



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Wookee Thinning Sale 341-06-85

District: Astoria

Date: 4/5/06

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,497,442.89	\$105,713.10	\$1,603,155.99
		Project Work	(\$99,744.00)
		Advertised Value	\$1,503,411.99



Timber Sale Appraisal Timber Description Wookee Thinning Sale 341-06-85

"STEWARDSHIP IN FORESTRY"

District: Astoria

Location: Portions of Sections 24 & 25, T7N, R6W, W.M., Clatsop County, Oregon.

Date: 4/5/06

Stand Stocking: 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	16	0	97
Western Hemlock / Fir	16	0	95
Red Cedar	24	0	90
Alder (Red)	16	0	96

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)	Total
SM	29	1	0	0	30
2S	1,320	667	1	0	1,988
3S	1,216	736	0	0	1,952
4S	173	78	0	0	251
Camprun	0	0	0	270	270
Total	2,738	1,482	1	270	4,491

Comments: Pond Values Used: 1st Quarter Calendar Year 2006.

Log Markets: Mist, Tillamook, Clatskanie, Garibaldi, St. Helens.

Hauling Cost Used: System currently uses hauling costs of \$460 daily truck costs. Additional hauling costs added in "Other Costs" (No P & R) to make equivalent to \$700 daily truck costs.

Other Cost (+ P & R):

Additional Logging Costs:

100% branding and painting = \$1.00/MBF X 4,491 = \$ 4,491

Ling Pulling in Area 1: 2 1/2 acres - 20 hours @ \$25/hr. = \$ 500

"Loggers Choice" dirt spurs. Approximately 10 stations @ \$89/sta. = \$ 890

"Loggers Choice" landings. A total of 4 Landings @ \$285/landing = \$ 1,140

Rigging Intermediate Supports: est. 10 locations x 2 hrs each x \$25/hr = \$ 500

TOTAL Other Costs (+ P & R) = \$7,521

Other Costs (No P & R):

Close "Loggers Choice" dirt spurs 10 hours with C330 excavator

10 hours X \$138/hr = \$ 1,380

Additional hauling cost for increased fuel cost

\$19.41/MBF x 4,491 MBF = \$ 87,151

TOTAL Other Costs (No P&R) = \$88,531



Timber Sale Appraisal Logging Conditions Wookee Thinning Sale 341-06-85

"STEWARDSHIP IN FORESTRY"

Combination#: 1	Douglas - Fir	75.00%	
	Western Hemlock / Fir	75.00%	
	Red Cedar	75.00%	
	Alder (Red)	75.00%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: No
Logging System:	Cable: Medium Tower >40 - <70		Process: Stroke Delimber
Tree Size:	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
Loads/Day:	6		Bd. Ft./Load: 4,000
Cost/MBF:	\$136.78		
Machines:			
	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Medium)		
Combination#: 2	Douglas - Fir	19.00%	
	Western Hemlock / Fir	19.00%	
	Red Cedar	19.00%	
	Alder (Red)	19.00%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: No
Logging System:	Shovel		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:	\$98.11		
Machines:			
	Shovel Logger		
Combination#: 3	Douglas - Fir	6.00%	
	Western Hemlock / Fir	6.00%	
	Red Cedar	6.00%	
	Alder (Red)	6.00%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: Yes
Logging System:	Shovel		Process: Manual Delimiting
Tree Size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
Loads/Day:	10		Bd. Ft./Load: 4,000
Cost/MBF:	\$58.87		
Machines:			
	Shovel Logger		



Timber Sale Appraisal Logging Costs Wookee Thinning Sale 341-06-85

"STEWARDSHIP IN FORESTRY"

Date: 4/5/06

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$99,744

Other Costs (P/R): \$7,521

Slash Disposal: \$0

Other Costs: \$88,531

Road Maintenance: \$9.41

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	\$0.00	4.0	4.0
Western Hemlock / Fir	\$0.00	2.0	4.0
Red Cedar	\$0.00	2.0	3.5
Alder (Red)	\$0.00	2.0	3.5



Timber Sale Appraisal Logging Costs Breakdown Wookee Thinning Sale 341-06-85

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)
Logging	124.76	124.76	124.76	124.76
Road Maintenance	9.70	9.91	10.46	9.80
Fire Protection	1.21	1.21	1.21	1.21
Hauling	29.64	60.53	73.00	68.44
Other (P/R appl.)	1.67	1.67	1.67	1.67
Profit & Risk	25.05	29.71	31.66	30.88
Slash Disposal	0.00	0.00	0.00	0.00
Scaling	2.00	2.00	2.00	2.00
Other	19.71	19.71	19.71	19.71
Total	213.74	249.50	264.47	258.47

Amortization	0.00	0.00	0.00	0.00
Pond Value	663.10	429.24	985.00	650.00
Stumpage	449.36	179.74	720.53	391.53
Amortized	0.00	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Wookee Thinning Sale 341-06-85

Amortized

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

Unamortized

	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)
MBF	2,738.00	1,482.00	1.00	270.00
Value	449.36	179.74	720.53	391.53
Total	1,230,347.68	266,374.68	720.53	105,713.10

Gross Timber Sale Value

Recovery \$1,603,155.99

Prepared by: Ed Holloran

Date: 4/5/06

District: Astoria

Phone: (541) 325-5451

Additional Hauling Rate

Amount to add to appraisal to equal \$700/day hauling cost.

Species	Trips/Day	MBF/Load	MBF/day	\$700/mbf	existing hauling price	F minus G	Percent	weighted haul
Douglas fir	4	4	16	\$43.75	\$29.64	14.11	0.609664	8.602355823
Western Hemlock	2	4	8	\$87.50	\$60.53	26.97	0.329993	8.89991984
Red cedar	2	3.5	7	\$100.00	\$73.00	27	0.000223	0.006012024
Alder	2	3.5	7	\$100.00	\$68.44	31.56	0.06012	1.89739479
Spruce						0	0	0
								\$19.41

Douglas fir	2,738	60.97%
Western Hemlock	1,482	33.00%
Red cedar	1	0.02%
Alder	270	6.01%
Spruce	0	0.00%
4,491 MBF		100.00%

X =

\$19.41

\$87,151

Road Maintenance Cost Summary
Harvesting

Sale: Wookee Thinning
Date: January 20, 2006
By: Ed Holloran

MBF: 4,491
\$/MBF: \$9.14

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Progressive Operations Entries (1)	Grader 14G	\$570	1	32	\$84	\$3,258
	Dump Truck 12CY	\$119	1	16	\$59	\$1,063
	FE Loader C966	\$570	1	16	\$79	\$1,834
Final Haul Road Maintenance Haul Route	Grader 14G	\$570	1	107	\$84	\$9,558
	Dump Truck 12CY	\$119	2	80	\$59	\$4,958
	FE Loader C966	\$570	1	40	\$79	\$3,730
	Vibratory Roller	\$570	1	107	\$79	\$9,023
	Water Truck 2,500 gallon	\$139	1	100	\$70	\$7,139
	Labor				20	\$25
Total						\$41,063

