



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Paradise East  
Sale 341-09-10

District: Astoria

Date: April 09, 2009

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**cost summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sale Value</b>	\$832,716.06	\$2,217.42	\$834,933.48
		<b>Project Work:</b>	\$(89,986.00)
		<b>Advertised Value:</b>	\$744,947.48



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**timber description**

**Location:** Portions of Sections 1, 2, 3, 11, and 12, T5N, R6W, and Section 35, T6N, R6W, W.M., Clatsop County, Oregon.

**Stand Stocking:** 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	97
Western Hemlock / Fir	15	0	96
Alder (Red)	13	0	95

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	3,576	1,367	217	0	5,160
Western Hemlock / Fir	2	0	1	0	3
Alder (Red)	0	0	0	9	9
Total	3,578	1,367	218	9	5,172



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comments: Pond Values Used: 1st Quarter Calendar Year 2009.

Log Markets: Mist, Clatskanie, Tillamook, Forest Grove.

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost  
 $\$542.58/\text{MBF} = \$720/\text{MBF} - \$177.42/\text{MBF}$

SCALING COST ALLOWANCE =  $\$5.00/\text{MBF}$

FUEL COST ALLOWANCE =  $\$3.00/\text{Gallon}$

HAULING COST ALLOWANCE

Hauling costs equivalent to  $\$700$  daily truck cost.

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

100% Brand and Paint:  $\$1/\text{MBF} \times 5,172 \text{ MBF} = \$ 5,172$

TOTAL Other Costs (with Profit and Risk to be added) =  $\$5,172$

Other Costs (No Profit & Risk to be added):

Waterbar and block dirt road segments after harvest:

$\$13.85/\text{station} \times 24 \text{ stations} = \$332.40$

TOTAL Other Costs (No Profit & Risk added) =  $\$332.40$





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**logging costs**

Operating Seasons:	3.00	Profit Risk:	14.00%
Project Costs:	\$89,986.00	Other Costs (P/R):	\$5,172.00
Slash Disposal:	\$0.00	Other Costs:	\$332.40

**Miles of Road**

Road Maintenance: \$5.55

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

**Hauling Costs**

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	4.0	4.5
Western Hemlock / Fir	\$0.00	2.0	3.5
Alder (Red)	\$0.00	2.0	3.0



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**logging costs breakdown**

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
<b>Douglas - Fir</b>									
\$83.10	\$5.72	\$2.54	\$35.13	\$1.00	\$17.85	\$0.00	\$5.00	\$0.06	\$150.40
<b>Western Hemlock / Fir</b>									
\$26.64	\$5.77	\$2.54	\$91.23	\$1.00	\$17.81	\$0.00	\$5.00	\$0.06	\$150.05
<b>Alder (Red)</b>									
\$26.64	\$5.83	\$2.54	\$107.46	\$1.00	\$20.09	\$0.00	\$5.00	\$0.06	\$168.62

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$311.72	\$161.32	\$0.00
Western Hemlock / Fir	\$0.00	\$251.67	\$101.62	\$0.00
Alder (Red)	\$0.00	\$415.00	\$246.38	\$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
Alder (Red)	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	5,160	\$161.32	\$832,411.20
Western Hemlock / Fir	3	\$101.62	\$304.86
Alder (Red)	9	\$246.38	\$2,217.42

**Gross Timber Sale Value**

Recovery: \$834,933.48

Prepared by: Derek Bangs

Phone: 503-325-5451

**SUMMARY OF ALL PROJECT COSTS**

**SALE NAME:** Paradise East

**NEW CONSTRUCTION:**

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1			
New Construction	<u>2A-2B, 2C-2D,</u>	<u>24.00</u>	<u>\$8,581</u>
(Dirt Roads)	<u>3A-3B, 3C-3D,</u>	<u>          </u>	<u>          </u>
	<u>          </u>	<u>          </u>	<u>          </u>
New Construction	<u>1A-1B, 1C-1D, 1E-1F, 2H-2I,</u>	<u>24.1</u>	<u>29,204</u>
(Surfaced Roads)	<u>5A-4B, and 5D-5E</u>	<u>          </u>	<u>          </u>
	<u>          </u>	<u>          </u>	<u>          </u>
	<b>TOTALS</b>	<b>48.10</b>	<b>\$37,785</b>

**ROAD IMPROVEMENT:**

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1			
	<u>11-12, 13-14, 15-16,</u>	<u>168.20</u>	<u>\$27,939</u>
	<u>17-18, 19-110, and 111-112</u>	<u>          </u>	<u>          </u>
	<u>          </u>	<u>          </u>	<u>          </u>
	<b>TOTALS</b>	<b>168.20</b>	<b>\$27,939</b>

**SPECIAL PROJECTS:**

Project No. 2	Road Vacating	<u>22.8 sta.</u>	<u>\$4,651</u>
Project Work	Road Maintenance		<u>\$8,518</u>

**MOVE IN:**

	<u>Equipment</u>	<u>Cost</u>
	<u>Dozer (D8) x 2</u>	<u>\$2,440</u>
	<u>Dump Trucks (12 cy x 6)</u>	<u>\$846</u>
	<u>Dump Trucks (20 cy x 4)</u>	<u>\$664</u>
	<u>F E Loader (C966) x 2</u>	<u>\$1,350</u>
	<u>Grader (14G)</u>	<u>\$675</u>
	<u>Vibratory Roller</u>	<u>\$675</u>
	<u>Backhoe (C 580)</u>	<u>\$279</u>
	<u>Rubber Tire Skidder (C518)</u>	<u>\$622</u>
	<u>Water Truck (2,500 gallon)</u>	<u>\$165</u>
	<u>Excavator (C325) x 2</u>	<u>\$2,238</u>
	<b>TOTAL</b>	<b>\$11,094</b>

**GRAND TOTAL** \$89,986

Compiled By: D.Bangs

Date: 02/05/2009



Project No. 1 New Construction

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Paradise East (Designed Roads) Rocked  
 ROADS: 1A-1B (11+60)

NEW CONSTRUCTION: 11.60 STATIONS  
 IMPROVEMENT: STATIONS

0.22 MILES  
 0.00 MILES

Method	Acres/amount	Rate	=	Cost
Scatter Outside of R/W	1.1	\$1,161.00	=	\$1,277.10
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>				<b>\$1,277</b>

Material	Cy/amount/station	Rate	=	Cost
Common drift excavation \$\$/cy	1,123	\$1.60	=	\$1,796.80
Embankment compaction \$\$/cy	1,088	\$0.60	=	\$652.80
Landing Construction 1B	1	\$338.00	=	\$338.00
<b>SUB TOTAL FOR EXCAVATION</b>				<b>\$2,788</b>

CULVERT MATERIALS AND INSTALLATION				
Location	Dial/type	Lineal ft.	Rate	Cost
1A to 1B	0+60	50	\$17.64	\$882.00
1A to 1B	5+40	40	\$17.64	\$705.60
1A to 1B	10+50	30	\$17.64	\$529.20
				\$0.00

Other/miscellaneous:	Quantity	Rate	Cost
Culvert stakes & markers: 2 1/2" x 6' White Carsonite post (installed)	3	\$18.00	\$54.00
			\$0.00
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>			<b>\$2,171</b>
Subtotal			<b>\$6,236</b>





**Project No. 1 New Road Construction**

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Paradise East  
 ROAD: 1A-1B (11.6), 1C-1D (0.8), 1E-1F (1.2), 2H-2I (1.1), 5A-5B (8.6), 5D-5E (0.8)

NEW CONSTRUCTION: 24.10 STATIONS  
 IMPROVEMENT: 0.00 STATIONS

0.46 MILES  
 0.00 MILES

SURFACING		Subgrade prep:		Description		Stations/amount		Rate/ Cost																																																																																		
		Grade, Shape and Ditch 16"				24.10		x																																																																																		
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**Project No. 1 Road Improvement**

**SUMMARY OF CONSTRUCTION COSTS**

**SALE NAME:** Paradise East **NEW CONSTRUCTION:** STATIONS 0.00 MILES  
**ROAD:** I1-I2 (5.0), I2-I3 (65.5), I5-I6 (3.5), I7-I8 (3.2), I9-I10(22.0) & IMPROVEMENT: 168.20 STATIONS 3.19 MILES  
 I11-I12 (69+0)

