



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Cost Summary Brownsmead Hill Sale 341-04-62

District: Astoria

Date: 10/1/03

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$125,153.42	\$32,024.61	\$157,178.03
		<b>Project Work</b>	(\$12,895.00)
		<b>Advertised Value</b>	\$144,283.03



# Timber Sale Appraisal Timber Description Brownsmead Hill Sale 341-04-62

"STEWARDSHIP IN FORESTRY"

**District:** Astoria

**Location:** Portions of Sections 15, 16, T8N, R7W, W.M., Clatsop County, Oregon.

**Date:** 10/1/03

**Stand Stocking:** 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	12	0	97
Western Hemlock / Fir	16	0	97
Sitka Spruce	12	0	95
Alder (Red)	11	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)	Total
2S	101	500	8	0	609
3S	211	196	26	87	520
4S	38	58	23	24	143
<b>Total</b>	350	754	57	111	1,272

**Comments:** Pond Values Used: 2nd Quarter 2003  
Log Markets: Tillamook, Mist, Forest Grove and Longview.  
Other Costs (No P&R):  
Slash Piling 90 hours @ \$95/hr + move-in = \$9,785.  
Slash Piling @ Landings: \$130 / landing x 2 landings = \$260.  
Total Other Costs (No P&R) = \$10,045

Other Costs (Plus P&R):  
Brand/Paint Logs @ \$1/MBF = \$1,272.  
Thinning Tree Selection: \$5/MBF x 179MBF = \$895.  
Skid Trail Layout: \$3/MBF x 1145MBF= \$3435.  
Logger's Choice Road Construction: \$170/sta. x 3stations = \$510  
Total Other Costs Plus P&R = \$6,112.



# Timber Sale Appraisal Logging Conditions Brownsmead Hill Sale 341-04-62

"STEWARDSHIP IN FORESTRY"

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<b>Combination#:</b> 1	Douglas - Fir	28.29%	
	Western Hemlock / Fir	7.43%	
	Sitka Spruce	12.28%	
	Alder (Red)	14.41%	
<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding:</b> Yes
<b>Logging System:</b>	Wheel Skidder		<b>Process:</b> Manual Falling/Delimiting
<b>Tree Size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
<b>Loads/Day:</b>	3		<b>Bd. Ft./Load:</b> 3,700
<b>Cost/MBF:</b>	\$270.34		
<b>Machines:</b>	Log Loader (B) Tire Skidder		
<b>Combination#:</b> 2	Douglas - Fir	39.44%	
	Western Hemlock / Fir	50.92%	
	Sitka Spruce	48.25%	
	Alder (Red)	47.07%	
<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70		<b>Process:</b> Manual Delimiting
<b>Tree Size:</b>	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
<b>Loads/Day:</b>	5		<b>Bd. Ft./Load:</b> 3,800
<b>Cost/MBF:</b>	\$174.56		
<b>Machines:</b>	Log Loader (A) Tower Yarder (Medium)		
<b>Combination#:</b> 3	Douglas - Fir	32.27%	
	Western Hemlock / Fir	41.66%	
	Sitka Spruce	39.47%	
	Alder (Red)	38.51%	
<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding:</b> Yes
<b>Logging System:</b>	Track Skidder		<b>Process:</b> Manual Falling/Delimiting
<b>Tree Size:</b>	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
<b>Loads/Day:</b>	6		<b>Bd. Ft./Load:</b> 3,800
<b>Cost/MBF:</b>	\$143.22		
<b>Machines:</b>	Log Loader (B) Track Skidder		



# Timber Sale Appraisal

## Logging Costs

### Brownsmead Hill

### Sale 341-04-62

"STEWARDSHIP IN FORESTRY"

Date: 10/1/03

Operating Seasons: 0.5

Profit & Risk: 16%

Project Costs: \$12,895

Other Costs (P/R): \$6,112

Slash Disposal: \$0

Other Costs: \$10,045

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

Road Maintenance: \$1.90

#### Hauling Costs

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



# Timber Sale Appraisal Logging Costs Breakdown Brownsmead Hill Sale 341-04-62

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)
<b>Logging</b>	191.54	168.62	173.95	176.30
<b>Road Maintenance</b>	1.96	1.96	2.00	2.00
<b>Fire Protection</b>	1.07	1.07	1.07	1.07
<b>Hauling</b>	45.15	39.54	46.11	53.79
<b>Other (P/R appl.)</b>	4.81	4.81	4.81	4.81
<b>Profit &amp; Risk</b>	39.12	34.56	36.47	38.08
<b>Slash Disposal</b>	0.00	0.00	0.00	0.00
<b>Scaling</b>	2.00	2.00	2.00	2.00
<b>Other</b>	7.90	7.90	7.90	7.90
<b>Total</b>	293.55	260.46	274.31	285.95

<b>Amortization</b>	0.00	0.00	0.00	0.00
<b>Pond Value</b>	491.96	332.53	298.33	574.46
<b>Stumpage</b>	198.41	72.07	24.02	288.51
<b>Amortized</b>	0.00	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Summary

## Brownsmead Hill Sale 341-04-62

**Amortized**

	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)
<b>MBF</b>	0.00	0.00	0.00	0.00
<b>Value</b>	0.00	0.00	0.00	0.00
<b>Total</b>	0.00	0.00	0.00	0.00

**Unamortized**

	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)
<b>MBF</b>	350.00	754.00	57.00	111.00
<b>Value</b>	198.41	72.07	24.02	288.51
<b>Total</b>	69,443.50	54,340.78	1,369.14	32,024.61

### Gross Timber Sale Value

**Recovery \$157,178.03**

Prepared by: Kraig Kirkpatrick

Date: 10/1/03

District: Astoria

Phone: (503) 325-5451

### Road Maintenance Cost Summary

**Sale:** Brownsmead Hill  
**Date:** 9-Sep-03  
**By:** K. Kirkpatrick

**MBF:** 1,272  
**\$\$/MBF:** \$1.90

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Progressive Operations Entries (NONE)	Grader 14G	\$540				
	Dump Truck 12CY	\$114				
	FE Loader C966	\$540				
Final Haul Road Maintenance Haul Route	Grader 14G	\$540	1	8	\$80	\$1,180
	Dump Truck 12CY	\$114	1	4	\$57	\$342
	FE Loader C966	\$540	1	4	\$75	\$840
	Labor			2	\$25	\$50
<b>Total</b>						<b>\$2,412</b>

**Production Rates**

Grader

\*Grader

Miles/day	Distance(miles)	Days
1.5	0.8	0.5
1.5		

\*Final Road Maintenance Only

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**SUMMARY OF ALL PROJECT COSTS**

