



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Modified Green
Sale 341-10-09

District: Astoria

Date: September 04, 2009

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$306,335.04	\$18,816.36	\$325,151.40
		Project Work:	\$(87,160.00)
		Advertised Value:	\$237,991.40



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timber description

Location: Portions of Sections 6, 7 and 8, T6N, R8W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	97
Western Hemlock / Fir	17	0	96
Sitka Spruce	16	0	95
Alder (Red)	14	0	95

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	191	53	20	0	264
Western Hemlock / Fir	991	1,543	412	0	2,946
Sitka Spruce	162	144	32	0	338
Alder (Red)	0	0	0	87	87
Total	1,344	1,740	464	87	3,635



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comments: Pond Values Used: 2nd Quarter Calendar Year 2009.

Log Markets: Mist, Rainier, Tillamook, Aberdeen.

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost
 $\$573.55/\text{MBF} = \$740/\text{MBF} - \$166.45/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$700 daily truck cost.

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

100% Brand and Paint: $\$1/\text{MBF} \times 3,635 \text{ MBF} = \$ 3,365$

Additional log loader piling: $3\text{hr.} \times \$65/\text{hr} \times 3 \text{ landings} = \585

Excavator Slash Piling: $\$120/\text{hr.} \times 11\text{hrs} = \$1,320$

Material Cost for Slash piles: $16 \text{ piles} \times \$5/\text{pile} = \$80$

Move in excavator for slash piling: $\$1,119 \times 1 = \$1,119$

TOTAL Other Costs (with Profit and Risk to be added) = \$6,469

Other Costs (No Profit & Risk added):

None.



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logging conditions

combination#: 1

Douglas - Fir	45.00%
Western Hemlock / Fir	45.00%
Sitka Spruce	45.00%
Alder (Red)	45.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Cable: Large Tower >=70 **Process:** Manual Falling/Delimiting
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 10.0 **bd. ft / load:** 3,900
cost / mbf: \$94.70

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

combination#: 2

Douglas - Fir	20.00%
Western Hemlock / Fir	20.00%
Sitka Spruce	20.00%
Alder (Red)	20.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Track Skidder **Process:** Manual Delimiting
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 8.0 **bd. ft / load:** 3,400
cost / mbf: \$51.42

machines: Feller Buncher w/ Delimber

combination#: 3

Douglas - Fir	35.00%
Western Hemlock / Fir	35.00%
Sitka Spruce	35.00%
Alder (Red)	35.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Track Skidder **Process:** Manual Falling/Delimiting
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 10.0 **bd. ft / load:** 4,000
cost / mbf: \$86.01

machines: Log Loader (B)
Track Skidder



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logging costs

Operating Seasons:	2.00	Profit Risk:	14.00%
Project Costs:	\$87,160.00	Other Costs (P/R):	\$6,469.00
Slash Disposal:	\$0.00	Other Costs:	\$0.00

Miles of Road

Road Maintenance: \$3.61

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	4.3
Western Hemlock / Fir	\$0.00	3.0	4.2
Sitka Spruce	\$0.00	2.0	4.4
Alder (Red)	\$0.00	2.0	3.5



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$83.00	\$3.72	\$2.41	\$36.77	\$1.78	\$17.88	\$0.00	\$5.00	\$0.00	\$150.56
Western Hemlock / Fir									
\$83.00	\$3.75	\$2.41	\$50.68	\$1.78	\$19.83	\$0.00	\$5.00	\$0.00	\$166.45
Sitka Spruce									
\$83.00	\$3.79	\$2.41	\$73.27	\$1.78	\$23.00	\$0.00	\$5.00	\$0.00	\$192.25
Alder (Red)									
\$83.00	\$3.79	\$2.41	\$92.11	\$1.78	\$25.63	\$0.00	\$5.00	\$0.00	\$213.72

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$309.09	\$158.53	\$0.00
Western Hemlock / Fir	\$0.00	\$247.66	\$81.21	\$0.00
Sitka Spruce	\$0.00	\$266.92	\$74.67	\$0.00
Alder (Red)	\$0.00	\$430.00	\$216.28	\$0.00



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summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Sitka Spruce	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	264	\$158.53	\$41,851.92
Western Hemlock / Fir	2,946	\$81.21	\$239,244.66
Sitka Spruce	338	\$74.67	\$25,238.46
Alder (Red)	87	\$216.28	\$18,816.36

Gross Timber Sale Value

Recovery: \$325,151.40

Prepared by: Bryce Rodgers

Phone: 503-325-5451

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Modified Green
 ROAD: 1A-1B (3.85) 4A-4B (31.40)

NEW CONSTRUCTION: 35.25 STATIONS 0.67 MILES
 IMPROVEMENT: STATIONS MILES

POINTS:

CLEARING & GRUBBING						
Method	Acres/amount	x	Rate	=	Cost	
(4A-4B) Scattering	2.80	x	\$1,161.00	=	\$3,250.80	
1A to 1B Brush Clearing	1.00	x	\$144.00	=	\$144.00	
		x		=		

SUB TOTAL FOR CLEARING & GRUBBING **\$3,395**

EXCAVATION						
Material	Cy/amount	x	Rate	=	Cost	
(4A-4B) Drift earth up to 20' \$\$/sta.	6.00	x	\$165.00	=	\$990.00	
(4A-4B) Balanced Construction \$\$/sta.	25.40	x	\$106.00	=	\$2,692.40	
(4A-4B) Cut Slope Rounding \$\$/sta.	13.83	x	\$37.00	=	\$511.71	
(4A-4B) Landing Const. 26+88, 31+40 \$\$/Landing	2.00	x	\$338.00	=	\$676.00	
(1A-1B) Construct junction (C330) \$\$/hr.	1.00	x	\$144.00	=	\$144.00	
		x		=		
		x		=		
		x		=		
		x		=		
		x		=		
		x		=		

SUB TOTAL FOR EXCAVATION **\$5,014**

CULVERT MATERIALS AND INSTALLATION										
(4A-4B)	Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
	1+00	18" ACSP	30	\$22.44	\$673.20					
(4A-4B)	4+00	18" ACSP	30	\$22.44	\$673.20					
(4A-4B)	13+40	18" ACSP	50	\$22.44	\$1,122.00					
(4A-4B)	18+00	18" ACSP	30	\$22.44	\$673.20					
(4A-4B)	24+70	18" ACSP	30	\$22.44	\$673.20					
(4A-4B)	27+30	18" ACSP	30	\$22.44	\$673.20					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	6" FIBERGLAS MARKERS	6	\$18.00	\$108.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION **\$4,596**

Subtotal of Clearing, Exc., Culv. **\$13,005**

SURFACING		Stations/amount		Rate/ sta/amt	Cost
Subgrade prep:	Description		x		
	Grade, Shape and Ditch 16'	31.40	x	\$21.55	\$676.67
	Subgrade Compaction	31.40	x	\$17.52	\$550.13

ROAD SEGMENT: 4A-4B			POINT TO POINT:	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost			
Application	Rock Size and Type	Location	Depth of Rock (inches)	4A-4B	0+00 to 31+40					
				Volume (CY) per	Number of					
Base Rock	6"-0" pit-run	0+00-31+40	14	station	68	stations	31.40	2,763	\$3.31	\$9,146
Turnouts	6"-0" pit-run	4+72, 10+60, 17+00, 23+43	14	TO	65	TO's	4	260	\$3.31	\$861
Turnarounds	6"-0" pit-run	1+93, 23+43	14	TA	23	TA's	2	46	\$3.31	\$152
Curve Widening	6"-0" pit-run		14	station		stations	308	308	\$3.31	\$1,019
Curve Widening	1 1/2"-0" crushed		2				32	32	\$11.07	\$354
Traction Rock	1 1/2"-0" crushed	0+00-8+00	2	station	13	stations	8	104	\$11.07	\$1,151
Traction Rock	1 1/2"-0" crushed	25+00-28+50	2	station	13	stations	3.5	46	\$11.07	\$504
Dissipator	24"-6" Riprap	27+30	n/a	culvert	11	culverts	1	11	\$4.70	\$52
Landings	6"-0" pit-run	26+88, 31+40	n/a	Landing	80	Landings	2	160	\$3.31	\$530
Total Rock for Road Segment:				4A-4B				3,730		\$13,769

ROAD SEGMENT: 1A-1B			POINT TO POINT:	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost			
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A-1B	0+00 to 3+85					
				Volume (CY) per	Number of					
Junction Rock	6"-0" pit-run	0+00	N/A	junction		junctions		30	\$3.31	\$99
Total Rock for Road Segment:				1A-1B				30		\$99

Processing	Description	amount	x	sta/amt	Cost
	Process & Compact: (6"-0" 1 lift)	31.40	x	\$51.39	\$1,613.65
	Water, process & compact: (1 1/2"-0" Crushed 1 lift)	11.50	x	\$49.02	\$563.73

24"-6" rip	6"-0" pr	1 1/2"-0"	Total
11	3,567	182	3,760

SPECIAL PROJECTS

Description	Cost

SUB TOTAL FOR SPECIAL PROJECTS

Subtotal of Surfacing & Spec. Proj. \$17,273
 Subtotal of Clearing, Exc., Culv. \$13,005

GRAND TOTAL

\$30,277

Compiled By: Bryce Rodgers

Date: 05/19/09

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Modified Green
 ROAD: 11-12 (105.75) 13-14 (17.0) 15-16 (7.0)
 POINTS:

NEW CONSTRUCTION: _____ STATIONS _____ MILES
 IMPROVEMENT: 129.75 STATIONS 2.46 MILES

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
13-14 Scattering	0.25	x	\$1,161.00	=	\$290.25
		x		=	
		x		=	
		x		=	
SUB TOTAL FOR CLEARING & GRUBBING					\$290