SURFACING		Description		Stations/amount	x	Rate/sta/amt	Cost		
Subgrade prep:		Grade, Shape and Ditch 16'		168.20	x	\$21.55	\$3,624.71		
		Surfacing Rock Processing and Compaction ( Subgrade Leveling)		168.20	x	\$17.52	\$2,946.86		
<b>ROAD SEGMENT I1 to I2 East Sager Spur</b>									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT I1 to I2 East Sager Spur		Sta. to Sta. 0+00 to 5+00	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Subgrade Leveling	1 1/2"-0" Crushed	I1 to I2	3	station	16	stations	5	\$6.51	\$521
Turnouts	1 1/2"-0" Crushed	N/A	3	turnout	10	turnouts	1	\$6.51	\$65
Turn Arouds	1 1/2"-0" Crushed	N/A	3	turnaround	10	turn around	1	\$6.51	\$65
Total Rock for Road Segment: I1 to I2 East Sager Spur							100		\$651
<b>ROAD SEGMENT I3 to I4 West Deep Creek Rd</b>									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT I3 to I4 West Deep Creek Rd		Sta. to Sta. 0+00 to 65+50	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Subgrade Leveling	1 1/2"-0" Crushed	I3 to I4	N/A	station	N/A	stations	65.50	\$6.51	\$1,933
Turnouts	1 1/2"-0" Crushed	N/A	N/A	turnout	10	turnouts	5	\$6.51	\$326
Junction Rock	1 1/2"-0" Crushed	N/A	N/A	junction	10	junctions	4	\$6.51	\$260
Total Rock for Road Segment: I3 to I4 West Deep Creek Rd							390		\$2,539
<b>ROAD SEGMENT I5 to I6 West Deep Access</b>									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT I5 to I6 West Deep Access		Sta. to Sta. 0+00 to 3+50	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Subgrade Leveling	1 1/2"-0" Crushed	I5 to I6	N/A	station	N/A	stations	3.50	\$6.51	\$195
Junction Rock	1 1/2"-0" Crushed	N/A	N/A	junction	10	junctions	1	\$6.51	\$65
Total Rock for Road Segment: I5 to I6 West Deep Access							40		\$260
<b>ROAD SEGMENT I7 to I8 Spur off East Sager</b>									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT I7 to I8 Spur off East Sager		Sta. to Sta. 0+00 to 3+20	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Subgrade Leveling	Reclaimed Rock	I7 to I8	N/A	station	N/A	stations	3.20	\$2.89	\$145
Junction Rock	Reclaimed Rock	N/A	N/A	junction	10	junctions	1	\$2.89	\$29
Total Rock for Road Segment: I7 to I8 Spur off East Sager							60		\$173
<b>ROAD SEGMENT I9 to I10 Spur off East Sager</b>									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT I9 to I10 Spur off East Sager		Sta. to Sta. 0+00 to 22+00	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Subgrade Leveling	Reclaimed Rock	I9 to I10	N/A	station	N/A	stations	22.00	\$2.89	\$347
Turnouts	Reclaimed Rock	N/A	N/A	turnout	10	turnouts	4	\$2.89	\$116
Junction Rock	Reclaimed Rock	N/A	N/A	junction	10	junctions	3	\$2.89	\$87
Total Rock for Road Segment: I9 to I10 Spur off East Sager							190		\$87
<b>ROAD SEGMENT I11 to I12 Jones Road</b>									
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT I11 to I12 Jones Road		Sta. to Sta. 0+00 to 69+00	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per	Number of				
Surfacing	3/4"-0" crushed	0+00 to 69+00	3	station	16	stations	69.00	\$6.51	\$7,187
Curve Widening	3/4"-0" crushed	N/A	3	curve	N/A	culverts	N/A	\$6.51	\$273
Junctions	3/4"-0" crushed	N/A	3	junction	10	junctions	4	\$6.51	\$260
Turnouts	3/4"-0" crushed	Turnouts	3	turnout	10	turnouts	11	\$6.51	\$716
Total Rock for Road Segment: I11 to I12							1,296		\$8,437
Processing:		Description		No. sta	Rate/sta	Cost			
		Water, Process & Compact Crushed Rock:		168.2	\$49.02	\$8,245			
<b>SUB TOTAL FOR SURFACING</b>									
Hand Grass Seeding Pasture Mix (seed, labor) .25 acres @\$445.00 acre x's two		0.50	\$445.00	=	\$223				
Straw bales 30 bales @ \$10.00 per bale		30	\$10.00	=	\$300				
Labor 10 hrs. @\$38.00 hr.		10	\$38.00	=	\$380				
Install 2 1/2" x 6' White Carsonite Culvert Markers 4 Markers @\$18.00 each (includes installation) (Road Segment I11 to I12)		4	\$18.00	=	\$72				
<b>SUB TOTAL FOR SPECIAL PROJECTS</b>									
							\$975		
<b>GRAND TOTAL</b>							<b>\$27,939</b>		

\$18,718.93









**Road Maintenance Cost Summary**

Sale: Paradise East  
 Date: 05-Feb-09  
 By: D.Bangs

MBF: 5,172  
 \$\$/MBF: \$5.55

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Miles/day	Distance(miles)	Days	
Progressive Operations 1st Entry	Grader 14G	\$675	1	12	\$93	\$1,791	Grader	2.5	3.0	1.2
	Dump Truck 12CY x 2	\$141	2	20	\$73	\$1,742				
	FE Loader C966	\$675	1	10	\$77	\$1,445				
Progressive Operations 2nd Entry	Grader 14G	\$675	1	12	\$93	\$1,791	Grader	2.5	3.0	1.2
	Dump Truck 12CY x 2	\$141	2	20	\$73	\$2,920				
	FE Loader C966	\$675	1	10	\$77	\$1,445				
Final Road Maintenance	Grader 14G	\$675	1	50	\$93	\$5,325	Grader	1.5	7.3	4.9
	Dump Truck 12CY x 4	\$141	4	40	\$73	\$3,484				
	FE Loader C966	\$675	1	10	\$77	\$1,445	Vibratory Roller*	1.5	7.3	4.9
	Vibratory Roller* Water Truck 2,500 gallon Labor	\$165	1	50 30 10	\$72 \$83 \$37	\$4,275 \$2,655 \$370				
<b>Total</b>										<b>\$28,688</b>

\*Final Road Maintenance Only

**Road Maintenance after completion of Projects**

**Sale:** Paradise East  
**Date:** 20-Oct-08  
**By:** L. Freeman

Type	Equipment/Rationale	Hours	Rate	Cost
	Grader 14G	24	\$90	\$2,160
Final Haul Road	Dump Truck (12CY x 3)	30	\$73	\$2,190
Maintenance	FE Loader C966	10	\$74	\$740
Haul Route	Vibratory Roller	24	\$72	\$1,728
	Water Truck 2,500 gallon	18	\$78	\$1,404
	Hand laborer	8	\$37	\$296
<b>Total</b>				<b>\$8,518</b>

Miles/day	Distance(miles)	Days
1.5	3.4	2.3
1.5	3.4	2.3

Production Rates  
 Grader  
 Vibratory Roller

**Paradise East  
TIMBER CRUISE REPORT  
FY 2009**

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5, and 6 R/W are located in portions of Sections 1, 2, 3, 11, and 12, T5N, R6W, and Section 35, T6N, R6W, W.M., Clatsop County, Oregon.

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

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	New R/W	Non-Thinnable	Stream Buffer	Net Acres	Survey Method
1	Partial Cut	59	1	2	7	3	46	GIS
2	Partial Cut	138	5	1	4	11	117	GIS
3	Partial Cut	54	4	2	4	3	41	GIS
4	Partial Cut	22	0	0	3	1	18	GIS
5	Partial Cut	67	2	1	1	6	57	GIS
6 R/W	Right-of-way	6	0	0	0	0	6	GIS
<b>TOTALS</b>		<b>346</b>	<b>12</b>	<b>6</b>	<b>19</b>	<b>24</b>	<b>285</b>	

4. **Cruisers and Cruise Dates:** Areas 1, 2, 3, 4, and 5 were cruised by Derek Bangs, Jon Long, Jasen McCoy, and Tamara Dowell, July 16, 2008.