SALE NAME: Brownsmead Hill

**NEW CONSTRUCTION:**

**PROJECT NO. 1**

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
1A-1B, 2A-2B	20	\$5,563
_____	_____	_____
_____	_____	_____
_____	_____	_____
<b>TOTALS</b>	20.0	\$5,563

**ROAD IMPROVEMENT**

**PROJECT NO. 1**

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
_____	_____	_____
<b>TOTALS</b>	_____	_____

**SPECIAL PROJECTS:**

	<u>Description</u>	<u>Cost</u>
Project No. 2	Fill Vacating (2 fills in Area 2)	\$3,218
_____	_____	_____
<b>TOTALS</b>	_____	\$3,218

**MOVE IN:**

	<u>Equipment</u>	<u>Cost</u>
	Dozer (Medium D7) X 2 at \$560	\$1,120
	Grader (Large 14G)	\$540
	Front End Loader	\$540
	Dump Trucks	\$114
	Excavator (Medium C325) X 2 at \$900	\$1,800

**TOTAL** \$4,114

**GRAND TOTAL** **\$12,895**

Compiled By: K. Kirkpatrick **TS**

Date: 9/9/2003



ROCKING

Subgrade prep:	Description	Stations/amt	x	Rate/sta/amt	Cost	
1A-1B, 2A-2B.	Grade, Shape, Construct Ditches	\$\$/Station	20.00	x	\$11.20	\$224.00
				x		
				x		
				x		

	Size	Totals	Size	Totals	Size	Totals	Size	Totals
Base:								
Surface:								
Miscellaneous:	1 1/2"-0"	100						
Miscellaneous:								
Miscellaneous:								
Miscellaneous:								
		100 CY		CY		CY		CY

Surfacing rock:	Size/type	Tot. cy	Rate/cy	Cost

Other/misc:	Description	Size/type	Cy	Rate/cy	Cost
	Junction of county road and 1A-1B	1 1/2"-0"	100	\$5.59	\$559.00

Processing:	Description	No. sta	Rate/sta	Cost

SUB TOTAL FOR ROCKING \$783

SPECIAL PROJECTS

Description	Cost

SUB TOTAL FOR SPECIAL PROJECTS

GRAND TOTAL \$5,563.00

Compiled By: Kirkpatrick Date: 9/9/2003

TS





**Brownsmead Hill  
FY 2004  
TIMBER CRUISE REPORT**

**1. Sale Area Location:** All sale areas are within Township 8 North, Range 7 West, W.M., Clatsop County, Oregon. Area 1 - Portions of S ½S ½ of Section 16. Area 2 - Portions of E½NW ¼ of Section 15. Area 3 - Portions of S½SW ¼ of Section 15.

**2. Fund Distribution:** BOF 100%  
Tax Code: 4-03 = 100%

**3. Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	New R/W *	Buffers	Study Plots	Net Acres	Survey Method
1	Clearcut	19	0	0.5	0	0	19	GIS
2	Clearcut	31	0	1.3	2	0	29	GIS
3	Commercial Thinning	21	0	0	1	4	16	GIS
Total		71	0	1.8	3	4	64	

\*R/W within Clearcut units is not subtracted from Gross Acres.

**4. Cruisers and Cruise Dates:** Areas 1, 2 and 3 were cruised by Tom Scoggins, Kraig Kirkpatrick, Ed Holloran, and Kevin Berry on July 2<sup>nd</sup> of 2003.

**5. Cruise Method and Computation:** AREAS 1 and 2 were variable plot cruised with a 27.78 BAF, and AREA 3 was cruised with a 1/25<sup>TH</sup> acre fixed radius plot (RD 30). Cruise lines were located for efficiency and minimizing walking between plots (*See Cruise Plan Map for detailed cruise plot locations*). 54 plots were sampled along cruise lines 5 chains apart. In Area 3, all "take" and "leave" trees were measured and graded.

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	CRUISE	CRUISE TYPE
1-2	Clear Cut	8N7WSEC12,TRACT:A 1 & 2,TYPE:TAKE, LEAV
3	Thinning	8N7WSEC15,TRACT;AREA3, TYPE:TAKE, LEAV

**6. Timber Description:** Areas 1 & 2 (Clearcut) consist of conifer stocking in clumps with interspersed pockets of alder. These stands average 13.9 inches in DBH, with an average merchantable height of 43 feet to a merchantable top. The average volume (net) is 22.7 MBF/acre. Area 3 (Commercial Thinning) is a "auto marked" thinning unit that is about 35-40 years old, consisting of mostly Douglas-fir and mixed conifer stands, with small isolated clumps of hardwoods. This stand will be harvested to an SDI of 30%, removing approximately 125 trees per acre, 95ft<sup>2</sup> of basal area\acre, and 11.2 MBF/acre. The average "take" tree size is 11.8" DBH and 52 feet to a merchantable top (6" d.i.b.).

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

Area	Est. CV	Target SE%	Actual CV	Actual SE%
1 & 2	50%	11%	51%	8.1%
3	36%	11%	43%	12%

**8. Volumes by Species and Log Grade:** (See "Species, Sort and Grade" - Type Report 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 (Inches)	Net Vol.	2 Saw	3Saw	4 Saw	D&B%	% Sale
Hemlock	15.6"	754	500	196	58	10.5	59%
Douglas-fir	12.3"	350	101	211	38	2.8	27%
Alder	11.1"	111	--	87	24	2.5	9%
S. Spruce	12.0"	57	8	26	23	19.1	5%
<b>TOTALS</b>	<b>13.5"</b>	<b>1,272</b>					

**9. Approvals:**

Prepared by: Kraig Kirkpatrick Date: 9/17/03  
 Approved by: Tom Scoggin Date: 9/17/03

**10. Attachments:**

Cruise Designs 2 page  
 Cruise Maps 1 page  
 Volume Reports - 3 page  
 Statistics Reports - 4 pages  
 Stand Tables - 1 pages