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	4.0	16.1	4.0	32

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	16.1	10.7	107
Vibratory Roller	1.5	16.1	10.7	107

West Creek Ridge to East Kerry road (4.5 mi.) + East Kerry road to Wookee Road (.7 mi.) + Wookee Road to working spurs (1.0 mi.) + Porter Ridge road (3.5 mi.) + Nicolai down Greasy Spoon (5.75 mi.) + in sale spurs (0.74 mi.) = TOTAL of 16.1 miles

SUMMARY OF NEW CONSTRUCTION COSTS

SALE NAME: Wookee Thinning
 ROAD: 1A-1B(2+50), 1C-1D(16+70), 1E-1F(2+40), 1G-1H(35+00), 1I-1J(9+60), 1K-1L(2+75), 1M-1N(5+45)
 = 74+40

NEW CONSTRUCTION: 74.40 STATIONS 1.41 MILES
 IMPROVEMENT: _____ STATIONS _____ MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate/Acre	=	Cost
Scatter Outside of RW	5.20	x	\$980.00	=	\$5,096.00
Removal and end haul stumps from full contain. area (6.5 hrs dump truck + 3 hrs. excavator)	0.45	x		=	\$797.50

SUB TOTAL FOR CLEARING & GRUBBING

\$5,894

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
1A-1B, 1C-1D, 1E-1F Field Design (≤30%) with earth drift 200 ft.	21.6	x	\$139.00	=	\$3,002.40
1G-1H (except 21+50-28+50) Field Design (≤30%) with earth drift 200 ft.	28.0	x	\$139.00	=	\$3,892.00
1I-1J, 1K-1L, 1M-1N Field Design (≤30%) with earth drift 200 ft.	17.8	x	\$139.00	=	\$2,474.20
	67.4				
1G-1H (25+00 to 28+50) Embankment Compaction \$\$/bcy	1,652	x	\$0.45	=	\$743.40
1M-1N (1+50 to 2+50) Embankment Compaction \$\$/bcy	571	x	\$0.45	=	\$256.95
		x			
1G-1H (21+50 to 25+00) End Haul (loading and Hauling \$\$/cy)	2,223	x	\$2.90	=	\$6,446.70
		x			
1G-1H (21+50 to 25+00) Cut Slope Rounding -\$/sta.	3.50	x	\$31.00	=	\$108.50
		x			
1B, 1D, 1F, 1H, 1J, 1L, 1N Undesigned Landing Construction \$\$/landing	8	x	\$285.00	=	\$2,280.00

SUB TOTAL FOR EXCAVATION

\$19,204

CULVERT MATERIALS AND INSTALLATION

	Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
1C-1D	3+20	18"/CPP	30	\$13.60	\$408.00					
1C-1D	10+90	18"/CPP	30	\$13.60	\$408.00					
1C-1D	15+10	18"/CPP	30	\$13.60	\$408.00					
1E-1F	0+65	18"/CPP	40	\$13.60	\$544.00					
1G-1H	1+25	18"/CPP	30	\$13.60	\$408.00					
1G-1H	4+40	18"/CPP	30	\$13.60	\$408.00					
1G-1H	19+20	18"/CPP	30	\$13.60	\$408.00					
1G-1H	21+85	18"/CPP	40	\$13.60	\$544.00					
1G-1H	31+40	18"/CPP	35	\$13.60	\$476.00					
1I-1J	4+35	18"/CPP	30	\$13.60	\$408.00					
1K-1L	0+40	18"/CPP	30	\$13.60	\$408.00					
1M-1N	1+90	18"/CPP	40	\$13.60	\$544.00					
1M-1N	4+00	18"/CPP	30	\$13.60	\$408.00					

Other/miscellaneous:

Description	Quantity/Hrs.	Rate	Cost
Mulch & Seed			
1G to 1H Stations 21+50 to 28+50 (0.4 acres) Straw	50	\$4.50	\$225.00
Grass seed	40	\$1.65	\$66.00
Labor	4	\$25.00	\$100.00
Culvert stakes & markers:			
6' x 2 1/2" White Fiberglass (Carsonite) "I"-Beam post	13	\$14.10	\$183.30

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$6,354

Subtotal

\$31,452

Compiled by: Ed Holloran

Date: 1/20/2006

SUMMARY OF NEW CONSTRUCTION COSTS

SALE NAME: Wookee Thinning

SURFACING:		Description	Stations/amount	x	Rate/sta/amt	Cost
Subgrade prep:		Dirt spurs: None - all logger choice		x		
		Grade, Shape and Ditch 16' (1A-1B, 1C-1D, 1E-1F, 1G-1H, 1I-1J, 1K-1L, 1M-1N)	74.40	x	\$18.20	\$1,354.08
		Subgrade Compaction	74.40	x	\$14.80	\$1,101.12
						\$2,455.20

ROAD SEGMENT	1A to 1B	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 2+50	8	Station 50	Stations 2.50	125 \$6.75 \$844
Junction	4"-0" Crushed	0+00 (1A)	8	Junction 25	Junctions 1	25 \$6.75 \$169
Landings	6"-0"	2+50		Landing 50	Landings 1	50 \$6.92 \$346
Total Rock for Road Segment:				1A to 1B		200
						\$1,359

ROAD SEGMENT	1C to 1D	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 16+70	8	Station 50	Stations 16.70	835 \$6.75 \$5,636
Turnouts	4"-0" Crushed	6+00, 9+50	8	Turnout 25	Turnouts 2	50 \$6.75 \$338
Junctions	4"-0" Crushed	0+00, 11+60	8	Junction 25	Junctions 2	50 \$6.75 \$338
Turnaround	4"-0" Crushed	15+00	8	Turnaround 20	Turnarounds 1	20 \$6.75 \$135
Landings	6"-0"	16+70		Landing 50	Landings 1	50 \$6.92 \$346
Total Rock for Road Segment:				1C to 1D		1005
						\$6,792

ROAD SEGMENT	1E to 1F	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 2+40	8	Station 50	Stations 2.40	120 \$6.75 \$810
Landings	6"-0"	2+40		Landing 50	Landings 1	50 \$6.92 \$346
Total Rock for Road Segment:				1E to 1D		170
						\$1,156

