 15 to 16 (2+50)

NEW CONSTRUCTION: \_\_\_\_\_ STATIONS 0.00 MILES  
 IMPROVEMENT: 295.00 STATIONS 4.45 MILES

**CLEARING & GRUBBING**

Method	Qty/amount	x	Rate	=	Cost
11-12 Stump removal (30+70 - 32+00)					
C330 (Hrs)	3	x	\$144.00	=	\$432.00
Dump Truck (Hrs)	3	x	\$73.00	=	\$219.00
15 - 16 Clear portion of Borrow site and R/W					
C330 (Hrs)	2	x	\$144.00	=	\$288.00
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$939</b>

**EXCAVATION**

Material	Qty/amount	x	Rate	=	Cost
11-12 Cutslope rounding, scatter ditch debris (30+70 - 32+00)					
C330 (Hrs)	1	x	\$144.00	=	\$144.00
End haul ditch debris (46+50 - 49+20)					
C330 (Hrs)	1	x	\$144.00	=	\$144.00
Dump Truck (Hrs)	1	x	\$144.00	=	\$144.00
12 - 13 Move road into the hill (89+20 - 90+60)					
C330 (Hrs)	3	x	\$144.00	=	\$432.00
D12 (Hrs)	3	x	\$73.00	=	\$219.00
Felling & Bucking marked trees (Hrs)	6	x	\$38.00	=	\$228.00
Construct ditchouts (58+40, 123+35, 124+48)					
C330 (Hrs)	1.5	x	\$144.00	=	\$216.00
Sod removal (36+80 - 41+40)	4.6	x	\$19.89	=	\$91.49
Ditchline re-establishment	9.31	x	\$19.89	=	\$185.18
Clean culvert outlets C330 (Hrs)	1	x	\$144.00	=	\$144.00
Construct Waste Area C330 (Hrs)	0.5	x	\$144.00	=	\$72.00
Shape C330 (Hrs)	1.5	x	\$144.00	=	\$216.00
Compact	100	x	\$0.30	=	\$30.00
Straw Bales	6	x	\$10.00	=	\$60.00
Labor	2	x	\$38.00	=	\$76.00
Remove stump from inlet (111+35)					
C330 (Hrs)	0.5	x	\$144.00	=	\$72.00
13 - 14 Sta 10+22 Fill/culvert removal					
C330 (Hrs)	2.5	x	\$144.00	=	\$360.00
D12 (Hrs)	2.5	x	\$73.00	=	\$182.50
Borrow material for fill replacement					
C330 (Hrs)	3.5	x	\$144.00	=	\$504.00
D12 (Hrs)	2.5	x	\$73.00	=	\$182.50
Fill compaction	143	x	\$0.60	=	\$85.80
Sidecast pullback (16+10 - 18+50)					
C330 (Hrs)	2	x	\$144.00	=	\$288.00
D12 (Hrs)	2	x	\$73.00	=	\$146.00
Seed & Mulch (Bales)	3	x	\$10.00	=	\$30.00
Labor (Hrs)	1	x	\$38.00	=	\$38.00
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$4,290</b>

**CULVERT MATERIALS AND INSTALLATION**

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
11-12 (23+70)	18" CPP	40	\$17.64	\$705.60	13-14 (2+98)	18" CPP	40	\$17.64	\$705.60
12-13 (92+70)	18" CPP	40	\$17.64	\$705.60	13-14 (6+78)	18" CPP	40	\$17.64	\$705.60
12-13 (94+60)	18" CPP	40	\$17.64	\$705.60	13-14 (10+22)	18" CPP	40	\$10.00	\$400.00
12-13 (104+70)	18" CPP	40	\$17.64	\$705.60	13-14 (11+85)	18" CPP	40	\$17.64	\$705.60
12-13 (111+35)	18" CPP	40	\$17.64	\$705.60	13-14 (18+30)	18" CPP	32	\$17.64	\$564.48
12-13 (147+37)	18" CPP	40	\$17.64	\$705.60	13-14 (23+48)	18" CPP	32	\$17.64	\$564.48

\* Purchase only, install under excavation costs.

Other/miscellaneous:	Description	Quantity	Rate	Cost
	11-12 (fix outlet of culvert 35+70) (Labor Hrs)	1.00	\$38.00	\$38.00
	Haul away old culverts (28+00) Dump Truck	2	\$73.00	\$146.00
Culvert stakes & markers:	Carsonite Markers	8	\$18.00	\$144.00
	Reuse 6 existing culvert markers (Labor Hrs)	1	\$38.00	\$38.00

**SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION**

**\$6,245**

*Subtotal of Clearing, Exc., Culv. \$13,475*



PIT RUN ROCK COST

SALE NAME: Sagar the Horrible  
 PROJECT: Road Improvement  
 QUARRY: Northrup Quarry

MATERIAL: Pit Run

DATE: 05/23/2011  
 BY: J. Johnson

Segment	Stations	Cubic Yards						Misc	Total
		Base	Landing	Turnout	Turnaround	Junction			
2A	0.50					20		20	
3A	0.50					20		20	
3B			40					40	
5A			40					40	
5B - 5C	1.10	80	40					120	
Grand Total	2.10	80	120			40		240	

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	
2A	0.50	20	1.70	1.00	0.50	1.10	1.50	0.20	0.20	6.20
3A	0.50	20	1.50	1.00	2.00	0.45	1.25	0.20	0.20	6.60
3B		40	1.50	1.00	2.00	0.45	1.25	0.20	0.25	6.65
5A		40	1.50	1.00	2.50	0.45	1.25	0.50	0.50	7.70
5B - 5C	1.10	120	1.50	1.00	2.50	0.45	1.25	0.50	0.50	7.70
TOTAL	2.10	240								
CUBIC YARD WEIGHTED HAUL		CU. YD.	1.52	1.00	2.21	0.50	1.27	0.40	0.41	AVERAGE HAUL 7.31

Average Round Trip Distance (miles) 14.62

ROCK HAUL:

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

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

Truck type: D10 No. trucks: 4  
 Delay min.: 5 Efficiency: 85%

Ave haul: \$7.20 /cy  
 Load: \$1.43 /cy  
 Spread: \$1.91 /cy  
 \*Develop: \$2.30 /cy

Production: cy/day = 324

PIT RUN ROCK HAUL COSTS

240 cy @ \$12.84 /cy







**Road Maintenance after completion of Projects**

**Sale:** Sagar the Horrible  
**Date:** 19-May-11  
**By:** J. Johnson *FL*  
 (Northrup Stockpiles south to Property Line)

Type	Equipment/Rationale	Move In Rate	Hours	Rate	Cost
Light Grading Rock Haul Route	Grader 14G (1 hr. move from Project Areas)	\$93	8	\$93	\$837
<b>Total</b>					<b>\$837</b>

Miles/day	Distance (miles)	Days
1.5	1.1	0.7

Production Rates  
 Grader

**Sagar the Horrible  
TIMBER CRUISE REPORT  
FY 2011**

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5, and 6 are located in portions of Sections 22, 23, 27, and 34, T6N, R6W, and portions of Section 3, T5N, R6W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:**

BOF 95.5%	CSL 0.5%
Area 1 Tax Code	8-01 (86%); 8-03 (14%)
Area 2 Tax Code	8-03 (100%)
Area 3 Tax Code	8-01 (100%)
Area 4 Tax Code	8-01 (100%)
Area 5 Tax Code	8-01 (100%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Non-thinnable	New R/W	Existing R/W	Stream Buffer	Net Acres	Survey Method
1	Partial Cut	94	0	0	4	6	84	GIS
2	Partial Cut	45	12	1	1	1	30	GIS
3	Partial Cut	35	7	0	1	5	22	GIS
4	Partial Cut	17	1	0	1	1	14	GIS
5	Partial Cut	57	2	0	5	5	45	GIS
6	Right of Way	1	0	0	0	0	1	GIS
<b>TOTALS</b>		<b>249</b>	<b>22</b>	<b>1</b>	<b>12</b>	<b>18</b>	<b>196</b>	

4. **Cruisers and Cruise Dates:** Areas 1, 3, 4, and 5 were cruised by Jon Long, Derek Bangs, & Jenny Johnson, on April 6, 2011. Area 2 was cruised by Kraig Kirkpatrick and Bryce Rodgers, on April 6, 2011.

5. **Cruise Method and Computation:** Areas 1, 3, 4, & 5 are partial cut thinning units and were variable plot cruised using a 33.6 BAF. These plots are located on a 4 chain by 10 chain grid, with every third plot measured and graded. A total of 49 plots were sampled, with 18 measured and graded plots, and 31 count plots. Red alder and cedar are reserve species, and were recorded as "leave" trees.

Areas 2 is a partial cut thinning unit and was variable plot cruised using a 20 BAF. These plots are located on a 3 chain by 4 chain grid, with every third plot measured and graded. A total of 28 plots were sampled, with 9 measured and graded plots, and 19 count plots. Red alder was cruised as a "take" species, however, cruise results show low merchantability and it is now a reserve species.

All cruisers used Corvallis MicroTechnology (CMT) and/or Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program in 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.

AREA	CRUISE	TRACT	TYPE	ACRES
1,3,4 and 5	T6NR6W27	AREA1345	4TAK	165
2	T6NR8W24	AREA 2 Ground	TAKE	30
6	T6NR8W24	AREA 2	RAW	1

6. **Timber Description:** Areas 1, 3, 4, and 5 are partial cut thinning units, approximately 40 years old, consisting of Douglas-fir, and western hemlock. The average Douglas-fir tree size to be harvested is 15 inches DBH, with an average height of 55 feet to a merchantable top (6 inch d.i.b.). The average hemlock tree size is 16 inches DBH and 76 feet to a merchantable top (6 inch d.i.b.). The average volume per acre to be harvested (net) is 8.8 MBF.