X:\DOCUMENT\2004FYsales\Brownsmead Hill\Cruise Report.doc

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

T08N R07W S15 TyTAKE 16.00  
T08N R07W S15 Ty0001 48.00

**Project: BROWNSHL**  
**Acres 64.00**

**Page 1**  
**Date 8/18/2003**  
**Time 1:51:48PM**

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
D		DOCU		100.0	95											9		0.00	6.4
D		DO2S	8	1.2	1,596	1,576	101		3	58	40	3	4	29	63	33	262	1.78	6.0
D		DO3S	17	.1	3,301	3,297	211	2	98			0	3	63	34	34	65	0.50	50.3
D		DO4S	3	6.0	634	595	38	4	96			45	43	13		21	27	0.38	21.7
<b>D Totals</b>			<b>28</b>	<b>2.8</b>	<b>5,626</b>	<b>5,468</b>	<b>350</b>	<b>2</b>	<b>70</b>	<b>17</b>	<b>11</b>	<b>6</b>	<b>7</b>	<b>48</b>	<b>39</b>	<b>29</b>	<b>65</b>	<b>0.57</b>	<b>84.4</b>
A		DOCU		100.0	36											15		0.00	1.6
A		DO3S	7	.6	1,363	1,355	87		82	18		8	2	55	35	30	63	0.60	21.6
A		DO4S	2		378	378	24	6	94			32	26	7	35	25	34	0.37	11.1
<b>A Totals</b>			<b>9</b>	<b>2.5</b>	<b>1,778</b>	<b>1,733</b>	<b>111</b>	<b>1</b>	<b>85</b>	<b>14</b>		<b>13</b>	<b>7</b>	<b>44</b>	<b>35</b>	<b>28</b>	<b>51</b>	<b>0.52</b>	<b>34.2</b>
H		DOCU		100.0	1,280											13		0.00	9.6
H		DO2S	39	1.1	7,906	7,820	500		0	52	48	3	5	45	48	35	338	2.13	23.1
H		DO3S	15	.5	3,082	3,066	196		88	12		4	3	50	44	35	80	0.70	38.1
H		DO4S	4		891	891	57	7	93			69	25	6		20	25	0.42	35.2
<b>H Totals</b>			<b>59</b>	<b>10.5</b>	<b>13,158</b>	<b>11,777</b>	<b>754</b>	<b>1</b>	<b>30</b>	<b>38</b>	<b>32</b>	<b>8</b>	<b>6</b>	<b>43</b>	<b>43</b>	<b>28</b>	<b>111</b>	<b>1.00</b>	<b>106.0</b>
S		DOCU		100.0	186											13		0.00	3.6
S		DO2S	1		120	120	8				100					40	460	2.80	.3
S		DO3S	2	1.9	418	410	26		80	20		10	8	50	32	32	69	0.83	6.0
S		DO4S	2	4.3	378	362	23	14	86			50	50			22	26	0.40	14.0
<b>S Totals</b>			<b>4</b>	<b>19.1</b>	<b>1,103</b>	<b>892</b>	<b>57</b>	<b>6</b>	<b>72</b>	<b>9</b>	<b>14</b>	<b>25</b>	<b>24</b>	<b>23</b>	<b>28</b>	<b>23</b>	<b>37</b>	<b>0.56</b>	<b>23.8</b>
<b>Totals</b>				<b>8.3</b>	<b>21,664</b>	<b>19,870</b>	<b>1,272</b>	<b>1</b>	<b>48</b>	<b>29</b>	<b>23</b>	<b>9</b>	<b>7</b>	<b>44</b>	<b>41</b>	<b>28</b>	<b>80</b>	<b>0.75</b>	<b>248.5</b>



T08N R07W S15 T0001	T08N R07W S15 T0001
Twp 08N Rge 07W Sec 15 Tract AREAS 1-2 Type 0001 Acre 48.00 Plots 40 Sample Trees 129 CuFt 1	BdFt W

S Spp	So T	Gr rt 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						
H	DO	CU		00.0	1,644											13		0.00	12.1		
H	DO	2S	70	1.0	10,319	10,212	490		0	51	49		3	5	43	49	35	346	2.18	29.5	
H	DO	3S	23	.6	3,296	3,275	157		84	16			4	3	45	47	35	83	0.75	39.7	
H	DO	4S	7		1,042	1,042	50		4	96				71	25	4	19	26	0.44	40.7	
<b>H</b>	<b>Totals</b>		64	10.9	16,301	14,529	697		0	26	39	34		8	6	41	45	27	119	1.08	122.0
D	DO	CU		00.0	86												10		0.00	5.7	
D	DO	2S	39	1.3	2,037	2,011	97		3	56	42		4		30	66	34	275	1.82	7.3	
D	DO	3S	51	.2	2,666	2,660	128		100					2	63	36	35	69	0.55	38.7	
D	DO	4S	10	8.6	588	537	26		100				41	40	19		22	29	0.41	18.5	
<b>D</b>	<b>Totals</b>		23	3.1	5,376	5,208	250		62	22	16		6	5	46	44	29	74	0.66	70.1	
A	DO	3S	82	.7	1,644	1,633	78		81	19			9		52	39	30	63	0.61	26.0	
A	DO	4S	18		351	351	17		100				44	25		31	23	33	0.38	10.6	
<b>A</b>	<b>Totals</b>		9	.6	1,995	1,984	95		84	16			15	5	43	37	28	54	0.55	36.6	
S	DO	CU		00.0	54												16		0.00	2.7	
S	DO	2S	15		161	161	8				100					100	40	460	2.80	.3	
S	DO	3S	40	.8	418	415	20		87	13					57	43	35	71	0.77	5.9	
S	DO	4S	44	4.5	483	461	22		15	85			48	52			22	26	0.39	18.0	
<b>S</b>	<b>Totals</b>		5	7.1	1,116	1,037	50		7	73	5	15	21	23	23	33	24	38	0.54	26.9	
<b>Type Totals</b>				8.2	24,788	22,758	1,092		1	42	32	26	9	7	41	43	28	89	0.83	255.6	

**Species, Sort Grade - Board Foot Volumes (Type)**

Project: BROWNSHL

T08N R07W S15 TTAKE

T08N R07W S15 TTAKE

Twp Rge Sec Tract  
08N 07W 15 AREA 3

Type Acre Plots Sample Trees  
TAKE 16.00 12 60

CuFt BdFt  
1 W

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D	DO	CU		00.0	125											8		0.00	8.3	
D	DO	2S	4		271	271	4			100				100		27	130	1.15	2.1	
D	DO	3S	83		5,208	5,208	83	4	96				1	4	64	31	33	61	0.44	85.4
D	DO	4S	12		771	771	12	14	86				51	49			20	25	0.32	31.3
<b>D</b>	<b>Totals</b>		56	2.0	6,375	6,250	100	5	90	4			7	14	53	26	28	49	0.42	127.1
H	DO	CU		00.0	188											10		0.00	2.1	
H	DO	2S	18	3.1	667	646	10			100					100	32	155	1.17	4.2	
H	DO	3S	69		2,438	2,438	39		100						68	32	34	73	0.52	33.3
H	DO	4S	12		438	438	7	24	76				57	29	14		21	23	0.31	18.8
<b>H</b>	<b>Totals</b>		31	5.6	3,729	3,521	56	3	79	18			7	4	67	22	29	60	0.52	58.3
S	DO	CU		00.0	583											10		0.00	6.3	
S	DO	3S	86	5.0	417	396	6		58	42			42	32	26		26	63	1.05	6.3
S	DO	4S	14		63	63	1		100				100				18	30	0.56	2.1
<b>S</b>	<b>Totals</b>		4	56.9	1,063	458	7		64	36			50	27	23		18	31	0.73	14.6
A	DO	CU		00.0	146											15		0.00	6.3	
A	DO	3S	53		521	521	8		100					20	80		32	62	0.55	8.3
A	DO	4S	47		458	458	7	18	82				5	27	23	45	29	37	0.34	12.5
<b>A</b>	<b>Totals</b>		9	13.0	1,125	979	16	9	91				2	23	53	21	26	36	0.37	27.1
<b>Type Totals</b>				8.8	12,292	11,208	179	5	86	10			8	12	56	23	28	49	0.46	227.1