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
11-12 Load & Haul Ditch Waste Materials \$\$/sta. 53+80-55+75	2.00	x	\$19.89	=	\$39.78
11-12 Develop & Place Dissipator On Site (C15) 63+45 \$\$/hr.	1.00	x	\$94.00	=	\$94.00
11-12 Load & Haul Ditch Waste Materials \$\$/sta. 65+70-69+75	4.00	x	\$19.89	=	\$79.56
11-12 Balanced Construction \$\$/sta. 103+45-105+75	2.30	x	\$106.00	=	\$243.80
13-14 Ditch Outs & Drainage (C330) \$\$/hr.	8.00	x	\$144.00	=	\$1,152.00
		x		=	
		x		=	
SUB TOTAL FOR EXCAVATION					\$1,609

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
(11-12) 69+75	18"ACSP	35	\$22.44	\$785.40					
(11-12) 76+90	18"CPP	30	\$17.64	\$529.20					

Other/miscellaneous:	Description	Quantity	Rate	Cost
Culvert stakes & markers:	<u>6" FIBERGLASS MARKERS</u>	6	\$18.00	\$108.00
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION				\$1,423

Subtotal of Clearing, Exc., Culv. **\$3,322**

SURFACING		Subgrade prep;	Description	Stations/ amount	x	Rate/ sta/amt	Cost
11-12			Grade, Shape and Ditch 16' 0+00-103+45	103.45	x	\$21.08	\$2,180.73
11-12			Grade, Shape and Ditch 14' Outslope 103+45-105+75	2.30	x	\$15.93	\$36.64
11-12			Subgrade Compaction	105.75	x	\$17.52	\$1,852.74
13-14			Grade and Shape 14' Outslope	17.00	x	\$15.93	\$270.81
15-16			Grade, Shape and Ditch 16' 0+00-7+00	4.00	x	\$21.08	\$84.32
ROAD SEGMENT		11-12	POINT TO POINT	Sta. to Sta.			
			11-12	0+00 to 105+75			
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	TOTAL VOLUME (CY)	Rate/ Sta/ amt.
Surface Rock	1 1/2"-0" crushed	0+00-84+00	2	station 13	stations 84.00	1,092	\$11.07
Junctions	1 1/2"-0" crushed		2	junction 10	junctions 3	30	\$11.07
Turnouts	1 1/2"-0" crushed		2	TO 10	TO's 5	50	\$11.07
Leveling rock	1 1/2"-0" crushed			TA 10	TA's 18	180	\$11.07
Bedding rock	1 1/2"-0" crushed	69+75, 76+90		10	4	40	\$11.07
Base Rock	6"-0" pit-run	69+75, 76+90		10	2	20	\$3.31
Leveling rock	6"-0" pit-run	84+00-103+45		10	11	110	\$3.31
Base rock	6"-0" pit-run	103+45-105+75	14	station 88	stations 2.3	202	\$3.31
Total Rock for Road Segment:						1,724	
ROAD SEGMENT		15-16	POINT TO POINT	Sta. to Sta.			
			15-16	0+00 to 4+00			
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	TOTAL VOLUME (CY)	Rate/ Sta/ amt.
Patch Rock	1 1/2"-0" crushed	0+00-4+00		station 10	stations 4.00	40	\$11.07
Total Rock for Road Segment:						40	
						\$332.40	
Processing		Description		amount	x	sta/amt	Cost
		Water, process & compact: (1 1/2"-0" Crushed 1 lift)		84.00	x	\$49.02	\$4,117.68
	6"-0" pit-run	1 1/2"-0"				Total	
				332	1,432	1,764	1,764
							\$25,495
SPECIAL PROJECTS		Description					Cost
SUB TOTAL FOR SPECIAL PROJECTS							\$0
						Subtotal of Surfacing & Spec. Proj.	\$25,495
						Subtotal of Clearing, Exc., Culv.	\$3,322
GRAND TOTAL							\$28,817

Compiled By: Bryce Rodgers

Date: 6/11/09

SUMMARY OF ROCK DEVELOPMENT COSTS

QUARRY: West Green Mountain Quarry
LOCATION: _____
COUNTY: Clatsop
BY: S. Bushnell
DATE: 06/12/2009

TIMBER SALE NAME: Modified Green
QUANTITY: 3,899 cy Pit-Run
 11 cy Rip Rap

MOBILIZATION:						
Equipment	Hours/Quantity		x	Rate	=	Cost
D8 Dozer - Secondary Mobilization (hours)	1		x	\$147.00	=	\$147.00
Excavator - Secondary Mobilization (hours)	1		x	\$144.00	=	\$144.00
C966 Loader (quantity)	1		x	\$675.00	=	\$675.00
SUB TOTAL FOR MOBILIZATION						\$966

CLEARING AND GRUBBING						
Material	Hours		x	Rate	=	Cost
Scatter debris outside clearing limits					=	
-Large Excavator (\$144/hr)	4.00		x	\$144.00	=	\$576.00
SUB TOTAL FOR CLEARING AND GRUBBING						\$576

EXCAVATION						
Material	Hours		x	Rate	=	Cost
Drift overburden					=	
-Large Dozer (\$147/hr)	9.00		x	\$147.00	=	\$1,323.00
-Large Excavator (\$144/hr)	9.00		x	\$144.00	=	\$1,296.00
Waste Area Shaping					=	
-Large Dozer (\$147/hr)	2.00		x	\$147.00	=	\$294.00
-Large Excavator (\$144/hr)	2.00		x	\$144.00	=	\$288.00
SUB TOTAL FOR EXCAVATION						\$3,201

PIT-RUN DEVELOPMENT						
Material	CY		x	Rate	=	Cost
Develop Pit-Run (Ripping)	3,900.00		x	\$2.20	=	\$8,580.00
SUB TOTAL FOR PIT-RUN DEVELOPMENT						\$8,580

MISCELLANEOUS		
Description		Cost
Final Quarry Development, Waterbarring, Drainage, Bock Quarry Access		\$1,000.00
Seed and Mulch Waste Area (0.2 ac @ \$545/ac, 6 bales @ \$10/bale, 1 hr labor @ \$38/hr)		\$207.00
SUB TOTAL FOR MISCELLANEOUS		\$1,207

GRAND TOTAL **\$14,530.00**
 \$/Cubic Yard **\$3.73**

CRUSHED ROCK COST

SALE NAME: Modified Green
 PROJECT: Projects 1 & 2
 QUARRY: Simmons Ridge Stockpile

MATERIAL: Crushed

DATE: 06/10/2009
 BY: Rodgers

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	
4A-4B	785.60	182	5	3	2	1.50	1.50	1.50	0.59	14.80
11-12	708.60	1,392	5	3	2	1.50	1.25	0.50	0.15	13.40
15-16	7.00	70	5	3	2	1.50	1.25	0.50	0.25	13.50
TOTAL	1,501.20	1,644								
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL			5.04	2.98	1.94	1.50	1.28	0.61	0.20	AVERAGE HAUL 13.56
										Average Round Trip Distance (miles) 27.12

ROCK HAUL:

Truck type: <u>D20</u>	No. trucks: <u>2</u>	Ave haul: \$8.27 /cy
Delay min.: <u>8</u>	Efficiency: <u>85%</u>	Load: \$1.01 /cy
Truck type: <u>D12</u>	No. trucks: <u> </u>	Spread: \$1.79 /cy
Delay min.: <u>6</u>	Efficiency: <u>85%</u>	
Truck type: <u>D10</u>	No. trucks: <u>4</u>	Production: cy/day = 464
Delay min.: <u>5</u>	Efficiency: <u>85%</u>	

CRUSHED ROCK HAUL COSTS 1,644 cy @ \$11.07 /cy

PIT RUN ROCK COST

SALE NAME: Modified Green
 PROJECT: Projects 1 & 2
 QUARRY: West Green Mountain

MATERIAL: Pit-Run

DATE: 06/10/2009
 BY: Rodgers

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	
4A-4B	71.10	3,537				0.90	0.25	0.10	0.10	1.35
1A-1B	60.40	30				0.60	0.20	0.15	0.19	1.14
I1-I2	36.00	332					0.50	0.10	0.08	0.68
TOTAL	167.50	3,899								
CUBIC YARD WEIGHTED HAUL		STA./NO. CU. YD.				0.82	0.27	0.10	0.10	AVERAGE HAUL 1.29
Average Round Trip Distance (miles)										2.58

ROCK HAUL:

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

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

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

Ave haul: \$2.14 /cy
 Load: \$0.45 /cy
 Spread: \$0.73 /cy

Production: cy/day = 1,093

PIT RUN ROCK HAUL COSTS 3,899 cy @ \$3.31 /cy

RIP RAP ROCK COST

SALE NAME: Modified Green
 PROJECT: Project No. 1
 QUARRY: West Green Mountain

MATERIAL: Rip Rap

DATE: 06/19/2009
 BY: Rodgers

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	
4A-4B	71.10	11				0.90	0.25	0.10	0.10	1.35
TOTAL	71.10	11				0.90	0.25	0.10	0.10	AVERAGE HAUL
	STA./NO.	CU. YD.								1.35
CUBIC YARD WEIGHTED HAUL										
Average Round Trip Distance (miles)										2.70

ROCK HAUL:

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

Truck type: D10 No. trucks: 1
 Delay min.: 5 Efficiency: 85%

Ave haul: \$2.18 /cy
 Load: \$2.52 /cy
 Develop: N/A /cy

Production: cy/day = 267

RIP RAP ROCK HAUL COSTS 11 cy @ \$4.70 /cy

Projects Road Maintenance Cost Summary

Sale: Modified Green
Date: June 11, 2009
By: Bryce Rodgers

Type	Equipment/Rationale	Hours	Rate	Cost
Post-Projects Road	Grader 14G	32	\$93	\$2,976
	Dump Truck 12CY (2 trucks)	10	\$73	\$730
	FE Loader C966	5	\$77	\$385
	Vibratory Roller	11	\$72	\$792
	Water Truck 2500 gallon	11	\$83	\$913
Total				\$5,796

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	4.8	3.2	32
1.5	1.7	1.1	11

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

Maintain from Highway 202 to Simmons Ridge Stockpile

Grade only on Saddle Mtn. County Road to jct. of Green Mtn. Road.