ROAD SEGMENT	1G to 1H	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 35+00	8	Station 50	Stations 35.00	1750 \$6.75 \$11,813
Turnouts	4"-0" Crushed	5+00, 8+50, 13+35, 21+20, 30+00	8	Turnout 25	Turnouts 5	125 \$6.75 \$844
Junctions	4"-0" Crushed	9+00, 15+80, 19+40	8	Junction 25	Junctions 3	75 \$6.75 \$506
Turnaround	4"-0" Crushed	33+00	8	Turnaround 20	Turnarounds 1	20 \$6.75 \$135
Landings	6"-0"	35+00		Landing 50	Landings 1	50 \$6.92 \$346
Total Rock for Road Segment:				1G to 1H		2020
						\$13,644

ROAD SEGMENT	1I to 1J	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 9+60	8	Station 50	Stations 9.60	480 \$6.75 \$3,240
Turnouts	4"-0" Crushed	7+25	8	Turnout 25	Turnouts 1	25 \$6.75 \$169
Turnaround	4"-0" Crushed	8+50	8	Turnaround 20	Turnarounds 1	20 \$6.75 \$135
Landings	6"-0"	9+60		Landing 50	Landings 1	50 \$6.92 \$346
Total Rock for Road Segment:				1I to 1J		575
						\$3,890

ROAD SEGMENT	1K to 1L	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 2+75	8	Station 50	Stations 2.75	137 \$6.75 \$925
Landings	6"-0"	9+60		Landing 50	Landings 1	50 \$6.92 \$346
Total Rock for Road Segment:				1K to 1L		187
						\$1,271

ROAD SEGMENT	1M to 1N	POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	
Base Rock	4"-0" Crushed	0+00 to 5+45	8	Station 50	Stations 5.45	273 \$6.75 \$1,843
Landings	6"-0"	2+80, 5+45		Landing 50	Landings 2	100 \$6.92 \$692
Total Rock for Road Segment:				3C to 3D		373
						\$2,535

4530						
SUB TOTAL FOR SURFACING						
	24"-6"r	6"-0"pr	4"-0"	1 1/2"-0"	3/4"-0"	Total
		400	4,130		0	4,530

PROCESSING:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact Crushed Rock (1 lift < 8"):	74.4	\$41.40	\$3,080
				\$3,080

				\$36,181
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SPECIAL PROJECTS:			
	No. sta.ft./cy.	Rate per sta.ft./cy.	Cost
Develop Pit-Run (pr) rock 6'-0" (400 cy)	400	\$1.90	\$760
Install 6 1/2 oz. woven x 12.5 ft wide X Fabric:			
1A-1B (2+50), 1C-1D (16+70), 1E-1F (2+40), 1G-1H (35+00), 1I-1J (9+60), 1K-1L (2+75) & 1M-1N (5+4			
=7,440 X 1.10% = 8,184	8,200	\$0.95	\$7,790
SUB TOTAL FOR SPECIAL PROJECTS			\$8,550
			\$8,550

Surfacing Total Cost \$44,731

GRAND TOTAL Cost per Mile **\$54,065** **\$76,183**

Compiled By: Ed Holloran Date: 1/20/2006

Wookee Thinning
 Project No. 2 - I1 to I2 - Kerry Road Bridge Improvement

Cullen Bangs
 12/22/2005

Ed Holloran
 1/5/2006
 Rev.

Location: Kerry Road Bridge

Materials	Quantity		\$	Total	
3/8" thick x 5" height x 60' long weathering steel sidedam (120 lineal feet total)	2		\$229.50	\$459.00	
Galvanized Standard Terminal End for W-Beam Guardrail	1		\$ 65.00	\$ 65.00	
3/4"-0" crushed rock for bridge deck and road	50	cy	\$ 4.71	\$235.50	
					Total Materials \$ 759.50

Equipment/Labor Costs	Quantity		\$	Hours	Total	
Laborers - deck removal/disposal, deck cleaning and prep, sidedam delivery/installation, guardrail delivery/repair/disposal.	2		\$ 25.00	16	\$800.00	
Road Grader - approach preparation, rock processing	1		\$ 84.00	4	\$336.00	
Vibratory Roller - Operating Time	1		\$ 79.00	4	\$316.00	
					Total Equipment/Labor	\$1,452.00

Project Total	\$2,211.50
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Project Work Road Maintenance Cost Summary

Sale: Wookee Thinning
Date: January 5, 2006
By: Ed Holloran

Type	Equipment/Rationale	Hours	Rate	Cost
Post-Projects Road	Grader 14G	67	\$84	\$5,628
	Dump Truck 12CY (2 trucks)	20	\$59	\$1,180
	FE Loader C966	10	\$79	\$790
	Vibratory Roller	59	\$79	\$4,661
	Water Truck 2500 gallon	50	\$70	\$3,500
Total				\$15,759

Production Rates
 Prep. roads by Grader
 Grader - Processing
 Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
8.8	8.8	1.0	8.0
1.50	8.8	5.9	58.7
1.50	8.8	5.9	58.7

Viewpoint Quarry/Stockpile to Porter Ridge to East Kerry to Wookee road.

TOTAL MILES for MAINTENANCE = 8.8 miles

TIMBER CRUISE REPORT

WOOKEE THINNING FY 2006

1. **Sale Area Location:**

Area 1 is located in portions of Sections 24 and 25 located in T7N, R6W, Willamette Meridian, Clatsop County, Oregon.

2. **Fund Distribution:**

BOF = 100%

Tax Code =

30-05 = Section 24 13.5 %

8-01 = Section 25 86.5 %

3. **Sale Acreage and Treatments by Area:**

Area	Harvest Type	Gross Acres	New R/W	Existing R/W	Stream Buffers	Net Acres	Survey Method
1	PC	199.7	5.2	0	16.3	178.2	GIS
2 R/W	R/W		5.2			5.2	Length & design
TOTAL		199.7	5.2	0	16.3	183.4	

4. **Cruisers and Cruise Dates:**

Area 1 was cruised by Bryce Rodgers, Kevin Berry, Eric Perkins and Ed Holloran on December 8 and finished by Eric Perkins and Ed Holloran on December 9, 2005.

5. **Cruise Method and Computations:**

Area 1 (first entry partial cut) was designed for a variable plot cruise using a 40 Basal Area Factor (BAF). 55 plots were sampled with 20 cruise plots (3:1 ratio) on an 8 x 4 chain grid. All "take" and "leave" trees were measured and graded on the cruise plots.

Ed Holloran used Corvallis Micro Technology (CMT # 31) data collector, Eric Perkins (#4), Bryce Rodgers (#A) and Kevin Berry (#B) used the Allegro data collectors and were downloaded to the Atterbury SUPER A.C.E. program in the Astoria 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.