TC PSTATS		PROJECT STATISTICS							PAGE 1	
		PROJECT BROWNSHI.							DATE 8/18/2003	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
08N	07W	15	AREA 3	TAKE	64.00	52	317	1	W	
08N	07W	15	AREAS 1-2	0001						
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		52	317	6.1						
CRUISE		33	189	5.7	10,077	1.9				
DBH COUNT REFOREST COUNT		19	128	6.7						
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
WHEMLOCK	72	62.8	15.6	49		83.6	13,158	11,777	3,197	2,921
DOUG FIR	72	48.2	12.3	52		39.7	5,626	5,468	1,417	1,393
S SPRUCE	18	21.8	12.0	27		17.0	1,103	892	362	310
R ALDER	27	24.7	11.1	39		16.7	1,778	1,733	505	489
<b>TOTAL</b>	<b>189</b>	<b>157.5</b>	<b>13.5</b>	<b>45</b>		<b>157.0</b>	<b>21,664</b>	<b>19,870</b>	<b>5,481</b>	<b>5,113</b>
	COEFF VAR.	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
WHEMLOCK	102.4	14.2	54	63	72					
DOUG FIR	181.5	25.2	36	48	60					
S SPRUCE	193.0	26.8	16	22	28					
R ALDER	232.1	32.2	17	25	33					
<b>TOTAL</b>	<b>59.2</b>	<b>8.2</b>	<b>145</b>	<b>157</b>	<b>170</b>	<b>140</b>	<b>35</b>	<b>16</b>		
	COEFF VAR.	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
WHEMLOCK	99.6	13.8	72	84	95					
DOUG FIR	173.8	24.1	30	40	49					
S SPRUCE	196.9	27.3	12	17	22					
R ALDER	224.3	31.1	12	17	22					
<b>TOTAL</b>	<b>48.0</b>	<b>6.7</b>	<b>147</b>	<b>157</b>	<b>167</b>	<b>92</b>	<b>23</b>	<b>10</b>		
	COEFF VAR.	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
WHEMLOCK	103.8	14.4	10,081	11,777	13,472					
DOUG FIR	171.8	23.8	4,166	5,468	6,771					
S SPRUCE	182.8	25.3	666	892	1,118					
R ALDER	231.9	32.2	1,175	1,733	2,290					
<b>TOTAL</b>	<b>59.0</b>	<b>8.2</b>	<b>18,244</b>	<b>19,870</b>	<b>21,497</b>	<b>139</b>	<b>35</b>	<b>15</b>		

TC TSTATS		STATISTICS						PAGE 1		
		PROJECT BROWNSHL						DATE 8/18/2003		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
08N	07W	15	AREAS 1-2	0001	48.00	40	257	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL	40	257	6.4							
CRUISE	21	129	6.1	8,077	1.6					
DBH COUNT										
REFOREST										
COUNT	19	128	6.7							
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
WHEMLOCK	57	73.3	16.1	47		103.5	16,301	14,529	3,956	3,604
DOUG FIR	39	41.3	13.1	51		38.9	5,376	5,208	1,370	1,351
R ALDER	19	27.4	11.2	38		18.8	1,995	1,984	563	563
S SPRUCE	14	26.2	10.8	26		16.7	1,116	1,037	366	349
<b>TOTAL</b>	<b>129</b>	<b>168.3</b>	<b>13.9</b>	<b>43</b>		<b>177.8</b>	<b>24,788</b>	<b>22,758</b>	<b>6,255</b>	<b>5,868</b>
	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	89.5	14.1	63	73	84					
DOUG FIR	225.4	35.6	27	41	56					
R ALDER	238.1	37.6	17	27	38					
S SPRUCE	181.5	28.7	19	26	34					
<b>TOTAL</b>	<b>60.2</b>	<b>9.5</b>	<b>152</b>	<b>168</b>	<b>184</b>	<b>145</b>	<b>36</b>	<b>16</b>		
	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	82.5	13.0	90	103	117					
DOUG FIR	198.0	31.3	27	39	51					
R ALDER	226.0	35.7	12	19	25					
S SPRUCE	172.1	27.2	12	17	21					
<b>TOTAL</b>	<b>42.0</b>	<b>6.6</b>	<b>166</b>	<b>178</b>	<b>190</b>	<b>71</b>	<b>18</b>	<b>8</b>		
	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	87.1	13.8	12,528	14,529	16,530					
DOUG FIR	198.3	31.4	3,575	5,208	6,841					
R ALDER	231.5	36.6	1,258	1,984	2,710					
S SPRUCE	174.9	27.7	750	1,037	1,323					
<b>TOTAL</b>	<b>51.5</b>	<b>8.1</b>	<b>20,906</b>	<b>22,758</b>	<b>24,609</b>	<b>106</b>	<b>26</b>	<b>12</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT BROWNSHL.				DATE 8/18/2003		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
08N	07W	15	AREA 3	TAKE	16.00	12	60	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	12	60	5.0							
CRUISE	12	60	5.0	2,000			3.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	33	68.8	10.6	54		42.2	6,375	6,250	1,556	1,519
WHEMLOCK	15	31.3	11.9	56		24.0	3,729	3,521	919	873
S SPRUCE	4	8.3	19.9	33		18.1	1,063	458	352	190
R ALDER	8	16.7	10.8	45		10.6	1,125	979	331	267
<b>TOTAL</b>	<b>60</b>	<b>125.0</b>	<b>11.8</b>	<b>52</b>		<b>94.8</b>	<b>12,292</b>	<b>11,208</b>	<b>3,158</b>	<b>2,848</b>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	97.0	28.0	50	69	88					
WHEMLOCK	174.4	50.3	16	31	47					
S SPRUCE	195.4	56.4	4	8	13					
R ALDER	161.0	46.5	9	17	24					
<b>TOTAL</b>	<b>51.9</b>	<b>15.0</b>	<b>106</b>	<b>125</b>	<b>144</b>	<b>108</b>	<b>27</b>	<b>12</b>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	99.2	28.6	30	42	54					
WHEMLOCK	207.0	59.7	10	24	38					
S SPRUCE	251.3	72.6	5	18	31					
R ALDER	177.9	51.4	5	11	16					
<b>TOTAL</b>	<b>56.7</b>	<b>16.4</b>	<b>79</b>	<b>95</b>	<b>110</b>	<b>129</b>	<b>32</b>	<b>14</b>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	101.3	29.2	4,422	6,250	8,078					
WHEMLOCK	208.9	60.3	1,398	3,521	5,644					
S SPRUCE	203.9	58.9	189	458	728					
R ALDER	168.1	48.5	504	979	1,454					
<b>TOTAL</b>	<b>78.6</b>	<b>22.7</b>	<b>8,666</b>	<b>11,208</b>	<b>13,751</b>	<b>247</b>	<b>62</b>	<b>27</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT BROWNSHL				DATE 9/17/2003		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
08N	07W	15	AREA 3	LEAV	16.00	13	51	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		13	51	3.9						
CRUISE		13	51	3.9	1,569		3.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
HEMLEAV	21	40.4	17.9	73	13	70.3	12,096	12,096	2,981	2,981
DOUGLEAV	27	51.9	14.3	74	15	57.8	9,077	8,808	2,358	2,290
ALDRLEAV	3	5.8	13.0	61	2	5.3	731	731	206	206
<b>TOTAL</b>	<b>51</b>	<b>98.1</b>	<b>15.8</b>	<b>73</b>	<b>30</b>	<b>133.4</b>	<b>21,904</b>	<b>21,635</b>	<b>5,544</b>	<b>5,477</b>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
HEMLEAV	73.8	20.5	32	40	49					
DOUGLEAV	72.1	20.0	42	52	62					
ALDRLEAV	259.6	72.0	2	6	10					
<b>TOTAL</b>	<b>16.3</b>	<b>4.5</b>	<b>94</b>	<b>98</b>	<b>103</b>		<b>11</b>	<b>3</b>	<b>1</b>	
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
HEMLEAV	89.2	24.7	53	70	88					
DOUGLEAV	78.3	21.7	45	58	70					
ALDRLEAV	255.3	70.8	2	5	9					
<b>TOTAL</b>	<b>18.5</b>	<b>5.1</b>	<b>127</b>	<b>133</b>	<b>140</b>		<b>14</b>	<b>3</b>	<b>2</b>	
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
HEMLEAV	93.7	26.0	8,951	12,096	15,241					
DOUGLEAV	78.0	21.6	6,902	8,808	10,714					
ALDRLEAV	250.4	69.5	223	731	1,238					
<b>TOTAL</b>	<b>28.5</b>	<b>7.9</b>	<b>19,926</b>	<b>21,635</b>	<b>23,343</b>		<b>32</b>	<b>8</b>	<b>4</b>	