Area 2 is a partial cut thinning, approximately 40 years old, consisting of Douglas-fir, western red cedar, western hemlock and red alder. The average Douglas-fir tree size to be harvested is 12 inches DBH, with an average height of 38 feet to a merchantable top (6 inch d.i.b.). The average hemlock tree size is 16 inches

DBH and 45 feet to a merchantable top (6 inch d.i.b.). The average cedar tree to be harvested is 27 inches DBH and 57 feet to a merchantable top (6 inch d.i.b). The average volume per acre to be harvested (net) is 5.0 MBF.

**7. Statistical Analysis and Stand Summary:** (See "Statistics" - Type Reports, attached)

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1, 3, 4, & 5 (PC)	45%	9%	35.8%	5.1%
2 (PC)	65%	15%	43.5%	8.4%

**8. Volumes by Species and Log Grade:** (See "Species, Sort, Grade" - Project Report, attached).

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

Species	DBH	Net Vol.	2 Saw	3 Saw	4 Saw	CampRun	% D & B	% Sale
Douglas-fir	14"	1,485	337	968	180	0	6	91
Hemlock/True-fir	16"	120	54	51	15	0	2	7
Alder /Other Hardwoods	10"	1	0	0	0	1	6	<1
Cedar	26"	19	15	2	2	0	9	1
<b>TOTALS</b>		<b>1,625</b>	<b>406</b>	<b>1,021</b>	<b>197</b>	<b>1</b>		

**9. Approvals:**

Prepared by: Jenny Johnson Date: 6/20/11  
 Unit Forester Approval: C. L. R. B... Date: 6/20/11

- 10. Attachments:**
- Cruise Designs and Maps – 5 pages
  - Volume Report - 3 pages
  - Statistics Reports - 8 pages
  - Log Stock Tables - 1 page
  - Stand Table Summary – 1 page

Revised August, 2002

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Sager the Horrible **Area(s)** 1, 3, 4, & 5

**Harvest Type:** (PC) "Partial Cut"

**Approx. Cruise Acres:** 178 **Estimated CV%** 45 Net BF **SE% Objective** 9 Net BF

**Planned Sale Volume :** 1,546 MBF **Estimated Sale Area Value/Acre:** \$1,600/Ac  
(All Sale Areas) (7 MBF/Ac.)

**A. Cruise Goals:** (a) Grade minimum 90 conifer;  
(b) Sample 49 cruise plots (18 grade/31 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 33.6 (**Full point**; Half point) (circle one)  
Cruise Line Direction(s) Areas 1, 3, & 5 AZ= 90°; Area 4 AZ = 162 °;  
Cruise Line Spacing 10 (chains)  
Cruise Plot Spacing 4 (chains)  
Grade/Count Ratio 1/2

Basal Area leave target 120 sq. ft. Cruiser needs to select 3 or 4 leave trees per plot, for a 3.5 tree per plot average. Cruise all take and leave trees on grade plots. If a cruise line ends up in a buffer, offset by 1 chain. Alder will not be thinned; Record alder as leave trees. Alder will not count towards the leave BA. All cedar are leave trees and count towards the leave tree basal area. Record snags (SN) as cull and estimate height and diameter.

**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 < 18" dbh and 40% of dob @ FP for 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

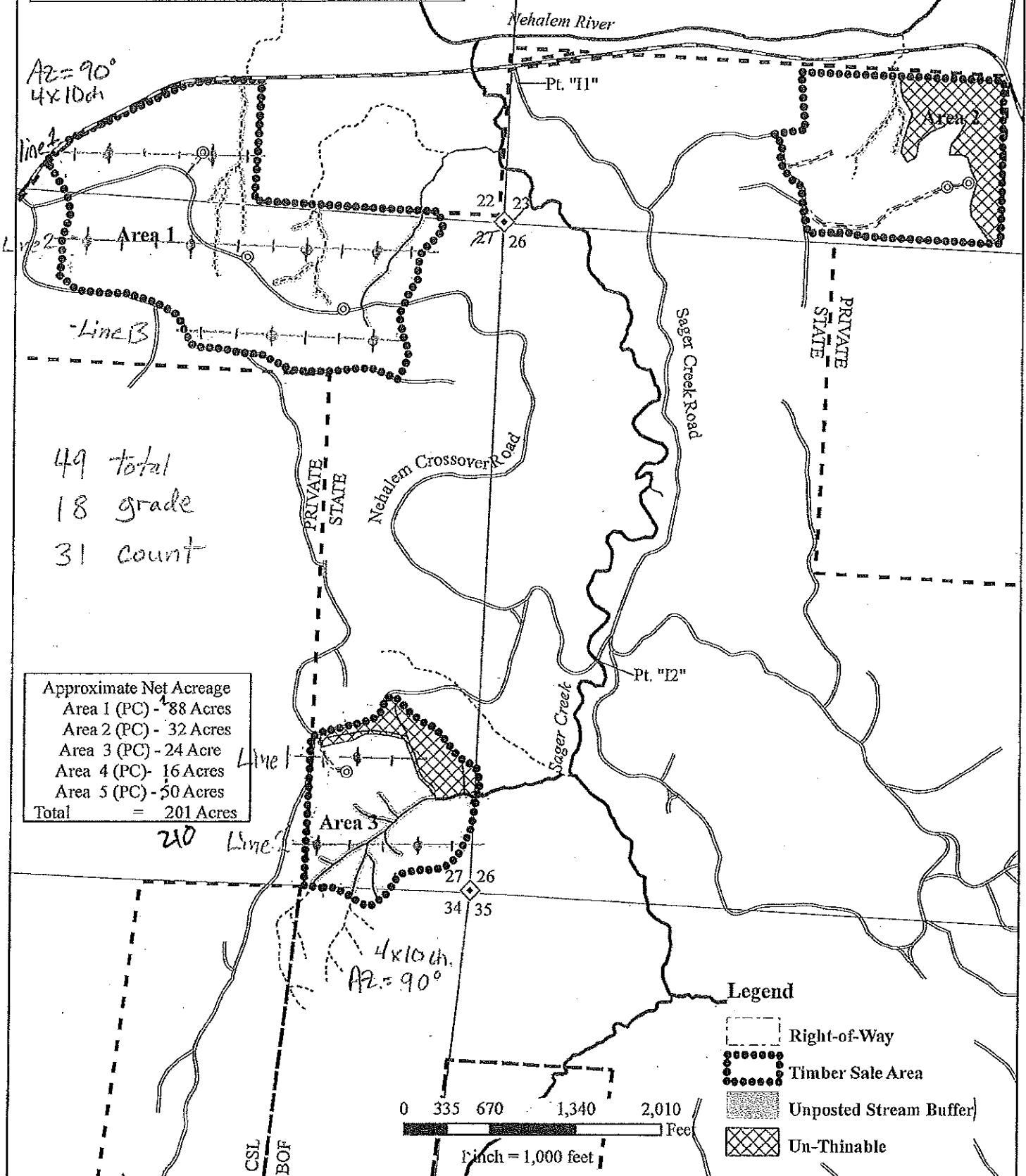
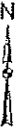
conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

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.
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 = Camprun; 0 = Cull
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures: Plot Type Cruises:** Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at 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: Jenny Johnson  
Approved by: *Jon Long*  
Date: 5/6/2011

# Exhibit "A"

OF TIMBER SALE CONTRACT NO. 341-11-07  
 SAGER THE HORRIBLE  
 PORTIONS OF SECTIONS 22, 23, 27, & 34, T6N, R6W,  
 AND PORTIONS OF SECTION 3, T5N, R6W,  
 W.M., CLATSOP COUNTY, OR.

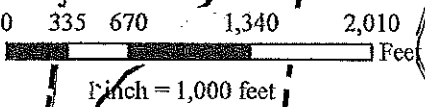


49 total  
 18 grade  
 31 count

Approximate Net Acreage	
Area 1 (PC)	- 88 Acres
Area 2 (PC)	- 32 Acres
Area 3 (PC)	- 24 Acres
Area 4 (PC)	- 16 Acres
Area 5 (PC)	- 50 Acres
<b>Total</b>	<b>= 201 Acres</b>