5. **Cruise Method and Computation:**

Areas 1, 2, and 5 are partial cut thinning units and were variable plot cruised using a 54.4 BAF. These plots are located on a 3 chain by 9 chain grid, with every third plot measured and graded. A total of 71 plots were sampled, with 25 measured and graded plots, and 46 count plots. Red alder, western hemlock, and cedar are reserve species, and were recorded as "leave" trees.

Areas 3 and 4 are partial cut thinning units and were variable plot cruised using a 54.4 BAF. These plots are located on a 4 chain by 4.5 chain grid, with every third plot measured and graded. A total of 37 plots were sampled, with 15 measured and graded plots, and 22 count plots. Red alder, western hemlock, and cedar are reserve species, and were recorded as "leave" trees.

Area 6 In-Sale R/W The right-of-way volume within the harvest areas was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Areas 3 and 4. In-sale right-of-way totals 6 acres.

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, 2, and 5	06N06W SEC 02	AREA125	TAKE	220
3 and 4	06N06W SEC 03	AREA34	TAKE	59
6 R/W	06N06W SEC 03	AREA34	R/W	6

6. **Timber Description** Areas 1, 2, and 5 are partial cut thinning units, approximately 85 years-old, consisting of Douglas-fir, western hemlock, and pockets of red alder. Non-thinnable pockets are scattered throughout the unit. These stands will be thinned to a SDI of 43 (180 Sq. Ft.BA), removing approximately 55 trees per acre. The average Douglas-fir tree size to be harvested is 17.5 inches DBH, with an average height of 73 feet to a merchantable top (6 inch d.i.b.). The average volume per acre to be harvested (net) is 17.2 MBF.

Areas 3 and 4 are partial cut thinning units, approximately 85 years-old, consisting of Douglas-fir, western hemlock, and patches of red alder. Non-thinnable pockets are scattered throughout the unit. This stand will be thinned to a SDI of 39 (150 Sq. Ft.BA), removing approximately 59 trees per acre. The average Douglas-fir tree

size to be harvested is 18.2 inches DBH, with an average height of 77 feet to a merchantable top (6 inch d.i.b.). The average volume per acre to be harvested (net) is 18.0 MBF.

Area 6 R/W is similar to the timber description mentioned above for Areas 3 and 4. The average volume (net) is approximately 53.4 MBF/acre.

**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, 2, and 5 (PC)	60%	7%	32.1%	3.8%
3 and 4 (PC)	60%	7%	43.8%	7.2%

**8. Volumes by Species and Log Grade:** (See "Species, Sort, Grade - Type and Project Reports, attached, of individual sale areas and combined areas and three cruise types).

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

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	CampRun	% D & B	% Sale
Douglas-fir	18"	5,160	3,576	1,367	217		1%	99%
Hemlock/True-Fir	15"	3	2	0	1		1%	<1%
Alder	13"	9				9	1%	<1%
<b>TOTALS</b>		<b>5,172</b>	<b>3,578</b>	<b>1,367</b>	<b>218</b>	<b>9</b>		

**9. Approvals:**

Prepared by: Derek Bangs Date: January 30, 2009

Unit Forester Approval: \_\_\_\_\_ Date: \_\_\_\_\_

**10. Attachments:**

- Cruise Design - 4 pages
- Cruise Maps- 2 pages
- Volume Reports - 4 pages
- Statistics Reports – 9 pages
- Log Stock Tables – 2 pages

X:\Jewell\_Unit\Timber Sales\2009\Paradise East\Sale Prep\CruiseReport.doc

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Paradise East **Area(s)** 1, 2 & 5

**Harvest Type:** (PC) "Automark Thinning"

**Approx. Cruise Acres:** 202 **Estimated CV%** 60 Net BF **SE% Objective** 7 Net BF

**Planned Sale Volume :** 3,030 MBF **Estimated Sale Area Value/Acre:** \$5,000/Ac  
(Areas 1, 2, & 6) (15 MBF/Ac.)

**A. Cruise Goals:** (a) Grade minimum 100 conifer:  
(b) Sample 72 cruise plots (24 grade/ 48 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 54 (Full point)

Cruise Lines 1-22 Direction(s) AZ= 90° /270° (East)

Cruise Line Spacing 9 (chains)

Cruise Plot Spacing 3 (chains)

Grade/Count Ratio 1/2

Basal Area leave target 180 sq. ft. Cruiser needs to select 3 leave trees per count plot and 4 leave trees per grade plot. Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer or non-thinnable area offset by 1 chain and continue. All minor species are to be reserved. Alder will be NOT be thinned and will NOT count towards basal area. The biggest and best trees should be selected as leave trees regardless of species. Conifers 10 inches in diameter or less are reserve trees and do not count towards basal area. Record snags as SN and take heights and diameters. Grade alder as camprun-sawlogs (20 net BF minimum). Special mill logs are present in stands, cruisers should reference log scaling specifications for grading. Reference Section 6 below for entry grade codes.

**C. Tree Measurements:**

**1. Diameter:** Minimum DBH to cruise is 10" for conifers and 10" 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; 0 = Cull R = Camprun
  
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: Lanny Freeman

Approved by: \_\_\_\_\_

Date: 6/16/08

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Paradise East **Area(s)** 3 and 4

**Harvest Type:** (PC) "Automark Thinning"

**Approx. Cruise Acres:** 59 **Estimated CV%** 60 Net BF **SE% Objective** 7 Net BF

**Planned Sale Volume :** 1,298 MBF **Estimated Sale Area Value/Acre:** \$7,000 /Ac  
(Areas 3 & 4) (22 MBF/Ac.)

**A. Cruise Goals:** (a) Grade minimum 100 conifer:  
(b) Sample 40 cruise plots ( 14 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 54 (Full point)  
Cruise Lines 1-22 Direction(s) AZ= 90° /270° (East/West)  
Cruise Line Spacing 4.5 (chains)  
Cruise Plot Spacing 4 (chains)  
Grade/Count Ratio 1/2

Basal Area leave target 150 sq. ft. Cruiser needs to select 3 leave trees per plot. Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer or non-thinnable area offset by 1 chain and continue. All minor species are to be reserved. Alder will be NOT be thinned and will NOT count towards basal area. The biggest and best trees should be selected as leave trees regardless of species. Conifers 10 inches in diameter or less are reserve trees and do not count towards basal area. Record snags as SN and take heights and diameters. Grade alder as camprun-sawlogs (20 net BF minimum). Special mill logs are present in stands, cruisers should reference log scaling specifications for grading. Reference Section 6 below for entry grade codes.

**C. Tree Measurements:**

- 1. Diameter:** Minimum DBH to cruise is 10" for conifers and 10" 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; 0 = Cull R = Camprun
  
