



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Porter Horse Sale 341-07-45

District: Astoria

Date: 3/6/07

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,862,896.68	\$273,792.96	\$3,136,689.64
		Project Work	(\$380,569.00)
		Advertised Value	\$2,756,120.64



Timber Sale Appraisal Timber Description Porter Horse Sale 341-07-45

"STEWARDSHIP IN FORESTRY"

District: Astoria

Location: Portions of Sections 23, 25, 26, and 27 T7N, R6W, W.M., Clatsop County, Oregon.

Date: 3/6/07

Stand Stocking: 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	17	0	99
Western Hemlock / Fir	14	0	95
Alder (Red)	13	0	90

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Total
2S	5,000	1,011	0	6,011
3S	2,662	909	0	3,571
4S	415	248	0	663
Camprun	0	0	756	756
Total	8,077	2,168	756	11,001

Comments: Pond Values Used: 4th Quarter Calendar Year 2006.

Log Markets: Tillamook, Longview, Mist.

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost
\$735/MBF = \$960/MBF - \$225/MBF

HAULING

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

\$700 - % Profit & Risk ($\$700 / 1.17$) = \$598 Daily Truck Cost.

Hauling Cost Calculation Conifer:

$\$598 \text{ Daily Truck Cost} / (\text{Avg. 4 trips per day} \times \text{Avg. 4 MBF per load}) = \$37.38/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Red Alder:

$\$598 \text{ Daily Truck Cost} / (3 \text{ trips per day} \times 3 \text{ MBF per load}) = \$66.44/\text{MBF Hauling Cost.}$

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

100% branding & painting - $\$1/\text{MBF} \times 11,001 \text{ MBF} = \$11,001$

Stream Enhancement: Skyline placement of logs in 3 locations;

3 logs (each) $\times 3 = 9 \text{ logs} \times \$100/\text{log} = \$900$

Line Pulling in Area 1, 3, and 8: $40\text{hrs} \times \$25/\text{hr} = \$1,000$

Snag Creation: Select and Create 40 snags in Area 3:

Top 40 trees $\times \$45/\text{tree} = \$1,800$

TOTAL Other Costs (with P&R to be added) = \$14,701

Other Costs (No Profit & Risk added):

"Loggers Choice" spur roads in Areas 1, 5, 6, 7, & 8 -

15 stations $\times \$125/\text{station} = \$1,875.$

Pile slash at MC cable landings - $\$130/\text{landing} \times 6 \text{ landings} = \$780.$

Slash piling in Areas 3, 5, 7, & 8 -

$105.9 \text{ Hrs} \times \$120/\text{Hr} + \$945 \text{ Move in} = \$13,653.$

TOTAL Other Costs (No P&R added) = \$16,308.



Timber Sale Appraisal

Logging Conditions

Porter Horse

Sale 341-07-45

"STEWARDSHIP IN FORESTRY"

Combination#: 1	Douglas - Fir	16.40%	
	Western Hemlock / Fir	16.33%	
	Alder (Red)	27.60%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: Yes
Logging System:	Track Skidder		Process: Manual Falling/Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	5		Bd. Ft./Load: 4,000
Cost/MBF:	\$163.27		
Machines:	Log Loader (B)		
	Track Skidder		
Combination#: 2	Douglas - Fir	25.66%	
	Western Hemlock / Fir	25.55%	
	Alder (Red)	43.17%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: No
Logging System:	Cable: Medium Tower >40 - <70		Process: Manual Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	5		Bd. Ft./Load: 4,000
Cost/MBF:	\$184.26		
Machines:	Log Loader (A)		
	Tower Yarder (Medium)		
Combination#: 3	Douglas - Fir	31.29%	
	Western Hemlock / Fir	31.38%	
	Alder (Red)	15.79%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: Yes
Logging System:	Track Skidder		Process: Manual Falling/Delimiting
Tree Size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
Loads/Day:	7		Bd. Ft./Load: 4,000
Cost/MBF:	\$116.62		
Machines:	Log Loader (B)		
	Track Skidder		
Combination#: 4	Douglas - Fir	26.65%	
	Western Hemlock / Fir	26.73%	
	Alder (Red)	13.45%	

Yarding Distance: Medium (800 ft) **Downhill Yarding:** No
Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Delimiting
Tree Size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
Loads/Day: 6 **Bd. Ft./Load:** 4,000
Cost/MBF: \$150.75
Machines:
 Log Loader (A)
 Tower Yarder (Medium)



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Logging Costs

Porter Horse

Sale 341-07-45

Date: 3/6/07

Operating Seasons: 2.0

Profit & Risk: 17%

Project Costs: \$380,569

Other Costs (P/R): \$14,701

Slash Disposal: \$0

Other Costs: \$16,308

Road Maintenance: \$3.70

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$37.38	4.0	4.0
Western Hemlock / Fir	\$37.38	2.0	4.0
Alder (Red)	\$66.44	3.0	3.0

Local Pond Values

Date	Species	Grade	Value
1/17/07	Douglas - Fir	2S	\$540.00
1/17/07	Douglas - Fir	3S	\$540.00
1/17/07	Douglas - Fir	4S	\$540.00
1/17/07	Western Hemlock / Fir	2S	\$400.00
1/17/07	Western Hemlock / Fir	3S	\$400.00
1/17/07	Western Hemlock / Fir	4S	\$400.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Logging Costs Breakdown Porter Horse Sale 341-07-45

Costs	Douglas - Fir	Westem Hemlock / Fir	Alder (Red)
Logging	150.72	150.64	163.28
Road Maintenance	3.74	3.89	4.11
Fire Protection	0.49	0.49	0.49
Hauling	37.76	39.35	73.82
Other (P/R appl.)	1.34	1.34	1.34
Profit & Risk	32.99	33.27	41.32
Slash Disposal	0.00	0.00	0.00
Scaling	2.00	2.00	2.00
Other	1.48	1.48	1.48
Total	230.52	232.46	287.84

Amortization	0.00	0.00	0.00
Pond Value	540.00	400.00	650.00
Stumpage	309.48	167.54	362.16
Amortized	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

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Amortized

	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
MBF	0.00	0.00	0.00
Value	0.00	0.00	0.00
Total	0.00	0.00	0.00

Unamortized

	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
MBF	8,077.00	2,168.00	756.00
Value	309.48	167.54	362.16
Total	2,499,669.96	363,226.72	273,792.96

Gross Timber Sale Value

Recovery \$3,136,689.64

Prepared by: Kraig Kirkpatrick

Date: 3/6/07

District: Astoria

Phone: (503) 325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Porter Horse
Date: August 17, 2006
By: Kraig Kirkpatrick

MBF: 11,001
\$/MBF: \$3.70

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Progressive Operations Entries (2)	Grader 14G	\$570	2	107	\$84	\$10,128
	Dump Truck 12CY	\$119	2	70	\$59	\$4,368
	FE Loader C966	\$570	2	20	\$79	\$2,720
Final Haul Road	Grader 14G	\$570	1	70	\$84	\$6,450
	Dump Truck 12CY	\$119	1	50	\$59	\$3,069
	FE Loader C966	\$570	1	25	\$79	\$2,545
Maintenance	Vibratory Roller	\$570	1	70	\$79	\$6,100
Haul Route	Water Truck 2,500 gallon	\$139	1	70	\$70	\$5,039
	Labor			10	\$25	\$250
Total						\$40,669

Interim Maintenance (2)

Production Rates
 Grader

Miles/day	Distance(miles)	Days	Hours
1.5	16.0	11	107

Final Road Maintenance

Production Rates
 Grader
 Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
1.5	10.5	7.0	70.00
1.5	10.5	7.0	70.00

***Maintenance calculations were determined as follows:**

- West Creek Ridge Road to Porter Ridge Road 5.5 miles.
- Horseshoe Camp Road 1.5 miles.
- Spur Road to Areas 2, 7, & 8; 1.25 miles.
- New Road Construction (Area 10 & 11 RW) 2.25 miles.

Total Miles: 10.5

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Porter Horse

NEW CONSTRUCTION:

Project No.	Road segment	Length/Sta	Cost
Project No. 1	1A-1B, 2A-2B, 2C, 4A-4B, 5A-5B, 7A-7B, 8A-8B, 8C-8D	85.60	\$57,667
	6A-6B, 6C-6D, 6E-6F	32.3	\$44,837
TOTALS	2.23 miles	117.90 Stations	\$102,504

ROAD IMPROVEMENT:

Project No.	Road segment	Length/Sta	Cost
Project No. 2	11-12, 13-14, 15-16, 17-18, 19-110	187.20	\$38,411
TOTALS	3.55 miles	187.20 Stations	\$38,411

SPECIAL PROJECTS:

Project No.	Description	Cost
Project No. 3	Rock Crushing - Viewpoint Quarry	\$176,003
Project No. 4	Roadside Brushing (17 miles)	\$19,554
Project No. 5	Road Vacating (V1 to V2)	\$17,523
Project No. 6	Stream Enhancement Project	\$8,673
	Project Work Road Maintenance	\$11,048
TOTALS		\$232,801

MOVE IN:

Equipment	Cost
D-8 Dozer	\$1,030
12cy Dump Trucks (6 @ \$119 each)	\$714
Front End Loader - Medium (966)	\$945
Grader (14G)	\$570
Vibratory Roller	\$570
Water Truck (2,500 gal.)	\$139
Excavator - Small (315)	\$590
Excavator (C330) x2 \$1,030 ea	\$2,060
Medium Brush Cutter	\$235
TOTAL	\$6,853

GRAND TOTAL **\$380,569**

Compiled By: Kraig Kirkpatrick

Date: 12/12/2006

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Porter Horse
 ROAD: 1A-1B (16.0), 2A-2B(13.3), 2C, 4A-4B(15.3)
 5A-5B(5.8), 7A-7B(7.1), 8A-8B(10.9), 8C-8D(17.2)

NEW CONSTRUCTION: 85.60 STATIONS 1.62 MILES
 IMPROVEMENT: STATIONS MILES

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W	7.00	x	\$980.00	=	\$6,860.00
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING \$6,860

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
Field Design (Drift upto 200') \$9/sta.	82.60	x	\$139.00	=	\$11,481.40
Undesigned Landing Construction \$9/sta.	8.00	x	\$285.00	=	\$2,280.00
Cut Slope Rounding (4A-4B, 4+00-8+00)	4.00	x	\$31.00	=	\$124.00
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION \$13,885

CULVERT MATERIALS AND INSTALLATION								
Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost	
1A to 1B	0+00	18"CPP	40	\$13.60	\$544.00			
	5+30	18"CPP	30	\$13.60	\$408.00			
	7+80	18"CPP	40	\$13.60	\$544.00			
	11+00	18"CPP	30	\$13.60	\$408.00			
2A to 2B	0+00	18" CPP	40	\$13.60	\$544.00			
	4+20	18" CPP	30	\$13.60	\$408.00			
	10+00	18" CPP	30	\$13.60	\$408.00			
4A to 4B	0+00	18" CPP	40	\$13.60	\$544.00			
	5+00	18" CPP	30	\$13.60	\$408.00			
	10+00	18" CPP	30	\$13.60	\$408.00			
Other/miscellaneous:					Description	Quantity	Rate	Cost
Culvert stakes & markers:					6' FIBERGLASS MARKERS	10	\$14.10	\$141.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION \$4,765

Subtotal **\$25,510**

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Porter Horse
 ROAD: 6A-6B (3.67), 6C-6C (17.47), 6E-6F (11.16)

NEW CONSTRUCTION: 32.30 STATIONS 0.61 MILES
 IMPROVEMENT: STATIONS MILES

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
6C-6D(scatter)	1.91	x	\$980.00	=	\$1,871.80
6A-6B, 6E-6F	1.70	x	\$980.00	=	\$1,666.00
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING \$3,538

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
6A-6B, 6E-6F (stations)	14.80	x	\$139.00	=	\$2,057.20
6C-6D (drifted excavation)	469	x	\$1.52	=	\$712.88
6C-6D (drifted excavation)	482	x	\$1.28	=	\$616.96
6C-6D (excavated material hauled to fill)	4,304	x	\$2.90	=	\$12,481.60
6C-6D (cutslope rounding 0+00 -6+22)	6.22	x	\$31.00	=	\$192.82
6C-6D (embankment compaction)	5,255	x	\$0.45	=	\$2,364.75
6C-6D (d/o to construct)(C330 hours)(7ea)	2	x	\$138.00	=	\$276.00
6C-6D (fill armor placement)(C330 hours)	20	x	\$138.00	=	\$2,760.00
6A-6B, 6E-6F (landings)	3	x	\$285.00	=	\$855.00
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION \$22,317