### Legend

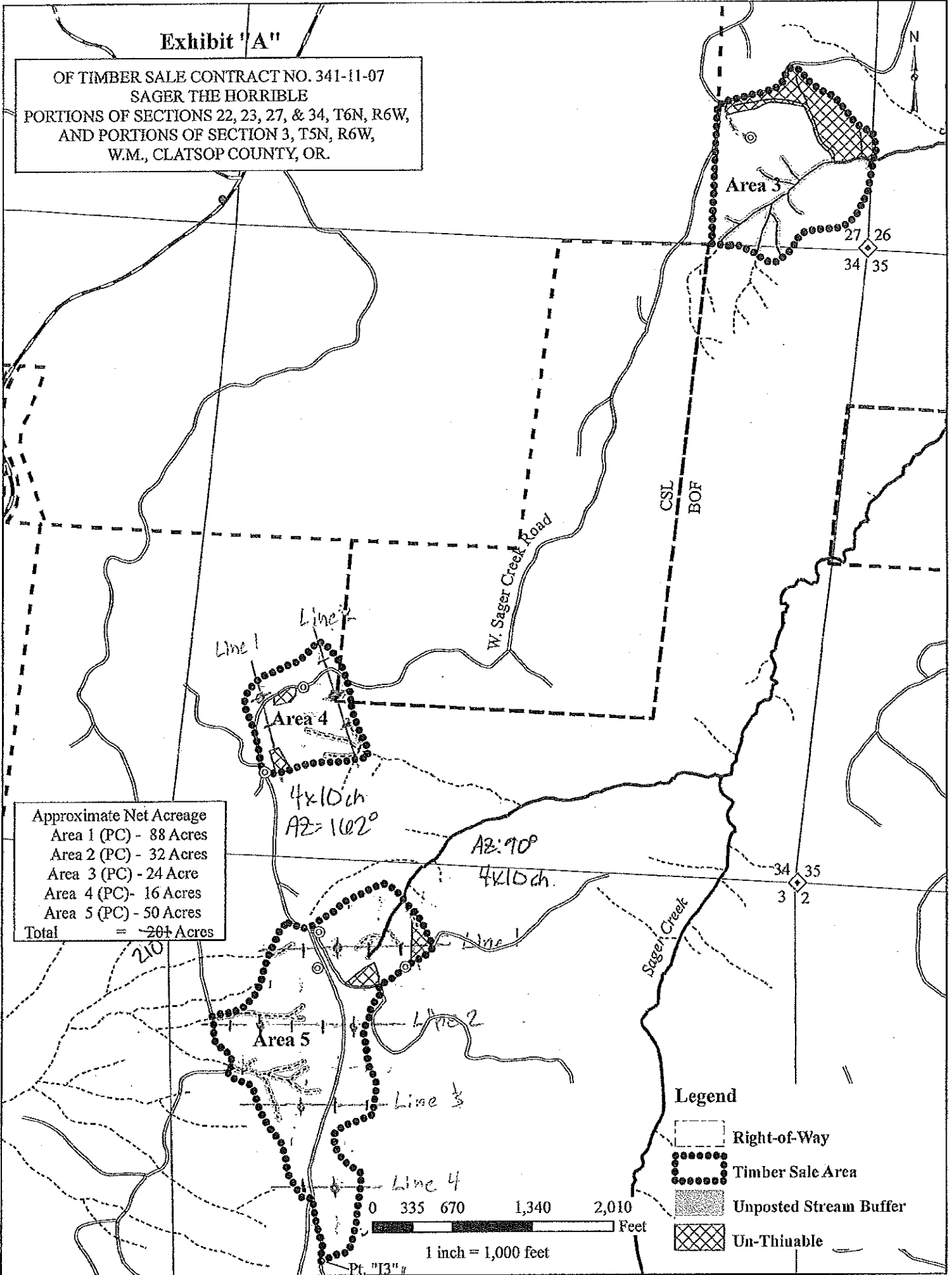
- Right-of-Way
- Timber Sale Area
- Unposted Stream Buffer
- Un-Thinable



CSL  
 BOF

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OF TIMBER SALE CONTRACT NO. 341-11-07  
 SAGER THE HORRIBLE  
 PORTIONS OF SECTIONS 22, 23, 27, & 34, T6N, R6W,  
 AND PORTIONS OF SECTION 3, T5N, R6W,  
 W.M., CLATSOP COUNTY, OR.



Approximate Net Acreage	
Area 1 (PC)	- 88 Acres
Area 2 (PC)	- 32 Acres
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Area 4 (PC)	- 16 Acres
Area 5 (PC)	- 50 Acres
Total	= 210 Acres

### Legend

- Right-of-Way
- Timber Sale Area
- Unposted Stream Buffer
- Un-Thinable

0 335 670 1,340 2,010 Feet  
 1 inch = 1,000 feet



**CRUISE DESIGN  
ASTORIA DISTRICT**

Sale Name: Sager the Horrible Area(s) 2

Harvest Type: (PC) "Partial Cut"

Approx. Cruise Acres: 32 Estimated CV% 65 Net BF SE% Objective 15 Net BF

Planned Sale Volume : 192 MBF (Area 2) Estimated Sale Area Value/Acre: \$1,200/Ac (6 MBF/Ac.)

A. **Cruise Goals:** (a) Grade minimum 50 conifer:  
(b) Sample 28 cruise plots (9 grade/19 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 20 (**Full point**; Half point) (circle one)  
Cruise Line Direction(s) AZ= 90° (North/South)  
Cruise Line Spacing 4 (chains)  
Cruise Plot Spacing 3 (chains)  
Grade/Count Ratio 1/2

Basal Area leave target 120 sq. ft. Cruiser needs to select 6 leave trees per plot. Cruise all take and leave trees on grade plots. If a cruise line ends up in a buffer, offset by 1 chain. Cruise all species, including alder and cedar. Maple is the only reserve species. Maple does not count towards the leave tree basal area. Leave biggest and best of all cruised species. Record snags (SN) as cull and estimate height and diameter.

**Tree Measurements:**

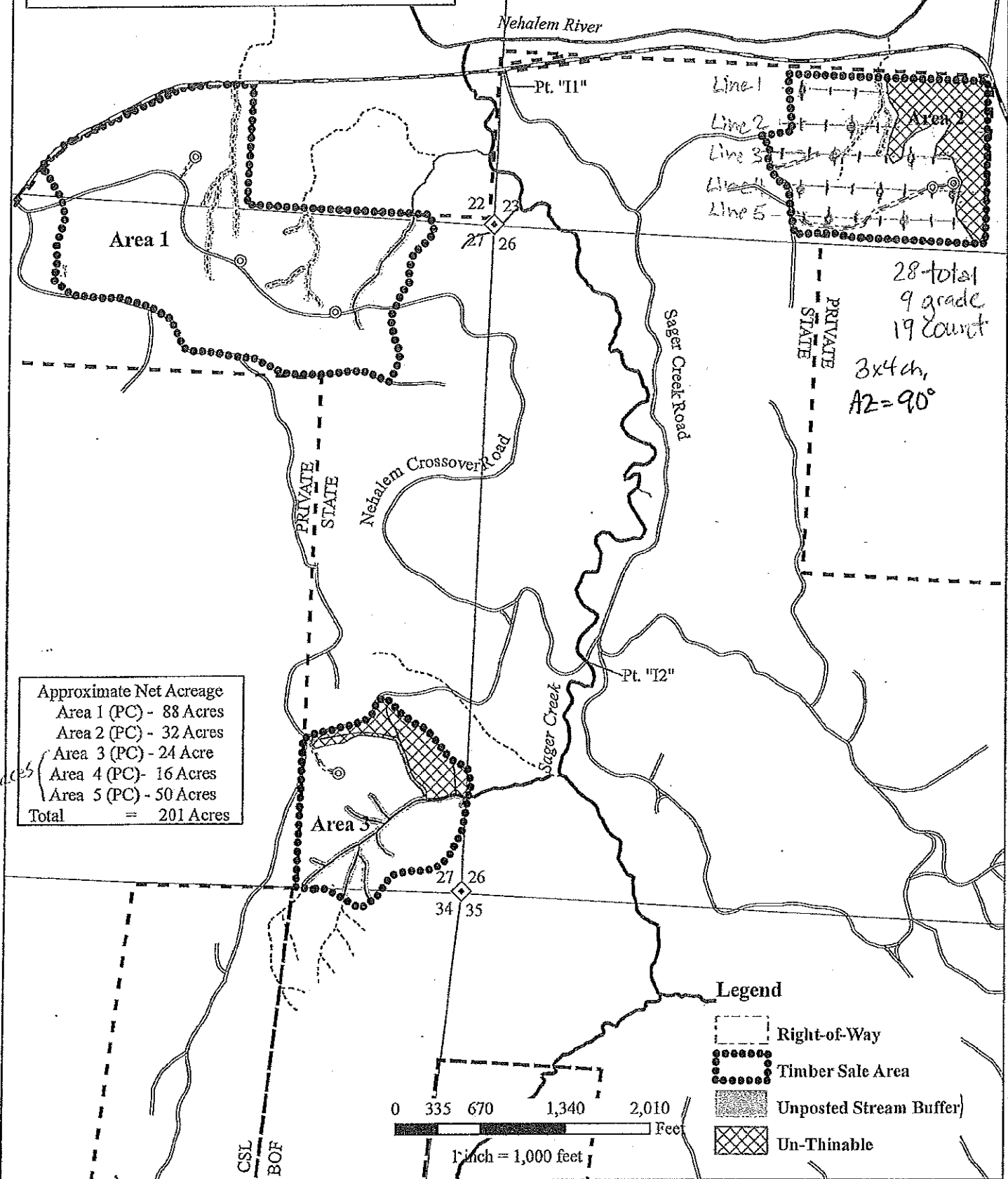
- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods. Record dbh to nearest  $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 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 < 18" dbh and 40% of dob @ FP for 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.
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- 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 = Camprun; 0 = Cull
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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: Jenny Johnson  
 Approved by: *Jon Long*  
 Date: 5/6/2011

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OF TIMBER SALE CONTRACT NO. 341-11-07  
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 PORTIONS OF SECTIONS 22, 23, 27, & 34, T6N, R6W,  
 AND PORTIONS OF SECTION 3, T5N, R6W,  
 W.M., CLATSOP COUNTY, OR.