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: Derek Bangs

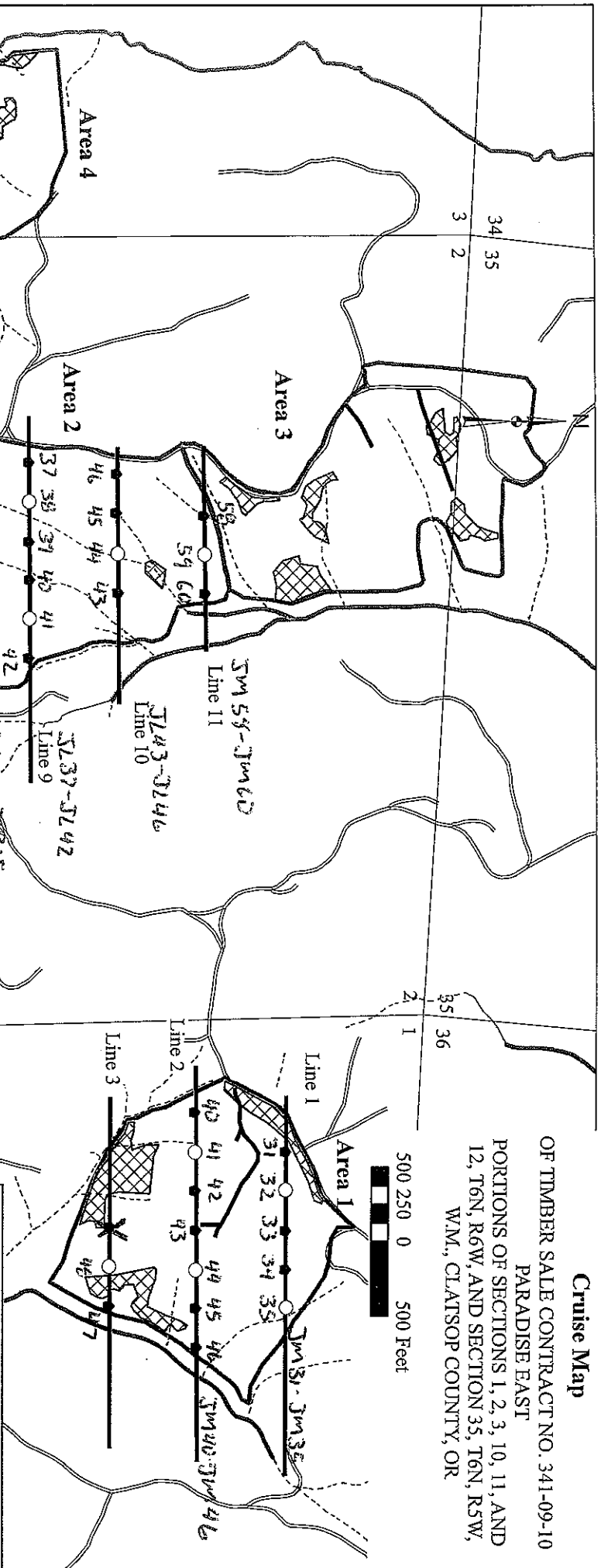
Approved by: \_\_\_\_\_

Date: 06/09/08

# Cruise Map

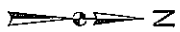
OF TIMBER SALE CONTRACT NO. 341-09-10  
 PARADISE EAST  
 PORTIONS OF SECTIONS 1, 2, 3, 10, 11, AND  
 12, T6N, R6W, AND SECTION 35, T6N, R5W,  
 WM., CLATSOP COUNTY, OR

500 250 0 500 Feet



- Legend**
- Grade Plots (Areas 1, 2, and 6)
  - Count Plots (Areas 1, 2, and 6)
  - New Road Construction
  - Fish
  - Nonfish
  - Unknown
  - ▨ Non thinnable
  - ▩ Timber Sale Boundary
  - ▬ Paved Road
  - ▬ Existing Surfaced Road
  - ▬ Vacated/Dormant Road

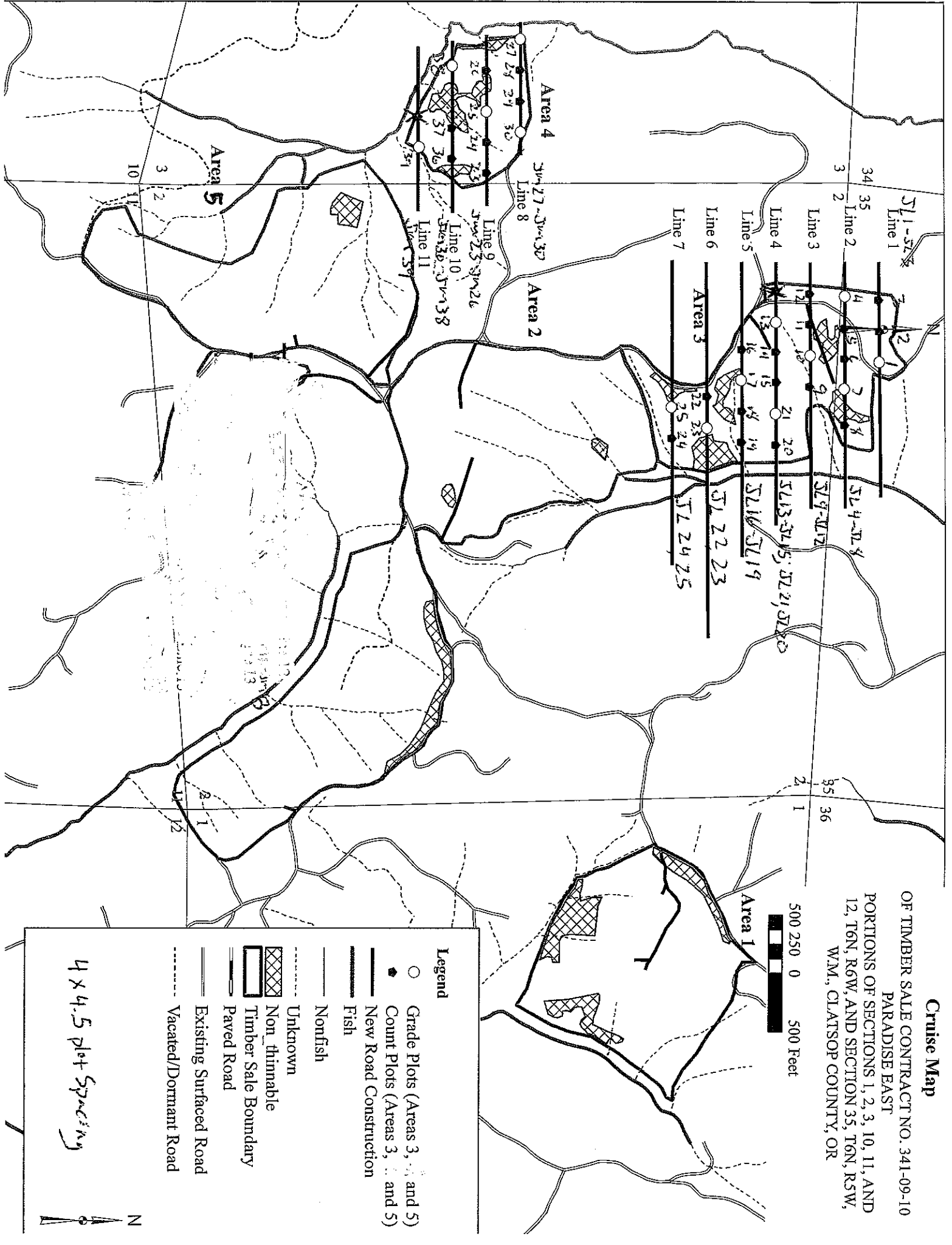
4x9 Plot Spacing



# Cruise Map

OF TIMBER SALE CONTRACT NO. 341-09-10  
 PARADISE EAST  
 PORTIONS OF SECTIONS 1, 2, 3, 10, 11, AND  
 12, T6N, R6W, AND SECTION 35, T6N, R5W,  
 W.M., CLATSOP COUNTY, OR

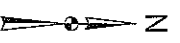
500 250 0 500 Feet



## Legend

- Grade Plots (Areas 3, 4, and 5)
- ◆ Count Plots (Areas 3, 4, and 5)
- New Road Construction
- Fish
- Nonfish
- Unknown
- ▨ Non-thinnable
- ▧ Timber Sale Boundary
- ▬ Paved Road
- ▬ Existing Surfaced Road
- Vacated/Dormant Road

4 x 4.5 plot Spacing





<b>T06N R06W S02 TTAKE</b>										<b>T06N R06W S02 TTAKE</b>		
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>			
06N	06W	02	AREA125	TAKE	220.00	71	32	1	W			

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
								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	2S	68	.2	11,861	11,841	2,605	10	62	28		36	64	36	286	1.74	41.4		
D	DO	3S	27	1.1	4,638	4,587	1,009	97	3		4	46	50	35	90	0.72	50.8		
D	DO	4S	5		790	790	174	20	80		53	47		19	23	0.38	33.7		
<b>D</b>	<b>Totals</b>		100	.4	17,289	17,218	3,788	1	37	43	19	2	3	37	58	31	137	1.06	125.9
<b>Type Totals</b>				.4	17,289	17,218	3,788	1	37	43	19	2	3	37	58	31	137	1.06	125.9

