



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Minich Ridge  
Sale 341-08-03

District: Tillamook

Date: June 04, 2007

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**Cost Summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sales Value</b>	\$123,338.74	\$0.00	\$123,338.74
		<b>Project Work:</b>	\$(29,910.00)
		<b>Advertised Value:</b>	\$93,428.74



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**Timber Description**

Location: Portions of Sections 11 and 14, T1N, R10W, W.M., Tillamook County, Oregon.

Stand Stocking: 40%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	13	0	95
Western Hemlock / Fir	13	0	95
Sitka Spruce	11	0	95

Volume by Grade	2S	3S	4S	SM	Total
Douglas - Fir	14	222	143	0	379
Western Hemlock / Fir	28	201	105	13	347
Sitka Spruce	0	6	36	0	42
Total	42	429	284	13	768



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Comments: Pond Values Used: 1st Quarter Calendar Year 2007.

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost  
\$813/MBF = \$1,150/MBF - \$337/MBF

Red Alder Stumpage Price = Pond Value minus Logging Cost  
\$493/MBF = \$830/MBF - \$337/MBF

HAULING

Hauling costs equivalent to \$700 daily truck cost.

Other Costs (Profit and Risk to be added):

Brand and Paint: \$2/MBF x 768 MBF = \$ 1,536

TOTAL Other Costs (Profit and Risk to be added) = \$1,536

Other Costs (No Profit and Risk added):

Tank Trap Installation 1 hr. x \$75/hr. (3 times) = \$225

Move-in backhoe \$203

Sort slash at landings 90ac. x 2 hrs. (1hr./50ac.) x \$90/hr.=  
\$180

Water Bars \$25each (6 times) = \$150

Slashing (Helicopter Landing Zone) 2 hrs. x \$50/hr. = \$100

TOTAL Other Costs (No Profit and Risk added) = \$858

ROAD MAINTENANCE

Final Grading (once per 2MMBF)

Maintenance - \$500/Mile x 3.1miles x 1 grading + \$107move in/  
(768MBF) = \$2.16/MBF

Compaction - \$13.20/Station x 161 stations + \$137 move in/(768MBF)  
= \$2.95/MBF

Watering - 8 hrs. x \$65/hr.+ \$41 move in/(768MBF)= \$.73/MBF

Surfacing - 15cy/mile x .768MBF x 3.1 miles x 18.98cy/(768MBF) = \$  
.88/MBF

Green Diamond Maintenance Fee (\$210) - \$2.00/MBF x .42 miles x  
250/MBF/(768MBF) = .27

TOTAL MAINTENANCE COST = \$6.99/MBF



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**Logging Conditions**

**Combination#: 1**

	Douglas - Fir	71.34%
	Western Hemlock / Fir	65.95%
	Sitka Spruce	63.00%
<b>Yarding Distance</b>	Medium (800 ft)	<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70	<b>Process:</b> Stroke Delimber
<b>Tree Size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF	
<b>Loads / Day:</b>	4.5	<b>Bd. Ft / Load:</b> 3,700
<b>Cost / MBF:</b>	\$200.85	
<b>Machines:</b>	Log Loader (A) Stroke Delimber (A) Tower Yarder (Medium)	

**Combination#: 2**

	Douglas - Fir	28.66%
	Western Hemlock / Fir	34.05%
	Sitka Spruce	37.00%
<b>Yarding Distance</b>	Short (400 ft)	<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Track Skidder	<b>Process:</b> Manual Felling/Delimiting
<b>Tree Size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF	
<b>Loads / Day:</b>	9.0	<b>Bd. Ft / Load:</b> 3,700
<b>Cost / MBF:</b>	\$103.32	
<b>Machines:</b>	Log Loader (B) Track Skidder	



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**Logging Costs**

Operating Seasons:	2.00	Profit Risk:	15.00%
Project Costs:	\$29,910.00	Other Costs (P/R):	\$1,536.00
Slash Disposal:	\$0.00	Other Costs:	\$858.00