Total Miles: 4.8 miles.

TIMBER CRUISE REPORT

Modified Green FY 2010

1. Sale Area Location:

Areas 1, 2, 3, 4, & 5 are located in portions of Section 6, 7, and 8, T6N, R8W, Willamette Meridian., Clatsop County, Oregon.

2. Fund Distribution:

BOF = 100% Tax Code = 1-02 = 100%

3. Sale Acreage and Treatments by Area:

Area	Harvest Type	Gross Acres	New R/W	Net Acres	Survey Method
1	MC	8.1	0	8.1	GIS
2	MC	11.8	0	11.8	GIS
3	PC	48.8	0	48.8	GIS
4	MC	68.6	0	68.6	GIS
5	R/W		1.7	1.7	GIS
TOTAL		137.3	1.7	139	

4. Cruisers and Cruise Dates:

Areas 1, 2 and 4 were cruised by Bryce Rodgers, Kraig Kirkpatrick, Peter Stone and Dave Wolfgram on April 14, 2009. Area 3 was cruised by Bryce Rodgers, Jay Morey and Kraig Kirkpatrick on April 17, 2009.

5. Cruise Method and Computations:

Areas 1, 2 and 4 were combined into one cruise for statistical purposes. The cruise was designed for a variable plot cruise using a 40 Basal Area Factor (BAF). 43 plots were sampled with 25 cruise plots 18 count plots (1:2 ratio) on a 4.5 x 4.5 chain grid. Area 3 was designed for a variable plot cruise using a 40 Basal Area Factor (BAF). 30 cruise plots were sampled (1:1 ratio) on a 5 x 3 chain grid. The data was downloaded to the Atterbury SUPER A.C.E. program and computations were made at the Astoria District Office. See the attached Cruise Design for more details on cruise methods.

<u>AREA</u>	<u>CRUISE</u>	<u>CRUISE TYPE</u>
1,2&4	MODGRN	T07NR08W S08 CC124, Take, Leave
3	MODGRN	T07NR08W S08 PC3, Take, Leave
5 R/W	MODGRN	T07NR08W S08 Area 5 R/W

6. Timber Description:

Areas 1, 2, and 4- These stands are about 55 to 73 years old, and are dominated by hemlock with some minor components of Sitka spruce, true fir, Douglas-fir, and red alder. Some windthrow is evident along the southern property lines in areas 1 and 2.

Area 3- This stand is about 49 to 63 years old, and is dominated by hemlock, with some Sitka spruce, true fir, red alder and Douglas-fir.

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 %
1,2,4	45	11	35.9	5.5
3	45	11	53.4	9.9

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

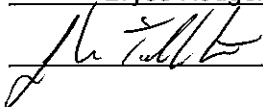
8. **Volumes by Species and Sale Areas:** (See the Species, Sort, Grade, and the Log Stock Table attached.) Volumes do not include "in-growth". The majority of defect and breakage was culled during the cruise. The total net MBF volumes by species and grade are as follows:

Species	DBH	Net. Vol.	2 Saw	3 Saw	4 Saw	Camp Run	% D & B	Sale%
W. Hemlock	13.7	2,824	916	1,501	407		9	78
Sitka Spruce	16.2	338	162	144	32		9	9
Douglas-fir	18.6	264	191	53	20		7	7
Noble Fir	17	122	75	42	5		2	3
Red Alder	14.2	87				87	2	3
Totals	15.9	3,635	1,344	1,740	464	87		100

9. **Approvals:**

Prepared by: Bryce Rodgers

Date: May 01, 2009

Approved by: 

Date: 7/22/09

10. **Attachments:**

Species, Sort & Grade (Volume) Reports: 4 pages.
 Statistical Reports: 14 pages.
 Log Stock Table-MBF (cut): 3 pages.
 Cruise Designs and Maps: 4 pages.

Species, Sort Grade - Board Foot Volumes (Project)

T07N R08W S08 Ty00CC 1.70 T07N R08W S08 TyTAKE 88.50 T07N R08W S08 TyTAKE 48.80	Project: MODGRN Acres 139.00	Page 1 Date 5/1/2009 Time 9:19:20AM
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Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre		
								Log Scale Dia				Log Length				Ln Ft	Bd Ft	CF/ Lf			
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
H		DOCU		100.0	1,125											15		0.00	17.3		
H		DO2S	32	5.8	6,998	6,590	916		2	70	28		0	6	23	71	36	255	1.70	25.9	
H		DO3S	53	3.8	11,224	10,798	1,501		95	5			2	5	40	53	35	82	0.71	131.2	
H		DO4S	15	1.9	2,985	2,928	407		100				43	56	1		21	27	0.43	107.7	
H	Totals		78	9.0	22,332	20,317	2,824		66	25	9		7	12	29	52	28	72	0.72	282.1	
D		DOCU		100.0	221		191										8		0.00	4.2	
D		DO2S	72	1.0	1,385	1,370	190				35	65				48	52	36	416	2.38	3.3
D		DO3S	20	7.4	414	383	53		100				30	0	13	57	31	70	0.81	5.4	
D		DO4S	8		146	146	20		100				74	26			18	25	0.43	6.0	
D	Totals		7	12.3	2,166	1,900	264		28	25	47		12	2	37	49	23	101	1.08	18.8	
S		DOCU		100.0	159												9		0.00	2.0	
S		DO2S	47	.0	1,164	1,164	162				43	57	5		25	70	36	341	2.21	3.4	
S		DO3S	43		1,038	1,038	144		99	1			1	2	65	32	34	100	0.88	10.4	
S		DO4S	10		228	228	32		100				85	6	8		19	29	0.48	7.9	
S	Totals		9	6.2	2,590	2,430	338		52	21	27		11	2	40	47	27	102	1.02	23.8	
A		DOCU		100.0	45												18		0.00	1.4	
A		DOCR	100	2.4	644	628	87		73	27			1	30	22	47	33	62	0.71	10.2	
A	Totals		2	8.8	689	628	87		73	27			1	30	22	47	31	54	0.66	11.6	
NF		DO2S	61		541	541	75			100					100		32	160	1.50	3.4	
NF		DO3S	34		300	300	42		100						33	67	35	63	0.55	4.8	
NF		DO4S	5		38	38	5		100				38	57		6	22	26	0.35	1.5	
NF	Totals		3		878	878	122		38	62			2	2	73	23	32	92	0.86	9.6	
Totals				8.7	28,655	26,154	3,635		61	26	13		8	11	32	50	28	76	0.76	346.0	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1									
		Project: MODGRN								Date 5/1/2009									
										Time 9:20:28AM									
T07N R08W S08 TTAKE										T07N R08W S08 TTAKE									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt										
07N	08W	08	CC124	TAKE	88.50	43	148	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				
H	DO	CU		00.0	1,534											16		0.00	21.3
H	DO	2S	34	6.2	9,880	9,269	820		3	68	30		6	24	71	36	255	1.68	36.3
H	DO	3S	52	4.0	14,459	13,887	1,229		94	6		2	6	38	54	35	83	0.71	168.0
H	DO	4S	14	2.3	3,803	3,716	329		100			40	59	1		21	28	0.44	134.6
H	Totals		78	9.4	29,676	26,872	2,378		63	26	10	7	13	28	52	29	75	0.74	360.2
D	DO	CU		00.0	341											8		0.00	6.4
D	DO	2S	72	1.0	2,117	2,095	185			35	65			48	52	36	416	2.39	5.0
D	DO	3S	20	7.4	637	589	52		100			30		13	57	31	70	0.81	8.4
D	DO	4S	8		225	225	20		100			74	26			18	25	0.43	9.2
D	Totals		8	12.4	3,320	2,909	257		28	25	47	12	2	37	49	23	100	1.08	29.0
S	DO	CU		00.0	223											8		0.00	1.5
S	DO	2S	57		1,425	1,425	126			37	63	7		31	62	35	331	2.15	4.3
S	DO	3S	33		841	841	74		98	2		2	3	53	42	35	115	1.04	7.3
S	DO	4S	10		225	225	20		100			90	10			19	28	0.51	8.1
S	Totals		7	8.2	2,713	2,490	220		42	22	36	13	2	36	50	27	117	1.17	21.3
A	DO	CU		00.0	70											18		0.00	2.2
A	DO	CR	100	2.7	890	866	77		70	30		2	30	20	48	33	64	0.73	13.4
A	Totals		3	9.8	960	866	77		70	30		2	30	20	48	31	55	0.67	15.6
NF	DO	2S	72		832	832	74			100				100		32	160	1.50	5.2
NF	DO	3S	28		312	312	28		100					100		36	60	0.56	5.2
NF	Totals		3		1,143	1,143	101		27	73				73	27	34	110	1.00	10.4
Type Totals				9.3	37,812	34,281	3,034		58	28	15	7	11	31	51	29	79	0.78	436.5