<b>T06N R06W S03 TTAKE</b>										<b>T06N R06W S03 TTAKE</b>		
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>	<b>W</b>		
<b>06N</b>	<b>06W</b>	<b>03</b>	<b>AREA34</b>	<b>TAKE</b>	<b>59.00</b>	<b>37</b>	<b>38</b>	<b>1</b>				

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														9		0.00	6.7	
D		DO	2S	68	.5	12,375	12,307	726		12	65	24				33	67	37	272	1.69	45.2
D		DO	3S	28	1.1	5,159	5,102	301	3	97				4	51	46	35	83	0.70	61.6	
D		DO	4S	4		609	609	36	22	78				29	71		21	24	0.43	25.1	
<b>D</b>	<b>Totals</b>			100	.7	18,142	18,018	1,063	1	38	44	16		1	3	37	59	32	130	1.03	138.6
<b>Type Totals</b>					.7	18,142	18,018	1,063	1	38	44	16		1	3	37	59	32	130	1.03	138.6

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1													
		Project: PARADISE								Date	2/5/2009												
										Time	1:23:52PM												
T06N R06W S03 TR/W										T06N R06W S03 TR/W													
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt														
06N	06W	03	AREA34	R/W	6.00	37	82	1	W														
Spp	Sp	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				
D	DO	CU																					
D	DO	2S		79	.6	41,122	40,870	245		5	40	56			21	79	37	377	2.14			108.4	
D	DO	3S		18	.7	9,613	9,544	57	2	92	6			8	52	39	34	87	0.75			109.6	
D	DO	4S		3		1,087	1,087	7	15	85				29	71		21	26	0.44			41.3	
<b>D</b>	<b>Totals</b>			96	.6	51,823	51,501	309	1	23	33	44		1	3	26	70	33	192	1.35		268.6	
A	DO	CU																					
A	DO	CR		100	.9	1,508	1,495	9		18	82				3	97	31	144	1.25			10.4	
<b>A</b>	<b>Totals</b>			3	.9	1,508	1,495	9		18	82				3	97	26	114	1.20			13.1	
H	DO	CU																					
H	DO	2S		61		267	267	2			100					100	40	360	2.07			.7	
H	DO	3S		18	8.3	89	82	0		100					45	55	36	55	0.81			1.5	
H	DO	4S		21		89	89	1		100				100			26	30	0.50			3.0	
<b>H</b>	<b>Totals</b>			1	1.7	446	438	3		39	61			20	8	71	30	74	0.80			5.9	
<b>Type Totals</b>					.6	53,776	53,434	321	1	23	34	42		1	3	28	68	32	186	1.34		287.6	

TC PSTATS		PROJECT STATISTICS							PAGE	1		
		PROJECT PARADISE							DATE	2/5/2009		
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt			
06N	06	02	AREA125	TAKE	285.00	145	378	1	W			
06N	06W	03	AREA34	R/W								
06N	06W	03	AREA34	TAKE								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			145	378	2.6							
CRUISE			40	152	3.8	16,327	.9					
DBH COUNT												
REFOREST												
COUNT			75	220	2.9							
BLANKS			30									
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			145	57.1	17.8	75		98.8	18,192	18,105	4,386	4,386
R ALDER			4	.1	20.4	68		.2	32	31	9	9
WHEMLOCK			3	.1	15.6	42		.1	9	9	3	3
<b>TOTAL</b>			<b>152</b>	<b>57.3</b>	<b>17.8</b>	<b>75</b>		<b>99.2</b>	<b>18,234</b>	<b>18,146</b>	<b>4,398</b>	<b>4,398</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			87.8	7.3	578	624	669					
R ALDER			23.9	13.6	255	295	335					
WHEMLOCK			131.8	91.2	15	167	319					
<b>TOTAL</b>			<b>89.4</b>	<b>7.2</b>	<b>562</b>	<b>606</b>	<b>650</b>	<b>319</b>	<b>80</b>	<b>35</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			131.5	10.9	51	57	63					
R ALDER			592.7	49.2	0	0	0					
WHEMLOCK			701.3	58.2	0	0	0					
<b>TOTAL</b>			<b>130.8</b>	<b>10.9</b>	<b>51</b>	<b>57</b>	<b>64</b>	<b>683</b>	<b>171</b>	<b>76</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			122.5	10.2	89	99	109					
R ALDER			595.8	49.4	0	0	0					
WHEMLOCK			595.8	49.4	0	0	0					
<b>TOTAL</b>			<b>121.8</b>	<b>10.1</b>	<b>89</b>	<b>99</b>	<b>109</b>	<b>593</b>	<b>148</b>	<b>66</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			123.3	10.2	16,253	18,105	19,957					
R ALDER			595.0	49.4	16	31	47					
WHEMLOCK			733.0	60.8	4	9	15					
<b>TOTAL</b>			<b>122.9</b>	<b>10.2</b>	<b>16,296</b>	<b>18,146</b>	<b>19,996</b>	<b>603</b>	<b>151</b>	<b>67</b>		



TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PARADISE				DATE 2/5/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	02	AREA125	00PC	220.00	71	384	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		71	384	5.4						
CRUISE		25	140	5.6	28,362		.5			
DBH COUNT										
REFOREST										
COUNT		46	239	5.2						
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	88	47.7	25.6	96		170.1	43,515	43,332	8,836	8,836
DOUG FIR	32	55.3	17.5	73		92.7	17,289	17,218	4,152	4,152
HEMLEAV	8	15.0	12.2	35		12.3	1,723	1,723	423	423
SNAG	6	3.0	22.8	44		8.4				
WHEMLOCK	2	5.3	12.6	38		4.6	443	443	141	141
ALDRLEAV	3	2.0	18.5	57		3.8	667	667	163	163
CEDLEAV	1	.7	20.0	66		1.5	133	133	41	41
<b>TOTAL</b>	<b>140</b>	<b>128.9</b>	<b>20.4</b>	<b>75</b>		<b>293.5</b>	<b>63,769</b>	<b>63,515</b>	<b>13,757</b>	<b>13,757</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		
DOUGLEAV	77.2	8.2	1,477	1,609	1,742					
DOUG FIR	98.2	17.3	424	513	603					
HEMLEAV	136.7	51.5	197	406	616					
SNAG										
WHEMLOCK	115.7	108.3		165	344					
ALDRLEAV	143.2	99.0		11	1,163	2,316				
CEDLEAV										
<b>TOTAL</b>	<b>100.7</b>	<b>8.5</b>	<b>1,080</b>	<b>1,181</b>	<b>1,281</b>	<b>405</b>	<b>101</b>	<b>45</b>		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	57.9	6.9	44	48	51					
DOUG FIR	103.3	12.3	48	55	62					
HEMLEAV	281.1	33.3	10	15	20					
SNAG	306.9	36.4	2	3	4					
WHEMLOCK	352.5	41.8	3	5	7					
ALDRLEAV	439.9	52.2	1	2	3					
CEDLEAV	591.5	70.1	0	1	1					
<b>TOTAL</b>	<b>59.5</b>	<b>7.1</b>	<b>120</b>	<b>129</b>	<b>138</b>	<b>141</b>	<b>35</b>	<b>16</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		
DOUGLEAV	29.6	3.5	164	170	176					
DOUG FIR	97.9	11.6	82	93	103					
HEMLEAV	282.6	33.5	8	12	16					
SNAG	281.3	33.4	6	8	11					
WHEMLOCK	331.5	39.3	3	5	6					
ALDRLEAV	437.6	51.9	2	4	6					
CEDLEAV	591.5	70.1	0	2	3					
<b>TOTAL</b>	<b>33.2</b>	<b>3.9</b>	<b>282</b>	<b>293</b>	<b>305</b>	<b>44</b>	<b>11</b>	<b>5</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		