CULVERT MATERIALS AND INSTALLATION								
	Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
(6C-6D)	4+20	18 CPP	50	\$13.60	\$680.00			

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	6' Carsonite Post	1	\$14.10	\$14.10

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION \$694

Subtotal \$26,549

SURFACING		Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:	Description				
	Grade, Shape and Ditch 16'	32.30	x	\$18.20	\$587.86
	Subgrade Compaction	32.30	x	\$14.80	\$478.04

ROAD SEGMENT	6A-6B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	6A-6B Volume (CY) per	0+00 to 3+67 Number of	Stations				
Base Rock	4"-0" Crushed		9	station	49	stations	3.67	180	\$5.05	\$908
Junction	4"-0" Crushed		9	junction	36	junctions	1	36	\$5.05	\$182
Junction	3/4"-0" Crushed		2	junction	24	junctions	1	24	\$5.05	\$121
Landings	6"-0" Pit-run		N/A	landing	60	landings	1	60	\$5.51	\$331
Total Rock for Road Segment								300		

\$1,542

ROAD SEGMENT	6C-6D		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	6C-6D Volume (CY) per	0+00 to 17+47 Number of	Stations				
Base Rock	4"-0" Crushed		9	station	49	stations	17.47	856	\$5.05	\$4,323
Turn Outs	4"-0" Crushed		9	turn out	22	turn outs	2	44	\$5.05	\$222
Curve Widening	4"-0" Crushed		9	curve	N/A	curves	5	65	\$5.05	\$328
Fill Widening	4"-0" Crushed		9	fill	24	fills	1	24	\$5.05	\$121
Turn-Arounds	4"-0" Crushed	13+40	9	TA	13	TA's	1	13	\$5.05	\$66
Junction	4"-0" Crushed		9	junction	36	junctions	1	36	\$5.05	\$182
Junction	3/4"-0" Crushed		2	junction	24	junctions	1	24	\$5.05	\$121
Subgrade Reinforcement	24"-6" Riprap	6+45 to 9+45	12	station	108	stations	3	324	\$7.24	\$2,346
Dissipator Rock	24"-6" Riprap	4+20	N/A	culvert	10	culverts	1	10	\$7.24	\$72
Fill Armoring	24"-6" Riprap	6+45 to 9+45	N/A	fill	N/A	fills	1	35	\$7.24	\$253
Fill Armoring	6"-0" Pit-run	6+45 to 9+45	N/A	fill	N/A	fills	1	270	\$5.51	\$1,488
Landings	6"-0" Pit-run		N/A	landing	60	landings	1	60	\$5.51	\$331
Traction Rock	3/4"-0" Crushed	0+30 to 8+30	2	station	11	stations	9	99	\$5.05	\$500
Total Rock for Road Segment								1,860		

\$10,353

ROAD SEGMENT	6E-6F		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	6E-6F Volume (CY) per	0+00 to 11+16 Number of	Stations				
Base Rock	4"-0" Crushed		9	station	49	stations	11.16	547	\$5.05	\$2,762
Turn Outs	4"-0" Crushed		9	turn out	22	turn outs	2	44	\$5.05	\$222
Junction	4"-0" Crushed		9	junction	36	junctions	1	36	\$5.05	\$182
Junction	3/4"-0" Crushed		2	junction	24	junctions	1	24	\$5.05	\$121
Landings	6"-0" Pit-run		N/A	Landing	60	Landings	1	60	\$5.51	\$331
Total Rock for Road Segment								711		

\$3,617

Processing:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact (4"-0" Crushed 1 lift)	32.30	\$41.40	\$1,337
	(3/4"-0" Crushed 1 lift)	9.00	\$41.40	\$373

SUB TOTAL FOR SURFACING

24"-6"	6"-0" pr	4"-0"	1 1/2"-0"	3/4"-0"	Total
369	450	1,881		171	2,871

\$18,288

SPECIAL PROJECTS

Description	Cost

SUB TOTAL FOR SPECIAL PROJECTS

\$0

GRAND TOTAL

\$44,837

Compiled By: Scott Bushnell

Date: 07/14/2006

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Porter Horse
 ROAD: 11-12 (154.20), 13-14 (9.40), 15-16 (6.00), 17-18 (4.3), 19-110(13.3)

NEW CONSTRUCTION: _____ STATIONS _____ MILES
 IMPROVEMENT: 187.20 STATIONS _____ 3.55 MILES

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W	0.10	x	\$980.00	=	\$98.00
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING **\$98**

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION

CULVERT MATERIALS AND INSTALLATION							
Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
11 to 12	8+60	18" CPP	40	\$13.60	\$544.00		
	23+50	18" CPP	40	\$13.60	\$544.00		
	113+90	18" CPP	40	\$13.60	\$544.00		
	133+70	18" CPP	40	\$13.60	\$544.00		

Other/miscellaneous:	Description	Quantity	Rate	Cost
Culvert stakes & markers:	6" FIBERGLASS MARKERS	19	\$14.10	\$267.90

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION **\$2,444**

Subtotal **\$2,542**

SURFACING		Subgrade prep:	Description	Stations/amount	x	Rate/sta/amt	Cost
11-12, 13-14, 15-16	Grade, Shape and Ditch 16'			187.20	x	\$18.20	\$3,407.04
17-18, 19-110					x		\$0.00
11-12, 13-14, 15-16	Subgrade Compaction			187.20	x	\$14.80	\$2,770.56
17-18, 19-110							

ROAD SEGMENT 11 to 12				POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	11 to 12 Volume (CY) per	0+00 to 154+20 Number of			
Leveling Rock	3/4"-0" Crushed	0+00 to 154+20	N/A	N/A	N/A	120	\$5.05	\$606
Surface Rock	3/4"-0" Crushed	0+00 to 154+20	4	station	22	stations 154.20	\$5.05	\$17,132
Junctions	3/4"-0" Crushed		N/A	junction	24	junctions 7	\$5.05	\$848
Turnouts	3/4"-0" Crushed		4	TO	11	TO's 22	\$5.05	\$1,222
Culvert Backfill	3/4"-0" Crushed		N/A	culvert	36	culverts 4	\$5.05	\$727
Energy Dissipator	24"-6" Riprap	70+05	N/A	dissipator	10	dissipator 1	\$7.24	\$72
Total Rock for Road Segment				11 to 12		4,076		
ROAD SEGMENT 13 to 14				POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	13 to 14 Volume (CY) per	0+00 to 9+40 Number of			
Leveling Rock	3/4"-0" Crushed	0+00 to 9+40	N/A	N/A	N/A	72	\$5.05	\$364
Junctions	3/4"-0" Crushed		N/A	junction	24	junctions 1	\$5.05	\$121
Total Rock for Road Segment				TO		96		\$364
ROAD SEGMENT 15 to 16				POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	15 to 16 Volume (CY) per	0+00 to 6+00 Number of			
Leveling Rock	4"-0" Crushed	0+00 to 6+00	N/A	N/A	N/A	48	\$5.05	\$242
Junctions	3/4"-0" Crushed		N/A	junction	24	junctions 1	\$5.05	\$121
Total Rock for Road Segment				Volume (CY)		72		\$242
ROAD SEGMENT 17 to 18				POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	17 to 18 Volume (CY) per	0+00 to 4+30 Number of			
Leveling Rock	4"-0" Crushed	0+00 to 4+30	N/A	N/A	N/A	48	\$5.05	\$242
Junctions	3/4"-0" Crushed		N/A	junction	24	junctions 1	\$5.05	\$121
Total Rock for Road Segment				Volume (CY)		72		\$242
ROAD SEGMENT 19 to 110				POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	19 to 110 Volume (CY) per	0+00 to 13+30 Number of			
Leveling Rock	4"-0" Crushed	0+00 to 13+30	N/A	N/A	N/A	96	\$5.05	\$485
Junctions	3/4"-0" Crushed		N/A	junction	24	junctions 1	\$5.05	\$121
Total Rock for Road Segment				Volume (CY)		120		\$485
Processing:				Description		No. sta	Rate/sta	Cost
				Water, Process & Compact:		187.20	\$41.40	\$7,750
SUB TOTAL FOR SURFACING								
				24"-6"	4"-0"	1 1/2"-0"	3/4"-0"	Total
				10	192	4,234	4,436	4,436
								\$35,869

SPECIAL PROJECTS		Description	Cost
SUB TOTAL FOR SPECIAL PROJECTS			\$0

GRAND TOTAL **\$38,411**

Compiled By: Kraig Kirkpatrick

Date: 07/18/2006

CRUSHED ROCK COST

SALE NAME: Porter Horse
 PROJECT: Project No. 1 and 2
 QUARRY: View Point

ROCK TYPE: Crushed

DATE: 07/27/2006
 BY: K. Kirkpatrick

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		
1A to 1B	16.00	945			3.60	1.50			0.10	0.15	5.35
2A to 2B	13.30	780			3.60	1.50			0.20	0.12	5.42
4A to 4B	15.30	928			3.60	2.00			0.20	0.15	5.95
5A to 5B	5.80	396			3.60	2.00	0.50			0.05	6.15
6A to 6B	3.67	240			3.60	2.00	0.85			0.03	6.48
6C to 6D	17.47	1,161			3.60	2.00	1.00			0.16	6.76
6E to 6F	11.16	651			3.60	2.00	1.05			0.10	6.75
7A to 7B	7.10	498			3.60	1.50	0.30			0.07	5.47
8A to 8B	1.00	36			3.60	1.50	0.30	0.50		0.10	6.00
8C to 8D	17.20	993			3.60	1.50	0.30	0.70		0.16	6.26
11 to 12	154.20	4,066			3.60		1.00	0.30		0.20	5.10
13 to 14	9.40	96			3.60	1.50	0.20			0.09	5.39
15 to 16	6.00	72			3.60	1.50	0.50			0.05	5.65
17 to 18	4.30	72			3.60	1.50	0.80			0.04	5.94
19 to 110	13.30	120			3.60	1.50	1.05			0.12	6.27
TOTAL	295.20	11,054									AVERAGE
CUBIC YARD WEIGHTED HAUL					3.60	1.10	0.63	0.21	0.15	0.15	5.70
Average Round Trip Distance (miles) 11.40											

ROCK HAUL:

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

Ave haul: \$3.89 /cy
 Load: \$0.42 /cy
 Spread: \$0.74 /cy

Production: cy/day = 971

CRUSHED ROCK HAUL COSTS 11,054 cy @ \$5.05 /cy

RIP RAP ROCK COST

SALE NAME: Porter Horse
 PROJECT: Project No. 1 and 2
 QUARRY: View Point

ROCK TYPE: Rip Rap

DATE: 07/27/2006
 BY: K. Kirkpatrick

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	
6C to 6D	17.47	369			3.60	2.01		0.59	0.40	6.60
I1 to I2	154.20	10			3.60				0.05	3.65
TOTAL	171.67	379								AVERAGE
	STA./NO.	CU. YD.								HAUL
CUBIC YARD WEIGHTED HAUL					3.60	1.96		0.57	0.39	6.52
									Average Round Trip Distance (miles)	13.04

ROCK HAUL:

Truck type: <u>D12</u>	No. trucks: <u>3</u>		
Delay min.: <u>6</u>	Efficiency: <u>85%</u>	Ave haul: <u>\$4.86</u> /cy	
		Load: <u>\$2.39</u> /cy	
Truck type: <u>D10</u>	No. trucks: <u> </u>	Develop: <u> </u> /cy	
Delay min.: <u>5</u>	Efficiency: <u>85%</u>		

Production: cy/day = 291

RIP RAP ROCK HAUL COSTS 379 cy @ **\$7.24 /cy**

*Will be developed with the quarry development

8) STOCKPILING

STOCKPILE PREPARATION OR CONST	COST
Construct Stockpile Sites	\$756
(See Footnote)	
Level Existing Residual Rock (4 hr @ \$126)	\$504
SUB TOTAL	\$1,260