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)							Page 1										
		Project: MODGRN							Date 5/1/2009										
									Time 9:20:54AM										
T07N R08W S08 TTAKE								T07N R08W S08 TTAKE											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt										
07N	08W	08	PC3	TAKE	48.80	30	76	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				
H	DO	CU		00.0	369											9		0.00	10.0
H	DO	2S	19	2.0	1,662	1,628	79			90	10	6	6	8	80	36	248	1.90	6.6
H	DO	3S	63	2.9	5,247	5,092	249		100				1	48	51	36	81	0.67	63.2
H	DO	4S	18		1,473	1,473	72		100			58	42			19	25	0.39	58.2
H	Totals		74	6.4	8,750	8,194	400		80	18	2	11	9	32	47	27	59	0.65	137.9
S	DO	CU		00.0	42											10		0.00	2.9
S	DO	2S	28		662	662	32			70	30				100	40	382	2.42	1.7
S	DO	3S	61		1,401	1,401	68		100				2	78	21	34	87	0.74	16.1
S	DO	4S	11		234	234	11		100			77		23		18	31	0.40	7.6
S	Totals		21	1.8	2,340	2,298	112		71	20	9	8	1	50	41	27	81	0.80	28.3
A	DO	CR	100		188	188	9		100				27	38	35	31	45	0.59	4.2
A	Totals		2		188	188	9		100				27	38	35	31	45	0.59	4.2
NF	DO	3S	73		283	283	14		100					100		32	70	0.53	4.0
NF	DO	4S	27		101	101	5		100			40	60			22	25	0.34	4.0
NF	Totals		3		384	384	19		100			11	16	74		27	47	0.45	8.1
Type Totals				5.1	11,663	11,064	540		79	17	3	11	8	37	44	27	62	0.66	178.6

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1										
		Project:		MODGRN				Date 5/1/2009		Time 9:21:32AM										
T07N R08W S08 T00CC										T07N R08W S08 T00CC										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
07N	08W	08	AREA5RW	00CC	1.70	43	165	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									
H	DO	CU		00.0	1,526									16		0.00	21.2			
H	DO	2S	35	6.1	10,204	9,578	16		2	66	31		5	26	69	36	261	1.72	36.8	
H	DO	3S	51	4.0	14,380	13,811	23		94	6			2	6	38	54	35	83	0.71	167.0
H	DO	4S	14	2.3	3,782	3,696	6		100				40	59	1		21	28	0.44	133.8
H	Totals		75	9.4	29,892	27,084	46		63	26	11		6	13	29	52	29	75	0.74	358.8
D	DO	CU		00.0	320												8		0.00	6.0
D	DO	2S	76	.7	3,011	2,990	5			37	63				42	58	37	393	2.23	7.6
D	DO	3S	17	6.3	702	658	1		100				25	4	23	48	31	70	0.80	9.3
D	DO	4S	7		241	241	0		100				65	35			19	26	0.45	9.4
D	Totals		11	9.0	4,274	3,889	7		23	28	49		8	3	36	53	25	120	1.17	32.3
S	DO	CU		00.0	227												8		0.00	1.5
S	DO	2S	63	2.1	2,021	1,980	3			40	60		5		23	72	36	353	2.27	5.6
S	DO	3S	29		906	906	2		98	2			2	3	50	45	35	111	1.01	8.2
S	DO	4S	8		230	230	0		100				90	10			19	28	0.51	8.3
S	Totals		9	7.9	3,384	3,115	5		36	26	38		10	2	29	59	28	132	1.26	23.6
A	DO	CU		00.0	70												18		0.00	2.2
A	DO	CR	100	2.7	890	866	1		70	30			2	30	20	48	33	64	0.73	13.4
A	Totals		2	9.8	960	866	1		70	30			2	30	20	48	31	55	0.67	15.6
NF	DO	2S	72		907	907	2		100						100		32	160	1.50	5.7
NF	DO	3S	14		170	170	0		100						100		36	60	0.56	2.8
NF	DO	4S	14		170	170	0		100						100		36	60	0.56	2.8
NF	Totals		3		1,247	1,247	2		27	73					73	27	34	110	1.00	11.3
Type Totals				8.9	39,757	36,202	62		55	28	17		7	11	31	52	29	82	0.80	441.7

TC PSTATS		PROJECT STATISTICS							PAGE 1	
		PROJECT			MODGRN				DATE 5/1/2009	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08	08	AREA5RW	00CC	139.00	116	741	1	W	
07N	08W	08	CC124	TAKE						
07N	08W	08	PC3	TAKE						
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		116	741	6.4						
CRUISE		69	388	5.6	29,269		1.3			
DBH COUNT										
REFOREST										
COUNT		39	320	8.2						
BLANKS		8								
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	269	174.8	13.7	48		178.7	22,332	20,317	6,083	5,805
S SPRUCE	39	13.2	16.2	52		18.8	2,590	2,430	683	655
DOUG FIR	30	7.1	18.6	63		13.3	2,166	1,900	515	467
R ALDER	37	10.6	14.2	36		11.7	689	628	258	241
NOB FIR	5	4.8	17.0	66	2	7.6	878	878	264	264
SNAG	8	.1	19.5	26		.1				
TOTAL	388	210.6	14.2	49		230.2	28,655	26,154	7,804	7,433
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL	68.1	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		111.7	6.8	179	193	206				
S SPRUCE		119.7	19.2	302	374	445				
DOUG FIR		122.0	22.6	467	604	741				
R ALDER		92.2	15.1	61	71	82				
NOB FIR		40.3	20.0	136	170	204				
SNAG										
TOTAL		146.5	7.4	210	227	244	857	214	95	
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		129.7	12.0	154	175	196				
S SPRUCE		371.3	34.4	9	13	18				
DOUG FIR		392.8	36.4	4	7	10				
R ALDER		413.2	38.3	7	11	15				
NOB FIR		428.7	39.8	3	5	7				
SNAG		388.4	36.0	0	0	0				
TOTAL		117.6	10.9	188	211	234	552	138	61	
CL	68.1	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		120.7	11.2	159	179	199				
S SPRUCE		282.3	26.2	14	19	24				
DOUG FIR		383.3	35.6	9	13	18				
R ALDER		428.2	39.7	7	12	16				
NOB FIR		468.9	43.5	4	8	11				
SNAG		361.0	33.5	0	0	0				
TOTAL		108.4	10.1	207	230	253	469	117	52	
CL	68.1	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		128.1	11.9	17,902	20,317	22,732				
S SPRUCE		278.7	25.9	1,802	2,430	3,059				
DOUG FIR		421.9	39.1	1,156	1,900	2,644				

PROJECT STATISTICS										
TC PSTATS		PROJECT MODGRN						PAGE 2	DATE 5/1/2009	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08	08	AREA5RW	00CC	139.00	116	741	1	W	
07N	08W	08	CC124	TAKE						
07N	08W	08	PC3	TAKE						
CL	68.1	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER		487.9	45.3	344	628	913				
NOB FIR		458.1	42.5	505	878	1,251				
SNAG										
TOTAL		115.4	10.7	23,353	26,154	28,955	532	133	59	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT MODGRN		DATE 7/23/2009				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	CC124	00CC	88.50	43	345	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	43	345	8.0							
CRUISE	25	166	6.6	24,197			.7			
DBH COUNT										
REFOREST										
COUNT	18	156	8.7							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	105	222.0	13.9	49		233.5	29,676	26,872	8,040	7,658
DOUG FIR	13	10.9	18.6	63		20.5	3,320	2,909	789	716
S SPRUCE	12	11.8	17.4	51		19.5	2,713	2,490	707	669
R ALDER	17	14.1	14.3	36		15.8	960	866	356	329
NOB FIR	1	5.2	19.0	70	2	10.2	1,143	1,143	353	353
SNAG	8	4.5	19.5	26		9.3				
DOUGLEAV	4	1.8	22.0	84		4.7	912	912	210	210
SPRUCELV	2	1.1	25.3	83		3.7	690	643	168	168
CEDLEAV	2	1.5	15.0	45		1.9	106	106	49	49
NFIRLEAV	1	.5	19.0	70	0	.9	94	94	31	31
HEMLEAV	1	.1	36.0	82		.9	159	151	37	37
TOTAL	166	273.4	14.7	49		320.9	39,773	36,188	10,742	10,222
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	111.9	10.9	179	200	222					
DOUG FIR	133.1	38.4	360	585	809					
S SPRUCE	128.0	38.5	254	413	573					
R ALDER	94.1	23.5	56	74	91					
NOB FIR										
SNAG										
DOUGLEAV	84.3	48.1	380	732	1,085					
SPRUCELV	75.2	70.4	234	790	1,346					
CEDLEAV										
NFIRLEAV										
HEMLEAV										
TOTAL	149.0	11.6	220	249	278	886	221	98		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	55.7	8.5	203	222	241					
DOUG FIR	233.1	35.5	7	11	15					
S SPRUCE	196.6	30.0	8	12	15					
R ALDER	278.9	42.5	8	14	20					
NOB FIR	320.2	48.8	3	5	8					
SNAG	224.3	34.2	3	4	6					
DOUGLEAV	476.6	72.6	0	2	3					
SPRUCELV	332.9	50.7	1	1	2					
CEDLEAV	655.7	99.9	0	2	3					
NFIRLEAV	655.7	99.9	0	0	1					
HEMLEAV	655.7	99.9	0	0	0					
TOTAL	36.6	5.6	258	273	289	53	13	6		