TC TSTNDSUM

**Stand Table Summary**

Project **BROWNSHL**

**T08N R07W S15 TLEAV**

**T08N R07W S15 TLEAV**

**Twp Rge Sec Tract**  
**08N 07W 15 AREA 3**

**Type Acres Plots Sample Trees**  
**LEAV 16.00 13 51**

**Page: 1**  
**Date: 8/18/200:**  
**Time: 1:34:07PM**

S Spc	T	Av			Trees/ BA/ Logs			Average Log		Net		Totals		
		DBH	Sample Trees	FF 16'	Ht Tot	Acres	BA/ Acres	Acres	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acres	Net Cu.Ft. Acres	Net Bd.Ft. Acres	Tons
HL	11	1	86	81	1.923	1.16	1.92	17.0	60.0	33	115		5	2
HL	12	1	90	97	1.923	1.39	3.85	14.5	55.0	56	212		9	3
HL	13	1	86	99	1.923	1.77	3.85	18.5	70.0	71	269		11	4
HL	14	3	90	101	5.769	6.17	11.54	23.8	96.7	275	1,115		44	18
HL	15	4	88	92	7.692	9.13	15.38	24.1	93.7	371	1,442		59	23
HL	17	3	89	88	5.769	8.92	11.54	29.3	108.3	338	1,250		54	20
HL	18	1	86	91	1.923	3.40	3.85	35.0	125.0	135	481		22	8
HL	19	2	91	115	3.846	7.57	9.62	40.2	174.0	387	1,673		62	27
HL	22	1	90	94	1.923	5.08	3.85	54.0	210.0	208	808		33	13
HL	24	2	89	98	3.846	12.08	9.62	53.0	230.0	510	2,212		82	35
HL	25	1	91	91	1.923	6.56	3.85	72.5	315.0	279	1,212		45	19
HL	26	1	86	107	1.923	7.09	3.85	83.0	340.0	319	1,308		51	21
HL	Totals	21	89	96	40.385	70.31	82.69	36.0	146.3	2,981	12,096		477	194
DL	10	1	89	124	1.923	1.05	3.85	11.5	45.0	44	173		7	3
DL	11	1	86	124	1.923	1.27	3.85	12.5	50.0	48	192		8	3
DL	12	2	87	113	3.846	3.02	7.69	15.2	60.0	117	462		19	7
DL	13	5	86	113	9.615	8.46	19.23	18.1	71.0	348	1,365		56	22
DL	14	6	86	112	11.538	11.90	21.15	21.0	78.2	444	1,654		71	26
DL	15	2	87	122	3.846	4.57	7.69	26.5	105.0	204	808		33	13
DL	16	6	86	108	11.538	15.95	26.92	23.7	91.4	638	2,462		102	39
DL	17	4	87	108	7.692	11.60	19.23	23.2	88.0	446	1,692		71	27
DL	Totals	27	86	112	51.923	57.81	109.62	20.9	80.4	2,290	8,808		366	141
AL	13	2	86	84	3.846	3.41	7.69	16.5	57.5	127	442		20	7
AL	14	1	86	100	1.923	1.91	3.85	20.5	75.0	79	288		13	5
AL	Totals	3	86	89	5.769	5.32	11.54	17.8	63.3	206	731		33	12
Totals		51	87	104	98.077	133.44	203.85	26.9	106.1	5477	21,635		876	346

**CRUISE DESIGN  
ASTORIA DISTRICT**

Sale Name: Brownsmead Hill Area(s) 1 & 2 (cc)

Harvest Type: CC PC CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 48 Estimated CV% 50 <sup>Net BF or</sup> BA/Acre SE% Objective 11% <sup>Net BF or</sup> BA/Acre

Planned Sale Volume: 1.8 MMBF Estimated Sale Area Value/Acre: \$5,750

- A. **Cruise Goals:** (a) Grade minimum 80 conifer and 40 hardwood trees:  
 (b) Sample 40 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;

**B. Cruise Design:**

1. Plot Cruises: BAF: 27.78 (Full point; Half point) (circle one) (10 bars)

Fixed Plot Size \_\_\_ Plot Radius \_\_\_ feet

Cruise Line Direction(s) N-S

Cruise Line Spacing 5 (chains) (feet)

Cruise Plot Spacing 2.5 (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 8" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.