28 total  
 9 grade  
 19 count  
 3x4 ch,  
 A2 = 90°

Approximate Net Acreage	
Area 1 (PC)	- 88 Acres
Area 2 (PC)	- 32 Acres
Area 3 (PC)	- 24 Acre
Area 4 (PC)	- 16 Acres
Area 5 (PC)	- 50 Acres
<b>Total</b>	<b>= 201 Acres</b>

### Legend

- Right-of-Way
- Timber Sale Area
- Unposted Stream Buffer
- Un-Thinable

3/24/25

CSL  
BOF

TC P5PCSTGR Species, Sort Grade - Board Foot Volumes (Project)

T06N R06W S23 TyR/W	1.00
T06N R06W S23 TyTAKE	30.00
T06N R06W S27 Ty4TAK	165.00

Project: DEMO  
Acres 196.00

Page 1  
Date 6/7/2011  
Time 10:52:35AM

S Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre
			Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf	
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
A	DOCR	100	5.7	7	6	1	100				59	18	23		22	28	0.39	.2
A Totals		0	5.7	7	6	1	100				59	18	23		22	28	0.39	.2
D	DOCU		100.0	217											7		0.00	9.0
D	DO2S	22	2.1	1,758	1,721	337			83	17					37	234	1.37	7.4
D	DO3S	65	3.6	5,123	4,941	968			96	4					35	84	0.71	58.6
D	DO4S	13	.7	923	917	180			100						22	27	0.41	34.3
D Totals		91	5.5	8,022	7,579	1,485			75	21	4				29	69	0.68	109.3
C	DOCU		100.0	10											6		0.00	.1
C	DO2S	82	.0	77	77	15			68	32					29	243	2.83	.3
C	DO3S	9		8	8	2			100						33	74	1.26	.1
C	DO4S	9		8	8	2			100						19	34	0.77	.2
C Totals		1	9.4	103	93	18			17	56	26				24	124	1.91	.7
H	DOCU		100.0	12											8		0.00	.1
H	DO2S	45	.0	277	277	54			100	0					39	271	1.72	1.0
H	DO3S	42		262	262	51			100						36	110	0.86	2.4
H	DO4S	13		74	74	14			100						22	28	0.46	2.6
H Totals		7	1.9	625	613	120			55	45	0				30	100	0.91	6.1
M	DOCR	100		2	2	0			100						23	39	0.61	.0
M Totals		0		2	2	0			100						23	39	0.61	.0
Totals			5.3	8,758	8,293	1,625			73	23	4				29	71	0.70	116.4

T06N R06W S23 TR/W T06N R06W S23 TR/W  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt  
 06N 06W 23 AREA2 R/W 1.00 I W

Spp	S T	So rt	Gr ad	% 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 Ft	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
D		DO	CU		00.0	215										17		0.00	10.8	
D		DO	2S	15		1,290	1,290	1			100			13	87	38	253	1.92	5.1	
D		DO	3S	67	.5	5,446	5,417	5		89	11		7	42	51	35	92	0.78	59.1	
D		DO	4S	18	2.5	1,414	1,379	1		100			35	57	4	4	22	28	0.42	49.7
D		<b>Totals</b>		55	3.3	8,365	8,086	8		77	23		6	14	31	49	28	65	0.70	124.7
C		DO	CU		00.0	227										6		0.00	1.3	
C		DO	2S	75	.1	2,035	2,033	2			54	46	6	1	48	45	34	320	3.24	6.4
C		DO	3S	18		496	496	0		100				19	56	24	32	87	1.15	5.7
C		DO	4S	7		169	169	0		100			88	12			16	30	0.78	5.7
C		<b>Totals</b>		18	7.8	2,928	2,698	3		25	41	35	10	5	46	39	26	142	1.97	19.0
A		DO	CR	100	5.7	1,349	1,272	1		100			59	18	23		22	28	0.39	45.9
A		<b>Totals</b>		9	5.7	1,349	1,272	1		100			59	18	23		22	28	0.39	45.9
H		DO	CU		00.0	150										7		0.00	2.3	
H		DO	2S	54	1.1	1,303	1,289	1			85	15			8	92	39	270	1.78	4.8
H		DO	3S	31		719	719	1		100				18	62	20	32	91	0.90	7.9
H		DO	4S	15		340	340	0		100			57	43			19	27	0.48	12.5
H		<b>Totals</b>		16	6.5	2,513	2,349	2		45	46	8	8	12	23	57	25	86	0.97	27.4
M		DO	CR	100		345	345	0		100			53		47		23	39	0.61	8.8
M		<b>Totals</b>		2		345	345	0		100			53		47		23	39	0.61	8.8
<b>Type Totals</b>					4.8	15,499	14,750	15		65	28	8	13	12	31	44	26	65	0.78	225.8

T06N R06W S23 TTAKE T06N R06W S23 TTAKE  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 06N 06W 23 AREA2\_GROUND TAKE 30.00 1 W

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln Ft	Bd Ft	
	T	rt	ad					Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
D	DO	CU		00.0		157											18		0.00	7.9
D	DO	3S		77	1.6	2,176	2,141	64	100						56	44	36	72	0.61	29.9
D	DO	4S		23	6.1	677	636	19	100				30	70			23	28	0.39	22.7
<b>D</b>	<b>Totals</b>			<b>55</b>	<b>7.8</b>	<b>3,011</b>	<b>2,777</b>	<b>83</b>	<b>100</b>				<b>7</b>	<b>16</b>	<b>43</b>	<b>34</b>	<b>29</b>	<b>46</b>	<b>0.49</b>	<b>60.4</b>
H	DO	CU		00.0		71											8		0.00	.6
H	DO	2S		52		927	927	28		100					11	89	39	255	1.66	3.6
H	DO	3S		31		546	546	16	100					18	82		31	84	0.85	6.5
H	DO	4S		17		295	295	9	100				60	40			19	27	0.48	10.9
<b>H</b>	<b>Totals</b>			<b>35</b>	<b>3.9</b>	<b>1,839</b>	<b>1,767</b>	<b>53</b>	<b>48</b>	<b>52</b>			<b>10</b>	<b>12</b>	<b>31</b>	<b>47</b>	<b>26</b>	<b>82</b>	<b>0.91</b>	<b>21.6</b>
C	DO	CU		00.0		56											6		0.00	.6
C	DO	2S		83		434	434	13		71	29		29		31	40	29	234	2.77	1.9
C	DO	3S		8		39	39	1	100						100		34	70	1.29	.6
C	DO	4S		9		45	45	1	100				47	53			20	35	0.77	1.3
<b>C</b>	<b>Totals</b>			<b>10</b>	<b>9.7</b>	<b>574</b>	<b>518</b>	<b>16</b>	<b>16</b>	<b>59</b>	<b>25</b>		<b>29</b>	<b>5</b>	<b>33</b>	<b>34</b>	<b>24</b>	<b>122</b>	<b>1.90</b>	<b>4.3</b>
<b>Type Totals</b>					<b>6.7</b>	<b>5,423</b>	<b>5,062</b>	<b>152</b>	<b>73</b>	<b>24</b>	<b>3</b>		<b>10</b>	<b>14</b>	<b>38</b>	<b>38</b>	<b>28</b>	<b>59</b>	<b>0.65</b>	<b>86.3</b>

T06N R06W S27 T4TAK		T06N R06W S27 T4TAK
Twp Rge Sec Tract	Type Acres Plots Sample Trees	CuFt BdFt
06N 06W 27 AREA1345	4TAK 165.00	1 W

S Sp	So T	Gr rt	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
				Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln Ft	Bd Ft		CF/ Lf
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
D	DO	CU		100.0	228											5		0.00	9.2	
D	DO	2S	24	2.1	2,081	2,036	336			83	17			26	74	37	234	1.36	8.7	
D	DO	3S	64	3.7	5,657	5,448	899		96	4			3	3	50	44	34	85	0.72	63.9
D	DO	4S	12		965	965	159		100				35	65			22	27	0.42	36.3
D	Totals		96	5.4	8,932	8,449	1,394		73	23	4		6	9	39	46	29	72	0.70	118.1
H	DO	2S	38		152	152	25			100					100		40	290	1.78	.5
H	DO	3S	53		208	208	34		100						100		40	130	0.86	1.6
H	DO	4S	9		32	32	5		100					100			28	30	0.43	1.1
H	Totals		4		393	393	65		61	39				8	92		36	123	0.91	3.2
Type Totals				5.2	9,324	8,841	1,459		73	23	4		5	9	37	48	29	73	0.71	121.2