6. **Timber Description:**

Area 1 (PC)– This stand is an "auto-mark" partial cut, about 55 to 65 years old, consisting of a moderate sized, Douglas-fir dominated, mixed conifer. Hardwoods are present along old skid trails and draws. The stand will be harvested to a Stand Density Index (SDI) around 29 with a target basal area of 130 square feet. The "biggest and best" trees will be retained regardless of species. Cedar over 18 inches will count toward the basal area requirements. The harvest will remove approximately 109 trees per acre and 24 MBF per acre. The average "take" tree size is about 16 inches DBH and 66 feet to a merchantable top.

7. **Statistical Analysis and Stand Summary:** (See also "Statistical Summary-Type Reports", attached.) Evaluated on Net BF/Acre.

Area	Target CV %	Target SE %	Actual CV %	Actual SE %
1	55	7	36.4	4.9

The statistics for Area 1 are "Take" and "Leave" stands combined based on Net BF/ACRE.

8. **Volumes by Species and Sale Areas:** (See the Species, Sort, Grade, and the Log Stock Table attached.) Volumes do not include "in-growth". The majority of defect and breakage was culled during the cruise. The total net MBF volumes by species and grade are as follows:

Species	DBH	Net. Vol.	Spec. Mill	2 Saw	3 Saw	4 Saw	Camp Run	% D & B	Sale%
Douglas-fir	16.2	2,738	29	1,320	1,216	173		6.6	62.6
W. Hemlock/fir	16.0	1,482	1	667	736	78		7.0	31.7
Cedar	24.2	1		1				23.5	<0.01
Red Alder	16.0	270					270	--	5.7
Totals	16.1	4,491	30	1,987	1,952	252	270	6.4	100

9. **Approvals:**

Prepared by: Ed Holloran Date: January 11, 2006

Approved by: *Dan Goady* Date: 1/19/06

10. **Attachments:**

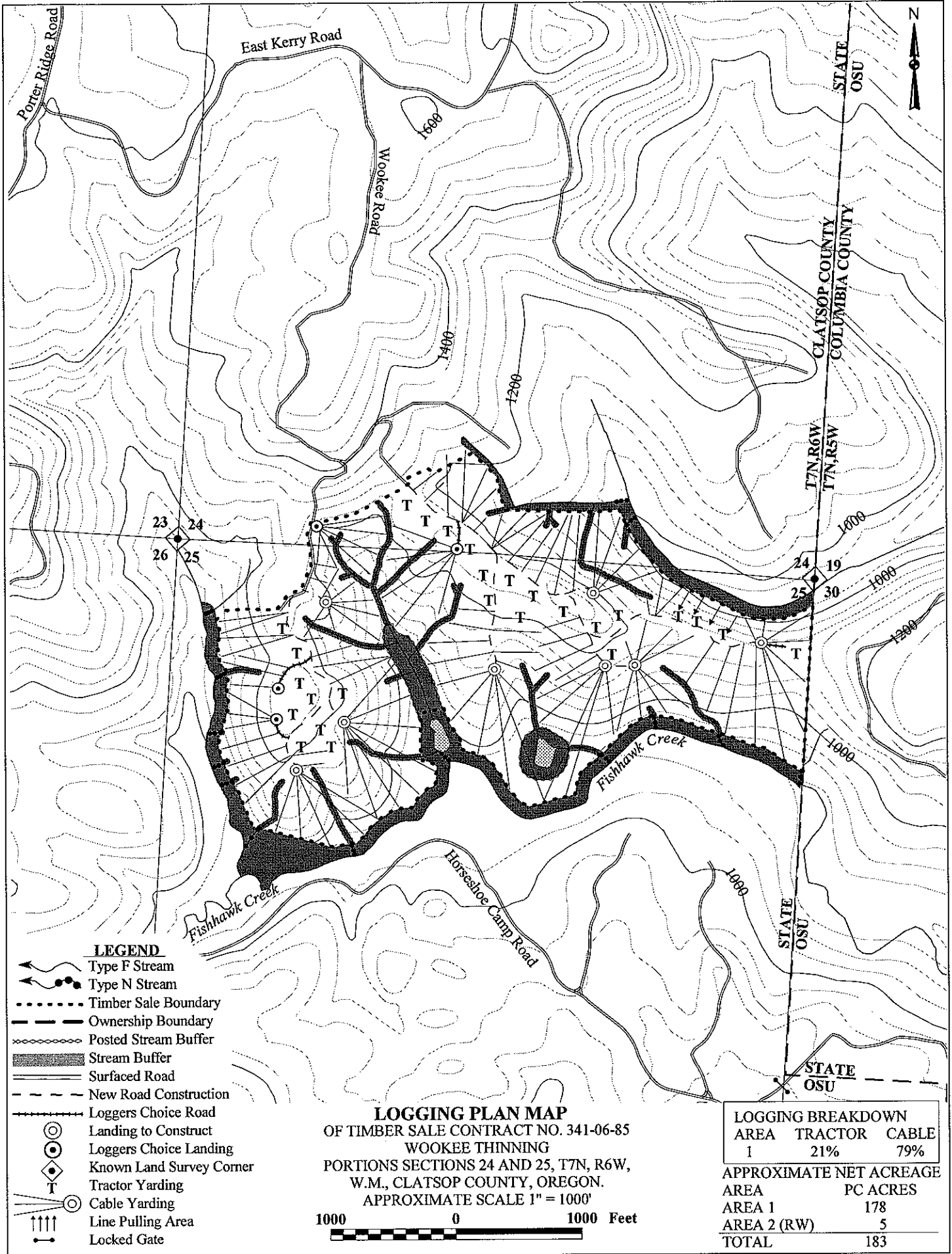
Species, Sort & Grade (Volume) Reports – 4 pages.

Statistical Reports – 4 pages.

Stand Tables – 1 page.

Log Stock Table-MBF (take) – 3 pages.