**Miles of Road**

Road Maintenance: \$6.99

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	2.0	3.3
Western Hemlock / Fir	\$0.00	3.0	3.3
Sitka Spruce	\$0.00	3.0	3.4



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**Logging Costs Breakdown**

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
<b>Douglas - Fir</b>									
\$172.90	\$7.34	\$11.42	\$96.84	\$2.00	\$43.58	\$0.00	\$2.00	\$1.12	\$337.20
<b>Western Hemlock / Fir</b>									
\$167.64	\$7.34	\$11.42	\$64.55	\$2.00	\$37.94	\$0.00	\$2.00	\$1.12	\$294.01
<b>Sitka Spruce</b>									
\$164.76	\$7.34	\$11.42	\$62.66	\$2.00	\$37.23	\$0.00	\$2.00	\$1.12	\$288.53

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$565.82	\$228.62	\$0.00
Western Hemlock / Fir	\$0.00	\$386.69	\$92.68	\$0.00
Sitka Spruce	\$0.00	\$396.43	\$107.90	\$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

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	379	\$228.62	\$86,646.98
Western Hemlock / Fir	347	\$92.68	\$32,159.96
Sitka Spruce	42	\$107.90	\$4,531.80

**Gross Timber Sale Value**

Recovery: \$123,338.74

Prepared by: David Luttrell

Phone: 503-815-7025



"STEWARDSHIP IN FORESTRY"

## PROJECT SUMMARY SHEET

Sale: Minich Ridge

### CONSTRUCTION

Point	A to B	4+75	stations =	\$1,093.89
Point	E to F	7+10	stations =	\$9,918.70
<b>SUBTOTAL CONSTRUCTION</b>				<b>\$11,012.59</b>

### IMPROVEMENT

Point	A to B	9+50	stations =	\$2,187.79
Point	C to D	1+65	stations =	\$2,631.16
Point	E to F	157+75	stations =	\$3,567.65
<b>SUBTOTAL IMPROVEMENT</b>				<b>\$8,386.60</b>

### RECONSTRUCTION

Point	E to F	6+50	stations =	\$9,080.50
<b>SUBTOTAL IMPROVEMENT</b>				<b>\$9,080.50</b>

### MOVE IN

\$1,430.31

**GRAND TOTAL**

**\$29,910.00**



## SUMMARY OF CONSTRUCTION COST

Sale:	<u>Minich Ridge</u>				Road: <u>A to B</u>
Construction -	<u>4+75</u> stations <u>0.09</u> miles				Improvement - <u>9+50</u> stations <u>0.18</u> miles
CLEARING AND GRUBBING -					
Roadside Brushing		0.18	miles @	\$800.00 per mile =	\$144.00
Scattering		0.330	acres @	\$980.00 per acre =	\$323.40
				TOTAL CLEARING AND GRUBBING	<b>\$467.40</b>
EXCAVATION -					
Road Earthwork		4.75	sta. @	\$100.00 per sta. =	\$475.00
Landing Construction -14+25		1	@	\$285.00 per c.y. =	\$285.00
				TOTAL EXCAVATION	<b>\$760.00</b>
ROCK					
0+00 to 2+00	20	20	cy. of Crushed	@	\$18.64 per c.y. = \$372.80
Landing Rock 9+50	70	70	cy. of Crushed	@	\$16.89 per c.y. = \$1,182.30
				TOTAL ROCK	<b>\$1,555.10</b>
SPECIAL PROJECTS					
Grade and shape road -		14.25	stations @	\$15.50 per station	\$220.88
Roll subgrade w/ vibratory roller prior to rocking -		14.25	stations @	\$13.20 per station	\$188.10
Grass seed and fertilize -		0.11	acres @	\$220.00 per acre	\$24.20
Mulching -		0.110	acres @	\$600.00 per acre	\$66.00
				TOTAL SPECIAL PROJECTS	<b>\$499.18</b>
<b>GRAND TOTAL</b>					<b>\$3,281.68</b>