HAUL & STOCKPILE STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. _____					
2. Kerry Junction 1 1/2"-0" Stockpile	1-1/2"-0"	6	5,800	\$4.60	\$26,680
3. Viewpoint Quarry 4"-0" Stockpile	4"-0"	2	5,800	\$1.83	\$10,588
4. _____					
5. _____					
6. _____					
SUB TOTAL					\$37,268

TOTAL STOCKPILING COSTS **\$38,528**

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
_____	_____
_____	_____
_____	_____
Waterbar quarry access road, slope quarry floor	\$2,000
_____	_____
_____	_____
_____	_____
TOTAL MISCELLANEOUS COSTS	\$2,000

10) GRAND TOTAL: **\$176,003**

\$/Cubic Yard \$7.77

Footnotes:

Construct/Reconstruct Stockpile Floor

Equipment	Hours	Rate	Total
Dozer	6	\$126.00	\$756.00
Compactor		\$75.00	
Grader		\$80.00	
Excavator		\$130.00	

\$756.00

Total Construct Stockpile Floor \$756.00

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

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 3

Timber Sale Name: Porter Horse

Quarry: Viewpoint

Swell: _____

Location: SE1/4, SE1/4, Sec 4, T7N, R6W, W.M

Shrink: 16%

County: Clatsop

By: Scott Bushnell

Date: 7/22/06

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR		4,649	4,649
1-1/2"-0"		CR	5,000		5,800
4"-0"		CR	5,000	6,405	12,205
6"-0"		PR		930	930
24"-6"		RR		379	379
36"		RR			
TOTAL CUBIC YARDS OF ROCK:			10,000	12,363	23,963

1) MOBILIZATION & SET UP:

EQUIPMENT MOBILIZATION	DISTANCE IN MILES	DIST. FACTOR	BASE RATE	COST
3 Stage Crusher	75	1.40	\$2,353	\$3,294
Screening Plants (2)	75	1.40	\$954	\$1,336
D8 Cat & D6 Cat	75	1.40	\$1,600	\$2,240
Loader	75	1.40	\$590	\$826
Drill & Compressor (2)	75	1.40	\$1,140	\$1,596
Powder	75	1.40	\$286	\$400
6 Dump Trucks	75	1.40	\$714	\$1,000
Excavator	75	1.40	\$945	\$1,323
SUB TOTAL FOR MOBILIZATION				\$12,015

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher		\$2,682	\$2,682
Screening Plants (2)		\$451	\$451
Change Gradation	2	\$424	\$848
SUB TOTAL FOR SET UP COSTS			\$3,981

TOTAL MOBILIZATION & SET UP COSTS

\$15,996

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST

TOTAL CLEARING & GRUBBING COSTS

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST

TOTAL EXCAVATION COSTS

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping			\$1.85	
crushed	22,654	95%	Drill & shoot	100%	23,963	\$1.90	\$45,530
pit run	930	4%	Oversize red	5%	1,179	\$5.04	\$5,943
rip rap	379	2%	Other				
Total	23,963						
reject							
TOTAL ROCK DEVELOPMENT COSTS							\$51,473

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	3	\$400	\$1,200
Calibrate			
Test	12	\$50	\$600
Test			
TOTAL CALIBRATION & TESTING COSTS			\$1,800

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	22,654	\$0.70	\$15,839
TOTAL FEEDING & LOADING COSTS			\$15,839

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTIO	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed	4,649	3 stage w/s	110	\$2.95	\$13,736
1-1/2"-0"	crushed	5,800	3 stage w/s	120	\$2.71	\$15,708
4"-0"	crushed	12,205	2 stage	140	\$1.71	\$20,923
TOTAL ROCK CRUSHING COSTS						\$50,367

SUMMARY OF BRUSHING COSTS

PROJECT NO. 4: ROADSIDE BRUSHING

SALE NAME: Porter Horse

Road Segment	Length		Brushing Rate	Cost per Mile	Segment Cost	Comments
	Stations	Miles				
1	141.00	2.67	L	\$1,150.00	\$3,071.02	Porter Ridge to Horseshoe Camp Road
2	171.75	3.25	L	\$1,150.00	\$3,740.77	Spurs East of Greasy Spoon from Porter Ridge to Fishhawk Ridge Road
3	435.10	8.24	L	\$1,150.00	\$9,476.61	Fishhawk Ridge and Spur Roads
4	109.84	2.08	L	\$1,150.00	\$2,392.35	Fishhawk Tie Thru and Spur Roads
5	40.10	0.76	L	\$1,150.00	\$873.39	Horseshoe Camp Spurs
897.79					17.00	

Total Brushing Cost \$19,554.14

Compiled By: Kraig Kirkpatrick Date: 07/25/2006

Porter Horse

Project No. 5 Road Vacating

V1 to V2

Location/Description	C330 Excavator	C330 Excavator	C330 Excavator	Truck	Labor	Seeding	Straw Mulch	Total
V1 to V2 Fill Removal Sidecast Pullback Waterbar	34 hrs	27.75 sta.	20					
V3 and V4 Fill Removal	10 hrs							
V1 to V2, V3, and V4 Erosion Control Mulch Hand Grass Seeding Seed					1.5 ac	\$50.00 lb	300 bales	
Walk excavator between sites.	10 hrs							
Total	54 hrs	27.75 sta.	20	0 hr	1.5 ac	50 lb	300 Bales	
Rate	\$138 /hr	\$265 /hr	\$25 ea	\$57 /hr	\$540 /ac	\$1.15 /lb	\$4.50 /Bale	
Cost	\$7,452	\$7,354	\$500	\$0	\$810	\$58	\$1,350.00	\$17,523

Prepared by: Kraig Kirkpatrick Date: 07/28/2006

x:\Document\2007 FY Sales\PorterHorse\Sale Prep\Projects\Vacating Costs -PorterHorse.xls

Porter Horse
Project No. 6 Stream Enhancement

C330**

Location	Site	Number of Trees	Excavator	\$/Tree*	Location Cost
SE1	1	1	\$ 348.00	\$225.00	\$225.00
SE2	2	5		\$225.00	\$1,125.00
SE3	3	8		\$225.00	\$1,800.00
SE4	4	5		\$225.00	\$1,125.00
SE5	5	5		\$225.00	\$1,125.00
SE6	6	5		\$225.00	\$1,125.00
SE7	7	8		\$225.00	\$1,800.00
Project Total					\$8,673.00

*\$/Tree includes transportation cost of tree up to 0.5 miles.

**Price includes Rip Rap haul cost (\$7.24/CY) and placement with excavator.

Projects Road Maintenance Cost Summary

Sale: Porter Horse
Date: July 19, 2006
By: Kraig Kirkpatrick

Type	Equipment/Rationale	Hours	Rate	Cost
Post-Projects Road	Grader 14G	51	\$84	\$4,284
	Dump Truck 12CY (2 trucks)	10	\$59	\$590
	FE Loader C966	5	\$79	\$395
	Vibratory Roller	51	\$79	\$4,029
	Water Truck 2500 gallon	25	\$70	\$1,750
Total				\$11,048

Interim Maintenance

Production Rates

Grader
Vibratory Roller

Miles/day	Distance(miles)	Days	Hours

Final Road Maintenance

Production Rates

Grader
Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
1.5	7.7	5.1	51.00
1.5	7.7	5.1	51.00

***Maintenance calculations were determined as follows:**

Maintain from View Point Quarry to jct. of Porter Ridge Road, station 79+20 of Porter Ridge Road to Pt. 8C, and Horseshoe Camp Road to Pt. 6E.

Total Miles: 7.65 miles.

**Porter Horse
FY 2007
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5, 6, 7, 8, 9, 10RW and 11RW are located in portions of Sections 23, 25, 26 and 27, T7N, R6W; W.M., Clatsop County, Oregon.

All timber sale areas are posted with ODF "Timber Sale Boundary" signs, pink ribbon. Areas 10 and 11 R/W are posted with ODF "Right-of-Way Boundary" signs.

2. **Fund Distribution:** **Fund:** BOF (100%)
 Tax Code: 8-01 (21%) 30-05 (79%)

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acreage	New R/W Acreage	Existing R/W Acreage	Stream Buffer Acreage	Wildlife Tree Area/	Net Acreage
1	PC	85	-2	-2	0	0	81
2	PC	64	-1	0	-5	0	58
3	MC	23	0	0	0	0	23
4	PC	35	-1	-1	-1	0	32
5	MC	56	0	-1	-1	0	54
6	PC	123	-3	-4	-9	0	107
7	MC	43	0	0	0	-11	32
8	MC	44	0	0	-3	-1	40
9	PC	9	0	0	0	0	9
10	R/W	4					4
11	R/W	3					3
TOTALS		489	-7	-8	-19	-12	443

4. **Cruisers and Cruise Dates:** Area 1, 2, and 4 was cruised by Bryce Rodgers, Ed Holloran, John Tillotson, Kevin Berry, and Kraig Kirkpatrick. Areas 6 and 9 were cruised by Ed Holloran, and Kraig Kirkpatrick. Area 3, 5, 7, and 8 was cruised by Bryce Rodgers, Ed Holloran, Kevin Berry and Kraig Kirkpatrick. Cruise for Area 10 R/W was calculated using total cruise per acre volumes for partial harvest Areas 1, 2, and 4, and applying road R/W acreage. Cruise for Area 11 R/W was calculated using total cruise per acre volume for partial harvest Areas 6 and 9. Acreage for R/W in modified-clearcut Areas 3, 5, 7, and 8 were included in the total net acreage for those sale areas.

5. **Cruise Method and Computation:** All cruises used Corvallis MicroTechnology (CMT) 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 1, 2, and 4 (Partial Cut), was variable plot cruised with a 33.61 BAF. 63 plots were sampled on a cruise grid of 5 chains by 5.5 chains, with a count/cruise plot ratio of 2:1.

Areas 6 and 9 (Partial Cut), were variable plot cruised with a 33.61 BAF. 47 plots were sampled on a cruise grid of 5 chains by 5 chains, with a count/cruise plot ratio of 2:1.

Area 3 (Modified Clear Cut), was variable plot cruised with a 33.61 BAF. 56 plots were sampled on a cruise grid of 5 chains by 5 chains, with a count/cruise plot ratio of 2:1.

All "take" and "leave" trees were measured and graded, on cruise plots.

AREAS	PROJECT	CRUISE TYPE
3, 5, 7, and 8	PORTER	0001, LEAV, TAKE
1, 2, and 4	PORTER	0002, LEAV, TAKE
6 and 9	PORTER	0003, LEAV, TAKE
10 and 11 RW	PORTER	RW10, RW11

6. Timber Description:

Areas 3, 5, 7, and 8 (Modified Clearcut) – These stands range from 54 to 59 years old, consisting of Douglas-fir dominated mixed conifer stands with patches of alder. These stands average 17 inches in DBH, with an average merchantable height of 65 feet to a merchantable top. The average volume (net) to be harvested is 39.5 MBF/acre.

Area 1, 2, and 4 (Partial Cut) – These stands are approximately 40 to 59 years old, consisting of Douglas-fir dominated mixed conifer stands with patches of alder. This stand will be harvested to an SDI of 27, with a basal area target of 130ft², while removing approximately 83 trees per acre and 13.4 MBF/acre. The average "take" tree size is 15" DBH and 53 feet to a merchantable top (6" d.i.b.).

Area 6 and 9 (Partial Cut) – These stands are approximately 54 to 59 years old, consisting of Douglas-fir dominated mixed conifer stands with patches of alder. These stands will be harvested to an SDI of 25, with a target basal area of 110 ft², while removing approximately 117 trees per acre and 21.9 MBF/acre. The average "take" tree size is 15" DBH and 63 feet to a merchantable top (6" d.i.b.).

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
3, 5, 7, and 8	60	8	42.7	5.7
1, 2, and 4	40	8	48	6.1
6 and 9	40	8	39.1	5.7

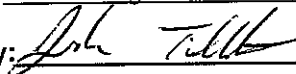
The statistics for Areas 1, 2, 4, 6 and 9 are "Take" and "Leave" stands combined.