TC TSTATS				STATISTICS				PAGE 2	
				PROJECT PARADISE		DATE 2/5/2009			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	06W	02	AREA125	00PC	220.00	71	384	1	W
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV	34.9	4.1	41,536	43,332	45,127				
DOUG FIR	97.6	11.6	15,226	17,218	19,209				
HEMLEAV	332.7	39.4	1,043	1,723	2,402				
SNAG									
WHEMLOCK	342.4	40.6	263	443	622				
ALDRLEAV	492.3	58.4	278	667	1,057				
CEDLEAV	591.5	70.1	40	133	227				
<b>TOTAL</b>	<i>32.1</i>	<i>3.8</i>	<i>61,098</i>	<i>63,515</i>	<i>65,932</i>	<i>41</i>	<i>10</i>	<i>5</i>	

TC TSTATS		STATISTICS								PAGE	1
		PROJECT PARADISE								DATE	2/5/2009
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	06W	03	AREA34	00PC	59.00	37	190	1	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		37	190	5.1							
CRUISE		15	83	5.5	6,691	1.2					
DBH COUNT											
REFOREST											
COUNT		22	101	4.6							
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	37	44.6	24.6	94		147.0	35,194	34,993	7,556	7,556	
DOUG FIR	38	58.6	18.2	77		105.9	18,142	18,018	4,499	4,499	
ALDRLEAV	4	5.2	20.4	68		11.8	1,508	1,495	406	406	
SNAG	1	.5	50.0	25		7.4					
HEMLEAV	3	4.5	15.6	42		5.9	446	438	143	143	
<b>TOTAL</b>	<b>83</b>	<b>113.4</b>	<b>21.2</b>	<b>82</b>		<b>277.9</b>	<b>55,291</b>	<b>54,944</b>	<b>12,605</b>	<b>12,605</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			
DOUGLEAV	57.5	9.4	1,036	1,144	1,252						
DOUG FIR	68.7	11.1	370	417	463						
ALDRLEAV	23.9	13.6	255	295	335						
SNAG											
HEMLEAV	131.8	91.2	15	167	319						
<b>TOTAL</b>	<b>85.3</b>	<b>9.4</b>	<b>654</b>	<b>721</b>	<b>788</b>	<b>290</b>	<b>73</b>	<b>32</b>			
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
DOUGLEAV	48.3	7.9	41	45	48						
DOUG FIR	105.2	17.3	49	59	69						
ALDRLEAV	289.5	47.6	3	5	8						
SNAG	310.2	50.9	0	1	1						
HEMLEAV	347.0	57.0	2	4	7						
<b>TOTAL</b>	<b>58.3</b>	<b>9.6</b>	<b>103</b>	<b>113</b>	<b>124</b>	<b>136</b>	<b>34</b>	<b>15</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			
DOUGLEAV	28.7	4.7	140	147	154						
DOUG FIR	103.5	17.0	88	106	124						
ALDRLEAV	291.2	47.8	6	12	17						
SNAG	310.2	50.9	4	7	11						
HEMLEAV	291.2	47.8	3	6	9						
<b>TOTAL</b>	<b>44.4</b>	<b>7.3</b>	<b>258</b>	<b>278</b>	<b>298</b>	<b>79</b>	<b>20</b>	<b>9</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			
DOUGLEAV	30.2	5.0	33,254	34,993	36,732						
DOUG FIR	109.0	17.9	14,793	18,018	21,242						
ALDRLEAV	290.8	47.8	781	1,495	2,209						
SNAG											
HEMLEAV	363.7	59.7	176	438	700						
<b>TOTAL</b>	<b>43.8</b>	<b>7.2</b>	<b>50,987</b>	<b>54,944</b>	<b>58,901</b>	<b>77</b>	<b>19</b>	<b>9</b>			

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PARADISE				DATE 2/5/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	02	AREA125	TAKE	220.00	71	121	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		71	121	1.7						
CRUISE		13	32	2.5	12,157		.3			
DBH COUNT										
REFOREST										
COUNT		38	89	2.3						
BLANKS		20								
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	55.3	17.5	73		92.7	17,289	17,218	4,152	4,152
<b>TOTAL</b>	<b>32</b>	<b>55.3</b>	<b>17.5</b>	<b>73</b>		<b>92.7</b>	<b>17,289</b>	<b>17,218</b>	<b>4,152</b>	<b>4,152</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	98.2	17.3	424	513	603					
<b>TOTAL</b>	<b>98.2</b>	<b>17.3</b>	<b>424</b>	<b>513</b>	<b>603</b>	<b>385</b>	<b>96</b>	<b>43</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	103.3	12.3	48	55	62					
<b>TOTAL</b>	<b>103.3</b>	<b>12.3</b>	<b>48</b>	<b>55</b>	<b>62</b>	<b>426</b>	<b>107</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	97.9	11.6	82	93	103					
<b>TOTAL</b>	<b>97.9</b>	<b>11.6</b>	<b>82</b>	<b>93</b>	<b>103</b>	<b>383</b>	<b>96</b>	<b>43</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	97.6	11.6	15,226	17,218	19,209					
<b>TOTAL</b>	<b>97.6</b>	<b>11.6</b>	<b>15,226</b>	<b>17,218</b>	<b>19,209</b>	<b>380</b>	<b>95</b>	<b>42</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT PARADISE				DATE	2/5/2009	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	03	AREA34	TAKE	59.00	37	72	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	37	72	1.9							
CRUISE	12	38	3.2	3,459		1.1				
DBH COUNT										
REFOREST										
COUNT	15	34	2.3							
BLANKS	10									
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	58.6	18.2	77		105.9	18,142	18,018	4,499	4,499
<b>TOTAL</b>	<b>38</b>	<b>58.6</b>	<b>18.2</b>	<b>77</b>		<b>105.9</b>	<b>18,142</b>	<b>18,018</b>	<b>4,499</b>	<b>4,499</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>					<b># OF TREES REQ.</b>		<b>INF. POP.</b>	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	68.7	11.1	370	417	463					
<b>TOTAL</b>	<b>68.7</b>	<b>11.1</b>	<b>370</b>	<b>417</b>	<b>463</b>	<b>188</b>	<b>47</b>	<b>21</b>		
CL: 68.1 %	COEFF	<b>TREES/ACRE</b>					<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	105.2	17.3	49	59	69					
<b>TOTAL</b>	<b>105.2</b>	<b>17.3</b>	<b>49</b>	<b>59</b>	<b>69</b>	<b>442</b>	<b>110</b>	<b>49</b>		
CL: 68.1 %	COEFF	<b>BASAL AREA/ACRE</b>					<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	103.5	17.0	88	106	124					
<b>TOTAL</b>	<b>103.5</b>	<b>17.0</b>	<b>88</b>	<b>106</b>	<b>124</b>	<b>427</b>	<b>107</b>	<b>47</b>		
CL: 68.1 %	COEFF	<b>NET BF/ACRE</b>					<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	109.0	17.9	14,793	18,018	21,242					
<b>TOTAL</b>	<b>109.0</b>	<b>17.9</b>	<b>14,793</b>	<b>18,018</b>	<b>21,242</b>	<b>474</b>	<b>119</b>	<b>53</b>		

TC TSTATS		STATISTICS							PAGE	1
		PROJECT PARADISE							DATE	2/5/2009
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	03	AREA34	R/W	6.00	37	185	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		37	185	5.0						
CRUISE		15	82	5.5	711	11.5				
DBH COUNT										
REFOREST										
COUNT		22	97	4.4						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	75	108.8	20.6	83		252.9	51,823	51,501	11,858	11,858
R ALDER	4	5.2	20.4	68		11.8	1,508	1,495	406	406
WHEMLOCK	3	4.5	15.6	42		5.9	446	438	143	143
<b>TOTAL</b>	<b>82</b>	<b>118.4</b>	<b>20.5</b>	<b>81</b>		<b>270.5</b>	<b>53,776</b>	<b>53,434</b>	<b>12,407</b>	<b>12,407</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	80.0	9.2	704	775	847					
R ALDER	23.9	13.6	255	295	335					
WHEMLOCK	131.8	91.2	15	167	319					
<b>TOTAL</b>	<b>84.1</b>	<b>9.3</b>	<b>662</b>	<b>730</b>	<b>797</b>	<b>282</b>	<b>71</b>	<b>31</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	58.5	9.6	98	109	119					
R ALDER	289.5	47.6	3	5	8					
WHEMLOCK	347.0	57.0	2	4	7					
<b>TOTAL</b>	<b>50.6</b>	<b>8.3</b>	<b>109</b>	<b>118</b>	<b>128</b>	<b>102</b>	<b>26</b>	<b>11</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	50.2	8.3	232	253	274					
R ALDER	291.2	47.8	6	12	17					
WHEMLOCK	291.2	47.8	3	6	9					
<b>TOTAL</b>	<b>43.6</b>	<b>7.2</b>	<b>251</b>	<b>271</b>	<b>290</b>	<b>76</b>	<b>19</b>	<b>8</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	51.7	8.5	47,131	51,501	55,871					
R ALDER	290.8	47.8	781	1,495	2,209					
WHEMLOCK	363.7	59.7	176	438	700					
<b>TOTAL</b>	<b>47.9</b>	<b>7.9</b>	<b>49,233</b>	<b>53,434</b>	<b>57,635</b>	<b>91</b>	<b>23</b>	<b>10</b>		