## SUMMARY OF CONSTRUCTION COST

Sale:	<u>Minich Ridge</u>	<u>Road:</u>	<u>C to D</u>		
Construction -	0+00 stations 0.00 miles	Improvement -	1+65 stations 0.03 miles		
CLEARING AND GRUBBING -					
Roadside Brushing		0.10 miles @	\$800.00 per mile =	\$80.00	
Scattering		0.100 acres @	\$980.00 per acre =	\$98.00	
			TOTAL CLEARING AND GRUBBING		<b>\$178.00</b>
ROCK					
0+00 to 1+65	50 cy. of	Crushed	@	\$17.30 per c.y. =	\$865.00
Landing Rock	70 cy. of	Crushed	@	\$17.30 per c.y. =	\$1,211.00
				TOTAL ROCK	<b>\$2,076.00</b>
SPECIAL PROJECTS					
Re-Construct Landing -		1.00 @	\$285.00 each	\$285.00	
Grade and shape road -		1.65 stations @	\$15.50 per station	\$25.58	
Roll subgrade w/ vibratory roller prior to rocking -		1.65 stations @	\$13.20 per station	\$21.78	
Grass seed and fertilize -		0.10 acres @	\$220.00 per acre	\$22.00	
Mulching -		0.038 acres @	\$600.00 per acre	\$22.80	
			TOTAL SPECIAL PROJECTS		<b>\$377.16</b>
<b>GRAND TOTAL</b>					<b>\$2,631.16</b>

## SUMMARY OF CONSTRUCTION COST

Sale:	<u>Minich Ridge</u>					Road: <u>E to F</u>	
Construction	7+10 stations <u>0.13</u> miles					Improvement -	157+75 stations <u>2.99</u> miles
Reconstruction	6+50 stations <u>0.12</u> miles						
CLEARING AND GRUBBING -							
Roadside Brushing			2.99 miles @		\$800.00 per mile =		\$2,392.00
Scattering			0.94 acres @		\$980.00 per acre =		\$921.20
					<b>TOTAL CLEARING AND GRUBBING</b>		<b>\$1,039.34</b>
EXCAVATION -							
Road Earthwork			13.6 sta. @		\$120.00 per sta. =		\$1,632.00
Pullback			107 cy. @		\$1.40 per c.y. =		\$149.80
Widening			312 cy. @		\$1.40 per c.y. =		\$436.80
Construct Landing			1 @		\$285.00 per c.y. =		\$285.00
Ditchline Cleaning & EH			20 sta. @		\$80.00 per sta. =		\$1,600.00
					<b>TOTAL EXCAVATION</b>		<b>\$4,103.60</b>
ENDHAUL -							
Pullback	160+75	to	161+15	108 cy. @	\$1.30 per c.y. =		\$140.40
Widening	159+00	to	166+00	312 cy. @	\$1.73 per c.y. =		\$539.76
Spread & compact				420 cy. @	\$0.25 per c.y. =		\$105.00
					<b>TOTAL ENDHAUL</b>		<b>\$785.16</b>
CULVERTS - MATERIALS & INSTALLATION							
			<u>Culverts</u>				
			32 LF of 30"	\$1,056.00			
				<u>\$1,056.00</u>			
			<u>Half Rounds</u>				
			0 LF of 21"	\$0.00	0 LF of 30"	\$0.00	
			0 LF of 36"	\$0.00	0 LF of 42"	\$0.00	
				<u>\$0.00</u>			
			<u>Culvert Stakes &amp; Markers</u>				
			1 markers	\$8.00			
				<u>\$8.00</u>			
					<b>TOTAL CULVERTS</b>		<b>\$1,064.00</b>
ROCK							
			191 cy. of Crushed	@	\$18.98 per c.y. =		\$3,625.18
			70 cy. of Crushed	@	\$17.51 per c.y. =		\$1,225.70
Landing Rock			20 cy. of Crushed	@	\$17.62 per c.y. =		\$352.40
Culvert Backfill	0+00		80 cy. of Crushed	@	\$18.82 per c.y. =		\$1,505.60
Spot Rock	*		453 cy. of Crushed	@	\$16.99 per c.y. =		\$7,696.47
					<b>TOTAL ROCK</b>		<b>\$14,405.35</b>
SPECIAL PROJECTS							
Grade and shape road -			20.00 stations @		\$15.50 per station		\$310.00
Roll subgrade w/ vibratory roller prior to rocking -			20.00 stations @		\$13.20 per station		\$264.00
Remove culverts from state lands			3.00 @		\$185.40 total		\$185.40
Grass seed and fertilize -			0.50 acres @		\$220.00 per acre		\$110.00
Mulching -			0.500 acres @		\$600.00 per acre		\$300.00
					<b>TOTAL SPECIAL PROJECTS</b>		<b>\$1,169.40</b>
<b>GRAND TOTAL</b>							<b>\$22,566.85</b>