TC PSTATS		PROJECT STATISTICS							PAGE 1	
		PROJECT DEMO							DATE 6/7/2011	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06	23	AREA2	R/W	196.00	100	428	1	W	
06N	06W	23	AREA2_GROUN	TAKE						
06N	06W	27	AREA1345	4TAK						
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		100	428	4.3						
CRUISE		31	143	4.6	12,809	1.1				
DBH COUNT										
REFOREST										
COUNT		60	285	4.8						
BLANKS		9								
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	83	61.3	14.2	53		67.6	8,022	7,579	2,173	2,130
WR CEDAR	20	.3	26.5	56		1.3	103	93	36	34
WHEMLOCK	25	3.4	15.9	57		4.7	625	613	171	169
R ALDER	10	.2	9.6	22		.1	7	6	2	2
BL MAPLE	5	.0	12.2	24		.0	2	2	1	1
<b>TOTAL</b>	<b>143</b>	<b>65.4</b>	<b>14.4</b>	<b>53</b>		<b>73.7</b>	<b>8,758</b>	<b>8,293</b>	<b>2,383</b>	<b>2,336</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL	68.1	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		85.5	9.4	132	145	159				
WR CEDAR		65.0	14.9	313	368	422				
WHEMLOCK		62.9	12.8	189	216	244				
R ALDER		38.5	12.8	26	30	34				
BL MAPLE		39.1	19.4	34	42	50				
<b>TOTAL</b>		<b>94.2</b>	<b>7.9</b>	<b>163</b>	<b>177</b>	<b>191</b>	<b>354</b>	<b>89</b>	<b>39</b>	
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		110.8	11.1	55	61	68				
WR CEDAR		475.5	47.5	0	0	0				
WHEMLOCK		355.8	35.6	2	3	5				
R ALDER		324.4	32.4	0	0	0				
BL MAPLE		476.1	47.6	0	0	0				
<b>TOTAL</b>		<b>103.1</b>	<b>10.3</b>	<b>59</b>	<b>65</b>	<b>72</b>	<b>424</b>	<b>106</b>	<b>47</b>	
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		118.8	11.9	60	68	76				
WR CEDAR		478.7	47.8	1	1	2				
WHEMLOCK		365.5	36.5	3	5	6				
R ALDER		326.0	32.6	0	0	0				
BL MAPLE		460.6	46.0	0	0	0				
<b>TOTAL</b>		<b>110.3</b>	<b>11.0</b>	<b>66</b>	<b>74</b>	<b>82</b>	<b>486</b>	<b>121</b>	<b>54</b>	
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		133.7	13.4	6,567	7,579	8,591				
WR CEDAR		477.8	47.7	49	93	138				
WHEMLOCK		430.8	43.0	349	613	877				
R ALDER		323.5	32.3	4	6	9				
BL MAPLE		455.7	45.5	1	2	3				
<b>TOTAL</b>		<b>128.4</b>	<b>12.8</b>	<b>7,229</b>	<b>8,293</b>	<b>9,357</b>	<b>658</b>	<b>165</b>	<b>73</b>	



TC PSTATS

**PROJECT STATISTICS**  
PROJECT DEMO

PAGE 2  
DATE 6/7/2011

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	06	23	AREA2	RAW	196.00	100	428	1	W
06N	06W	23	AREA2_GROUN	TAKE					
06N	06W	27	AREA1345	4TAK					

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT DEMO		DATE 6/6/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	27	AREA1345	PC14	165.00	49	322	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		49	322	6.6						
CRUISE		20	122	6.1	26,859	.5				
DBH COUNT										
REFOREST										
COUNT		29	189	6.5						
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	67	77.6	17.5	66		129.0	16,523	15,808	4,542	4,464
DOUG FIR	32	57.3	14.5	55		65.8	8,020	7,587	2,159	2,119
HEMLEAV	9	4.2	21.3	62		10.3	1,219	1,152	346	335
SNAG	6	13.0	9.8	48		6.9	184		64	
MAPLELV	2	7.0	9.5	22		3.4	172	172	62	62
ALDRLEAV	3	1.8	14.6	33		2.1	94	94	41	41
WHEMLOCK	2	1.4	16.2	76		2.1	352	352	94	94
NFIRLEAV	1	.5	23.0	76	0	1.4	200	195	52	52
TOTAL	122	162.8	15.8	59		220.9	26,764	25,360	7,360	7,167
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	59.8	7.3	209	225	242					
DOUG FIR	87.5	15.4	145	171	198					
HEMLEAV	63.9	22.6	273	352	432					
SNAG										
MAPLELV	28.3	26.5	18	25	32					
ALDRLEAV	77.9	53.9	29	63	97					
WHEMLOCK	50.5	47.3	148	280	412					
NFIRLEAV										
TOTAL	77.1	7.0	190	205	219	238	59	26		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	29.8	4.2	74	78	81					
DOUG FIR	59.4	8.5	52	57	62					
HEMLEAV	239.5	34.2	3	4	6					
SNAG	243.3	34.7	8	13	18					
MAPLELV	458.6	65.5	2	7	12					
ALDRLEAV	489.9	69.9	1	2	3					
WHEMLOCK	517.4	73.8	0	1	2					
NFIRLEAV	489.8	69.9	0	0	1					
TOTAL	39.3	5.6	154	163	172	62	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		
DOUGLEAV	28.3	4.0	124	129	134					
DOUG FIR	62.5	8.9	60	66	72					
HEMLEAV	260.0	37.1	6	10	14					
SNAG	244.6	34.9	4	7	9					
MAPLELV	458.1	65.4	1	3	6					
ALDRLEAV	517.4	73.8	1	2	4					
WHEMLOCK	517.4	73.8	1	2	4					
NFIRLEAV	489.8	69.9	0	1	2					

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	DEMO		DATE	6/6/2011		
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
06N	06W	27	AREA1345	PC14	165.00		49	322	1	W
CL:	68.1%	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		25.6	3.7	213	221	229	26	7	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		32.7	4.7	15,070	15,808	16,545				
DOUG FIR		73.4	10.5	6,792	7,587	8,382				
HEMLEAV		281.0	40.1	690	1,152	1,614				
SNAG										
MAPLELV		458.5	65.4	59	172	284				
ALDRLEAV		505.8	72.2	26	94	161				
WHEMLOCK		517.4	73.8	92	352	613				
NFIRLEAV		489.8	69.9	59	195	331				
TOTAL		35.8	5.1	24,064	25,360	26,655	51	13	6	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	DEMO		DATE	6/6/2011		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	27	AREA1345	4TAK	165.00	44	99	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TRBES				
TOTAL	44	99	2.3							
CRUISE	16	34	2.1	10,796		3				
DBH COUNT										
REFOREST										
COUNT	26	65	2.5							
BLANKS	2									
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	32	63.8	14.5	55		73.3	8,932	8,449	2,404	2,360
WHEMLOCK	2	1.6	16.2	76		2.3	393	393	105	105
TOTAL	34	65.4	14.6	56		75.6	9,324	8,841	2,509	2,465
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	87.5	15.4		145	171	198				
WHEMLOCK	50.5	47.3		148	280	412				
TOTAL	84.2	14.4		152	178	203	283	71	31	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	46.2	7.0		59	64	68				
WHEMLOCK	489.8	73.8		0	2	3				
TOTAL	44.3	6.7		61	65	70	78	20	9	
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	49.7	7.5		68	73	79				
WHEMLOCK	489.8	73.8		1	2	4				
TOTAL	49.9	7.5		70	76	81	100	25	11	
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	61.7	9.3		7,663	8,449	9,234				
WHEMLOCK	489.8	73.8		103	393	682				
TOTAL	64.4	9.7		7,983	8,841	9,699	166	41	18	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT DEMO		DATE 6/6/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	27	AREA1345	4LEA	165.00	49	223	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	49	223	4.6							
CRUISE	20	88	4.4	17,165			.5			
DBH COUNT										
REFOREST										
COUNT	29	127	4.4							
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	67	77.6	17.5	66		129.0	16,523	15,808	4,542	4,464
HEMLEAV	9	4.2	21.3	62		10.3	1,219	1,152	346	335
SNAG	6	13.0	9.8	48		6.9	184		64	
MAPLELV	2	7.0	9.5	22		3.4	172	172	62	62
ALDRLEAV	3	1.8	14.6	33		2.1	94	94	41	41
NFIRLEAV	1	.5	23.0	76	0	1.4	200	195	52	52
TOTAL	88	104.0	16.4	60		153.0	18,392	17,421	5,107	4,954
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	59.8	7.3	209	225	242					
HEMLEAV	63.9	22.6	273	352	432					
SNAG										
MAPLELV	28.3	26.5	18	25	32					
ALDRLEAV	77.9	53.9	29	63	97					
NFIRLEAV										
TOTAL	74.7	8.0	198	215	232	223	56	25		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	29.8	4.2	74	78	81					
HEMLEAV	239.5	34.2	3	4	6					
SNAG	243.3	34.7	8	13	18					
MAPLELV	458.6	65.5	2	7	12					
ALDRLEAV	489.9	69.9	1	2	3					
NFIRLEAV	489.8	69.9	0	0	1					
TOTAL	50.7	7.2	96	104	112	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		
DOUGLEAV	28.3	4.0	124	129	134					
HEMLEAV	260.0	37.1	6	10	14					
SNAG	244.6	34.9	4	7	9					
MAPLELV	458.1	65.4	1	3	6					
ALDRLEAV	517.4	73.8	1	2	4					
NFIRLEAV	489.8	69.9	0	1	2					
TOTAL	15.6	2.2	150	153	156	10	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	32.7	4.7	15,070	15,808	16,545					
HEMLEAV	281.0	40.1	690	1,152	1,614					
SNAG										
MAPLELV	458.5	65.4	59	172	284					

State 18.16  
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TC TSTATS				STATISTICS			PAGE	2	
				PROJECT	DEMO		DATE	6/6/2011	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	06W	27	AREA1345	4LEA	165.00	49	223	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
ALDRLEAV		505.8	72.2	26	94	161			
NFIRLEAV		489.8	69.9	59	195	331			
TOTAL		21.5	3.1	16,885	17,421	17,956	19	5	2