8. Volumes by Species and Log Grades for All Sale Areas by MBF: (See "Species, Sort, Grade, Length % Type Reports" attached, of the thinning and regeneration harvest areas combined.) Volumes do not include "ingrowth." The majority of defect and breakage was culled out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	17.0	8,077	5,000	2,662	415	0	.6	73
Hemlock	14.2	2,168	1,011	909	248	0	.4	20
Alder	13.5	756				756	.7	7
TOTAL		11,001						

9. Prepared by: Kraig Kirkpatrick

Date: July 11, 2006

10. Approved by: 

Date: 1/4/07

11. Attachments: Species, Sort, Grade Reports (5 pages)
 Statistics Stand Summary Reports (15 pages)
 Log Stock Table Reports (4 pages)
 Leave Tree Stand Table Reports (5 pages)
 Cruise Plans & Maps (9 pages)

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)										Page 1								
T07N R06W S26 TyRW THRU T07N R06W S26 TyTAKE			Project: PORTER					Acres 443.00				Date 7/12/2006		Time 11:49:08AM						
Spp	S T	So rt	Gr 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					
D	?	?														10		0.00	13.6	
D	?	2S		45	.9	11,385	11,288	5,000		6	66	28	3	4	19	74	36	266	1.72	42.4
D	?	3S		24	.4	6,030	6,009	2,662	0	95	3	2	2	4	38	56	36	87	0.69	68.9
D	?	4S		4		938	938	415	9	91			60	36	4		19	26	0.41	36.5
D	?	2P		0		1	1	0				100	100				17	980	10.12	.0
D	?	SM		0		1	1	0				100	100				20	980	8.60	.0
D Totals				73	.6	18,354	18,236	8,079	0	40	42	18	6	6	24	64	30	113	0.96	161.4
H	?	?						7											0.00	.2
H	?	?															7		0.00	1.9
H	?	2S		9	.5	2,294	2,283	1,011		5	55	40	2	2	17	79	36	296	1.80	7.7
H	?	3S		8	.4	2,061	2,052	909		93	7	0	0	4	30	66	36	96	0.75	21.3
H	?	4S		2		560	560	248	3	97			56	20	7	17	21	28	0.41	20.1
H Totals				20	.4	4,914	4,894	2,168	0	52	29	19	7	5	21	66	29	96	0.85	51.1
SN	?		CU														29		0.00	.0
SN Totals																	29		0.00	.0
A	?	?															16		0.00	1.3
A	?	CR		7	.7	1,720	1,707	756		86	14		7	23	17	52	31	78	0.72	21.8
A Totals				7	.7	1,720	1,707	756		86	14		7	23	17	52	30	74	0.70	23.1
C	?	3S		0		1	1	0		100				28	72		35	104	1.14	.0
C	?	4S		0		0	0	0		100				100			33	50	0.48	.0
C Totals				0		1	1	0		100				40	60		35	88	0.95	.0
Totals					0.6	24,989	24,838	11,003	0	45	37	17	6	7	23	64	30	105	0.91	235.8

TC TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: PORTER

Page 1
Date 7/12/2006
Time 1:12:38PM

T07N R06W S26 TTAKE

T07N R06W S26 TTAKE

Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt
07N 06W 26 A357&8 TAKE 149.00 56 167 1

BdFt
W

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	?	?														10		0.00	15.3
D	?	2S	68	.8	20,502	20,347	3,032	5	63	32		1	4	21	74	37	280	1.78	72.6
D	?	3S	27	.4	8,290	8,257	1,230		97	3		2	4	37	57	36	89	0.70	92.8
D	?	4S	5		1,494	1,494	223	12	88			55	40	5		19	26	0.42	56.8
D	Totals		76	.6	30,287	30,098	4,485	1	34	43	22	4	6	24	65	30	127	1.04	237.5
H	?	?														14		0.00	2.2
H	?	2S	52	.6	4,236	4,213	628		4	48	48	2		13	84	36	304	1.83	13.9
H	?	3S	39		3,147	3,147	469		89	11		1	4	35	60	36	104	0.82	30.1
H	?	4S	9		768	768	114	6	94			45	25	12	18	22	28	0.43	27.3
H	Totals		21	.3	8,152	8,128	1,211	1	45	29	25	6	4	22	69	30	110	0.93	73.6
A	?	?														18		0.00	3.4
A	?	CR	100	1.3	1,382	1,364	203		77	23		10	32	26	32	30	77	0.79	17.8
A	Totals		3	1.3	1,382	1,364	203		77	23		10	32	26	32	28	64	0.71	21.2
Type Totals				.6	39,820	39,590	5,899	1	38	40	22	5	6	24	65	30	119	1.00	332.2

Species, Sort Grade - Board Foot Volumes (Type)

Project: PORTER

T07N R06W S26 TTAKE

T07N R06W S26 TTAKE

Twp Rge Sec Tract
07N 06W 26 A12&4

Type Acre Plots Sample Trees
TAKE 171.00 63 95

CuFt BdFt
1 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	?	?														6		0.00	7.4	
D	?	2S		58	.6	4,958	4,927	843	10	74	17	4	4	13	78	36	249	1.62	19.8	
D	?	3S		37	.3	3,154	3,145	538	89	4	7	3	4	37	55	36	88	0.70	35.9	
D	?	4S		6		496	496	85	10	90		68	32			19	23	0.38	21.1	
D	Totals			64	.5	8,607	8,569	1,465	1	43	44	12	8	6	21	65	29	102	0.91	84.1
H		DO																0.00	.4	
H		DO	?													3		0.00	2.3	
H	?	2S		42	.5	1,536	1,527	261	8	72	20		9	33	58	36	278	1.74	5.5	
H	?	3S		45	1.4	1,642	1,619	277	96	4			7	24	70	36	87	0.66	18.7	
H	?	4S		13		480	480	82	100			71	24	6		19	27	0.42	17.6	
H	Totals			27	.9	3,658	3,626	620	59	32	8	9	10	25	56	27	82	0.77	44.5	
A	?	CR		100		1,210	1,210	207	100			3	19	8	70	33	74	0.68	16.3	
A	Totals			9		1,210	1,210	207	100			3	19	8	70	33	74	0.68	16.3	
Type Totals					.5	13,475	13,405	2,292	0	53	37	10	8	8	21	63	29	93	0.84	144.9

T07N R06W S26 TTAKE T07N R06W S26 TTAKE
 Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt BdFt
 07N 06W 26 A6&9 TAKE 116.00 47 95 1 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	?	?														11		0.00	20.4	
D	?	2S		51	1.3	8,671	8,557	993	6	72	22	8	6	17	69	35	241	1.64	35.5	
D	?	3S		43	.3	7,251	7,226	838	0	95	2	2		4	41	55	36	84	0.68	86.0
D	?	4S		5		868	868	101	100				66	30	4	19	26	0.40	33.0	
D	Totals			76	.8	16,790	16,651	1,931	0	50	38	12	8	6	26	60	29	95	0.84	174.9
H		DO	CU															0.00	.8	
H		DO	2S	34		837	837	97		49	51				100	40	294	1.74	2.9	
H		DO	3S	50		1,233	1,233	143	100					24	76	38	93	0.73	13.2	
H		DO	4S	16		409	409	47	100			56			44	23	28	0.38	14.4	
H	Totals			11		2,479	2,479	288	66	16	17	9		12	79	30	79	0.73	31.3	
A		DO	CU													4		0.00	.8	
A		?	CR	100	.9	2,858	2,834	329	83	17		7	21	18	54	30	82	0.71	34.5	
A	Totals			13	.9	2,858	2,834	329	83	17		7	21	18	54	30	80	0.71	35.2	
Type Totals					.7	22,126	21,963	2,548	0	56	33	11	8	8	24	61	29	91	0.81	241.4

Species, Sort Grade - Board Foot Volumes (Project)

T07N R06W S26 TyRW 4.00
 T07N R06W S26 TyRW 3.00

Project: PORTER
 Acres 7.00

Page 1
 Date 7/12/2006
 Time 3:21:24PM

Spp	S T	So rt	Gr 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							
D	?	?																					
D	?	2S		51	.9	19,256	19,086	134		4	59	37		3	3	11	82	37	298	1.88		17.4	
D	?	3S		21	.3	7,960	7,938	56	1	86	4	10		1	5	33	60	36	92	0.74		64.1	
D	?	4S		3		1,043	1,043	7	3	97				67	32	1		18	26	0.42		86.4	
D	?	2P		0		54	54	0				100		100				17	980	10.12		39.9	
D	?	SM		0		62	62	0				100		100				20	980	8.60		.1	
D	Totals			75	.7	28,376	28,183	197	0	31	41	28		6	5	17	73	30	136	1.11		207.8	
H	?																						
H	?	?																4		0.00		.2	
H	?	2S		10	.4	3,616	3,603	25		2	72	26		2	2	17	78	37	309	1.90		2.6	
H	?	3S		8	.6	2,890	2,873	20		88	7	5			5	29	65	36	97	0.76		11.7	
H	?	4S		1		566	566	4		100				64	23	3	11	20	27	0.42		29.6	
H	Totals			19	.4	7,072	7,041	49		45	39	16		6	5	21	68	30	109	0.94		20.8	
SN	?	CU																29		0.00		2.7	
SN	Totals																	29		0.00		2.7	
A	?	?																4		0.00		.3	
A	?	CR		7	.4	2,502	2,491	17		85	15			7	17	19	57	30	79	0.72		31.5	
A	Totals			7	.4	2,502	2,491	17		85	15			7	17	19	57	30	78	0.72		31.8	
C	?	3S		0		58	58	0		100					28	72		35	104	1.14		.6	
C	?	4S		0		12	12	0		100					100			33	50	0.48		.2	
C	Totals			0		70	70	0		100					40	60		35	88	0.95		.8	
Totals					0.6	38,020	37,785	264	0	37	39	24		6	6	18	71	30	123	1.03		308.0	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PORTER		DATE 7/12/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A357&8	0001	149.00	56	409	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		56	409	7.3						
CRUISE		30	207	6.9	26,519		.8			
DBH COUNT										
REFOREST										
COUNT		26	192	7.4						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	117	103.5	17.7	72		177.9	30,287	30,098	7,487	7,487
WHEMLOCK	33	38.8	15.5	59		50.7	8,152	8,128	2,056	2,056
R ALDER	17	16.0	13.7	38		16.4	1,382	1,364	418	418
SNAG	12	3.1	30.0	50		15.0				
DOUGLEAV	14	2.2	33.7	124		13.6	4,039	4,023	779	779
CEDLEAV	9	11.8	13.3	35		11.4	643	643	264	264
HEMLEAV	5	2.5	21.5	77		6.4	1,268	1,268	286	286
TOTAL	207	178.0	17.3	64		291.4	45,771	45,525	11,291	11,291
		COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		131.2	9.1	234	258	281				
WHEMLOCK		352.6	24.5	45	59	74				
R ALDER		423.7	29.4	6	9	11				
SNAG										
DOUGLEAV		434.9	30.2	105	150	195				
CEDLEAV		563.9	39.2	2	3	4				
HEMLEAV		732.4	50.9	8	16	24				
TOTAL		135.1	9.4	448	494	541	730	182	81	
		COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		71.9	9.6	94	104	113				
WHEMLOCK		154.2	20.6	31	39	47				
R ALDER		208.7	27.9	12	16	20				
SNAG		185.3	24.8	2	3	4				
DOUGLEAV		214.3	28.6	2	2	3				
CEDLEAV		318.0	42.5	7	12	17				
HEMLEAV		274.8	36.7	2	3	3				
TOTAL		41.2	5.5	168	178	188	68	17	8	
		COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		61.1	8.2	163	178	192				
WHEMLOCK		148.5	19.8	41	51	61				
R ALDER		195.8	26.2	12	16	21				
SNAG		165.3	22.1	12	15	18				
DOUGLEAV		226.8	30.3	9	14	18				
CEDLEAV		311.0	41.6	7	11	16				
HEMLEAV		259.3	34.7	4	6	9				
TOTAL		28.3	3.8	280	291	302	32	8	4	
		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		60.1	8.0	27,679	30,098	32,517				
WHEMLOCK		151.2	20.2	6,486	8,128	9,771				
R ALDER		206.1	27.5	988	1,364	1,740				