Cruise Designs and Maps: Area 1 – 3 pages



LEGEND

- Type F Stream
- Type N Stream
- Timber Sale Boundary
- Ownership Boundary
- Posted Stream Buffer
- Stream Buffer
- Surfaced Road
- New Road Construction
- Loggers Choice Road
- Landing to Construct
- Loggers Choice Landing
- Known Land Survey Corner
- Tractor Yarding
- Cable Yarding
- Line Pulling Area
- Locked Gate

LOGGING PLAN MAP
 OF TIMBER SALE CONTRACT NO. 341-06-85
 WOOKEE THINNING
 PORTIONS SECTIONS 24 AND 25, T7N, R6W,
 W.M., CLATSOP COUNTY, OREGON.
 APPROXIMATE SCALE 1" = 1000'
 1000 0 1000 Feet

LOGGING BREAKDOWN		
AREA	TRACTOR	CABLE
1	21%	79%
APPROXIMATE NET ACREAGE		
AREA	PC ACRES	
AREA 1	178	
AREA 2 (RW)	5	
TOTAL	183	

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T07N R06W S25 TyR/W 5.20		Project: WOOKEE		Page 1																	
T07N R06W S25 TyTAKE 178.20		Acres 183.40		Date 12/28/2005																	
				Time 2:41:08PM																	
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					
H	?	?		100.0	506											20		0.00	6.9		
H	?	2S		15	2.3	3,721	3,635	667			76	24		6	23	71	37	273	1.72	13.3	
H	?	3S		16	.4	4,027	4,012	736		98	2	0	2	2	47	50	35	97	0.72	41.6	
H	?	4S		2		423	423	78		100			30	70			22	27	0.42	15.5	
H	?	SM		0		6	6	1				100			100		32	1850	9.12	.0	
H Totals				33	7.0	8,683	8,076	1,481		54	35	11	2	7	34	57	31	104	0.84	77.3	
A	?	CR		6		1,473	1,473	270		50	50		10	90	0		23	81	0.99	18.3	
A Totals				6		1,473	1,473	270		50	50		10	90	0		23	81	0.99	18.3	
D	?	?		100.0	926												11		0.00	9.5	
D	?	2S		29	1.4	7,298	7,199	1,320			59	41	1	6	18	76	36	313	1.92	23.0	
D	?	3S		27	.3	6,651	6,630	1,216		92	6	3	6	1	42	52	35	92	0.68	72.3	
D	?	4S		4		946	946	173	3	96	1		52	48	0		20	25	0.37	38.6	
D	?	SM		1	9.7	174	157	29				100	91	3		6	19	665	6.83	.2	
D Totals				61	6.6	15,995	14,933	2,739		0	47	31	22	7	6	27	60	30	104	0.86	143.6
SN	?	?			100.0	3											26		0.00	.0	
SN Totals					100.0	3											26		0.00	.0	
C	?	CU			100.0	2											16		0.00	.0	
C	?	2S		0		4	4	1			100				100		32	203	1.80	.0	
C	?	3S		0		1	1	0		100					100		38	110	1.00	.0	
C	?	4S		0		1	1	0		100				100			30	40	0.53	.0	
C Totals				0	23.5	7	5	1		22	78			11	78	11	30	115	1.16	.0	
Totals					6.4	26,160	24,486	4,491		0	49	33	17	6	11	28	55	30	102	0.86	239.3

Species, Sort Grade - Board Foot Volumes (Type)

Project: WOOKIEE

T07N R06W S25 TTAKE

T07N R06W S25 TTAKE

Twp	Rge	Sec	Tract	Type	Acre	Plots	Sample Trees	CuFt	BdFt
07N	06W	25	0001	TAKE	178.20	55	78	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	?	?			00.0	903											11		0.00	9.3	
D	?	2S		47	1.4	6,842	6,748	1,202			59	41		1	6	18	76	36	310	1.91	21.8
D	?	3S		45	.3	6,534	6,513	1,161			92	5	3	6	0	42	52	35	92	0.68	71.1
D		DO 4S		6		927	927	165	3	96	1			52	48			20	24	0.37	38.0
D		DO SM		1	10.8	155	139	25				100		100				18	660	7.39	.2
D	Totals			60	6.7	15,361	14,326	2,553	0	48	30	21		7	6	27	59	30	102	0.84	140.4
H	?	?			00.0	499												20		0.00	6.8
H		DO 2S		44	2.3	3,615	3,530	629			77	23			6	23	71	37	272	1.72	13.0
H	?	3S		50	.4	3,998	3,983	710		98	2			2	2	47	50	35	96	0.72	41.3
H		DO 4S		5		421	421	75		100				30	70			22	27	0.42	15.4
H	Totals			33	7.0	8,533	7,934	1,414		55	35	10		2	7	34	57	31	104	0.83	76.6
A		DO CR		100		1,465	1,465	261		50	50			10	90			23	81	0.99	18.2
A	Totals			6		1,465	1,465	261		50	50			10	90			23	81	0.99	18.2
Type Totals					6.4	25,359	23,725	4,228	0	50	33	16		6	12	28	55	30	101	0.85	235.2

Species, Sort Grade - Board Foot Volumes (Type)

Project: WOOKIEE

Date 12/28/2005

Time 3:01:53PM

T07N R06W S25 TR/W
 Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt BdFt
 07N 06W 25 0001 R/W 5.20 55 156 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	?	?		00.0	1,701											14		0.00	15.6	
D	?	2S		64	1.2	22,950	22,677	118		51	49		0	2	18	79	37	350	2.07	64.8
D	?	3S		30	.2	10,668	10,646	55		88	7	4	4	3	42	51	35	96	0.72	110.7
D	?	4S		4		1,586	1,586	8	2	97	1		46	50	4		21	26	0.41	60.1
D	?	SM		2	2.1	818	801	4			100		37	24		39	29	694	4.62	1.2
D	Totals			71	5.3	37,724	35,711	186	0	31	34	35	4	5	24	66	31	142	1.09	252.4
H	?	?		00.0	750											16		0.00	9.3	
H	?	2S		56	1.3	7,337	7,239	38		68	32			3	22	75	37	296	1.78	24.5
H	?	3S		39	.3	5,010	4,995	26		93	1	5	2	5	44	49	34	100	0.76	49.8
H	?	4S		4		512	512	3		100			36	64			22	27	0.43	19.1
H	?	SM		2		220	220	1			100				100		32	1850	9.12	.1
H	Totals			26	6.2	13,829	12,966	67	40	38	22		2	6	31	61	31	126	0.98	102.8
A	?	CR		100		1,732	1,732	9		47	53		10	76	14		24	79	0.97	21.9
A	Totals			3		1,732	1,732	9		47	53		10	76	14		24	79	0.97	21.9
SN	?	?		00.0	98											26		0.00	.4	
SN	Totals			00.0	98											26		0.00	.4	
C	?	CU		00.0	55											16		0.00	.2	
C	?	2S		78		139	139	1		100				100		32	203	1.80	.7	
C	?	3S		11		20	20	0		100					100	38	110	1.00	.2	
C	?	4S		11		20	20	0		100				100		30	40	0.53	.5	
C	Totals			0	23.5	234	179	1	22	78			11	78	11	30	115	1.16	1.6	
Type Totals					5.6	53,617	50,588	263	0	34	36	30	4	8	26	63	30	133	1.05	379.1