TC TSTATS				STATISTICS			PAGE 2		
				PROJECT MODGRN			DATE 7/23/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	08W	08	CC124	00CC	88.50	43	345	1	W
CL: 68.1%		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL: 68.1%		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	46.5	7.1	217	233	250				
DOUG FIR	227.2	34.6	13	20	28				
S SPRUCE	180.8	27.5	14	20	25				
R ALDER	287.5	43.8	9	16	23				
NOB FIR	320.2	48.8	5	10	15				
SNAG	206.4	31.4	6	9	12				
DOUGLEAV	428.3	65.3	2	5	8				
SPRUCELV	315.9	48.1	2	4	6				
CEDLEAV	655.7	99.9	0	2	4				
NFIRLEAV	655.7	99.9	0	1	2				
HEMLEAV	655.7	99.9	0	1	2				
TOTAL	19.5	3.0	311	321	330	15	4	2	
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	54.3	8.3	24,649	26,872	29,095				
DOUG FIR	253.3	38.6	1,786	2,909	4,032				
S SPRUCE	183.5	28.0	1,794	2,490	3,187				
R ALDER	327.7	49.9	434	866	1,299				
NOB FIR	320.2	48.8	585	1,143	1,701				
SNAG									
DOUGLEAV	396.8	60.5	361	912	1,463				
SPRUCELV	317.0	48.3	333	643	954				
CEDLEAV	655.7	99.9	0	106	212				
NFIRLEAV	655.7	99.9	0	94	189				
HEMLEAV	655.7	99.9	0	151	303				
TOTAL	35.9	5.5	34,206	36,188	38,170	52	13	6	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		MODGRN		DATE	5/1/2009	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	CC124	TAKE	88.50	43	322	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL	43	322	7.5							
CRUISE	22	148	6.7	23,363			.6			
DBH COUNT										
REFOREST										
COUNT	21	164	7.8							
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
WHEMLOCK	105	222.0	13.9	49		233.5	29,676	26,872	8,040	7,658
DOUG FIR	13	10.9	18.6	63		20.5	3,320	2,909	789	716
S SPRUCE	12	11.8	17.4	51		19.5	2,713	2,490	707	669
R ALDER	17	14.1	14.3	36		15.8	960	866	356	329
NOB FIR	1	5.2	19.0	70	2	10.2	1,143	1,143	353	353
TOTAL	148	264.0	14.4	49		299.5	37,812	34,281	10,246	9,727
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	111.9	10.9	179	200	222					
DOUG FIR	133.1	38.4	360	585	809					
S SPRUCE	128.0	38.5	254	413	573					
R ALDER	94.1	23.5	56	74	91					
NOB FIR										
TOTAL	148.5	12.2	208	237	266	880	220	98		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	55.7	8.5	203	222	241					
DOUG FIR	233.1	35.5	7	11	15					
S SPRUCE	196.6	30.0	8	12	15					
R ALDER	278.9	42.5	8	14	20					
NOB FIR	320.2	48.8	3	5	8					
TOTAL	42.0	6.4	247	264	281	71	18	8		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	46.5	7.1	217	233	250					
DOUG FIR	227.2	34.6	13	20	28					
S SPRUCE	180.8	27.5	14	20	25					
R ALDER	287.5	43.8	9	16	23					
NOB FIR	320.2	48.8	5	10	15					
TOTAL	27.7	4.2	287	300	312	31	8	3		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	54.3	8.3	24,649	26,872	29,095					
DOUG FIR	253.3	38.6	1,786	2,909	4,032					
S SPRUCE	183.5	28.0	1,794	2,490	3,187					
R ALDER	327.7	49.9	434	866	1,299					
NOB FIR	320.2	48.8	585	1,143	1,701					
TOTAL	37.9	5.8	32,302	34,281	36,261	57	14	6		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	MODGRN		DATE	5/1/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	CC124	LEAV	88.50	43	23	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		43	23	.5						
CRUISE		12	18	1.5	810		2.2			
DBH COUNT										
REFOREST										
COUNT		5	5	1.0						
BLANKS		26								
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
SNAG	8	4.5	19.5	26		9.3				
DOUGLEAV	4	1.8	22.0	84		4.7	912	912	210	210
SPRUCELV	2	.8	25.3	83		2.8	517	482	126	126
CEDLEAV	2	1.5	15.0	45		1.9	106	106	49	49
NFIRLEAV	1	.5	19.0	70	0	.9	94	94	31	31
HEMLEAV	1	.1	36.0	82		.9	159	151	37	37
TOTAL	18	9.2	20.2	48		20.5	1,789	1,746	453	453
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SNAG										
DOUGLEAV	84.3	48.1	380	732	1,085					
SPRUCELV	75.2	70.4	234	790	1,346					
CEDLEAV										
NFIRLEAV										
HEMLEAV										
TOTAL	144.2	36.0	226	353	480	882	221	98		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SNAG	224.3	34.2	3	4	6					
DOUGLEAV	476.6	72.6	0	2	3					
SPRUCELV	395.1	60.2	0	1	1					
CEDLEAV	655.7	99.9	0	2	3					
NFIRLEAV	655.7	99.9	0	0	1					
HEMLEAV	655.7	99.9	0	0	0					
TOTAL	191.5	29.2	6	9	12	1,464	366	163		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SNAG	206.4	31.4	6	9	12					
DOUGLEAV	428.3	65.3	2	5	8					
SPRUCELV	369.5	56.3	1	3	4					
CEDLEAV	655.7	99.9	0	2	4					
NFIRLEAV	655.7	99.9	0	1	2					
HEMLEAV	655.7	99.9	0	1	2					
TOTAL	161.7	24.6	15	20	26	1,044	261	116		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SNAG										
DOUGLEAV	396.8	60.5	361	912	1,463					
SPRUCELV	371.1	56.5	210	482	755					
CEDLEAV	655.7	99.9	0	106	212					

STATISTICS
PROJECT MODGRN

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	08W	08	CC124	LEAV	88.50	43	23	1	W
CL: 68.1%	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
NFIRLEAV	655.7	99.9	0	94	189				
HEMLEAV	655.7	99.9	0	151	303				
TOTAL	236.4	36.0	1,117	1,746	2,375	2,232	558	248	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	MODGRN		DATE	7/23/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	PC3	00PC	48.80	30	217	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		30	217	7.2						
CRUISE		30	217	7.2	10,016		2.2			
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
SPRUCELV	64	27.7	23.8	72		85.3	14,050	13,060	3,582	3,404
HEMLEAV	61	51.3	17.0	61		81.3	11,288	10,423	3,047	2,886
WHEMLOCK	58	87.7	12.7	45		77.3	8,750	8,194	2,464	2,378
S SPRUCE	13	15.7	14.2	53		17.3	2,340	2,298	633	623
SNAG	6	3.2	21.5	51		8.0				
NFIRLEAV	4	1.7	24.1	77	1	5.3	840	786	203	195
CEDLEAV	3	4.1	13.5	27		4.0	161	136	73	47
R ALDER	3	4.2	13.2	32		4.0	188	188	78	78
NOB FIR	2	4.0	11.0	57	1	2.7	384	384	99	99
ALDRLEAV	2	4.9	10.0	24		2.7	147	147	44	44
DOUGLEAV	1	.8	17.0	56		1.3	118	118	41	41
TOTAL	217	205.2	16.1	52		289.3	38,267	35,734	10,265	9,795
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SPRUCELV	70.1	8.8	651	713	776					
HEMLEAV	63.0	8.1	277	301	326					
WHEMLOCK	84.3	11.1	131	148	164					
S SPRUCE	84.3	24.3	179	237	294					
SNAG										
NFIRLEAV	76.9	43.9	338	603	867					
CEDLEAV	94.4	65.3	9	27	44					
R ALDER	32.7	22.6	36	47	57					
NOB FIR	7.4	7.0	88	95	102					
ALDRLEAV			30	30	30					
DOUGLEAV										
TOTAL	107.8	7.3	336	363	389	464	116	52		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SPRUCELV	86.5	16.1	23	28	32					
HEMLEAV	124.3	23.1	39	51	63					
WHEMLOCK	146.6	27.2	64	88	112					
S SPRUCE	388.0	72.0	4	16	27					
SNAG	316.6	58.8	1	3	5					
NFIRLEAV	278.0	51.6	1	2	3					
CEDLEAV	409.6	76.0	1	4	7					
R ALDER	426.1	79.1	1	4	8					
NOB FIR	380.6	70.6	1	4	7					
ALDRLEAV	380.6	70.6	1	5	8					
DOUGLEAV	547.7	101.7		1	2					
TOTAL	97.3	18.1	168	205	242	392	98	44		

TC TSTATS				STATISTICS			PAGE 2		
				PROJECT MODGRN			DATE 7/23/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	08W	08	PC3	00PC	48.80	30	217	1	W
CL: 68.1%		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL: 68.1%		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
SPRUCELV	64.8	12.0	75	85	96				
HEMLEAV	74.7	13.9	70	81	93				
WHEMLOCK	102.5	19.0	63	77	92				
S SPRUCE	301.1	55.9	8	17	27				
SNAG	203.4	37.8	5	8	11				
NFIRLEAV	259.3	48.1	3	5	8				
CEDLEAV	402.6	74.7	1	4	7				
R ALDER	402.6	74.7	1	4	7				
NOB FIR	380.6	70.6	1	3	5				
ALDRLEAV	380.6	70.6	1	3	5				
DOUGLEAV	547.7	101.7	1	1	3				
TOTAL	47.7	8.9	264	289	315	94	24	10	
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
SPRUCELV	69.9	13.0	11,366	13,060	14,754				
HEMLEAV	79.1	14.7	8,893	10,423	11,953				
WHEMLOCK	106.8	19.8	6,570	8,194	9,818				
S SPRUCE	285.1	52.9	1,082	2,298	3,514				
SNAG									
NFIRLEAV	262.3	48.7	404	786	1,169				
CEDLEAV	381.9	70.9	39	136	232				
R ALDER	399.5	74.2	49	188	328				
NOB FIR	381.1	70.8	112	384	655				
ALDRLEAV	380.6	70.6	43	147	250				
DOUGLEAV	547.7	101.7		118	239				
TOTAL	53.4	9.9	32,194	35,734	39,275	118	29	13	