TC TSTATS		STATISTICS							PAGE	1
		PROJECT PARADISE							DATE	2/5/2009
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	02	AREA125	LEAV	220.00	71	263	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		71	263	3.7						
CRUISE		25	108	4.3	16,226	.7				
DBH COUNT										
REFOREST										
COUNT		46	151	3.3						
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	88	47.7	25.6	96		170.1	43,515	43,332	8,836	8,836
HEMLEAV	10	20.4	12.3	35		16.9	2,219	2,219	569	569
SNAG	6	3.0	22.8	44		8.4				
ALDRLEAV	3	2.0	18.5	57		3.8	667	667	163	163
CEDLEAV	1	.7	20.0	66		1.5	133	133	41	41
<b>TOTAL</b>	<b>108</b>	<b>73.8</b>	<b>22.3</b>	<b>76</b>		<b>200.7</b>	<b>46,535</b>	<b>46,352</b>	<b>9,610</b>	<b>9,610</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		
DOUGLEAV	77.2	8.2	1,477	1,609	1,742					
HEMLEAV	140.8	46.9	190	358	526					
SNAG										
ALDRLEAV	143.2	99.0	11	1,163	2,316					
CEDLEAV										
<b>TOTAL</b>	<b>91.5</b>	<b>8.8</b>	<b>1,257</b>	<b>1,379</b>	<b>1,500</b>	<b>334</b>	<b>83</b>	<b>37</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	57.9	6.9	44	48	51					
HEMLEAV	253.3	30.0	14	20	27					
SNAG	306.9	36.4	2	3	4					
ALDRLEAV	439.9	52.2	1	2	3					
CEDLEAV	591.5	70.1	0	1	1					
<b>TOTAL</b>	<b>72.2</b>	<b>8.6</b>	<b>67</b>	<b>74</b>	<b>80</b>	<b>208</b>	<b>52</b>	<b>23</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		
DOUGLEAV	29.6	3.5	164	170	176					
HEMLEAV	259.3	30.7	12	17	22					
SNAG	281.3	33.4	6	8	11					
ALDRLEAV	437.6	51.9	2	4	6					
CEDLEAV	591.5	70.1	0	2	3					
<b>TOTAL</b>	<b>26.9</b>	<b>3.2</b>	<b>194</b>	<b>201</b>	<b>207</b>	<b>29</b>	<b>7</b>	<b>3</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		
DOUGLEAV	34.9	4.1	41,536	43,332	45,127					
HEMLEAV	295.9	35.1	1,441	2,219	2,998					
SNAG										
ALDRLEAV	492.3	58.4	278	667	1,057					
CEDLEAV	591.5	70.1	40	133	227					
<b>TOTAL</b>	<b>28.6</b>	<b>3.4</b>	<b>44,783</b>	<b>46,352</b>	<b>47,921</b>	<b>33</b>	<b>8</b>	<b>4</b>		

TC TSTATS		STATISTICS							PAGE	1
		PROJECT PARADISE							DATE	2/5/2009
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	03	AREA34	LEAV	59.00	37	118	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		37	118	3.2						
CRUISE		15	45	3.0	3,231	1.4				
DBH COUNT										
REFOREST										
COUNT		22	70	3.2						
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	37	44.6	24.6	94		147.0	35,194	34,993	7,556	7,556
ALDRLEAV	4	5.2	20.4	68		11.8	1,508	1,495	406	406
SNAG	1	.5	50.0	25		7.4				
HEMLEAV	3	4.5	15.6	42		5.9	446	438	143	143
<b>TOTAL</b>	<b>45</b>	<b>54.8</b>	<b>24.0</b>	<b>87</b>		<b>172.0</b>	<b>37,148</b>	<b>36,926</b>	<b>8,106</b>	<b>8,106</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		
DOUGLEAV	57.5	9.4	1,036	1,144	1,252					
ALDRLEAV	23.9	13.6	255	295	335					
SNAG										
HEMLEAV	131.8	91.2	15	167	319					
<b>TOTAL</b>	<b>71.5</b>	<b>10.6</b>	<b>874</b>	<b>978</b>	<b>1,082</b>	<b>204</b>	<b>51</b>	<b>23</b>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	48.3	7.9	41	45	48					
ALDRLEAV	289.5	47.6	3	5	8					
SNAG	310.2	50.9	0	1	1					
HEMLEAV	347.0	57.0	2	4	7					
<b>TOTAL</b>	<b>42.9</b>	<b>7.0</b>	<b>51</b>	<b>55</b>	<b>59</b>	<b>73</b>	<b>18</b>	<b>8</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		
DOUGLEAV	28.7	4.7	140	147	154					
ALDRLEAV	291.2	47.8	6	12	17					
SNAG	310.2	50.9	4	7	11					
HEMLEAV	291.2	47.8	3	6	9					
<b>TOTAL</b>	<b>30.3</b>	<b>5.0</b>	<b>163</b>	<b>172</b>	<b>181</b>	<b>37</b>	<b>9</b>	<b>4</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		
DOUGLEAV	30.2	5.0	33,254	34,993	36,732					
ALDRLEAV	290.8	47.8	781	1,495	2,209					
SNAG										
HEMLEAV	363.7	59.7	176	438	700					
<b>TOTAL</b>	<b>27.0</b>	<b>4.4</b>	<b>35,287</b>	<b>36,926</b>	<b>38,565</b>	<b>29</b>	<b>7</b>	<b>3</b>		



Log Stock Table - MBF

T06N R06W S02 TyTAKE	220.00
T06N R06W S03 TyR/W	6.00
T06N R06W S03 TyTAKE	59.00

Project: PARADISE  
Acres 285.00

S Spp	Gr rt	Log de Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
							2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
D	DO	2S	32		1,226		1,226	23.8					151	369	250	453	3		
D	DO	2S	34		1		1	.0						1					
D	DO	2S	36		20		20	.4						20					
D	DO	2S	40		2,339		2,329	45.1					216	473	678	355	349	259	
D	DO	3S	23		9		9	.2			9								
D	DO	3S	24		14		14	.3			14								
D	DO	3S	25		0		0	.0				0							
D	DO	3S	26		6		6	.1			6			0					
D	DO	3S	27		1		1	.0			1								
D	DO	3S	28		17		17	.3			17	0							
D	DO	3S	29		1		1	.0						1					
D	DO	3S	30		10		10	.2			0	9							
D	DO	3S	31		4		4	.1			4								
D	DO	3S	32		466		463	9.0		8	82	136	237						
D	DO	3S	33		7	14.6	6	.1			5	1							
D	DO	3S	34		169		168	3.3			47	50	71	0					
D	DO	3S	35		0		0	.0				0							
D	DO	3S	36		22	8.2	20	.4				6		14					
D	DO	3S	38		53		53	1.0			27	26							
D	DO	3S	40		603	1.4	595	11.5			118	243	213	20	1				
D	DO	4S	12		15		15	.3			14	1							
D	DO	4S	13		4		4	.1			4								
D	DO	4S	14		31		31	.6		2	29								
D	DO	4S	16		43		43	.8			43	0							
D	DO	4S	18		10		10	.2		10									
D	DO	4S	20		2		2	.0			2								
D	DO	4S	22		4		4	.1			4								
D	DO	4S	24		35		35	.7		11	24	0							
D	DO	4S	25		8		8	.2			8								
D	DO	4S	26		4		4	.1			4								
D	DO	4S	28		18		18	.3		7	11								
D	DO	4S	29		1		1	.0			1								
D	DO	4S	30		41		41	.8		14	28								
D	Totals				5,185		5,160	99.8		52	494	479	888	879	949	808	352	259	
A	DO	CR	27		0		0	3.0			0								
A	DO	CR	32		9		9	97.0			1	0		2	4	2			