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

3. Top Cruise Diameter (TCD): Minimum top outside bark is 7" 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: Tom Scoggins  
 Approved by: \_\_\_\_\_  
 Date: \_\_\_\_\_

CRUISE DESIGN  
ASTORIA DISTRICT

Sale Name: Brownsmead Hill Area(s) 3 (CT)

Harvest Type: CC PC CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 14 Estimated CV% 36 <sup>Net BF or</sup> BA/Acre SE% Objective 11 <sup>Net BF or</sup> BA/Acre

Planned Sale Volume: 1.8 MMBF Estimated Sale Area Value/Acre: \$5,750

- A. **Cruise Goals:** (a) Grade minimum 70 conifer and 5 hardwood trees:  
 (b) Sample 10 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;  
1. "Leave Trees" should average RD 30 (see attached)  
2. Avoid SNC plots. totum aid).

B. **Cruise Design:**

1. **Plot Cruises:** BAF  (Full point; Half point) (circle one)  
 Fixed Plot Size 1/25 Plot Radius 23.6 feet  
 Cruise Line Direction(s) 168°/348°  
 Cruise Line Spacing 5 (chains) (feet)  
 Cruise Plot Spacing 2.5 (chains) (feet)  
 Grade/Count Ratio 100%
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 8" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7" 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.

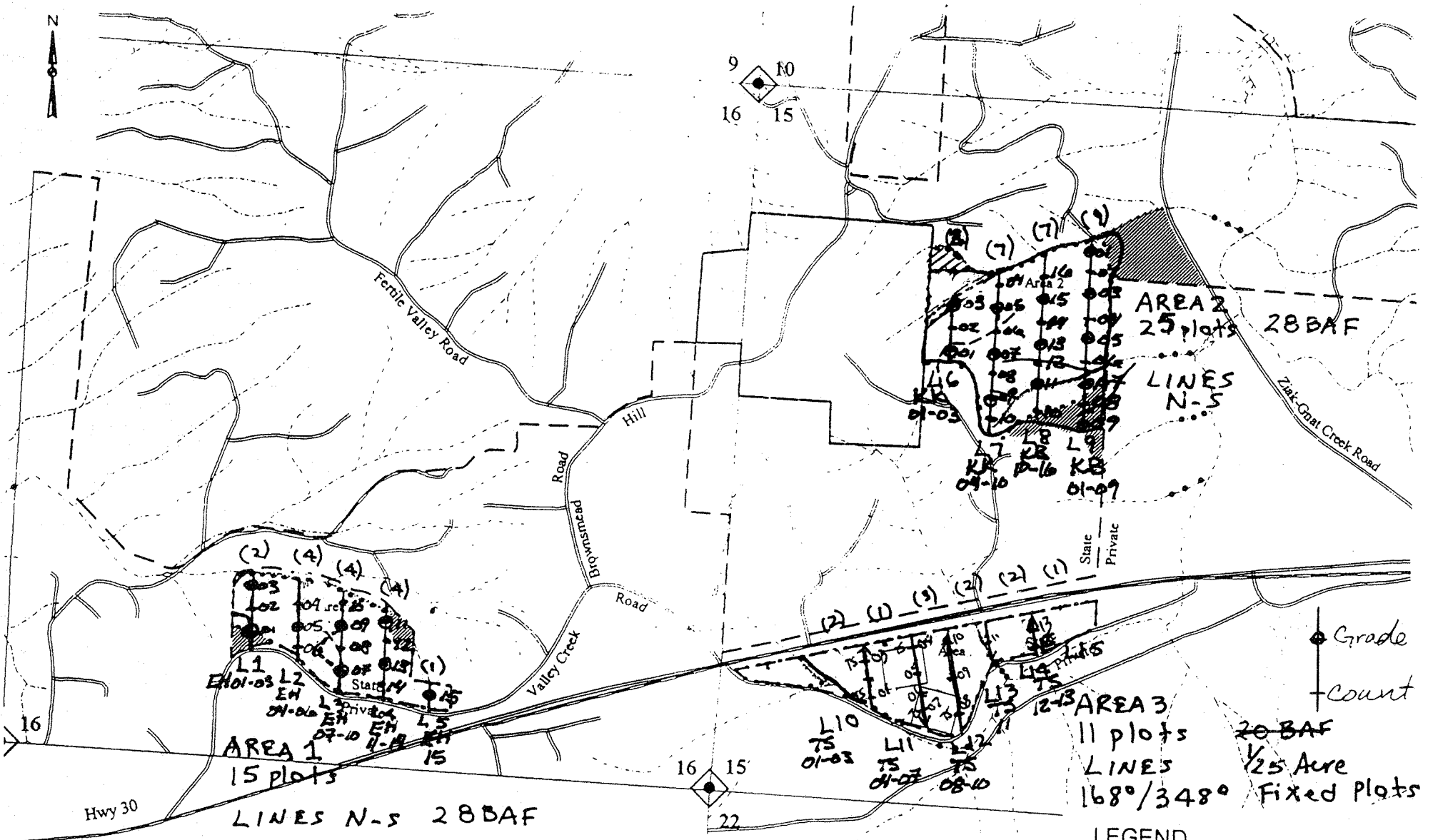
B. Data Recorder Instructions

C. Other *Relative Density Tatum Aid*

Cruise Design by: Tom Scoggins

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

Date: \_\_\_\_\_



(2) (4) (4) (4)  
 L1 L2  
 E101-03 EH  
 01-06 L2  
 07-10 EH  
 11-14 Private  
 15  
 (1)  
 15  
 AREA 1  
 15 plots

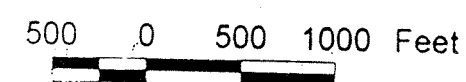
(7) (7) (2)  
 L16  
 01-03  
 04-06  
 07-09  
 10-12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 AREA 2  
 25 plots  
 28BAF  
 LINES N-S  
 K1 K2 K3  
 01-09  
 04-10  
 07-16  
 08-09