TC TSTATS				STATISTICS				PAGE 2	
				PROJECT	PORTER	DATE 7/12/2006			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	26	A357&8	0001	149.00	56	409	1	W
SD: 1		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
SNAG									
DOUGLEAV		248.7	33.2	2,686	4,023	5,360			
CEDLEAV		348.6	46.6	343	643	942			
HEMLEAV		263.3	35.2	822	1,268	1,714			
TOTAL		32.2	4.3	43,567	45,525	47,482	41	10	5

STATISTICS
PROJECT PORTER

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	26	A357&8	TAKE	149.00	56	343	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	56	343	6.1		
CRUISE	30	167	5.6	23,599	.7
DBH COUNT					
REFOREST					
COUNT	25	171	6.8		
BLANKS	1				
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	117	103.5	17.7	72		177.9	30,287	30,098	7,487	7,487
WHEMLOCK	33	38.8	15.5	59		50.7	8,152	8,128	2,056	2,056
R ALDER	17	16.0	13.7	38		16.4	1,382	1,364	418	418
TOTAL	167	158.4	16.8	65		245.0	39,820	39,590	9,961	9,961

SD:	COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	109.3	8.5	292	319	346			
WHEMLOCK	313.8	24.3	56	74	92			
R ALDER	378.2	29.3	7	11	14			
TOTAL	86.3	6.7	377	404	430	298	74	33

SD:	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	71.9	9.6	94	104	113			
WHEMLOCK	154.2	20.6	31	39	47			
R ALDER	208.7	27.9	12	16	20			
TOTAL	50.3	6.7	148	158	169	101	25	11

SD:	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	61.1	8.2	163	178	192			
WHEMLOCK	148.5	19.8	41	51	61			
R ALDER	195.8	26.2	12	16	21			
TOTAL	42.1	5.6	231	245	259	71	18	8

SD:	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	60.1	8.0	27,679	30,098	32,517			
WHEMLOCK	151.2	20.2	6,486	8,128	9,771			
R ALDER	206.1	27.5	988	1,364	1,740			
TOTAL	42.7	5.7	37,333	39,590	41,848	73	18	8

STATISTICS
PROJECT PORTER

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	26	A357&8	LEAV	149.00	56	67	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	56	67	1.2		
CRUISE	20	41	2.0	3,016	1.4
DBH COUNT					
REFOREST					
COUNT	14	23	1.6		
BLANKS	22				
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
SNAG	12	3.1	30.0	50		15.0				
DOUGLEAV	15	2.8	30.4	108		14.3	4,071	4,055	796	796
CEDLEAV	9	11.8	13.3	35		11.4	643	643	264	264
HEMLEAV	5	2.5	21.5	77		6.4	1,268	1,268	286	286
TOTAL	41	20.2	20.7	53		47.1	5,982	5,966	1,347	1,347

SD:	1	COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
SNAG									
DOUGLEAV		172.1	26.9	556	760	964			
CEDLEAV		236.7	37.0	9	14	20			
HEMLEAV		316.5	49.4	41	81	121			
TOTAL		149.1	23.3	656	856	1,055	889	222	99

SD:	1	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
SNAG		185.3	24.8	2	3	4			
DOUGLEAV		210.6	28.1	2	3	4			
CEDLEAV		318.0	42.5	7	12	17			
HEMLEAV		274.8	36.7	2	3	3			
TOTAL		184.9	24.7	15	20	25	1,367	342	152

SD:	1	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
SNAG		165.3	22.1	12	15	18			
DOUGLEAV		216.4	28.9	10	14	18			
CEDLEAV		311.0	41.6	7	11	16			
HEMLEAV		259.3	34.7	4	6	9			
TOTAL		112.2	15.0	40	47	54	504	126	56

SD:	1	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
SNAG									
DOUGLEAV		245.5	32.8	2,725	4,055	5,385			
CEDLEAV		348.6	46.6	343	643	942			
HEMLEAV		263.3	35.2	822	1,268	1,714			
TOTAL		183.8	24.6	4,501	5,966	7,431	1,351	338	150

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PORTER		DATE 7/12/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A12&4	0002	171.00	63	433	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES		TREES	TREES				
TOTAL		63	433	6.9						
CRUISE		33	219	6.6	24,586	9				
DBH COUNT										
REFOREST										
COUNT		30	212	7.1						
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	78	34.2	21.5	73		85.9	14,683	14,578	3,578	3,578
DOUG FIR	54	41.5	16.1	61		58.7	8,607	8,569	2,207	2,207
HEMLEAV	29	14.5	20.1	79		32.0	5,512	5,490	1,365	1,365
WHEMLOCK	26	29.3	13.2	44		27.7	3,658	3,626	921	921
R ALDER	15	11.9	13.1	46		11.2	1,210	1,210	366	366
SNAG	8	6.6	14.5	38		7.5				
ALDRLEAV	7	4.8	15.6	52		6.4	712	712	214	214
CEDLEAV	2	1.0	17.3	50		1.6	122	122	46	46
TOTAL	219	143.8	17.2	59		231.0	34,504	34,308	8,697	8,697
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	163.8	11.1	195	219	243					
DOUG FIR	241.8	16.3	73	88	102					
HEMLEAV	292.8	19.8	53	66	79					
WHEMLOCK	387.9	26.2	20	27	34					
R ALDER	407.6	27.5	6	8	10					
SNAG										
ALDRLEAV	592.3	40.0	3	5	8					
CEDLEAV	1242.8	84.0	0	1	2					
TOTAL	81.3	5.5	391	414	436	264	66	29		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	76.2	9.6	31	34	37					
DOUG FIR	104.5	13.2	36	41	47					
HEMLEAV	124.7	15.7	12	15	17					
WHEMLOCK	158.0	19.9	23	29	35					
R ALDER	315.4	39.7	7	12	17					
SNAG	284.1	35.8	4	7	9					
ALDRLEAV	334.1	42.1	3	5	7					
CEDLEAV	455.4	57.4	0	1	2					
TOTAL	56.2	7.1	134	144	154	126	32	14		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	52.5	6.6	80	86	92					
DOUG FIR	95.9	12.1	52	59	66					
HEMLEAV	112.2	14.1	27	32	37					
WHEMLOCK	146.8	18.5	23	28	33					
R ALDER	300.0	37.8	7	11	15					
SNAG	234.9	29.6	5	7	10					
ALDRLEAV	296.0	37.3	4	6	9					
CEDLEAV	450.8	56.8	1	2	3					
TOTAL	40.7	5.1	219	231	243	66	17	7		

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	26	A12&4	0002	171.00	63	433	1	W
SD: 1		COEFF VAR.		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
		S.E.%	LOW	AVG	HIGH	5	10	15	
SD: 1		COEFF VAR.%		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
		S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		56.2	7.1	13,546	14,578	15,611			
DOUG FIR		102.1	12.9	7,467	8,569	9,670			
HEMLEAV		111.5	14.1	4,719	5,490	6,262			
WHEMLOCK		148.5	18.7	2,948	3,626	4,305			
R ALDER		323.7	40.8	716	1,210	1,703			
SNAG									
ALDRLEAV		288.5	36.3	453	712	971			
CEDLEAV		493.3	62.1	46	122	198			
TOTAL		48.0	6.1	32,231	34,308	36,385	92	23	10

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PORTER		DATE 7/12/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A12&4	TAKE	171.00	63	183	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	63	183	2.9							
CRUISE	24	95	4.0		14,144		.7			
DBH COUNT										
REFOREST										
COUNT	25	88	3.5							
BLANKS	14									
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	54	41.5	16.1	61		58.7	8,607	8,569	2,207	2,207
WHEMLOCK	26	29.3	13.2	44		27.7	3,658	3,626	921	921
R ALDER	15	11.9	13.1	46		11.2	1,210	1,210	366	366
TOTAL	95	82.7	14.7	53		97.6	13,475	13,405	3,494	3,494
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	140.7	14.4	173	202	231					
WHEMLOCK	244.8	25.1	46	62	77					
R ALDER	258.4	26.5	13	18	22					
TOTAL	94.7	9.7	254	281	309	359	90	40		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	104.5	13.2	36	41	47					
WHEMLOCK	158.0	19.9	23	29	35					
R ALDER	315.4	39.7	7	12	17					
TOTAL	83.8	10.6	74	83	91	281	70	31		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	95.9	12.1	52	59	66					
WHEMLOCK	146.8	18.5	23	28	33					
R ALDER	300.0	37.8	7	11	15					
TOTAL	78.9	9.9	88	98	107	249	62	28		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	102.1	12.9	7,467	8,569	9,670					
WHEMLOCK	148.5	18.7	2,948	3,626	4,305					
R ALDER	323.7	40.8	716	1,210	1,703					
TOTAL	87.9	11.1	11,921	13,405	14,889	309	77	34		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PORTER		DATE 7/12/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A12&4	LEAV	171.00	63	250	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	63	250	4.0							
CRUISE	33	124	3.8		10,441		1.2			
DBH COUNT										
REFOREST										
COUNT	30	124	4.1							
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	78	34.2	21.5	73		85.9	14,683	14,578	3,578	3,578
HEMLEAV	29	14.5	20.1	79		32.0	5,512	5,490	1,365	1,365
SNAG	8	6.6	14.5	38		7.5				
ALDRLEAV	7	4.8	15.6	52		6.4	712	712	214	214
CEDLEAV	2	1.0	17.3	50		1.6	122	122	46	46
TOTAL	124	61.1	20.0	68		133.4	21,029	20,903	5,202	5,202
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	104.3	9.4	350	387	423					
HEMLEAV	210.6	18.9	95	117	139					
SNAG										
ALDRLEAV	441.6	39.7	6	10	13					
CEDLEAV	934.5	83.9	0	2	4					
TOTAL	67.8	6.1	484	515	546	184	46	20		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	76.2	9.6	31	34	37					
HEMLEAV	124.7	15.7	12	15	17					
SNAG	284.1	35.8	4	7	9					
ALDRLEAV	334.1	42.1	3	5	7					
CEDLEAV	455.4	57.4	0	1	2					
TOTAL	52.3	6.6	57	61	65	110	27	12		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	52.5	6.6	80	86	92					
HEMLEAV	112.2	14.1	27	32	37					
SNAG	234.9	29.6	5	7	10					
ALDRLEAV	296.0	37.3	4	6	9					
CEDLEAV	450.8	56.8	1	2	3					
TOTAL	22.6	2.8	130	133	137	20	5	2		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	56.2	7.1	13,546	14,578	15,611					
HEMLEAV	111.5	14.1	4,719	5,490	6,262					
SNAG										
ALDRLEAV	288.5	36.3	453	712	971					
CEDLEAV	493.3	62.1	46	122	198					
TOTAL	30.5	3.8	20,100	20,903	21,706	37	9	4		

TC TSTATS		STATISTICS						PAGE 1		
		PROJECT PORTER				DATE 7/12/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A6&9	0003	116.00	47	393	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		47	393	8.4						
CRUISE		29	184	6.3	19,723	9				
DBH COUNT										
REFOREST										
COUNT		18	177	9.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	75	77.3	16.4	69		113.7	16,790	16,651	4,331	4,331
DOUGLEAV	63	34.9	22.1	91		93.0	18,060	17,939	4,273	4,273
WHEMLOCK	6	21.4	12.9	46		19.3	2,479	2,479	691	691
R ALDER	14	18.5	13.6	58		18.6	2,858	2,834	736	736
SNAG	17	5.1	25.8	68		18.6				
HEMLEAV	8	10.1	15.7	62		13.6	2,121	2,121	550	550
ALDRLEAV	1	2.7	14.0	51		2.9	401	401	99	99
TOTAL	184	170.0	17.4	69		279.6	42,708	42,424	10,679	10,679
SD: 1		COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUG FIR		177.7	13.1	111	127	144				
DOUGLEAV		196.7	14.5	207	242	277				
WHEMLOCK		773.3	57.0	3	7	11				
R ALDER		389.0	28.7	10	14	18				
SNAG										
HEMLEAV		530.2	39.1	8	13	18				
ALDRLEAV		1356.5	100.0		1	2				
TOTAL		110.7	8.2	371	404	437	490	123	54	
SD: 1		COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUG FIR		81.4	11.9	68	77	86				
DOUGLEAV		42.4	6.2	33	35	37				
WHEMLOCK		305.9	44.6	12	21	31				
R ALDER		212.0	30.9	13	19	24				
SNAG		228.7	33.4	3	5	7				
HEMLEAV		179.3	26.2	7	10	13				
ALDRLEAV		412.1	60.1	1	3	4				
TOTAL		48.3	7.0	158	170	182	93	23	10	
SD: 1		COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUG FIR		76.1	11.1	101	114	126				
DOUGLEAV		36.3	5.3	88	93	98				
WHEMLOCK		303.1	44.2	11	19	28				
R ALDER		219.2	32.0	13	19	25				
SNAG		171.9	25.1	14	19	23				
HEMLEAV		168.4	24.6	10	14	17				
ALDRLEAV		412.1	60.1	1	3	5				
TOTAL		32.7	4.8	266	280	293	43	11	5	
SD: 1		COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUG FIR		76.7	11.2	14,787	16,651	18,514				
DOUGLEAV		40.5	5.9	16,878	17,939	19,000				
WHEMLOCK		303.2	44.2	1,382	2,479	3,575				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	PORTER			DATE	7/12/2006	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A6&9	0003	116.00	47	393	1	W	
SD:		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
1		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER		237.5	34.6	1,852	2,834	3,816				
SNAG										
HEMLEAV		171.6	25.0	1,590	2,121	2,651				
ALDRLEAV		412.1	60.1	160	401	643				
TOTAL		<i>39.1</i>	<i>5.7</i>	<i>40,007</i>	<i>42,424</i>	<i>44,841</i>	<i>61</i>	<i>15</i>	<i>7</i>	