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	DEMO	DATE 6/7/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	23	AREA2	GROUND	00PC	30.00	28	253	1	W
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		28	253	9.0						
CRUISE		10	85	8.5	5,050		1.7			
DBH COUNT										
REFOREST										
COUNT		18	150	8.3						
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	25	40.1	15.3	48		51.4	5,250	5,174	1,594	1,571
DOUG FIR	13	46.9	11.8	38		35.7	3,011	2,777	894	854
CEDLEAV	14	8.5	26.3	54		32.1	2,646	2,449	912	878
ALDRLEAV	10	45.9	9.6	22		22.9	1,349	1,272	390	390
WHEMLOCK	10	12.9	15.6	45		17.1	1,839	1,767	517	503
WR CEDAR	3	1.9	26.6	57		7.1	574	518	200	191
BML	5	8.8	12.2	24		7.1	345	345	117	117
HEMLEAV	3	2.1	21.0	68		5.0	671	580	183	167
SNAG	2	1.2	18.0	30		2.1				
TOTAL	85	168.3	14.0	37		180.7	15,684	14,883	4,806	4,672
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	62.0	12.6	163	187	210					
DOUG FIR	60.3	17.4	60	73	86					
CEDLEAV	69.1	19.1	326	404	481					
ALDRLEAV	38.5	12.8	26	30	34					
WHEMLOCK	68.4	22.8	151	195	239					
WR CEDAR	20.1	13.9	244	283	323					
BML	39.1	19.4	34	42	50					
HEMLEAV	53.1	36.7	200	317	433					
SNAG										
TOTAL	100.6	11.0	165	185	205	404	101	45		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	102.7	19.7	32	40	48					
DOUG FIR	111.0	21.3	37	47	57					
CEDLEAV	117.7	22.6	7	9	10					
ALDRLEAV	151.0	29.0	33	46	59					
WHEMLOCK	175.6	33.8	9	13	17					
WR CEDAR	286.2	55.0	1	2	3					
BML	240.2	46.2	5	9	13					
HEMLEAV	180.5	34.7	1	2	3					
SNAG	388.5	74.7	0	1	2					
TOTAL	44.0	8.5	154	168	183	80	20	9		
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	94.3	18.1	42	51	61					
DOUG FIR	102.6	19.7	29	36	43					
CEDLEAV	119.0	22.9	25	32	39					
ALDRLEAV	152.0	29.2	16	23	30					
WHEMLOCK	181.6	34.9	11	17	23					

TC TSTATS				STATISTICS			PAGE	2			
				PROJECT DEMO			DATE	6/7/2011			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	06W	23	AREA2	GROUND	00PC	30.00	28	253	1	W	
CL: 68.1%		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0		VAR.		S.E.%		LOW	AVG	HIGH	5	10	15
WR CEDAR		287.3		55.3		3	7	11			
BML		231.3		44.5		4	7	10			
HEMLEAV		176.4		33.9		3	5	7			
SNAG		388.5		74.7		1	2	4			
TOTAL		35.7		6.9		168	181	193	53	13	6
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		96.9		18.6		4,210	5,174	6,138			
DOUG FIR		99.0		19.0		2,248	2,777	3,305			
CEDLEAV		116.5		22.4		1,901	2,449	2,998			
ALDRLEAV		150.4		28.9		904	1,272	1,640			
WHEMLOCK		194.2		37.3		1,107	1,767	2,427			
WR CEDAR		288.6		55.5		231	518	806			
BML		228.6		44.0		193	345	496			
HEMLEAV		177.3		34.1		382	580	778			
SNAG											
TOTAL		43.5		8.4		13,637	14,883	16,129	79	20	9



TC TSTATS		STATISTICS					PAGE 1			
		PROJECT		DEMO		DATE 6/7/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	23	AREA2	GROUND TAKE	30.00	28	84	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		28	84	3.0						
CRUISE		6	26	4.3	1,850	1.4				
DBH COUNT										
REFOREST										
COUNT		15	58	3.9						
BLANKS		7								
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	13	46.9	11.8	38		35.7	3,011	2,777	894	854
WHEMLOCK	10	12.9	15.6	45		17.1	1,839	1,767	517	503
WR CEDAR	3	1.9	26.6	57		7.1	574	518	200	191
TOTAL	26	61.7	13.4	40		60.0	5,423	5,062	1,611	1,549
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	60.3	17.4	60	73	86					
WHEMLOCK	68.4	22.8	151	195	239					
WR CEDAR	20.1	13.9	244	283	323					
TOTAL	80.8	16.2	121	144	168	271	68	30		
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	111.0	21.3	37	47	57					
WHEMLOCK	175.6	33.8	9	13	17					
WR CEDAR	286.2	55.0	1	2	3					
TOTAL	85.6	16.5	52	62	72	304	76	34		
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	102.6	19.7	29	36	43					
WHEMLOCK	181.6	34.9	11	17	23					
WR CEDAR	287.3	55.3	3	7	11					
TOTAL	88.4	17.0	50	60	70	324	81	36		
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	99.0	19.0	2,248	2,777	3,305					
WHEMLOCK	194.2	37.3	1,107	1,767	2,427					
WR CEDAR	288.6	55.5	231	518	806					
TOTAL	94.9	18.3	4,138	5,062	5,986	373	93	41		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	DEMO	DATE 6/7/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	23	AREA2	GROUND	LEAV	30.00	28	169	1	W
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	28	169	6.0							
CRUISE	10	59	5.9		3,200		1.8			
DBH COUNT										
REFOREST										
COUNT	18	103	5.7							
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	25	40.1	15.3	48		51.4	5,250	5,174	1,594	1,571
CEDLEAV	14	8.5	26.3	54		32.1	2,646	2,449	912	878
ALDRLEAV	10	45.9	9.6	22		22.9	1,349	1,272	390	390
BML	5	8.8	12.2	24		7.1	345	345	117	117
HEMLEAV	3	2.1	21.0	68		5.0	671	580	183	167
SNAG	2	1.2	18.0	30		2.1				
TOTAL	59	106.7	14.4	36		120.7	10,261	9,821	3,195	3,123
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	62.0	12.6	163	187	210					
CEDLEAV	69.1	19.1	326	404	481					
ALDRLEAV	38.5	12.8	26	30	34					
BML	39.1	19.4	34	42	50					
HEMLEAV	53.1	36.7	200	317	433					
SNAG										
TOTAL	102.5	13.4	176	203	230	419	105	47		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	102.7	19.7	32	40	48					
CEDLEAV	117.7	22.6	7	9	10					
ALDRLEAV	151.0	29.0	33	46	59					
BML	240.2	46.2	5	9	13					
HEMLEAV	180.5	34.7	1	2	3					
SNAG	388.5	74.7	0	1	2					
TOTAL	48.7	9.4	97	107	117	98	25	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		
DOUGLEAV	94.3	18.1	42	51	61					
CEDLEAV	119.0	22.9	25	32	39					
ALDRLEAV	152.0	29.2	16	23	30					
BML	231.3	44.5	4	7	10					
HEMLEAV	176.4	33.9	3	5	7					
SNAG	388.5	74.7	1	2	4					
TOTAL	20.4	3.9	116	121	125	17	4	2		
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	96.9	18.6	4,210	5,174	6,138					
CEDLEAV	116.5	22.4	1,901	2,449	2,998					
ALDRLEAV	150.4	28.9	904	1,272	1,640					
BML	228.6	44.0	193	345	496					
HEMLEAV	177.3	34.1	382	580	778					
SNAG										
TOTAL	34.4	6.6	9,171	9,821	10,471	49	12	5		

STATISTICS  
PROJECT DEMO

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	06W	23	AREA2 GROUND	LEAV	30.00	28	169	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

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT DEMO		DATE 6/7/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	23	AREA2	R/W	1.00	28	245	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		28	245	8.8						
CRUISE		9	83	9.2	163		50.9			
DBH COUNT										
REFOREST										
COUNT		19	162	8.5						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	38	83.9	13.8	44		87.1	8,365	8,086	2,523	2,465
WR CEDAR	17	9.5	26.3	54		35.7	2,928	2,698	1,011	972
R ALDER	10	45.9	9.6	22		22.9	1,349	1,272	390	390
WHEMLOCK	13	14.9	16.5	48		22.1	2,513	2,349	700	671
BL MAPLE	5	8.8	12.2	24		7.1	345	345	125	125
TOTAL	83	163.0	14.0	38		175.0	15,499	14,750	4,749	4,622
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	75.0	12.2	130	148	166					
WR CEDAR	67.1	16.8	318	382	446					
R ALDER	38.5	12.8	26	30	34					
WHEMLOCK	64.8	18.7	181	223	265					
BL MAPLE	39.1	19.4	34	42	50					
TOTAL	99.4	10.9	167	187	208	394	99	44		
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	92.8	17.8	69	84	99					
WR CEDAR	116.1	22.3	7	9	12					
R ALDER	151.0	29.0	33	46	59					
WHEMLOCK	150.9	29.0	11	15	19					
BL MAPLE	240.2	46.2	5	9	13					
TOTAL	43.5	8.4	149	163	177	78	20	9		
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	83.4	16.0	73	87	101					
WR CEDAR	120.4	23.2	27	36	44					
R ALDER	152.0	29.2	16	23	30					
WHEMLOCK	148.2	28.5	16	22	28					
BL MAPLE	231.3	44.5	4	7	10					
TOTAL	34.3	6.6	163	175	187	49	12	5		
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	85.1	16.4	6,762	8,086	9,410					
WR CEDAR	117.8	22.7	2,087	2,698	3,310					
R ALDER	150.4	28.9	904	1,272	1,640					
WHEMLOCK	155.0	29.8	1,648	2,349	3,049					
BL MAPLE	228.6	44.0	193	345	496					
TOTAL	41.4	8.0	13,575	14,750	15,925	71	18	8		



Log Stock Table - MBF

T06NR06W S23 TyTAKE 30.00  
 T06NR06W S27 Ty4TAK 165.00

Project: DEMO  
 Acres 195.00

Page 2  
 Date 6/7/2011  
 Time 10:47:37AM

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
H		DO 2S	32	3		3	2.6					3					
H		DO 2S	40	50		50	42.3					6	44				
H		DO 3S	28	3		3	2.6			3							
H		DO 3S	32	13		13	11.3				4	9					
H		DO 3S	40	34		34	29.1				8	27					
H		DO 4S	16	5		5	3.8			5							
H		DO 4S	18	1		1	.6			1							
H		DO 4S	24	4		4	3.0			4							
H		DO 4S	28	5		5	4.5			5							
H		Totals		120	1.8	118	7.3			17	12	36	9	44			
Total		All Species		1,701	5.3	1,611	100.0			472	295	405	253	124		62	