T07N R06W S25 TSTAY										T07N R06W S25 TSTAY		
Twp	Rge	Sec	Tract	Type	Acre	Plots	Sample Trees	CuFt	BdFt			
07N	06W	25	0001	STAY	178.20	55	76	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				
DL	?	CU			00.0	694											11	0.00	3.6	
DL	?	2S	75		1.1	16,586	16,402	2,923		47	53		0	1	19	81	38	372	2.16	44.1
DL	?	3S	19			4,038	4,038	720	82	11	7		1	6	42	51	35	105	0.82	38.4
DL	?	4S	3			650	650	116	100				37	53	10		21	30	0.48	21.5
DL	?	SM	3			688	688	123			100		24	29		47	31	701	4.25	1.0
DL	Totals		79		3.9	22,656	21,778	3,881	18	37	45		2	4	22	72	32	201	1.43	108.6
HL	?	CU			00.0	165											1	0.00	1.4	
HL	?	2S	72		.4	3,786	3,771	672		60	40				21	79	37	321	1.84	11.8
HL	?	3S	22			1,124	1,124	200	76		24		2	17	34	46	33	117	0.94	9.6
HL	?	4S	2			103	103	18	100				62	38			20	25	0.45	4.2
HL	?	SM	4			217	217	39			100				100		32	1850	9.12	.1
HL	Totals		19		3.3	5,395	5,215	929	18	43	38		2	5	27	67	31	192	1.39	27.1
SN	?	CU			00.0	98											26	0.00	.4	
SN	Totals				00.0	98											26	0.00	.4	
AL	?	CR	100			282	282	50	38	62			10	28	62		25	74	0.91	3.8
AL	Totals		1			282	282	50	38	62			10	28	62		25	74	0.91	3.8
CL	?	CU			00.0	55											16	0.00	.2	
CL	?	2S	78			139	139	25		100					100		32	203	1.80	.7
CL	?	3S	11			20	20	4	100							100	38	110	1.00	.2
CL	?	4S	11			20	20	4	100					100			30	40	0.53	.5
CL	Totals		1		23.5	234	179	32	22	78				11	78	11	30	115	1.16	1.6
Type Totals					4.2	28,665	27,454	4,892	18	39	43		2	4	24	70	32	194	1.41	141.4

STATISTICS
PROJECT **WOOKEE**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	25	0001	TAKE	178.20	55	211	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	55	211	3.8		
CRUISE	19	78	4.1	19,491	.4
DBH COUNT					
REFOREST					
COUNT	32	133	4.2		
BLANKS	4				
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	48	62.5	16.1	69		88.0	15,361	14,326	3,700	3,507
WHEMLOCK	24	35.0	16.0	71		48.7	8,533	7,934	2,115	1,991
R ALDER	6	11.9	16.0	37		16.7	1,465	1,465	418	418
TOTAL	78	109.4	16.0	66		153.5	25,359	23,725	6,232	5,916

SD:	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	101.9	13.7	54	63	71			
WHEMLOCK	126.3	17.0	29	35	41			
R ALDER	243.3	32.8	8	12	16			
TOTAL	59.7	8.1	101	109	118	143	36	16

SD:	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	90.2	12.2	77	88	99			
WHEMLOCK	122.1	16.5	41	49	57			
R ALDER	242.2	32.7	11	17	22			
TOTAL	52.6	7.1	143	153	164	110	28	12

SD:	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
1			LOW	AVG	HIGH	5	10	15
DOUG FIR	90.9	12.3	12,570	14,326	16,083			
WHEMLOCK	123.0	16.6	6,618	7,934	9,250			
R ALDER	244.0	32.9	983	1,465	1,947			
TOTAL	57.2	7.7	21,895	23,725	25,554	131	33	15

**STATISTICS
PROJECT WOOKEE**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	25	0001	STAY	178.20	55	203	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	55	203	3.7		
CRUISE	20	76	3.8	9,890	.8
DBH COUNT					
REFOREST					
COUNT	35	127	3.6		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUGLEAV	53	40.8	21.9	89		106.2	22,656	21,778	5,182	5,056
HEMLEAV	12	9.2	21.5	96		23.3	5,395	5,215	1,209	1,182
SNAG	7	2.0	33.9	42		12.4	98		64	
ALDRLEAV	2	2.9	15.2	34		3.6	282	282	87	87
CEDLEAV	2	.7	24.2	71		2.2	234	179	70	54
TOTAL	76	55.5	22.1	86		147.6	28,665	27,454	6,612	6,378

SD:	1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		53.3	7.2	38	41	44				
HEMLEAV		138.8	18.7	7	9	11				
SNAG		187.4	25.3	1	2	2				
ALDRLEAV		390.6	52.7	1	3	4				
CEDLEAV		548.7	74.0	0	1	1				
TOTAL		33.4	4.5	53	56	58	45	11	5	

SD:	1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		37.8	5.1	101	106	112				
HEMLEAV		135.1	18.2	19	23	28				
SNAG		174.7	23.6	9	12	15				
ALDRLEAV		383.0	51.6	2	4	6				
CEDLEAV		548.7	74.0	1	2	4				
TOTAL		22.7	3.1	143	148	152	21	5	2	