**STATISTICS
PROJECT PORTER**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	26	A6&9	TAKE	116.00	47	212	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	47	212	4.5		
CRUISE	24	95	4.0	13,595	.7
DBH COUNT					
REFOREST					
COUNT	20	115	5.8		
BLANKS	3				
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	77.3	16.4	69		113.7	16,790	16,651	4,331	4,331
WHEMLOCK	6	21.4	12.9	46		19.3	2,479	2,479	691	691
R ALDER	14	18.5	13.6	58		18.6	2,858	2,834	736	736
TOTAL	95	117.2	15.4	63		151.6	22,126	21,963	5,758	5,758

SD:	1	COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
DOUG FIR		107.3	11.0	219	247	274			
WHEMLOCK		552.7	56.7	6	14	22			
R ALDER		271.4	27.8	19	27	34			
TOTAL		85.3	8.8	262	287	313	291	73	32

SD:	1	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
DOUG FIR		81.4	11.9	68	77	86			
WHEMLOCK		305.9	44.6	12	21	31			
R ALDER		212.0	30.9	13	19	24			
TOTAL		66.1	9.6	106	117	129	175	44	19

SD:	1	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
DOUG FIR		76.1	11.1	101	114	126			
WHEMLOCK		303.1	44.2	11	19	28			
R ALDER		219.2	32.0	13	19	25			
TOTAL		57.0	8.3	139	152	164	130	32	14

SD:	1	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
				LOW	AVG	HIGH	5	10	15
DOUG FIR		76.7	11.2	14,787	16,651	18,514			
WHEMLOCK		303.2	44.2	1,382	2,479	3,575			
R ALDER		237.5	34.6	1,852	2,834	3,816			
TOTAL		59.4	8.7	20,059	21,963	23,867	141	35	16

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT PORTER		DATE 7/12/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	26	A6&9	LEAV	116.00	47	181	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		47	181	3.9						
CRUISE		28	89	3.2	6,129		1.5			
DBH COUNT										
REFOREST										
COUNT		19	79	4.2						
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	63	34.9	22.1	91		93.0	18,060	17,939	4,273	4,273
SNAG	17	5.1	25.8	68		18.6				
HEMLEAV	8	10.1	15.7	62		13.6	2,121	2,121	550	550
ALDRLEAV	1	2.7	14.0	51		2.9	401	401	99	99
TOTAL	89	52.8	21.1	81		128.0	20,582	20,461	4,921	4,921
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	116.6	12.4	438	500	562					
SNAG										
HEMLEAV	362.7	38.4	16	26	36					
ALDRLEAV	943.4	100.0		2	3					
TOTAL	107.3	11.4	468	528	588	461	115	51		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	42.4	6.2	33	35	37					
SNAG	228.7	33.4	3	5	7					
HEMLEAV	179.3	26.2	7	10	13					
ALDRLEAV	412.1	60.1	1	3	4					
TOTAL	30.2	4.4	51	53	55	37	9	4		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	36.3	5.3	88	93	98					
SNAG	171.9	25.1	14	19	23					
HEMLEAV	168.4	24.6	10	14	17					
ALDRLEAV	412.1	60.1	1	3	5					
TOTAL	20.9	3.1	124	128	132	18	4	2		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	40.5	5.9	16,878	17,939	19,000					
SNAG										
HEMLEAV	171.6	25.0	1,590	2,121	2,651					
ALDRLEAV	412.1	60.1	160	401	643					
TOTAL	25.4	3.7	19,703	20,461	21,220	26	6	3		

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	26	A10 RW	RW	7.00	110	826	1	W
07N	06W	26	A11RW	RW					

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	110	826	7.5		
CRUISE	62	403	6.5	1,082	37.2
DBH COUNT					
REFOREST					
COUNT	48	389	8.1		
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	272	91.7	18.5	71		171.8	28,376	28,183	7,024	7,024
WHEMLOCK	67	37.5	15.3	54		47.6	7,072	7,041	1,805	1,805
R ALDER	37	18.8	13.7	53		19.3	2,502	2,491	692	692
SNAG	25	5.9	19.4	49		12.2				
WR CEDAR	2	.6	17.3	50		.9	70	70	26	26
TOTAL	403	154.6	17.3	64		251.8	38,020	37,785	9,547	9,547

SD:	COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	123.1	6.1	316	337	358			
WHEMLOCK	291.6	14.5	49	57	66			
R ALDER	355.4	17.7	11	14	16			
SNAG								
WR CEDAR	1686.7	84.0	0	1	1			
TOTAL	95.4	4.8	390	409	428	364	91	40

SD:	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	67.0	6.4	86	92	98			
WHEMLOCK	160.5	15.3	32	38	43			
R ALDER	245.2	23.4	14	19	23			
SNAG	269.0	25.6	4	6	7			
WR CEDAR	605.9	57.8	0	1	1			
TOTAL	48.3	4.6	147	155	162	93	23	10

SD:	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	58.7	5.6	162	172	181			
WHEMLOCK	145.4	13.9	41	48	54			
R ALDER	240.5	22.9	15	19	24			
SNAG	206.6	19.7	10	12	15			
WR CEDAR	599.9	57.2	0	1	1			
TOTAL	38.0	3.6	243	252	261	58	14	6

SD:	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	61.9	5.9	26,519	28,183	29,848			
WHEMLOCK	143.6	13.7	6,077	7,041	8,006			
R ALDER	251.4	24.0	1,894	2,491	3,088			
SNAG								
WR CEDAR	655.3	62.5	26	70	113			
TOTAL	46.3	4.4	36,116	37,785	39,455	86	21	10

Log Stock Table - MBF

T07N R06W S26 TyRW
THRU
T07N R06W S26 TyTAKE

Project: PORTER
Acres 443.00

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
D	?	2S	12	10	24.0	7	.1										7		
D	?	2S	14	7		7	.1						7						
D	?	2S	16	75	2.6	73	.9						24		35	14	0		
D	?	2S	20	75		75	.9						43		0	15	16		
D	?	2S	22	8		8	.1						8						
D	?	2S	24	61		61	.8						15				46		
D	?	2S	28	73		73	.9				0	7	40		0			26	
D	?	2S	30	79		79	1.0				18		0				61		
D	?	2S	32	929		926	11.5					17	76	434	117	251	30	1	
D	?	2S	34	0	16.7	0	.0								0				
D	?	2S	36	30		30	.4								30				
D	?	2S	38	20		20	.2							20					
D	?	2S	40	3,675		3,640	45.1				0		182	1173	945	1023	314	1	1
D	?	3S	15	2		2	.0						2						
D	?	3S	16	2		2	.0			0			2		0				
D	?	3S	18	10		10	.1				0		10						
D	?	3S	19	2		2	.0				2								
D	?	3S	20	32		32	.4				0		15				17		
D	?	3S	21	3		3	.0						3						
D	?	3S	24	31	8.3	28	.3				7		21						
D	?	3S	26	6		6	.1			0	6								
D	?	3S	27	13		13	.2				13								
D	?	3S	28	23		23	.3			3			0	20	0				
D	?	3S	29	12		12	.2				6	7							
D	?	3S	30	27		27	.3				14	0		13		0			
D	?	3S	32	869		865	10.7			0	190	342	300	11	0	22	1	0	
D	?	3S	33	38		38	.5				32	6							
D	?	3S	34	89		89	1.1				57	4	28						
D	?	3S	35	14		14	.2				14		0						
D	?	3S	36	33		33	.4				24	9							
D	?	3S	37	28		28	.3				5	4				18			
D	?	3S	38	43		43	.5				25	5	13						
D	?	3S	39	0		0	.0				0	0							
D	?	3S	40	1,393		1,389	17.2			0	453	453	430	16		36	1	1	
D	?	3S	41	0		0	.0				0								
D	?	4S	11	0		0	.0				0								
D	?	4S	12	7		7	.1				4	1	2						

Log Stock Table - MBF

T07N R06W S26 TyRW
 THRU
 T07N R06W S26 TyTAKE

Project: PORTER
 Acres 443.00

Page 4
 Date 7/12/2006
 Time 2:57:38PM

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		?	CR	36	6		6	.8			6											
A		?	CR	38	15		15	1.9			15											
A		?0	CR	39	34		34	4.4			34											
A		?	CR	40	342		342	45.3			60	114	132	36								
A		Totals			762		756	6.9			256	212	183	88	17							
C		?0	3S	32	0		0	23.5			0											
C		?	3S	40	0		0	59.9					0									
C		?	4S	33	0		0	16.6			0											
C		Totals			0		0	.0			0		0									
Total		All Species			11,070		11,003	100.0		46	1866	1340	1773	2202	1374	1754	535	113				2

Project - Porter
TWN 07N R3E 06W
Sec. 26 Type: 0001
TRACT: A 35 7 & 8
Acres 150 B1 40 41 55

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: Porter Horce Area(s) 3, 5, 7, & 8

Harvest Type: CO PC CT "Automark Thinning" (circle one)
Approx. Cruise Acres: 150 Estimated CV% 60 ^{(Net BF) or} SE% Objective 8 ^{(Net BF) or} B/A/Acre

Planned Sale Volume: 12.6 MMBF Estimated Sale Area Value/Acre: \$ 17,550

- A. **Cruise Goals:** (a) Grade minimum 170 conifer and _____ hardwood trees;
(b) Sample 60 cruise plots; (c) Other goals (_____ Determine "automark" thinning standards; Determine log grades for sale value; _____ Determine snag and leave tree species and sizes; _____ Determine LWD (down wood) cubic feet and decay classes; _____ Determine "diameter limit" harvest parameters;

*Cruise grade plots as shown on map. Cruise "W" trees at Camp Run.
All cedar is reserve. Cruise all snags ≥ 15 " DBH*

B. **Cruise Design:**

1. **Plot Cruises:** BAF 40 (Full point; Half point) (circle one)
Fixed Plot Size _____ Plot Radius _____ feet
Cruise Line Direction(s) SEE MAP
Cruise Line Spacing 5 (chains) (feet)
Cruise Plot Spacing 5 (chains) (feet)
Grade/Count Ratio 1:2
2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir _____ Hemlock _____
Spruce _____ True Fir _____ Cedar _____ Hardwood _____

C. **Tree Measurements:**

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7" 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 = Camp Run; 0 = Cull