TC TSTATS				STATISTICS				PAGE 1		
PROJECT MODGRN				DATE 5/1/2009						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	PC3	TAKE	48.80	30	76	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		30	76	2.5						
CRUISE		22	76	3.5	5,446	1.4				
DBH COUNT										
REFOREST										
COUNT										
BLANKS		8								
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	58	87.7	12.7	45		77.3	8,750	8,194	2,464	2,378
S SPRUCE	13	15.7	14.2	53		17.3	2,340	2,298	633	623
R ALDER	3	4.2	13.2	32		4.0	188	188	78	78
NOB FIR	2	4.0	11.0	57	1	2.7	384	384	99	99
TOTAL	76	111.6	12.9	46		101.3	11,663	11,064	3,274	3,178
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		84.3	11.1	131	148	164				
S SPRUCE		84.3	24.3	179	237	294				
R ALDER		32.7	22.6	36	47	57				
NOB FIR		7.4	7.0	88	95	102				
TOTAL		89.6	10.3	141	158	174	321	80	36	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		146.6	27.2	64	88	112				
S SPRUCE		388.0	72.0	4	16	27				
R ALDER		426.1	79.1	1	4	8				
NOB FIR		380.6	70.6	1	4	7				
TOTAL		130.4	24.2	85	112	139	703	176	78	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		102.5	19.0	63	77	92				
S SPRUCE		301.1	55.9	8	17	27				
R ALDER		402.6	74.7	1	4	7				
NOB FIR		380.6	70.6	1	3	5				
TOTAL		94.9	17.6	83	101	119	372	93	41	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		106.8	19.8	6,570	8,194	9,818				
S SPRUCE		285.1	52.9	1,082	2,298	3,514				
R ALDER		399.5	74.2	49	188	328				
NOB FIR		381.1	70.8	112	384	655				
TOTAL		105.9	19.7	8,888	11,064	13,241	464	116	52	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	MODGRN		DATE	5/1/2009		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	PC3	LEAV	48.80	30	141	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	30	141	4.7							
CRUISE	30	141	4.7		4,570		3.1			
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
SPRUCELV	64	27.7	23.8	72	111	85.3	14,050	13,060	3,582	3,404
HEMLEAV	61	51.3	17.0	61	120	81.3	11,288	10,423	3,047	2,886
SNAG	6	3.2	21.5	51		8.0				
NFIRLEAV	4	1.7	24.1	77	7 1	5.3	840	786	203	195
CEDLEAV	3	4.1	13.5	27	7	4.0	161	136	73	47
ALDRLEAV	2	4.9	10.0	24	5	2.7	147	147	44	44
DOUGLEAV	1	.8	17.0	56	2	1.3	118	118	41	41
TOTAL	141	93.6	19.2	60	252 ÷ 800 = 31.5	188.0	26,605	24,670	6,991	6,617
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SPRUCELV	70.1	8.8	651	713	776					
HEMLEAV	63.0	8.1	277	301	326					
SNAG										
NFIRLEAV	76.9	43.9	338	603	867					
CEDLEAV	94.4	65.3	9	27	44					
ALDRLEAV			30	30	30					
DOUGLEAV										
TOTAL	92.1	7.7	437	473	510	339	85	38		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SPRUCELV	86.5	16.1	23	28	32					
HEMLEAV	124.3	23.1	39	51	63					
SNAG	316.6	58.8	1	3	5					
NFIRLEAV	278.0	51.6	1	2	3					
CEDLEAV	409.6	76.0	1	4	7					
ALDRLEAV	380.6	70.6	1	5	8					
DOUGLEAV	547.7	101.7		1	2					
TOTAL	72.7	13.5	81	94	106	219	55	24		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
SPRUCELV	64.8	12.0	75	85	96					
HEMLEAV	74.7	13.9	70	81	93					
SNAG	203.4	37.8	5	8	11					
NFIRLEAV	259.3	48.1	3	5	8					
CEDLEAV	402.6	74.7	1	4	7					
ALDRLEAV	380.6	70.6	1	3	5					
DOUGLEAV	547.7	101.7		1	3					
TOTAL	29.1	5.4	178	188	198	35	9	4		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		

STATISTICS
PROJECT MODGRN

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	08W	08	PC3	LEAV	48.80	30	141	1	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
SPRUCELV		69.9	13.0	11,366	13,060	14,754			
HEMLEAV		79.1	14.7	8,893	10,423	11,953			
SNAG									
NFIRLEAV		262.3	48.7	404	786	1,169			
CEDLEAV		381.9	70.9	39	136	232			
ALDRLEAV		380.6	70.6	43	147	250			
DOUGLEAV		547.7	101.7		118	239			
TOTAL		36.2	6.7	23,012	24,670	26,328	54	14	6

TC TSTATS		STATISTICS							PAGE	1
		PROJECT		MODGRN			DATE		5/1/2009	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	08W	08	AREA5RW	00CC	1.70	43	343	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		43	343	8.0						
CRUISE		25	164	6.6	460	35.6				
DBH COUNT										
REFOREST										
COUNT		18	156	8.7						
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	106	221.1	13.9	49		234.4	29,892	27,084	8,085	7,705
DOUG FIR	17	12.5	19.2	67		25.1	4,274	3,889	1,007	938
S SPRUCE	14	13.0	18.1	54		23.3	3,384	3,115	872	833
R ALDER	17	14.1	14.3	36		15.8	960	866	356	329
NOB FIR	2	5.7	19.0	70	3	11.2	1,247	1,247	386	386
SNAG	8	4.5	19.5	26		9.3				
TOTAL	<i>164</i>	<i>270.8</i>	<i>14.7</i>	<i>49</i>		<i>319.1</i>	<i>39,757</i>	<i>36,202</i>	<i>10,706</i>	<i>10,192</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	115.4	11.2	186	209	233					
DOUG FIR	117.5	29.4	438	619	801					
S SPRUCE	113.8	31.5	320	467	614					
R ALDER	94.1	23.5	56	74	91					
NOB FIR			220	220	220					
SNAG										
TOTAL	<i>148.9</i>	<i>11.6</i>	<i>221</i>	<i>250</i>	<i>279</i>	<i>886</i>	<i>221</i>	<i>98</i>		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	55.6	8.5	202	221	240					
DOUG FIR	219.6	33.5	8	12	17					
S SPRUCE	177.5	27.0	9	13	17					
R ALDER	278.9	42.5	8	14	20					
NOB FIR	296.0	45.1	3	6	8					
SNAG	224.3	34.2	3	4	6					
TOTAL	<i>38.0</i>	<i>5.8</i>	<i>255</i>	<i>271</i>	<i>286</i>	<i>58</i>	<i>14</i>	<i>6</i>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	46.0	7.0	218	234	251					
DOUG FIR	217.1	33.1	17	25	33					
S SPRUCE	168.8	25.7	17	23	29					
R ALDER	287.5	43.8	9	16	23					
NOB FIR	296.0	45.1	6	11	16					
SNAG	206.4	31.4	6	9	12					
TOTAL	<i>21.8</i>	<i>3.3</i>	<i>308</i>	<i>319</i>	<i>330</i>	<i>19</i>	<i>5</i>	<i>2</i>		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	53.7	8.2	24,868	27,084	29,301					
DOUG FIR	246.9	37.6	2,426	3,889	5,352					
S SPRUCE	176.0	26.8	2,280	3,115	3,951					
R ALDER	327.7	49.9	434	866	1,299					

STATISTICS
PROJECT MODGRN

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	08W	08	AREA5RW	00CC	1.70	43	343	1	W
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
NOB FIR		296.0	45.1	685	1,247	1,810			
SNAG									
TOTAL		36.6	5.6	34,182	36,202	38,223	54	13	6

Log Stock Table - MBF

T07N R08W S08 Ty00CC	1.70
T07N R08W S08 TyTAKE	88.50
T07N R08W S08 TyTAKE	48.80

Project: **MODGRN**
Acres **139.00**

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Time **10:41:12AM**

S Spp	Gr T	Log rt de	Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches														
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+			
H	DO	CU	6	31	100.0																	
H	DO	CU	8	9	100.0																	
H	DO	CU	9	1	100.0																	
H	DO	CU	12	46	100.0																	
H	DO	CU	15	5	100.0																	
H	DO	CU	20	30	100.0																	
H	DO	CU	26	9	100.0																	
H	DO	CU	28	25	100.0																	
H	DO	2S	20	4		4	.2							4								
H	DO	2S	24	51		51	1.8						31	16	5							
H	DO	2S	32	222	6.6	207	7.3						119	64		23	0					
H	DO	2S	36	5	5.6	5	.2						5									
H	DO	2S	40	691	6.0	649	23.0						22	195	113	217	103					
H	DO	3S	16	13	25.0	10	.3							10								
H	DO	3S	20	18	21.2	14	.5					3	11									
H	DO	3S	22	16	31.3	11	.4							11								
H	DO	3S	26	4		4	.1															
H	DO	3S	28	37		37	1.3					24	13									
H	DO	3S	30	22		22	.8					7	15									
H	DO	3S	32	576	4.3	551	19.5					118	209	225								
H	DO	3S	34	49		49	1.7					43	6									
H	DO	3S	36	53		53	1.9					53										
H	DO	3S	38	89		89	3.1					83		5								
H	DO	3S	40	683	3.3	661	23.4					233	70	307	51							
H	DO	4S	12	7		7	.2					7										
H	DO	4S	14	17		17	.6					9	7									
H	DO	4S	16	81	3.7	78	2.8					72	6									
H	DO	4S	18	35		35	1.2					33	2									
H	DO	4S	20	42	3.1	40	1.4					35	5									
H	DO	4S	22	48		48	1.7					48										
H	DO	4S	24	95	1.3	94	3.3					71	23									
H	DO	4S	26	33		33	1.2					33										
H	DO	4S	28	11		11	.4					11										
H	DO	4S	30	41		41	1.5					41										
H	DO	4S	32	6	40.0	3	.1					3										
H	Totals			3,104	9.0	2,824	77.7					925	363	570	409	208	222	127	0			