## CRUSHED ROCK COST SUMMARY

Pit: Mohler (N.F. Nehalem)  
 Sale: Minich Ridge

Location: Sec. 14, T3N, R10W, W.M.

Move in Roller and Compactor	1	@	\$189.75	=	\$189.75
Move in Grader	1	@	\$58.40	=	\$58.40
Move in Trucks	4	@	\$52.93	=	\$211.72
Move in Water Truck	1	@	\$62.21	=	\$62.21
					\$522.08

Purchase 4"0"	\$7.75 /cu.yd.	x	833 cu.yds.	=	\$6,455.75
Purchase 1 1/2-0"	\$9.50 /cu.yd.	x	120 cu.yds.	=	\$1,140.00
(C.Y. Cost includes Move-in For Rock Processing)			\$ 0.46 /CY		

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A to B- 1 1/2"-0"	7.38	1.30	9.96	18.64	20	372.80
A to B Landing Rock	7.38	1.30	8.21	16.89	70	1,182.30
C to D 4"-0"	7.79	1.30	8.21	17.30	50	865.00
C to D Landing Rock	7.79	1.30	8.21	17.30	70	1,211.00
E to F- 1 1/2"-0"	7.72	1.30	9.96	18.98	191	3,625.18
E to F - 4"0"	7.48	1.30	8.21	16.99	453	7,696.47
E to F Landing Rock 171+35	8.00	1.30	8.21	17.51	70	1,225.70
E to F Landing Rock	7.23	1.30	8.21	16.74	120	2,008.80
E to F Culvert Backfill	7.06	0.60	9.96	17.62	20	352.40
E to F Spot Rock	7.56	1.30	9.96	18.82	80	1,505.60
				Total C.Y.	1144	Sub Total
						20,045.25

<b>TOTAL ROCKING COSTS</b>	<b>20,045.25</b>
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## Move-In Calculations

Sale: Minich Ridge

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
15.0	Pavement	30
2.0	Main Lines	7
1.0	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within	
								Area Cost	Total Cost
1	Brush Cutter	\$178.25		\$4.00	0.00	0.00	2	\$8.00	\$186.25
1	Graders	\$199.29		\$3.65	0.00	0.00	2	\$7.30	\$206.59
1	Rollers (smooth/grid) & Compactors	\$189.75		\$5.00	0.00	0.00	2	\$10.00	\$199.75
1	Excavators (Large)	\$330.87	1	\$44.80	0.00	0.00	2	\$89.60	\$420.47
1	Tractor (D8)	\$318.71	2	\$15.10	0.00	0.00	2	\$30.20	\$348.91
1	Water Truck (2500 Gal)	\$62.21		\$2.85	0.00	0.00	0	\$0.00	\$62.21
<b>TOTAL MOVE-IN COSTS:</b>									<b>\$1,430.31</b>



# OREGON DEPARTMENT OF FORESTRY

## CRUISE REPORT

### *Minich Ridge*

1. **Type of Sale**

Area 1 Partial cut, Conifer / Recovery.

Area 2 Modified Clearcut, Conifer / Recovery

2. **Legal Description**

Portions of Sections 11 and 14, T1N, R10W, W.M. Tillamook County, Oregon

3. **Sale Acreage**

	ACRES	
	<u>Sale</u>	<u>Net</u>
Partial Cut	81	73
Clearcut	20	17
<b>Total Acres</b>	101	90

Sale Acres

Area within the Timber Sale Boundary signs.