SD:	1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		41.3	5.6	20,567	21,778	22,990				
HEMLEAV		136.4	18.4	4,255	5,215	6,174				
SNAG										
ALDRLEAV		394.2	53.1	132	282	432				
CEDLEAV		548.7	74.0	47	179	311				
TOTAL		26.3	3.6	26,479	27,454	28,429	28	7	3	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT WOOKEE				DATE 12/28/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	25	0001	0001	178.20	55	416	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	55	416	7.6							
CRUISE	20	156	7.8		29,719		.5			
DBH COUNT										
REFOREST										
COUNT	35	260	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
DOUGLEAV	53	40.8	21.9	89		106.2	22,656	21,778	5,182	5,056
DOUG FIR	49	64.1	15.9	67		88.7	15,264	14,150	3,687	3,464
WHEMLOCK	25	35.3	16.0	69		49.5	8,414	7,730	2,084	1,940
HEMLEAV	12	9.2	21.5	96		23.3	5,395	5,215	1,209	1,182
R ALDER	6	11.9	16.0	37		16.7	1,465	1,465	418	418
SNAG	7	2.0	33.9	42		12.4	98		64	
ALDRLEAV	2	2.9	15.2	34		3.6	282	282	87	87
CEDLEAV	2	.7	24.2	71		2.2	234	179	70	54
TOTAL	156	166.8	18.2	72		302.5	53,809	50,799	12,800	12,200
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	53.3	7.2	38	41	44					
DOUG FIR	100.7	13.6	55	64	73					
WHEMLOCK	124.0	16.7	29	35	41					
HEMLEAV	138.8	18.7	7	9	11					
R ALDER	243.3	32.8	8	12	16					
SNAG	187.4	25.3	1	2	2					
ALDRLEAV	390.6	52.7	1	3	4					
CEDLEAV	548.7	74.0	0	1	1					
TOTAL	42.2	5.7	157	167	176	71	18	8		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	37.8	5.1	101	106	112					
DOUG FIR	90.0	12.1	78	89	99					
WHEMLOCK	119.5	16.1	41	49	57					
HEMLEAV	135.1	18.2	19	23	28					
R ALDER	242.2	32.7	11	17	22					
SNAG	174.7	23.6	9	12	15					
ALDRLEAV	383.0	51.6	2	4	6					
CEDLEAV	548.7	74.0	1	2	4					
TOTAL	32.1	4.3	289	303	316	41	10	5		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	41.3	5.6	20,567	21,778	22,990					
DOUG FIR	91.1	12.3	12,411	14,150	15,888					
WHEMLOCK	122.9	16.6	6,449	7,730	9,011					
HEMLEAV	136.4	18.4	4,255	5,215	6,174					
R ALDER	244.0	32.9	983	1,465	1,947					
SNAG										
ALDRLEAV	394.2	53.1	132	282	432					
CEDLEAV	548.7	74.0	47	179	311					
TOTAL	36.4	4.9	48,305	50,799	53,292	53	13	6		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT WOOKEE				DATE 12/28/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	25	0001	R/W	5.20	55	416	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	55	416	7.6							
CRUISE	20	156	7.8		876		17.8			
DBH COUNT										
REFOREST										
COUNT	35	260	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	102	106.5	18.3	75		194.9	37,724	35,711	8,833	8,478
WHEMLOCK	37	44.4	17.3	74		72.7	13,829	12,966	3,297	3,125
R ALDER	8	14.9	15.8	36		20.4	1,732	1,732	503	503
SNAG	7	2.0	33.9	42		12.4	98		64	
WR CEDAR	2	.7	24.2	71		2.2	234	179	70	54
TOTAL	<i>156</i>	<i>168.5</i>	<i>18.1</i>	<i>71</i>		<i>302.5</i>	<i>53,617</i>	<i>50,588</i>	<i>12,766</i>	<i>12,160</i>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	66.1	8.9	97	106	116					
WHEMLOCK	106.7	14.4	38	44	51					
R ALDER	249.6	33.7	10	15	20					
SNAG	187.4	25.3	1	2	2					
WR CEDAR	548.7	74.0	0	1	1					
TOTAL	<i>39.1</i>	<i>5.3</i>	<i>160</i>	<i>168</i>	<i>177</i>	<i>61</i>	<i>15</i>	<i>7</i>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	53.9	7.3	181	195	209					
WHEMLOCK	103.2	13.9	63	73	83					
R ALDER	244.6	33.0	14	20	27					
SNAG	174.7	23.6	9	12	15					
WR CEDAR	548.7	74.0	1	2	4					
TOTAL	<i>32.1</i>	<i>4.3</i>	<i>289</i>	<i>303</i>	<i>316</i>	<i>41</i>	<i>10</i>	<i>5</i>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	55.4	7.5	33,045	35,711	38,376					
WHEMLOCK	106.2	14.3	11,109	12,966	14,823					
R ALDER	248.9	33.6	1,151	1,732	2,314					
SNAG										
WR CEDAR	548.7	74.0	47	179	311					
TOTAL	<i>38.1</i>	<i>5.1</i>	<i>47,989</i>	<i>50,588</i>	<i>53,187</i>	<i>58</i>	<i>15</i>	<i>6</i>		

Stand Table Summary															
TC TSTNDSUM															
Project WOOKEE															
T07N R06W S25 TSTAY										T07N R06W S25 TSTAY					
Twp Rge Sec Tract										Page: 1					
07N 06W 25 0001										Date: 12/28/200					
Type Acres Plots Sample Trees										Time: 2:40:08PM					
STAY 178.20 55 76															
S Spec T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
								Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DL	10	1	96	54	3.673	2.00	3.67	12.0	50.0	44	184		79	33	
DL	12	1	97	88	2.551	2.00	5.10	15.0	60.0	77	306		136	55	
DL	14	1	87	100	1.874	2.00	3.75	20.5	75.0	77	281		137	50	
DL	15	2	86	80	3.265	4.01	6.53	19.0	65.0	124	424		221	76	
DL	16	2	87	110	2.870	4.01	7.17	23.6	90.0	169	646		302	115	
DL	17	1	87	107	1.271	2.00	2.54	33.0	120.0	84	305		149	54	
DL	20	2	87	117	1.837	4.01	5.51	33.8	131.7	186	725		332	129	
DL	21	3	87	123	2.499	6.01	7.50	37.7	146.7	282	1,099		503	196	
DL	22	6	85	145	4.554	12.02	13.66	46.9	193.9	641	2,649		1,141	472	
DL	23	3	84	129	2.083	6.01	6.25	45.6	180.0	285	1,125		507	200	
DL	24	5	86	136	3.189	10.02	9.57	53.9	222.0	515	2,124		918	378	
DL	25	4	83	152	2.351	8.01	7.64	56.8	235.4	434	1,798		774	320	
DL	26	7	87	134	3.804	14.02	10.87	60.1	262.0	653	2,847		1,164	507	
DL	27	2	86	155	1.008	4.01	3.02	74.7	345.0	226	1,043		402	186	
DL	28	2	84	146	.937	4.01	2.81	72.3	308.3	203	867		362	154	
DL	30	2	80	107	.816	4.01	1.63	73.8	302.5	120	494		215	88	
DL	33	1	84	138	.337	2.00	1.01	98.3	433.3	100	438		177	78	
DL	35	1	86	133	.300	2.00	.90	80.0	430.0	72	387		128	69	
DL	38	1	83	125	.254	2.00	.76	119.0	543.3	91	415		162	74	
DL	39	1	86	125	.242	2.00	.72	134.0	636.7	97	461		173	82	
DL	40	2	83	168	.459	4.01	1.84	122.1	660.0	224	1,212		400	216	
DL	42	1	86	182	.208	2.00	1.04	116.4	692.0	121	720		216	128	
DL	44	1	83	175	.190	2.00	.76	158.7	832.5	120	632		215	113	
DL	45	1	83	159	.181	2.00	.73	150.8	820.0	109	595		195	106	
DL	Totals	53	87	117	40.752	106.18	104.99	48.2	207.4	5,056	21,778		9,009	3,881	
HL	17	1	89	100	1.306	1.94	2.61	31.5	115.0	82	300		147	54	
HL	18	2	90	109	2.195	3.88	6.58	28.2	113.3	185	746		331	133	
HL	19	2	90	124	1.970	3.88	5.91	35.3	145.0	209	857		372	153	
HL	21	2	89	126	1.613	3.88	4.84	44.3	196.7	214	951		382	170	
HL	24	2	92	120	1.235	3.88	3.09	66.6	300.0	206	926		366	165	
HL	28	1	92	149	.454	1.94	1.36	92.3	473.3	126	644		224	115	
HL	34	1	83	129	.308	1.94	.92	107.7	480.0	99	443		177	79	
HL	55	1	83	121	.118	1.94	.35	170.7	983.3	60	347		107	62	
HL	Totals	12	90	118	9.197	23.27	25.67	46.0	203.2	1,182	5,215		2,106	929	
AL	13	1	86	33	1.973	1.82	1.97	14.0	40.0	28	79		49	14	
AL	19	1	87	68	.923	1.82	1.85	32.0	110.0	59	203		105	36	
AL	Totals	2	86	44	2.896	3.64	3.82	22.7	73.8	87	282		155	50	
CL	20	1	78	85	.500	1.09	1.00	35.0	100.0	35	100		62	18	
CL	33	1	68	122	.184	1.09	.37	52.5	215.0	19	79		34	14	
CL	Totals	2	75	95	.684	2.18	1.37	39.7	130.9	54	179		97	32	
SN	21	1	90	44	.734	1.77									
SN	27	1	89	126	.444	1.77									
SN	40	2	89	32	.405	3.53									
SN	50	3	83	28	.389	5.30									
SN	Totals	7	88	57	1.972	12.36									
Totals		76	88	111	55.500	147.64	135.84	47.0	202.1	6378	27,454		11,366	4,892	