Log Stock Table - MBF

T07N R08W S08 Ty00CC	1.70
T07N R08W S08 TyTAKE	88.50
T07N R08W S08 TyTAKE	48.80

Project: **MODGRN**
 Acres **139.00**

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 Date **5/1/2009**
 Time **10:41:12AM**

S Spp	Gr T	Log rt de	Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
D	DO	CU	6	23	100.0														
D	DO	CU	18	8	100.0														
D	DO	2S	32	93	1.5	91	34.6					16	5	29	0	41			
D	DO	2S	40	100		99	37.6					14		45	41				
D	DO	3S	20	16		16	6.0				8	8							
D	DO	3S	28	0		0	.0				0								
D	DO	3S	32	10	33.3	7	2.6				7								
D	DO	3S	34	0		0	.1				0	0							
D	DO	3S	36	6	12.5	6	2.1				6								
D	DO	3S	38	4		4	1.6					4							
D	DO	3S	40	20		20	7.7				7	14							
D	DO	4S	16	7		7	2.8				6	1							
D	DO	4S	18	6		6	2.3				6								
D	DO	4S	20	2		2	.6					2							
D	DO	4S	22	2		2	.7					2							
D	DO	4S	24	3		3	1.3				3								
D	DO	4S	30	0		0	.0				0								
D	Totals			301	12.3	264	7.3				22	37	14	30	5	73	41	41	
S	DO	CU	6	15	100.0														
S	DO	CU	8	1	100.0														
S	DO	CU	12	6	100.0														
S	DO	2S	16	9		9	2.6							9					
S	DO	2S	32	40		40	11.9					13		27					
S	DO	2S	40	113		113	33.4					42	0	25	24	21			
S	DO	3S	16	2		2	.5					2							
S	DO	3S	24	1		1	.4				1								
S	DO	3S	30	2		2	.7				2								
S	DO	3S	32	93		93	27.6				11	14	69						
S	DO	3S	40	46		46	13.6				12	18	16						
S	DO	4S	16	17		17	5.0				17								
S	DO	4S	20	10		10	3.0				10								
S	DO	4S	22	2		2	.6				2								
S	DO	4S	32	3		3	.8				3								
S	Totals			360	6.2	338	9.3				55	35	85	56	0	61	24	21	

Log Stock Table - MBF

T07N R08W S08 Ty00CC 1.70
 T07N R08W S08 TyTAKE 88.50
 T07N R08W S08 TyTAKE 48.80

Project: MODGRN
 Acres 139.00

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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		DO	CU	16	5	100.0														
A		DO	CU	27	2	100.0														
A		DO	CR	20	1		1	1.5			1									
A		DO	CR	24	13	7.1	12	14.3			6		6							
A		DO	CR	28	3	20.0	2	2.8			2									
A		DO	CR	30	12	5.2	11	12.5			11									
A		DO	CR	32	19		19	22.0			7	4		8						
A		DO	CR	40	41		41	46.9			31			9						
A		Totals			96	8.8	87	2.4			59	4		24						
NF		DO	2S	32	75		75	61.6					75							
NF		DO	3S	32	14		14	11.3				14								
NF		DO	3S	36	28		28	22.8			28									
NF		DO	4S	20	2		2	1.6			2									
NF		DO	4S	24	3		3	2.4			3									
NF		DO	4S	36	0		0	.2			0									
NF		Totals			122		122	3.4			33	14		75						
Total		All Species			3,983	8.7	3,635	100.0			1095	454		668	594		214	356	192	62

CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Modified Green Area(s) 1,2 & 4

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

Approx. Cruise Acres: 88.5 Estimated CV% 45 ^{Net BF or} BA/Acre SE% Objective 11 ^{Net BF or}
BA/Acre

Planned Sale Volume: 3.5 MMBF Estimated Sale Area Value/Acre: \$3,000

A. **Cruise Goals:** (a) Grade minimum 100 conifer and 50 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;)
Basal Area leave target _____ sq. ft. Cruiser needs to select or leave trees per plot.

Cruise all Alder All Cedar Are Leave

B. **Cruise Design:**

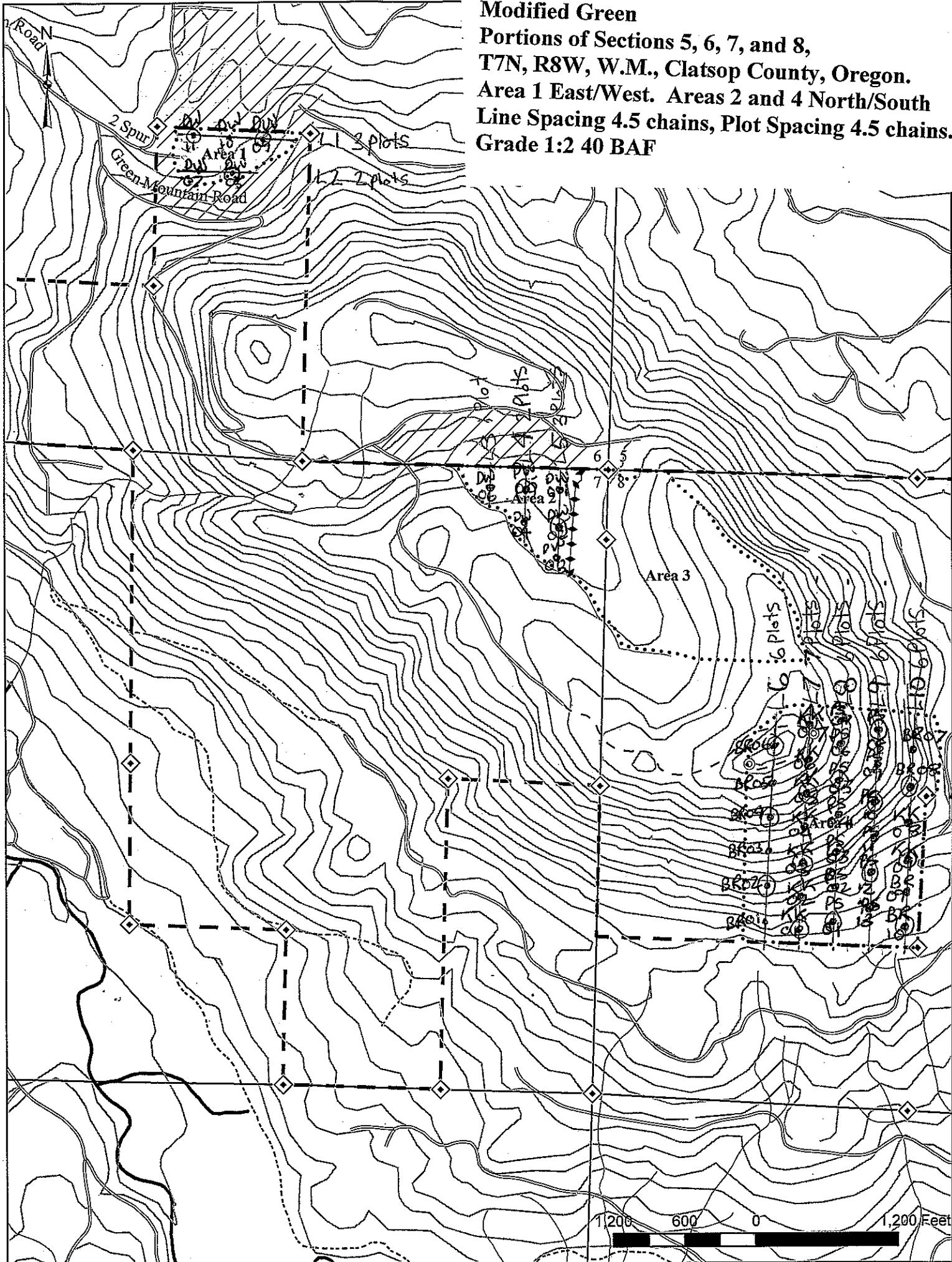
1. **Plot Cruises:** BAF 40 (Full point, Half point) (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) North/South
Cruise Line Spacing 4.5 (chains) (feet)
Cruise Plot Spacing 4.5 (chains) (feet)
Grade/Count Ratio 1:2

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

C. **Tree Measurements:**

- 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.
- 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.
- Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7" , 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 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.

Modified Green
Portions of Sections 5, 6, 7, and 8,
T7N, R8W, W.M., Clatsop County, Oregon.
Area 1 East/West. Areas 2 and 4 North/South
Line Spacing 4.5 chains, Plot Spacing 4.5 chains.
Grade 1:2 40 BAF



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Modified Green **Area** 3

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

Approx. Cruise Acres: 48.8 **Estimated CV%** 45 ^{Net BF or} **BA/Acre** **SE% Objective** 11 ^{Net BF or}

Planned Sale Volume: .5 **MMBF** **Estimated Sale Area Value/Acre:** \$2,000

A. Cruise Goals: (a) Grade minimum 100 conifer and 50 hardwood trees:

(b) Sample 31 cruise plots; (c) Other goals (X 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 190 sq. ft. Cruiser needs to select 4 or 5 leave trees per plot. Leave all Cedar, Leave all alder less than 10".