Net acres

*Used for calculating the advertised volume.*

Sale acres, less green tree retention, roads, utility, right-of-way, and less riparian areas inside the sale boundary.

4. **Cruising Procedures**

**A. Cruise Method**

A total of 31 variable radius plots were taken across Area 1 and were spaced on a square grid of 300' x 300'. A total of 13 variable radius plots were taken across Area 2 and were spaced on a square grid of 225' x 225'. All conifers 8 inches DBH and greater and all hardwoods 10 inches DBH and greater were recorded on all plots. Species were recorded on all trees, and they were graded and measured for merchantable height, diameter, and form factor.

**B. Plot size**

A basal area factor of 40 was used for Area 1 and a basal area factor of 20 was used for Area 2. The point of observation is 4.5 feet.

### **C. Grading System**

All trees were graded according to Columbia River Log Scaling and Grading Rules. Tree heights were recorded to a 7 inch top outside bark for hemlock, Sitka spruce; 6 inch top outside bark for Douglas-fir; 8 inches top outside bark for hardwoods; or three tenths (0.3) of DBH for all species, whichever was greater. Log lengths all favored 40 feet. Height and diameter measurement standards were to the nearest foot or inch respectively. All diameters were taken at a height of 4.5 feet. Conifers less than 20 board feet and hardwoods less than 30 board feet were not recorded.

### **5. Computation Procedure**

Plot data was entered into SuperAce for computation of basal area, stand tables, diameters, and volume to basal area ratio for each species and type. This data was then entered into the Volume Summary table to compute sale volumes. The standard error for the cruise was 10.4% and the coefficient variation was 58.0% based on mbf per acre.

### **6. Hidden Defect and Breakage**

A 5% deduction was applied to the conifer volume to account for defect and breakage.

### **7. Timber Description**

Area 1 was harvested in the early 1960's and was replanted in 1965 with Douglas-fir. Natural regeneration has resulted in small dense pockets of hemlock and some spruce intermixed with the Douglas-fir. The timber is approximately 42 years old.

Area 2 was harvested in the early 1970's and was planted with Douglas-fir shortly after. The stand is now comprised of Douglas-fir, hemlock and spruce and is approximately 35 years old.

The Douglas-fir has high symptoms of Swiss Needle Cast in Area 2 and more moderate symptoms in Area 1. There is minimal bear damage.

### **8. Cruiser Names/Dates**

Luttrell/Wells/Goetz/Savage/Wallmark/Stumpf/Yao, February 2007

### **9. Revenue Distribution**

FDF: 100%

Tax Code: 56-8

Deed Numbers: 186

10. **Attachments**

Volume Summary Table

Super Ace Stand Tables

Logging Plan Exhibit

Log Stock Tables





"STEWARDSHIP IN FORESTRY"

## Minich Ridge

### Volume Summary

Area 1 - Partial Cut							
73 acres							
SPECIES	QMD	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	13	52	77	4.0	291	5%	276
Hemlock	13	43	106	4.5	331	5%	315
Spruce	11	15	41	0.6	44	5%	42
<b>TOTAL</b>					666		633

Area 2 - Modified Clearcut							
17 acres							
SPECIES	QMD	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	13	95	67	6.4	108	5%	103
Hemlock	13	23	87	2.0	34	5%	32
<b>TOTAL</b>					142		135

TOTAL SALE VOLUME			90 acres
SPECIES	Gross (MBF)	Net Vol. (MBF)	
Douglas-fir	399	379	
Hemlock	365	347	
Spruce	44	42	
<b>TOTAL</b>	808	768	