Log Stock Table - MBF

T06N R06W S02 TyTAKE	220.00
T06N R06W S03 TyR/W	6.00
T06N R06W S03 TyTAKE	59.00

Project: **PARADISE**  
 Acres **285.00**

Page **2**  
 Date **2/5/2009**  
 Time **2:06:25PM**

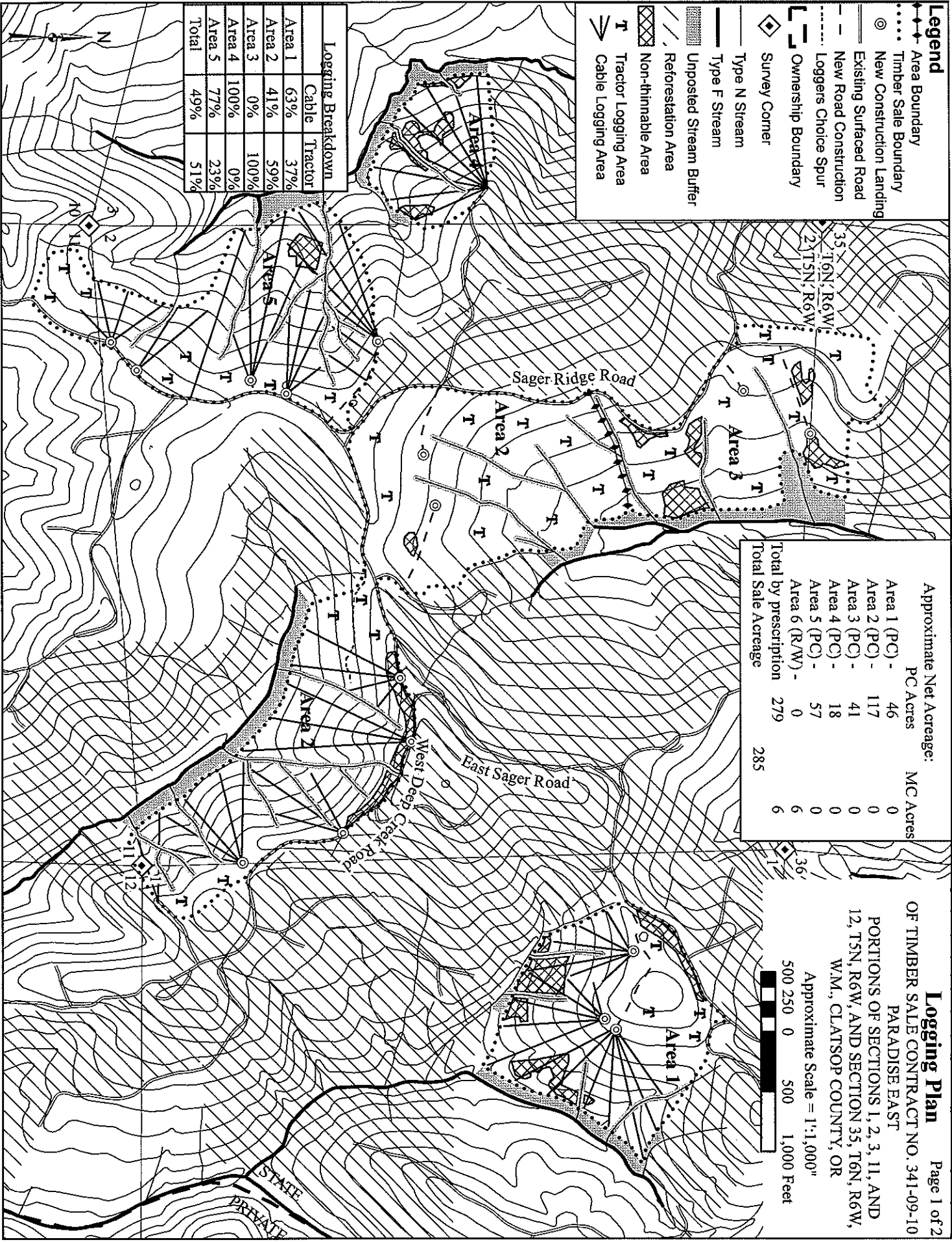
Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
A		Totals			9		9	.2			1	0		2	4	2				
H		DO	2S	40	2		2	61.0						2						
H		DO	3S	34	0	16.7	0	8.5			0									
H		DO	3S	38	0		0	10.2			0									
H		DO	4S	26	1		1	20.3			1									
H		Totals			3	1.7	3	.1			1				2					
Total		All Species			5,197		5,172	100.0			52	496	480	888	881	955	810	352	259	

**Legend**

- Area Boundary
- Timber Sale Boundary
- New Construction Landing
- Existing Surfaced Road
- New Road Construction
- Loggers Choice Spur
- Ownership Boundary
- ◆ Survey Corner
- Type N Stream
- Type F Stream
- Unposted Stream Buffer
- Reforestation Area
- Non-thinnable Area
- T Tractor Logging Area
- Cable Logging Area

Logging Breakdown		
Cable	Tractor	
Area 1	63%	37%
Area 2	41%	59%
Area 3	0%	100%
Area 4	100%	0%
Area 5	77%	23%
<b>Total</b>	<b>49%</b>	<b>51%</b>

Approximate Net Acreage:		
PC Acres	MC Acres	
Area 1 (PC) -	46	0
Area 2 (PC) -	117	0
Area 3 (PC) -	41	0
Area 4 (PC) -	18	0
Area 5 (PC) -	57	0
Area 6 (R/W) -	0	6
<b>Total by prescription</b>	<b>279</b>	<b>6</b>
<b>Total Sale Acreage</b>	<b>285</b>	



**Logging Plan** Page 1 of 2

OF TIMBER SALE CONTRACT NO. 341-09-10  
 PARADISE EAST  
 PORTIONS OF SECTIONS 1, 2, 3, 11, AND  
 12, T5N, R6W, AND SECTION 35, T6N, R6W,  
 W.M., CLATSOP COUNTY, OR

Approximate Scale = 1"=1,000"  
 500 250 0 500 1,000 Feet

**Legend**

- Area Boundary
- Timber Sale Boundary
- New Construction Landing
- Existing Surfaced Road
- New Road Construction
- Loggers Choice Spur
- Ownership Boundary
- ◆ Survey Corner
- Type N Stream
- Type F Stream
- Unposted Stream Buffer
- Reforestation Area
- Non-thinnable Area
- ⊠ Tractor Logging Area
- ⊡ Cable Logging Area

Logging Breakdown		
	Cable	Tractor
Area 1	63%	37%
Area 2	41%	59%
Area 3	0%	100%
Area 4	100%	0%
Area 5	77%	23%
<b>Total</b>	<b>49%</b>	<b>51%</b>

Approximate Net Acreage:		
	PC Acres	MC Acres
Area 1 (PC) -	46	0
Area 2 (PC) -	117	0
Area 3 (PC) -	41	0
Area 4 (PC) -	18	0
Area 5 (PC) -	57	0
Area 6 (R/W) -	0	6
<b>Total by prescription</b>	<b>279</b>	<b>6</b>
<b>Total Sale Acreage</b>	<b>285</b>	<b>6</b>

**Logging Plan** Page 2 of 2  
 OF TIMBER SALE CONTRACT NO. 341-09-10  
 PARADISE EAST  
 PORTIONS OF SECTIONS 1, 2, 3, 11, AND  
 12, T5N, R6W, AND SECTION 35, T6N, R6W,  
 W.M., CLATSOP COUNTY, OR  
 Approximate Scale = 1"=1,000"  
 500 250 0 500 1,000 Feet