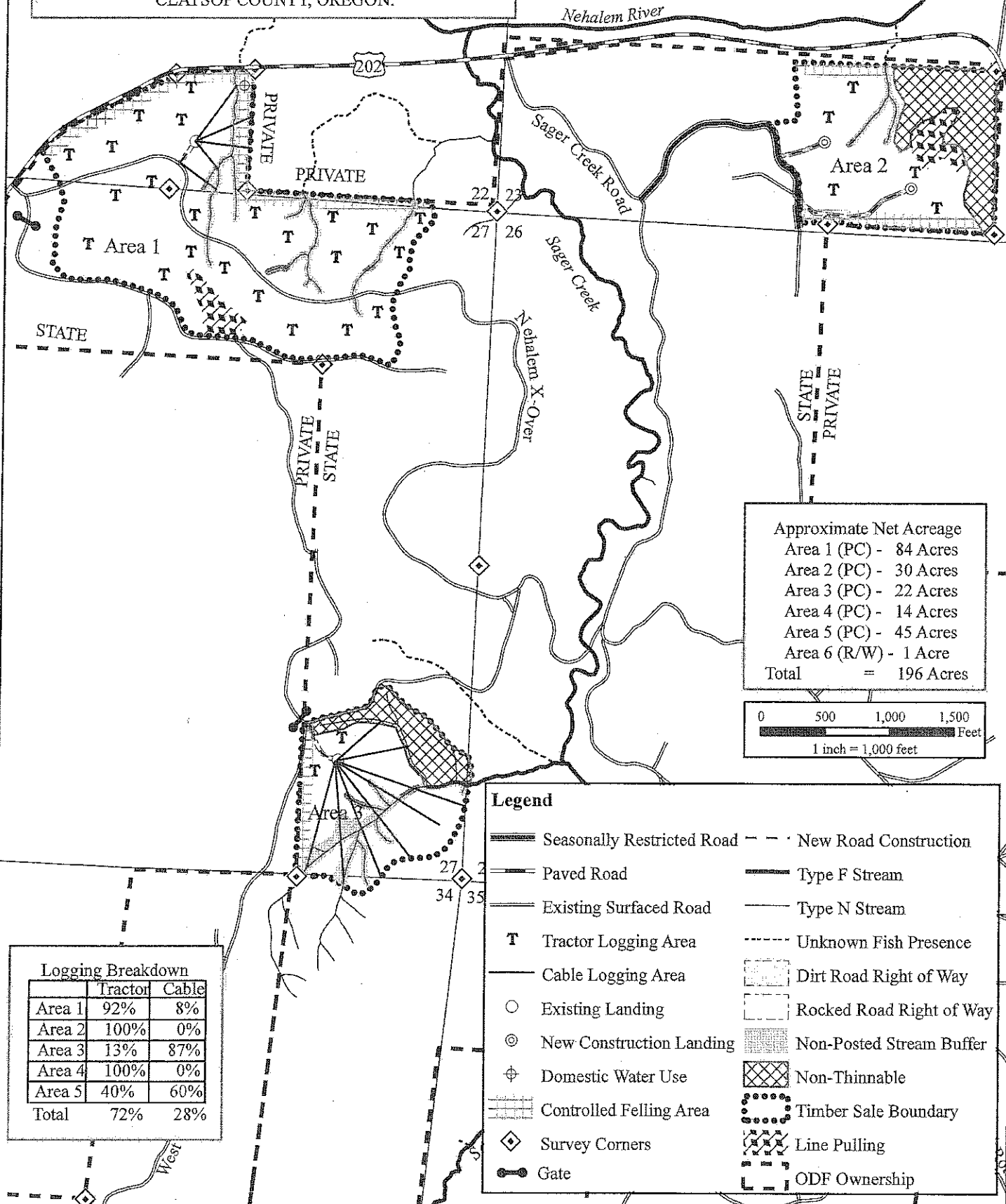
TC TSTNDSUM		Stand Table Summary														
Project DEMO											T06N R06W S23 TLEAV					
T06N R06W S23 TLEAV											T06N R06W S23 TLEA					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees		Page:	1						
06N	06W	23	AREA2_GROUND	LEAV	30.00				Date:	06/07/20						
									Time:	10:45:03AM						
S Spec	T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DL		9	1	82	21	4.656	2.06	4.66	5.0	20.0		23	93		7	3
DL		10	1	83	17	3.772	2.06									
DL		12	2	86	48	5.238	4.11	5.24	15.0	45.0		79	236		24	7
DL		13	3	85	73	6.695	6.17	13.39	12.8	41.7		172	558		52	17
DL		14	1	86	76	1.924	2.06	3.85	16.0	55.0		62	212		18	6
DL		16	2	84	82	2.947	4.11	5.89	23.5	80.0		138	471		42	14
DL		17	4	85	91	5.220	8.23	10.44	28.7	101.3		300	1,057		90	32
DL		18	1	82	95	1.164	2.06	2.33	34.0	110.0		79	256		24	8
DL		19	3	84	87	3.134	6.17	6.27	33.2	108.3		208	679		62	20
DL		20	1	80	71	.943	2.06	1.89	32.0	95.0		60	179		18	5
DL		21	2	84	92	1.711	4.11	3.42	43.0	132.5		147	453		44	14
DL		22	1	82	97	.779	2.06	1.56	49.0	150.0		76	234		23	7
DL		23	1	80	92	.713	2.06	1.43	50.5	150.0		72	214		22	6
DL		24	1	86	98	.655	2.06	1.31	59.0	210.0		77	275		23	8
DL		26	1	81	97	.558	2.06	1.12	69.0	230.0		77	257		23	8
DL		Totals	25	84	66	40.110	51.43	62.78	25.0	82.4		1,571	5,174		471	155
CL		17	1	80	93	1.457	2.30	2.91	26.5	85.0		77	248		23	7
CL		18	1	77	44	1.299	2.30	1.30	31.0	50.0		40	65		12	2
CL		22	1	71	76	.870	2.30	1.74	40.5	85.0		70	148		21	4
CL		25	1	78	70	.674	2.30	1.35	48.5	110.0		65	148		20	4
CL		26	2	78	65	1.245	4.59	2.49	47.8	127.5		119	318		36	10
CL		28	2	78	72	1.074	4.59	2.15	59.8	157.5		128	338		38	10
CL		32	1	77	70	.411	2.30	.82	80.0	195.0		66	160		20	5
CL		34	1	78	67	.364	2.30	.73	67.0	205.0		49	149		15	4
CL		36	1	77	96	.325	2.30	.65	123.0	405.0		80	263		24	8
CL		38	2	75	82	.583	4.59	1.17	97.0	310.0		113	361		34	11
CL		42	1	78	88	.239	2.30	.48	146.0	525.0		70	251		21	8
CL		Totals	14	77	72	8.540	32.14	15.78	55.6	155.2		878	2,449		263	73
AL		8	1	87	17	6.548	2.29	6.55	4.0	20.0		26	131		8	4
AL		9	5	86	31	25.869	11.43	25.87	6.6	24.0		171	621		51	19
AL		10	1	86	56	4.191	2.29	4.19	13.0	30.0		54	126		16	4
AL		11	1	86	47	3.463	2.29	3.46	13.0	30.0		45	104		14	3
AL		12	2	86	47	5.821	4.57	5.82	16.0	50.0		93	291		28	9
AL		Totals	10	86	34	45.892	22.86	45.89	8.5	27.7		390	1,272		117	38
HL		18	1	81	82	.943	1.67	1.89	25.0	85.0		47	160		14	5
HL		21	1	86	85	.693	1.67	1.39	42.0	140.0		58	194		17	6
HL		26	1	89	85	.452	1.67	.90	68.5	250.0		62	226		19	7
HL		Totals	3	84	84	2.088	5.00	4.18	40.1	139.0		167	580		50	17
BML		11	2	87	18	4.329	2.86	4.33	8.0	30.0		35	130		10	4
BML		12	1	86	17	1.819	1.43	1.82	10.0	30.0		18	55		5	2
BML		14	2	86	54	2.673	2.86	2.67	24.0	60.0		64	160		19	5
BML		Totals	5	86	29	8.821	7.14	8.82	13.3	39.1		117	345		35	10
SN		18	2	88	30	1.213	2.14									
SN		Totals	2	88	30	1.213	2.14									
Totals			59	85	50	106.664	120.71	137.45	22.7	71.5		3123	9,821		937	295