TC TSTNDSUM		Stand Table Summary														
Dave Luttrell		Project MINICH														
T01N R10W S11 T0100										T01N R10W S11 T0100						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
01N	10W	11	AREA1	0100	73.00	31	192	Date:	03/15/201							
								Time:	3:48:06PM							
S Spc	T	Sample			Av			Average Log		Net		Net		Totals		
		DBH	Trees	FF	Ht	Trees/	BA/	Logs	Net	Net	Tons/	Cu.Ft.	Bd.Ft.	Tons	Cunits	MBF
				16'	Tot	Acres	Acres	Acres	Cu.Ft.	Bd.Ft.	Acres	Acres	Acres			
WL		10	1	92	55	2.366	1.29	2.37	10.2	50.0	.77	24	118	56	18	9
WL		11	1	86	81	1.955	1.29	1.96	17.1	60.0	1.07	33	117	78	24	9
WL		12	2	85	76	3.286	2.58	4.93	13.6	50.0	2.15	67	246	157	49	18
WL		13	3	89	76	4.200	3.87	7.00	15.0	58.0	3.35	105	406	245	76	30
WL		14	2	87	79	2.414	2.58	3.62	20.4	73.3	2.37	74	266	173	54	19
WL		15	5	86	66	5.257	6.45	9.46	17.2	64.4	5.22	163	610	381	119	45
WL		16	3	89	84	2.772	3.87	5.54	22.2	86.7	3.94	123	481	287	90	35
WL		17	7	87	92	5.730	9.03	11.46	28.0	105.0	10.30	321	1,203	752	235	88
WL		18	8	85	74	5.841	10.32	10.22	28.5	100.7	9.31	291	1,030	680	213	75
WL		19	3	82	73	1.966	3.87	3.93	28.2	86.7	3.54	111	341	258	81	25
WL		20	3	88	93	1.774	3.87	3.55	40.0	151.7	4.54	142	538	331	104	39
WL		21	4	84	92	2.146	5.16	4.83	38.0	136.7	5.88	184	660	429	134	48
WL		22	2	85	67	.978	2.58	1.47	48.4	150.0	2.27	71	220	166	52	16
WL		23	3	84	91	1.342	3.87	3.13	43.2	148.6	4.33	135	465	316	99	34
WL		24	3	81	84	1.232	3.87	2.46	42.9	161.7	3.38	106	398	247	77	29
WL		26	2	88	91	.700	2.58	1.75	54.5	240.0	3.06	95	420	223	70	31
WL		27	1	86	111	.325	1.29	.97	55.1	240.0	1.72	54	234	125	39	17
WL		28	3	86	117	.905	3.87	2.72	63.5	296.7	5.52	172	806	403	126	59
WL		29	2	84	107	.563	2.58	1.41	75.6	320.0	3.40	106	450	248	78	33
WL		31	1	85	122	.246	1.29	.74	80.9	363.3	1.91	60	268	140	44	20
WL		34	1	84	118	.205	1.29	.61	93.9	420.0	1.85	58	258	135	42	19
WL		40	1	87	76	.148	1.29									
WL	Totals		61	86	80	46.350	78.71	84.13	29.7	113.3	79.86	2,496	9,535	5,830	1,822	696
WH		9	2	88	49	5.841	2.58	5.84	6.4	30.0	1.20	37	175	87	27	13
WH		10	2	87	66	4.732	2.58	4.73	11.2	45.0	1.70	53	213	124	39	16
WH		11	9	87	72	17.597	11.61	21.51	12.4	51.8	8.53	267	1,114	623	195	81
WH		12	2	85	60	3.286	2.58	4.93	11.2	40.0	1.77	55	197	129	40	14
WH		13	1	88	68	1.400	1.29	1.40	21.1	70.0	.94	29	98	69	22	7
WH		14	4	87	75	4.828	5.16	9.66	14.3	55.0	4.42	138	531	323	101	39
WH		15	4	88	83	4.206	5.16	8.41	19.0	78.7	5.12	160	662	374	117	48
WH		16	3	86	91	2.772	3.87	5.54	24.1	90.0	4.28	134	499	312	98	36
WH		17	1	84	65	.819	1.29	1.64	20.0	65.0	1.04	33	106	76	24	8
WH		18	2	86	72	1.460	2.58	2.19	30.8	86.7	2.16	68	190	158	49	14
WH		21	1	85	101	.536	1.29	1.07	47.4	175.0	1.63	51	188	119	37	14
WH		22	1	91	98	.489	1.29	.98	50.6	210.0	1.58	49	205	115	36	15
WH		23	1	90	138	.447	1.29	1.34	50.7	236.7	2.18	68	318	159	50	23
WH	Totals		33	87	71	48.413	42.58	69.24	16.5	64.9	36.55	1,143	4,497	2,668	834	328
DF		9	4	83	32	11.683	5.16	8.76	5.1	23.3	1.27	45	204	93	33	15
DF		10	1	92	64	2.366	1.29	2.37	11.6	40.0	.78	27	95	57	20	7
DF		11	2	90	52	3.910	2.58	3.91	12.4	45.0	1.38	48	176	101	35	13
DF		12	5	86	58	8.214	6.45	9.86	13.2	41.7	3.71	130	411	271	95	30
DF		13	3	80	57	4.200	3.87	4.20	20.0	46.7	2.40	84	196	175	61	14
DF		14	6	82	69	7.242	7.74	12.07	15.7	49.0	5.39	189	591	394	138	43
DF		15	2	86	58	2.103	2.58	3.15	17.4	50.0	1.57	55	158	114	40	12
DF		16	4	84	71	3.697	5.16	6.47	20.4	65.7	3.77	132	425	275	97	31
DF		17	5	85	84	4.093	6.45	7.37	25.5	85.6	5.35	188	630	391	137	46
DF		18	3	86	90	2.191	3.87	4.38	27.8	100.0	3.48	122	438	254	89	32
DF		19	3	84	73	1.966	3.87	3.93	26.9	90.0	3.01	106	354	220	77	26
DF		20	1	82	63	.591	1.29	1.18	26.5	80.0	.89	31	95	65	23	7
DF		21	2	87	87	1.073	2.58	2.15	38.2	127.5	2.34	82	274	171	60	20