(2) (1) (9) (2) (2) (1)  
 L10  
 01-03  
 L11  
 04-07  
 L12  
 08-10  
 L13  
 11-13  
 L14  
 14-15  
 AREA 3  
 11 plots  
 20BAF  
 LINES  
 168°/348°  
 1/25 Acre  
 Fixed Plots

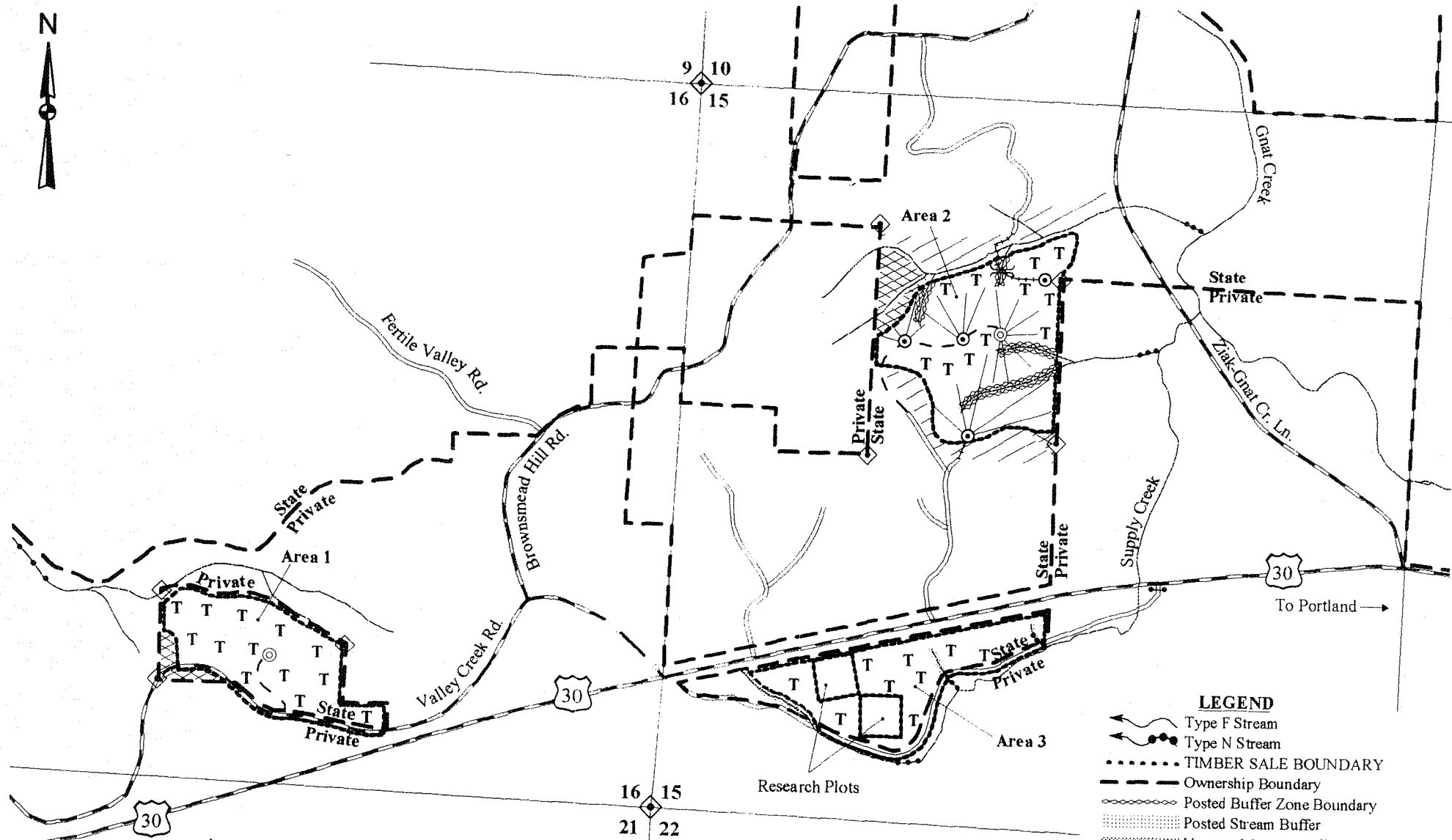
- LEGEND**
- Ownership Boundary
  - ..... Timber Sale Boundary
  - ..... Unsurfaced Road
  - ==== Surfaced Road
  - ==== New Construction
  - ==== State Highway
  - ~ Type F Stream
  - ~ Type N Stream
  - Stream Buffer
  - Research Plots
  - /// Green Tree Retention Area

**CRUISE PLAN - 2003**  
 Lines 5 ch. apart  
 Plots 2.5 ch. apart  
 Grade 1/2 plots

Approximate Net Acreages:  
 Area 1 - 20 Acres (CC)  
 Area 2 - 30 Acres (CC)  
 Area 3 - 18 Acres (CT)  
 Approximate Total Acres = 68



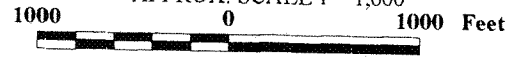
FY2004  
 Map C (Key Resources)  
 Brownsmead Hill  
 Portions of Sections 15 & 16,  
 T8N, R7W, W.M.  
 Clatsop County, Oregon



**LEGEND**

- Type F Stream
- Type N Stream
- TIMBER SALE BOUNDARY
- Ownership Boundary
- Posted Buffer Zone Boundary
- Posted Stream Buffer
- Unposted Stream Buffer
- Green Tree Retention Area
- Reforestation Area
- Surfaced Road
- Paved Road
- New Road Construction
- Landing to Construct
- Logger Choice Landing
- Tractor Logging
- Cable Logging
- Known Land Survey Corner
- Temporary Stream Crossing
- Loggers Choice Road
- Gate (Locked)

**EXHIBIT "A"**  
**LOGGING PLAN**  
 OF TIMBER SALE CONTRACT NO. 341-04-62  
 Brownsmead Hill  
 PORTIONS OF SECTIONS 15 & 16, T8N, R7W, W.M.  
 CLATSOP COUNTY, OREGON.  
 APPROX. SCALE 1"=1,000'



Approximate Net Acreages:  
 Area 1 19 Acres (CC)  
 Area 2 29 Acres (CC)  
 Area 3 16 Acres (CT)  
 Approximate Total Acres = 64

**FPA "Written Plan" for Harvest of State Timber Sale**  
**Brownsmead Hill**  
**Portions of Section 15, T8N, R7W, W.M., Clatsop County, Oregon.**

**Protected Resources:**

Supply Creek: Small Type F Stream

**Specific Site Characteristics:**

Sale area 3 is a partial cut units.