Log Stock Table - MBF

T07N R06W S25 TyR/W 5.20
T07N R06W S25 TyTAKE 178.20

Project: WOOKIEE
Acres 183.40

Spp	S	So	Gr	Log	Gross	Def	Net	%	Net Volume by Scaling Diameter in Inches											
									MBF	%	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19
H		?	?	6	36	100.0														
H		?0	CU	14	1	100.0														
H		?0	CU	16	1	100.0														
H		?	?	20	5	100.0														
H		?	?	24	30	100.0														
H		?	?	32	20	100.0														
H		?	2S	22	39		39	2.6							39					
H		?	2S	32	159	4.0	152	10.3					32	69	52					
H		?	2S	40	485	1.9	476	32.1					222	134	54	66				
H		?0	3S	16	0		0	.0							0					
H		?	3S	20	12		12	.8					12							
H		?0	3S	22	0		0	.0				0								
H		?0	3S	24	0		0	.0			0									
H		?	3S	26	13		13	.9				5	8							
H		?0	3S	28	1		1	.0					1							
H		?0	3S	30	0		0	.0				0								
H		?	3S	32	345		345	23.3			65	105	175						1	
H		?	3S	36	36		36	2.5			36									
H		?	3S	38	11		11	.8			11									
H		?	3S	39	11		11	.8			11									
H		?	3S	40	308		305	20.6			38	1	266		1					
H		?	4S	14	3		3	.2			3									
H		?	4S	16	20		20	1.3			20									
H		?0	4S	18	0		0	.0			0									
H		?0	4S	20	0		0	.0			0									
H		?	4S	24	22		22	1.5			22									
H		?	4S	26	9		9	.6			9									
H		?	4S	28	23		23	1.5			23									
H		?0	4S	30	0		0	.0			0									
H		?0	SM	32	1		1	.1												1
H			Totals		1,592	7.0	1,481	33.0			239	111	449	266	203	145	66	1		1
A		?	CR	16	12		12	4.6			7	5								
A		?	CR	20	15		15	5.4			15									
A		?	CR	24	152		152	56.3			42		66	44						
A		?	CR	30	90		90	33.3					42	48						
A		?0	CR	32	1		1	.5					1							

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Wookee Thinning Areas 1

Harvest Type: MC (PC) CT "Automark Thinning" (circle one) Aproximately 190 acres
(Net BP) or (Net BF)

Approx. Cruise Acres: 190 Estimated CV% 55% BVA/Acre SE% Objective 7% BVA/Acre

Planned Sale Volume: 4.00 MMBF Estimated Sale Area Value/Acre: \$7,000

A. Cruise Goals: (a) Grade minimum 90 conifer and 10 hardwood trees:
(b) Sample 53 cruise plots; Grade 18 plots; (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters;)
Basal Area leave target 130 sq. ft. Cruiser needs to select 3 or 4 leave trees per plot. One Leave tree may be an Intermediate (40% crown) conifer.

B. Cruise Design:

1. Plot Cruises: BAF 40.0 (Full point Half point) (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) Area 1 - East/West (+ 1 1/2 degrees) ie. 91.5°
Cruise Line Spacing 8 (chains) (feet)
Cruise Plot Spacing 4 (chains) (feet)
Grade/Count Ratio Grade 1 out of 3

2. ITS (Sample Tree) Cruises: Measure-grade ratios: D-fir Hemlock
Spruce True Fir Cedar Hardwood

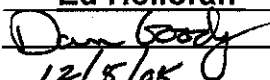
C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" or at least 20 board feet 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 for conifer is 7", 8" for hardwoods or 40 % of DOB at 16' form point. Generally, use 7" outside bark for trees < 18" DBH and 40% of DOB @ FP for trees > 18" DBH.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.
6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
 B. Sort: Use code "1" (Domestic).
 C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods Top Diameter: 7 inches and over grade as Camp Run=R. Lengths for Alder are 8 and 10 foot multiples.

Cruise snags 15 DBH inches and over. Cruise all reserved trees (cedar and Blue Marked trees) as Leave trees by species. **If you see a 40% + crown intermediate tree record it as a Leave Tree in a cruise plot (one per plot).** Leave Alder will count toward the Basal Area leave requirements.

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 indivisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with DBH on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Ed Holloran
 Approved by: 
 Date: 12/5/05

WOOKEE THINNING

CRUISE MAP

Portions of Sections 24 & 25, T7N, R6W, W.M., Clatsop County

Lines are 8 chains apart, Plots are 4 chains apart (pace through stream buffers but no plots in streams or buffers), and use a 40 BAF. 53 total plots, 18 grade plots planned

1 Inch = 1,000 feet

5-27-05

1-12

CLAT-COOP-2005

7-29-40

WOOKEE THINNING

Color Legend

Property Lines	—————	Black
Timber Sale Boundary	—————	Black
TSB/Property Line	—————	Black
Area Boundary	—————	Purple
Posted Buffer	—————	Green
Protected Monument	◆	Black
New Road Construction	—————	Red
Streams (F & N)	—————	Blue
End Type F Stream	—————	Blue
Labels (Points)	6A I3 V1	Black