TC TSTNDSUM		Stand Table Summary															
Project DEMO											T06N R06W S27 T4LEA						
T06N R06W S27 T4LEA											T06N R06W S27 T4LEA						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees		Page:	1							
06N	06W	27	AREA1345	4LEA	165.00				Date:	06/07/20							
									Time:	10:45:03AM							
S Spe	T	DBH	Sample Trees	Av FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Cu.Ft.	Net Bd.Ft.	Totals				
									Net Cu.Ft.	Net Bd.Ft.			Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Tons	Cunits
DL		13	2	88	92	4.176	3.85	8.35	16.5	57.5			138	480		227	79
DL		14	2	87	83	3.601	3.85	7.20	17.7	65.0			128	468		211	77
DL		15	5	89	80	7.842	9.62	14.12	21.8	80.0			307	1,129		507	186
DL		16	9	87	86	12.406	17.32	23.43	25.3	88.8			593	2,081		978	343
DL		17	9	89	91	11.064	17.32	22.13	29.0	103.0			641	2,278		1,058	376
DL		18	18	88	83	19.668	34.64	37.16	30.0	100.1			1,116	3,719		1,842	614
DL		19	9	89	93	8.798	17.32	17.60	36.6	130.6			643	2,297		1,061	379
DL		20	5	88	89	4.411	9.62	9.70	35.4	121.8			343	1,182		566	195
DL		21	2	84	85	1.600	3.85	3.20	40.2	127.5			129	408		213	67
DL		22	5	91	94	3.645	9.62	7.29	46.8	190.0			341	1,385		563	229
DL		31	1	93	106	.367	1.92	1.10	76.7	343.3			84	378		139	62
DL		Totals	67	88	87	77.578	128.95	151.28	29.5	104.5			4,464	15,808		7,366	2,608
HL		14	1	89	67	1.069	1.14	2.14	15.5	55.0			33	118		55	19
HL		19	2	86	78	1.161	2.29	2.32	35.2	110.0			82	255		135	42
HL		20	1	83	83	.524	1.14	1.05	37.5	120.0			39	126		65	21
HL		25	1	88	86	.335	1.14	.67	65.0	255.0			44	171		72	28
HL		26	1	72	63	.310	1.14	.31	47.0	90.0			15	28		24	5
HL		27	1	89	84	.288	1.14	.58	75.0	295.0			43	170		71	28
HL		29	1	88	66	.249	1.14	.50	70.5	235.0			35	117		58	19
HL		30	1	89	86	.233	1.14	.47	94.0	360.0			44	168		72	28
HL		Totals	9	86	75	4.170	10.29	8.03	41.7	143.5			335	1,152		552	190
NFL		23	1	89	92	.475	1.37	.95	55.0	205.0			52	195		86	32
NFL		Totals	1	89	92	.475	1.37	.95	55.0	205.0			52	195		86	32
ML		9	1	86	33	3.882	1.71	3.88	7.0	20.0			27	78		45	13
ML		10	1	82	41	3.144	1.71	3.14	11.0	30.0			35	94		57	16
ML		Totals	2	84	37	7.026	3.43	7.03	8.8	24.5			62	172		102	28
AL		12	1	86	41	.873	.69	.87	15.0	40.0			13	35		22	6
AL		15	1	86	33	.559	.69	.56	19.0	30.0			11	17		18	3
AL		19	1	87	54	.348	.69	.35	50.0	120.0			17	42		29	7
AL		Totals	3	86	41	1.781	2.06	1.78	23.1	52.5			41	94		68	15
SN		8	2	89	40	6.550	2.29										
SN		10	2	87	61	4.192	2.29										
SN		11	1	86	75	1.732	1.14										
SN		20	1	90	17	.524	1.14										
SN		Totals	6	88	51	12.998	6.86										
Totals			88	88	78	104.028	152.96	169.07	29.3	103.0			4954	17,421		8,174	2,874

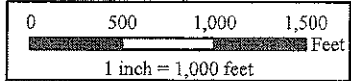


# Logging Plan

OF TIMBER SALE CONTRACT NO. 341-12-24  
 SAGAR THE HORRIBLE  
 PORTIONS OF SECTIONS 22, 23, 27, & 34, T6N, R6W, AND  
 PORTIONS OF SECTION 3, T5N, R6W, W.M.,  
 CLATSOP COUNTY, OREGON.



Approximate Net Acreage	
Area 1 (PC)	- 84 Acres
Area 2 (PC)	- 30 Acres
Area 3 (PC)	- 22 Acres
Area 4 (PC)	- 14 Acres
Area 5 (PC)	- 45 Acres
Area 6 (R/W)	- 1 Acre
<b>Total</b>	<b>= 196 Acres</b>

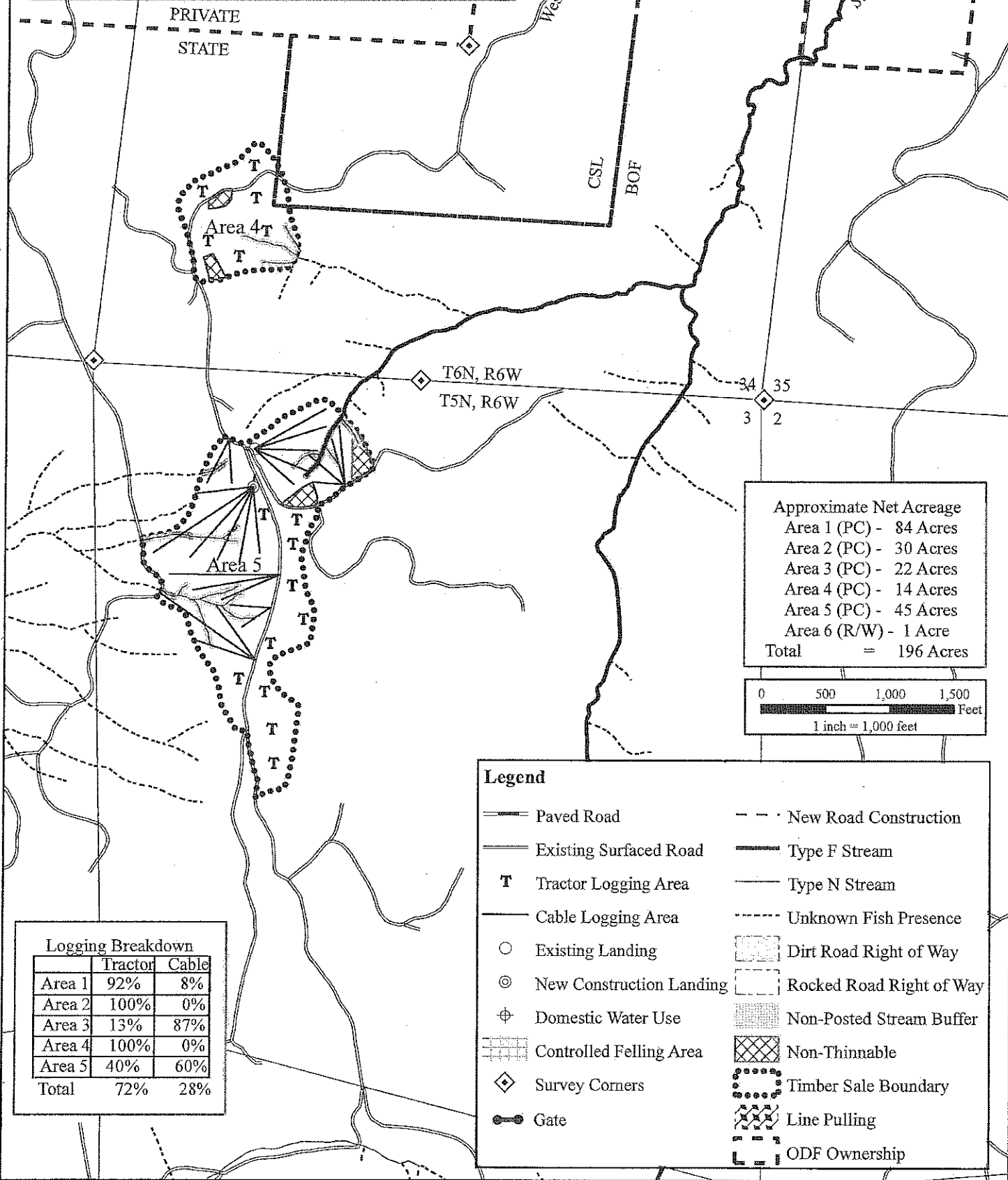


Logging Breakdown		
	Tractor	Cable
Area 1	92%	8%
Area 2	100%	0%
Area 3	13%	87%
Area 4	100%	0%
Area 5	40%	60%
<b>Total</b>	<b>72%</b>	<b>28%</b>

## Legend

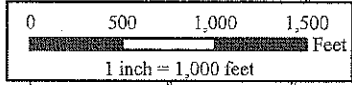
- Seasonally Restricted Road
- Paved Road
- Existing Surfaced Road
- New Road Construction
- Type F Stream
- Type N Stream
- Unknown Fish Presence
- Dirt Road Right of Way
- Rocked Road Right of Way
- Non-Posted Stream Buffer
- Non-Thinnable
- Timber Sale Boundary
- Line Pulling
- ODF Ownership
- Tractor Logging Area
- Cable Logging Area
- Existing Landing
- New Construction Landing
- Domestic Water Use
- Controlled Felling Area
- Survey Corners
- Gate

**Logging Plan**  
 OF TIMBER SALE CONTRACT NO. 341-12-24  
 SAGAR THE HORRIBLE  
 PORTIONS OF SECTIONS 22, 23, 27, & 34, T6N, R6W, AND  
 PORTIONS OF SECTION 3, T5N, R6W, W.M.,  
 CLATSOP COUNTY, OREGON.



**Approximate Net Acreage**

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**Logging Breakdown**

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<b>Total</b>	<b>72%</b>	<b>28%</b>

**Legend**

Paved Road	New Road Construction
Existing Surfaced Road	Type F Stream
Tractor Logging Area	Type N Stream
Cable Logging Area	Unknown Fish Presence
Existing Landing	Dirt Road Right of Way
New Construction Landing	Rocked Road Right of Way
Domestic Water Use	Non-Posted Stream Buffer
Controlled Felling Area	Non-Thinnable
Survey Corners	Timber Sale Boundary
Gate	Line Pulling
	ODF Ownership