Supply Creek (small Type F) flows in an easterly direction along the southern boundary and access road for Area 3, and is posted out of the sale.

**Tree and Vegetation Retention:**

The RMA outside the sale area consists of open wetlands and ponds, as well as 50 to 60 year-old mixed conifers and hardwoods, with various brush species intermixed.

**Resource Protection Measures:**

Felling: Trees are to be felled away from or parallel to the RMA to prevent them from entering the RMA. Any felled trees that may accidentally enter the RMA will be removed only with the STATE contract administrator's approval. Any felled trees that may accidentally enter the RMA will be yarded out of the RMA before limbing and bucking.

Yarding: There will be no machine activity permitted within the RMA and no temporary stream crossings will be permitted across Type F streams. These precaution measures include but are not limited to:

- A. Operator will not place any debris resulting from harvesting operations into the RMA.
- B. Erosion control measures will be applied during harvesting activities to minimize sediment from entering the waters of the STATE.
- C. All skid trails on slopes exceeding 10%, or within 100 feet of a stream, will be waterbarred prior to the rainy season.

Aquatic Protection: Debris entering the RMA or aquatic area will be removed by the end of operations each day or as soon as possible and placed in a stable location, unless an alternate practice is approved by STATE.

I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practices Act regarding the operations conducted within 100 feet of streams with the Riparian Management Areas (buffer strips) as shown on the attached map, Exhibit "A".

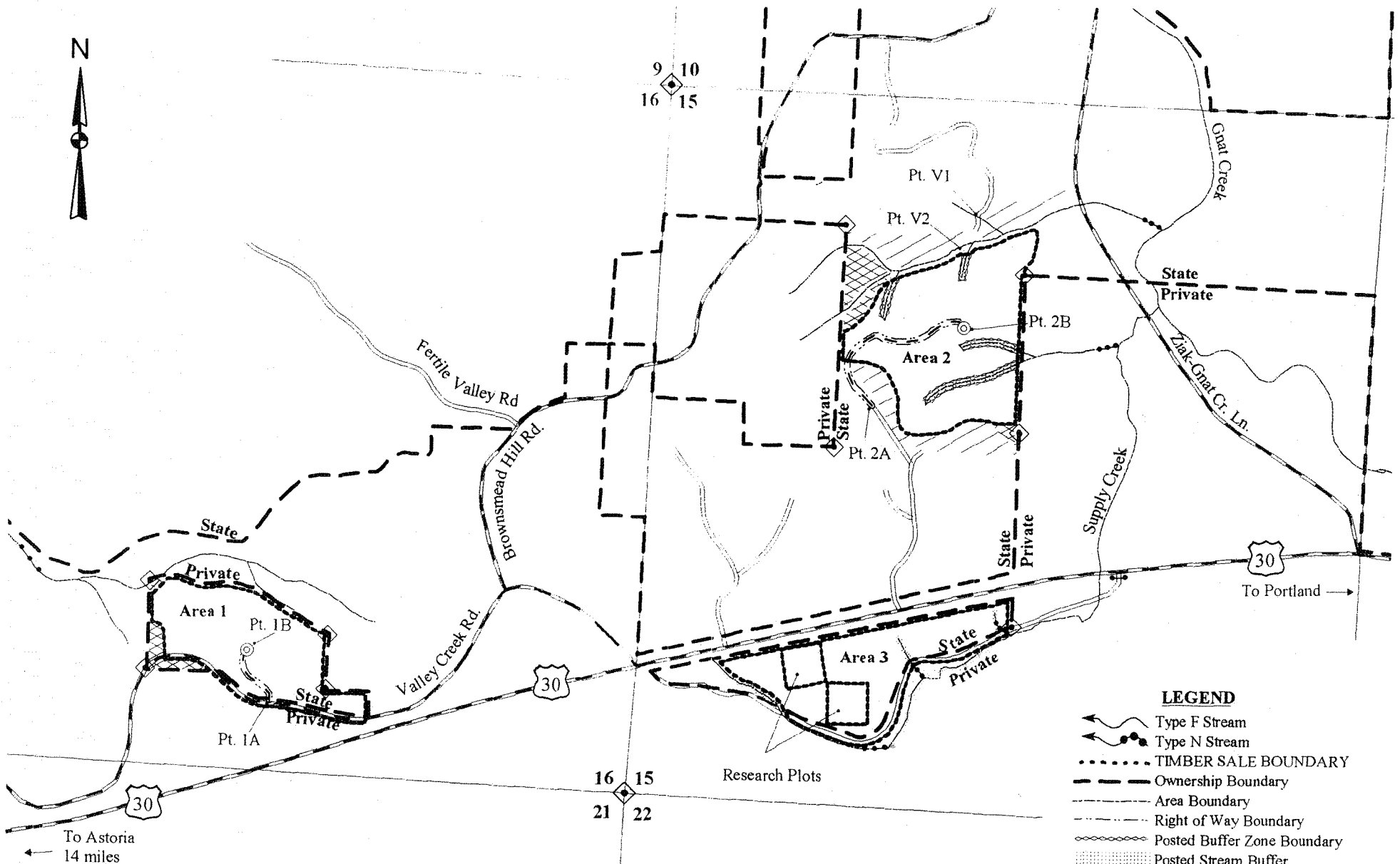
Submitted by: \_\_\_\_\_  
Operator

Date: \_\_\_\_\_

Reviewed by: Tom Scoggins  
State Lands Forester

Date: 9/26/03

**Attachments:** Timber Sale Exhibit "A" map

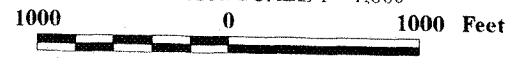


**LEGEND**

- Type F Stream
- Type N Stream
- TIMBER SALE BOUNDARY
- Ownership Boundary
- Area Boundary
- Right of Way Boundary
- Posted Buffer Zone Boundary
- Posted Stream Buffer
- Unposted Stream Buffer
- Green Tree Retention Area
- Reforestation Area
- Pt. 1A Point For Project Work
- Surfaced Road
- New Road Construction
- Landing to Construct
- Paved Roads
- Known Land Survey Corner
- Gate (Locked)

**EXHIBIT "A"**

OF TIMBER SALE CONTRACT NO. 341-04-62  
 Brownsmead Hill  
 PORTIONS OF SECTIONS 15 & 16, T8N, R7W, W.M.  
 CLATSOP COUNTY, OREGON.  
 APPROX. SCALE 1"=1,000'



Approximate Net Acreages:  
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