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)

Fixed Plot Size / Plot Radius / feet

Cruise Line Direction(s) N40W

Cruise Line Spacing 5 (chains) (feet)

Cruise Plot Spacing 3 (chains) (feet)

Grade/Count Ratio 1:1

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.

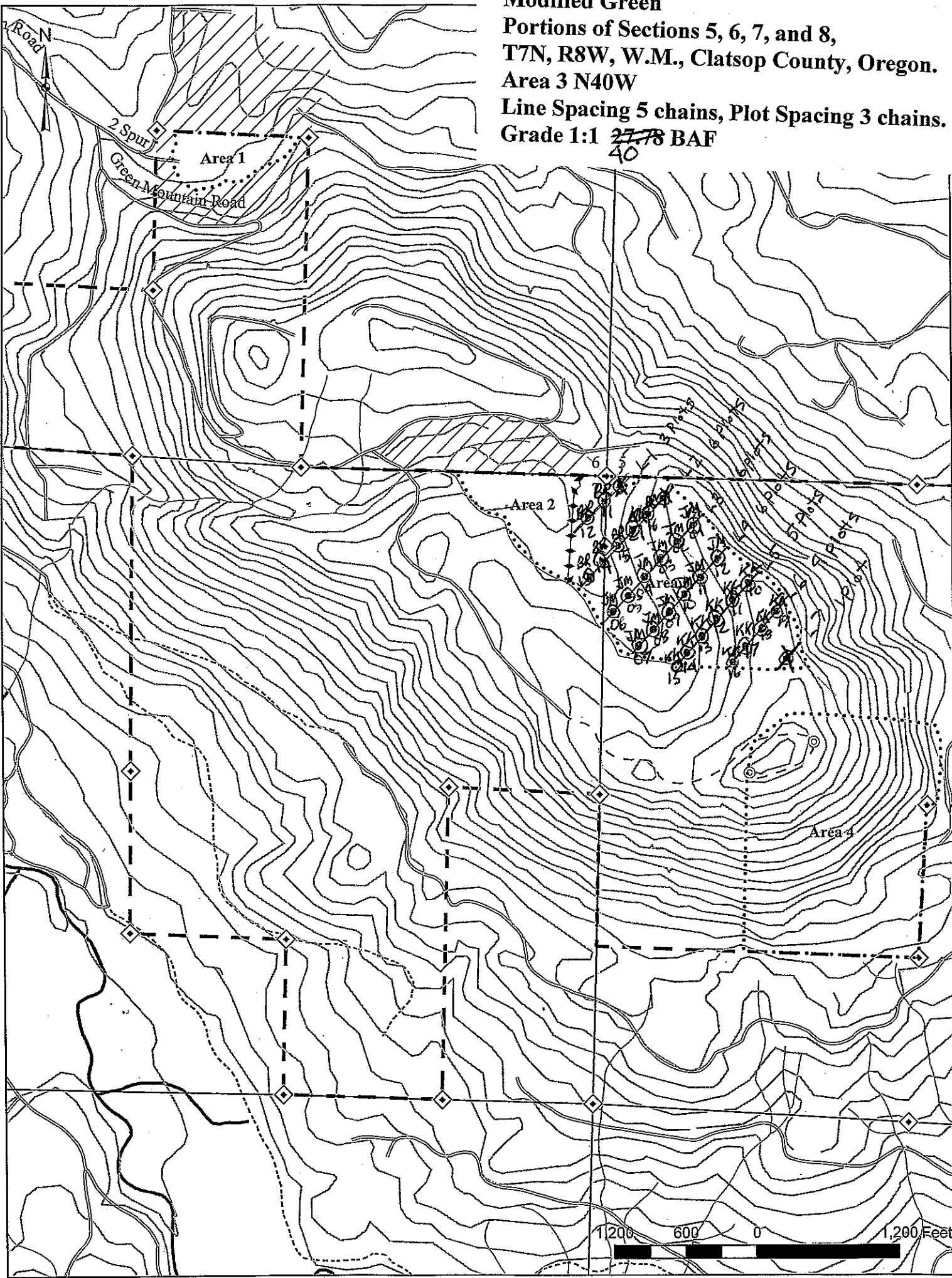
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.

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.

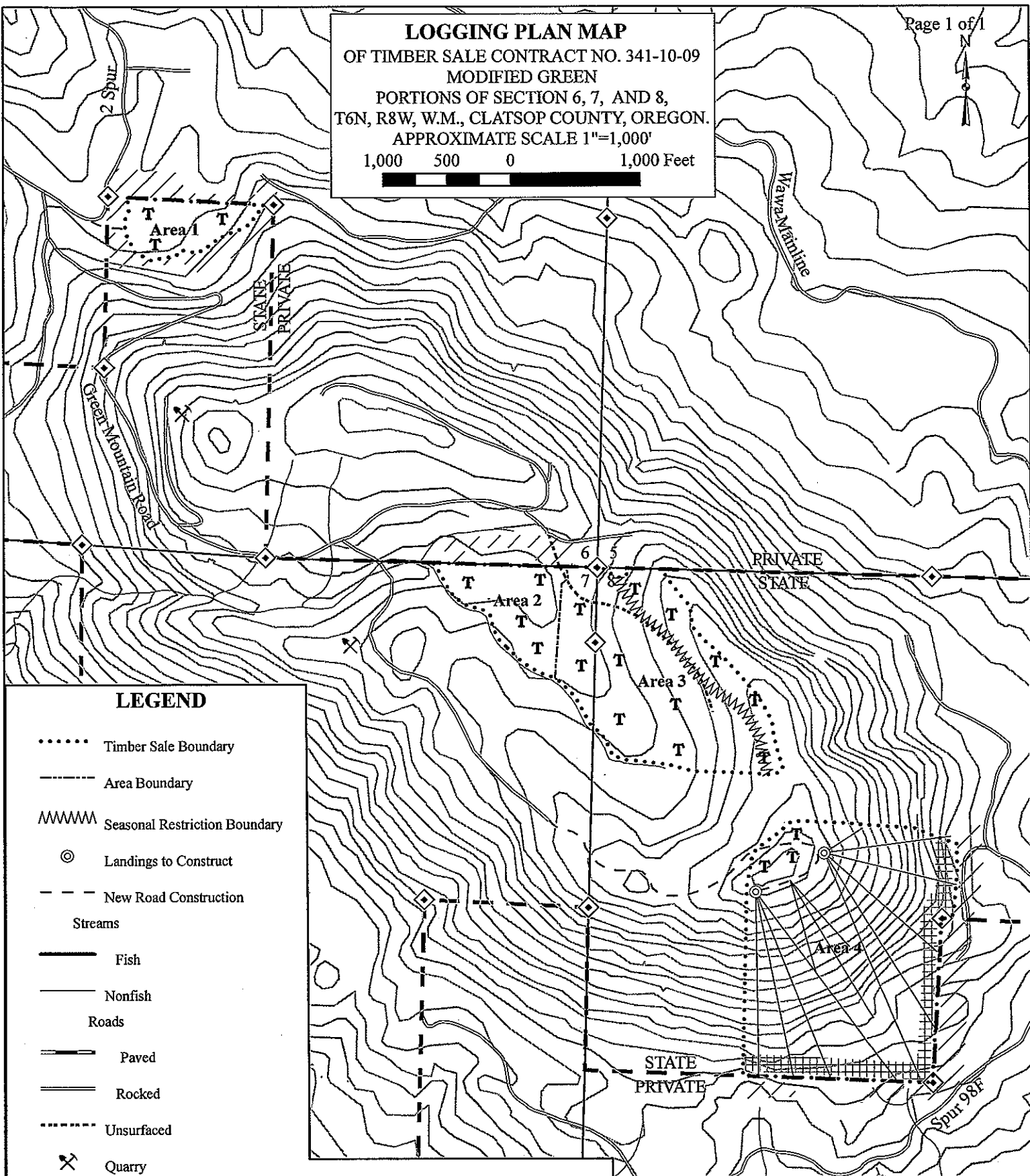
3. Top Cruise Diameter (TCD): Minimum top outside bark for conifer is 7 ", 7 " for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.

4. Form Factors: (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major

Modified Green
Portions of Sections 5, 6, 7, and 8,
T7N, R8W, W.M., Clatsop County, Oregon.
Area 3 N40W
Line Spacing 5 chains, Plot Spacing 3 chains.
Grade 1:1 ~~27.78~~ ⁴⁰ BAF



LOGGING PLAN MAP
 OF TIMBER SALE CONTRACT NO. 341-10-09
 MODIFIED GREEN
 PORTIONS OF SECTION 6, 7, AND 8,
 T6N, R8W, W.M., CLATSOP COUNTY, OREGON.
 APPROXIMATE SCALE 1"=1,000'
 1,000 500 0 1,000 Feet



LEGEND

- Timber Sale Boundary
- Area Boundary
- ~~~~~ Seasonal Restriction Boundary
- ⊙ Landings to Construct
- - - - - New Road Construction
- Streams
- Fish
- Nonfish
- Roads
- Paved
- Rocked
- - - - - Unsurfaced
- ⌵ Quarry
- /// Reforestation Area
- [-] Ownership
- ▣ Top Attached Yarding
- Cable Yarding
- T** Tractor Yarding

APPROXIMATE ACREAGE

AREA	MC ACRES	PC ACRES
AREA 1	8.1	
AREA 2	11.8	
AREA 3		48.8
AREA 4	68.6	
AREA 5 R/W	1.7	
TOTAL	90.2	48.8
TOTAL ALL AREAS - 139		

LOGGING BREAKDOWN

AREA	TRACTOR	CABLE
AREA 1	100%	0%
AREA 2	100%	0%
AREA 3	100%	0%
AREA 4	9%	91%
TOTAL	45%	55%