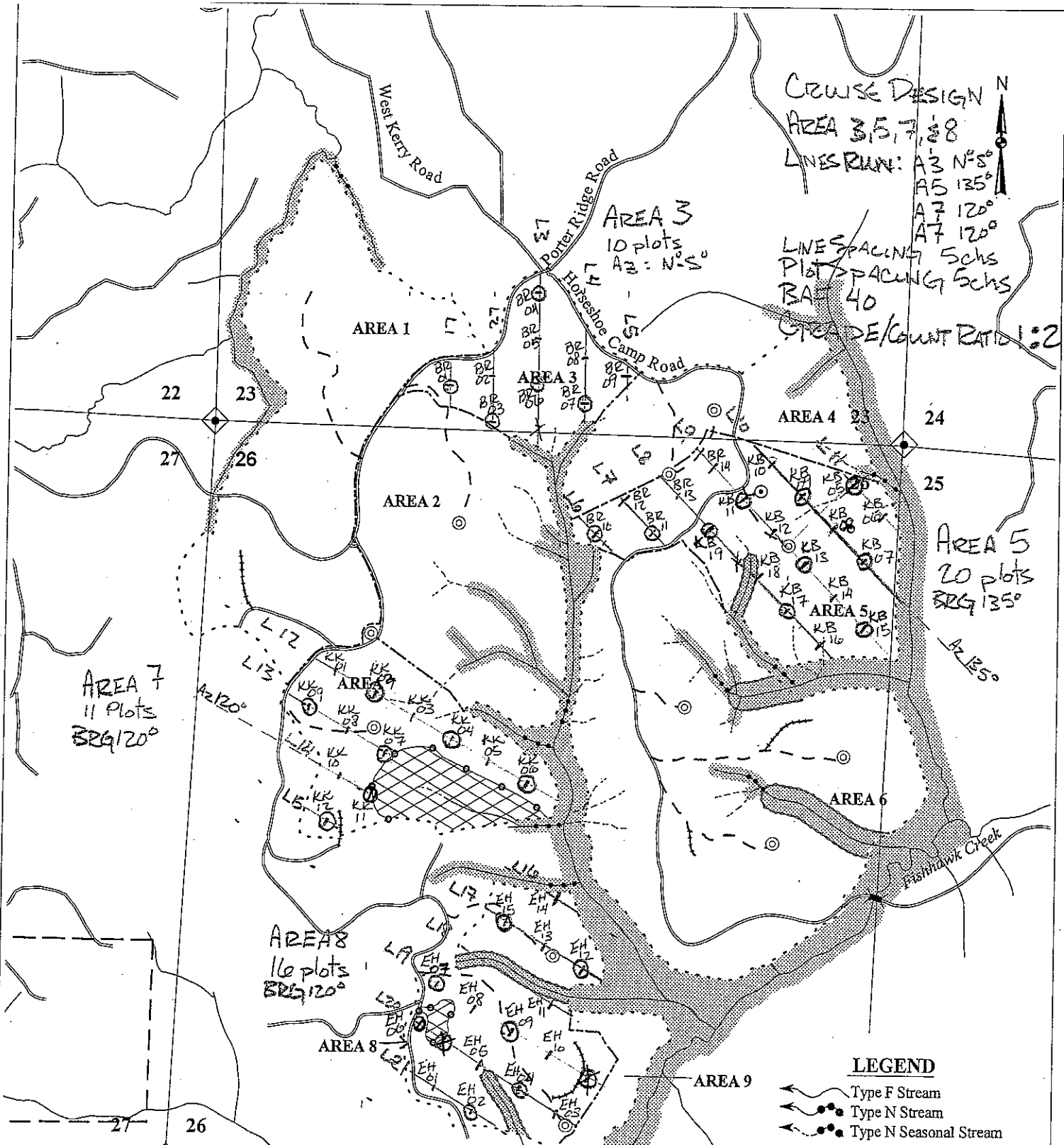
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally 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 intervisible 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.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

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

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).
B. Data Recorder Instructions
C. Other

Cruise Design by: Kraig Kirkpatrick
Approved by: Dan Coody
Date: 6/12/06



AREA	MC ACRES	PC ACRES
AREA 1		82
AREA 2		58
AREA 3	23	
AREA 4		32
AREA 5	54	
AREA 6		107
AREA 7	32	
AREA 8	40	
AREA 9		9
AREA 10R1W	X	
TOTAL	149	288
TOTAL ALL AREAS - 437 ACRES		

EXHIBIT A
 OF TIMBER SALE CONTRACT NO. 341-07-XX
 PORTER HORSE
 PORTIONS OF SECTIONS
 23, 25 & 26 T7N, R6W,
 W.M., CLATSOP COUNTY, OREGON.
 APPROX. SCALE 1"=1,000'

1000 0 1000 Feet

Project: Porter
 TWINORN RGE 06W
 Sec. 26 Type: 0006
 Tract: A12&4
 Acres 172 BI: 33,61 A:55

Revised August, 2002

**CRUISE DESIGN
 ASTORIA DISTRICT**

Sale Name: Porter Horse Area(s) 1.284

Harvest Type: CC PC CT "Automark Thinning" (circle one)
 Net BF or
 Approx. Cruise Acres: 172 Estimated CV% 40 BA/Acre SE% Objective 9 Net BF or BA/Acre

Planned Sale Volume: 12.6 MMBF Estimated Sale Area Value/Acre: \$8775

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and _____ hardwood trees:
 (b) Sample 60 cruise plots; (c) Other goals (_____ Determine "automark" thinning standards; X Determine log grades for sale value; _____ Determine snag and leave tree species and sizes; _____ Determine LWD (down wood) cubic feet and decay classes; _____ Determine "diameter limit" harvest parameters;
Leave Brist & Best, Residual BA 140 FT², Carry over leave, Cruise all snags
≥ 15" DBH,

- B. **Cruise Design:**
 1. Plot Cruises: BAF 33.6 (Full point) Half point) (circle one)
 Fixed Plot Size _____ Plot Radius _____ feet
 Cruise Line Direction(s) Area 1 & 2 140°; Area 4 110°
 Cruise Line Spacing 5 (chains) (feet)
 Cruise Plot Spacing 5.5 (chains) (feet)
 Grade/Count Ratio 1.2
 2. ITS (Sample Tree) Cruises: Measure-grade ratios: D-fir _____ Hemlock _____
 Spruce _____ True Fir _____ Cedar _____ Hardwood _____

- C. **Tree Measurements:**
 1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
 2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
 3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7" 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 = Camp Run; 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 intervisible 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.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

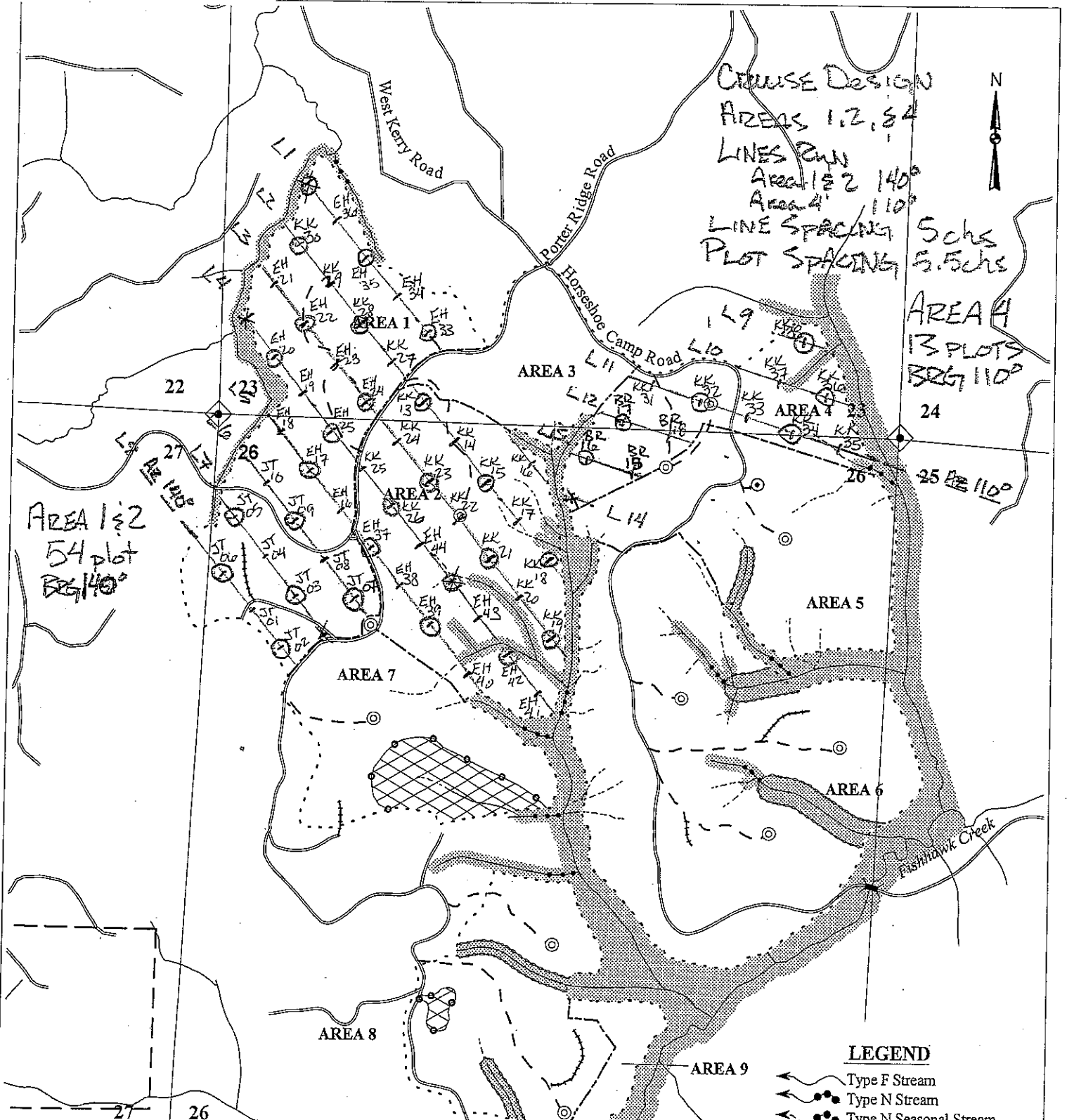
9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with dbh on back)
Biltmore Stick Compass Cruise Cards in Tatum OR Data Recorder
Cruise Design Cruise Map Yellow Flagging Blue Flagging

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.)

B. Data Recorder Instructions

C. Other

Cruise Design by: Braja Kurbantrick
Approved by: Dan Coody
Date: 6/12/06



AREA	MC ACRES	PC ACRES
AREA 1		82
AREA 2		58
AREA 3	23	
AREA 4		32
AREA 5	54	
AREA 6		107
AREA 7	32	
AREA 8	40	
AREA 9		9
AREA 10 (W)	X	
TOTAL	149	288
TOTAL ALL AREAS - 437 ACRES		

EXHIBIT A
 OF TIMBER SALE CONTRACT NO. 341-07-XX
 PORTER HORSE
 PORTIONS OF SECTIONS
 23, 25 & 26 T7N, R6W,
 W.M., CLATSOP COUNTY, OREGON.
 APPROX. SCALE 1"=1,000'



- LEGEND**
- Type F Stream
 - Type N Stream
 - Type N Seasonal Stream
 - Timber Sale Boundary
 - Area Boundary
 - Ownership Boundary
 - Right of Way Boundary
 - Posted Buffer Zone Boundary
 - Stream Buffer
 - Posted Wildlife Tree Area
 - GTRA
 - Reforestation Area
 - Pt 1A Point For Project Work
 - Surfaced Road
 - New Road Construction
 - Landing to Construct
 - Known Land Survey Corner
 - Bridge

Project: Porter
 TWN: 07N RGE: 06W
 Sec: 26 Type: 0003
 Tract: A 689
 Acres: 116 ISI 33.61 AI: 55
 Revised August, 2002

**CRUISE DESIGN
 ASTORIA DISTRICT**

Sale Name: Porter Horse Area(s) 6 & 9

Harvest Type: CC (PC) CT "Automark Thinning" (circle one)
 Net BF or Net BF or
 Approx. Cruise Acres: 116 Estimated CV% 40 BA/Acre SE% Objective 8 BA/Acre

Planned Sale Value: \$5,00,000 Estimated Sale Area Value/Acre: \$8,775

A. **Cruise Goals:** (a) Grade minimum 100 conifer and _____ hardwood trees:
 (b) Sample 40 cruise plots; (c) Other goals (_____ Determine "automark" thinning standards; X Determine log grades for sale value; _____ Determine snag and leave tree species and sizes; _____ Determine LWD (down wood) cubic feet and decay classes; _____ Determine "diameter limit" harvest parameters;
Leave Biggest & Best, Residual BA 110ft², Cedars are Leave, Cruise all snags ≥ 15" DBH, Large DF in places, all DF ≥ 40" DBH are Leave.

B. **Cruise Design:**
 1. Plot Cruises: BAF 33.6 (Full point, Half point) (circle one)
 Fixed Plot Size _____ Plot Radius _____ feet
 Cruise Line Direction(s) Area 12 110° Area 9 210°
 Cruise Line Spacing 5 (chains) (feet)
 Cruise Plot Spacing 5 (chains) (feet)
 Grade/Count Ratio 1:2
 2. ITS (Sample Tree) Cruises: Measure-grade ratios: D-fir _____ Hemlock _____
 Spruce _____ True Fir _____ Cedar _____ Hardwood _____

C. **Tree Measurements:**
 1. Diameter: Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
 2. Bole Length: Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
 3. Top Cruise Diameter (TCD): Minimum top outside bark is 7" 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 = Camp Run; 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.

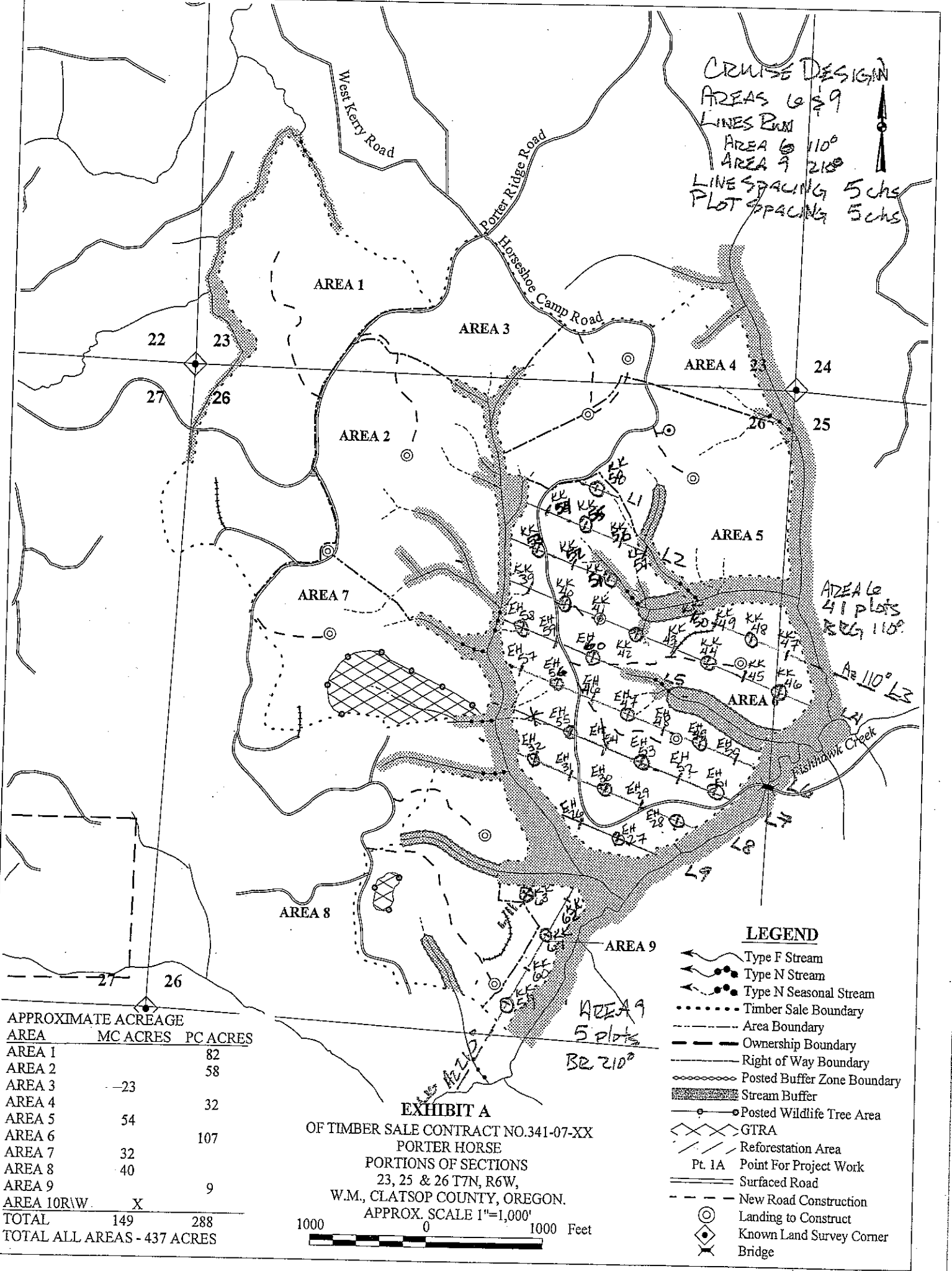
8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible 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.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

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

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).
B. Data Recorder Instructions
C. Other

Cruise Design by: _____
Approved by: _____
Date: 6/12/02

CRUISE DESIGN
 AREAS 6 & 9
 LINES BUN
 AREA 6 110°
 AREA 9 210°
 LINE SPACING 5 chs
 PLOT SPACING 5 chs



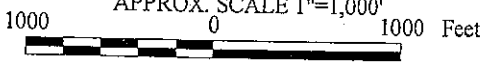
AREA 6
 41 plots
 BE 110°
 AREA 9
 5 plots
 BE 210°

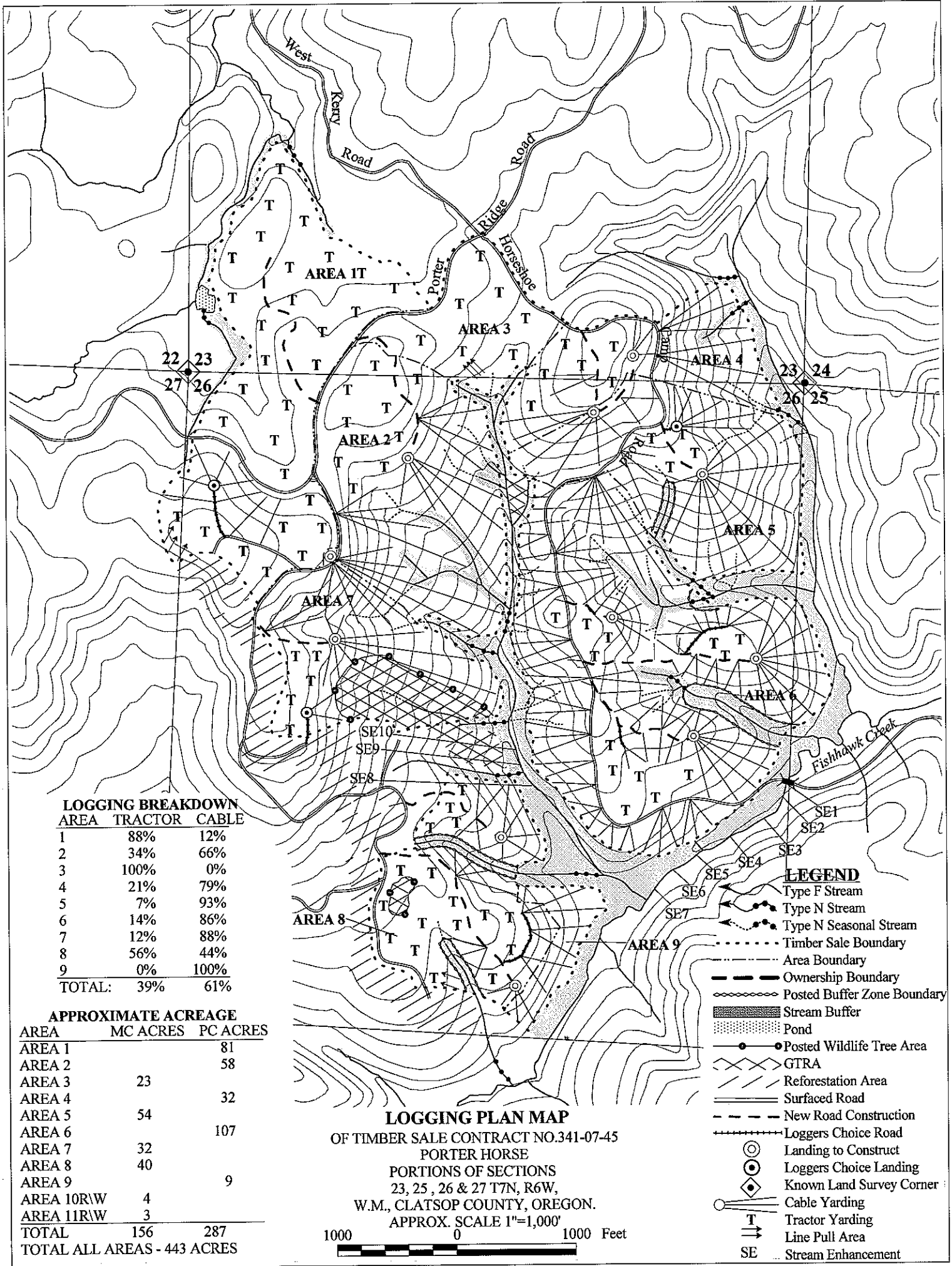
LEGEND

- ~ Type F Stream
- ~ Type N Stream
- ~ Type N Seasonal Stream
- Timber Sale Boundary
- - - Area Boundary
- - - Ownership Boundary
- - - Right of Way Boundary
- Posted Buffer Zone Boundary
- ▨ Stream Buffer
- Posted Wildlife Tree Area
- ▧ GTRA
- ▨ Reforestation Area
- Pt. 1A Point For Project Work
- == Surfaced Road
- - - New Road Construction
- ⊙ Landing to Construct
- ⊠ Known Land Survey Corner
- ⊞ Bridge

APPROXIMATE ACREAGE		
AREA	MC ACRES	PC ACRES
AREA 1		82
AREA 2		58
AREA 3	-23	
AREA 4		32
AREA 5	54	
AREA 6		107
AREA 7	32	
AREA 8	40	
AREA 9		9
AREA 10R/W	X	
TOTAL	149	288
TOTAL ALL AREAS - 437 ACRES		

EXHIBIT A
 OF TIMBER SALE CONTRACT NO.341-07-XX
 PORTER HORSE
 PORTIONS OF SECTIONS
 23, 25 & 26 T7N, R6W,
 W.M., CLATSOP COUNTY, OREGON.
 APPROX. SCALE 1"=1,000'





LOGGING BREAKDOWN

AREA	TRACTOR	CABLE
1	88%	12%
2	34%	66%
3	100%	0%
4	21%	79%
5	7%	93%
6	14%	86%
7	12%	88%
8	56%	44%
9	0%	100%
TOTAL:	39%	61%

APPROXIMATE ACREAGE

AREA	MC ACRES	PC ACRES
AREA 1		81
AREA 2		58
AREA 3	23	
AREA 4		32
AREA 5	54	
AREA 6		107
AREA 7	32	
AREA 8	40	
AREA 9		9
AREA 10R/W	4	
AREA 11R/W	3	
TOTAL	156	287
TOTAL ALL AREAS -	443 ACRES	

LOGGING PLAN MAP
 OF TIMBER SALE CONTRACT NO.341-07-45
 PORTER HORSE
 PORTIONS OF SECTIONS
 23, 25, 26 & 27 T7N, R6W,
 W.M., CLATSOP COUNTY, OREGON.
 APPROX. SCALE 1"=1,000'

- LEGEND**
- Type F Stream
 - Type N Stream
 - Type N Seasonal Stream
 - Timber Sale Boundary
 - Area Boundary
 - Ownership Boundary
 - Posted Buffer Zone Boundary
 - Stream Buffer
 - Pond
 - Posted Wildlife Tree Area
 - GTRA
 - Reforestation Area
 - Surfaced Road
 - New Road Construction
 - Loggers Choice Road
 - Landing to Construct
 - Loggers Choice Landing
 - Known Land Survey Corner
 - Cable Yarding
 - Tractor Yarding
 - Line Pull Area
 - Stream Enhancement