TC TSTNDSUM		Stand Table Summary													
Dave Luttrell		Project MINICH													
T01N R10W S11 T0100								T01N R10W S11 T0100							
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	2						
01N	10W	11	AREA1	0100	73.00	31	192	Date:	03/15/201						
								Time:	3:48:06PM						
S Spec	T	Sample DBH	FF Trees	Av Ht 16'	Trees/ Acres	BA/ Acres	Logs Acres	Average Log		Net Tons/ Acres	Net Cu.Ft. Acres	Net Bd.Ft. Acres	Totals		
								Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DF	Totals	41	85	59	53.328	52.90	69.80	17.8	58.0	35.34	1,240	4,047	2,580	905	295
DL	12	1	91	82	1.643	1.29	3.29	11.0	50.0	.99	36	164	72	26	12
DL	13	1	85	44	1.400	1.29	1.40	15.2	30.0	.59	21	42	43	16	3
DL	14	2	84	68	2.414	2.58	3.62	17.8	50.0	1.77	64	181	129	47	13
DL	15	1	80	80	1.051	1.29	2.10	17.8	50.0	1.03	37	105	75	27	8
DL	16	2	79	79	1.848	2.58	3.70	19.7	62.5	2.00	73	231	146	53	17
DL	17	1	81	67	.819	1.29	1.64	20.2	70.0	.91	33	115	66	24	8
DL	18	3	85	70	2.191	3.87	3.65	27.3	82.0	2.75	100	299	200	73	22
DL	19	3	87	73	1.966	3.87	3.93	27.4	95.0	2.97	108	374	217	79	27
DL	20	1	87	62	.591	1.29	.59	27.6	40.0	.45	16	24	33	12	2
DL	21	2	89	83	1.073	2.58	2.15	38.7	130.0	2.28	83	279	167	61	20
DL	24	1	89	103	.411	1.29	1.23	40.1	153.3	1.36	49	189	99	36	14
DL	36	1	88	53	.183	1.29									
DL	Totals	19	85	72	15.589	24.52	27.30	22.8	73.4	17.10	622	2,003	1,248	454	146
SL	17	2	83	60	1.637	2.58	2.46	25.8	70.0	1.66	63	172	121	46	13
SL	18	3	85	67	2.191	3.87	3.65	28.9	98.0	2.74	106	358	200	77	26
SL	19	6	86	57	3.932	7.74	4.59	40.3	90.0	4.81	185	413	351	135	30
SL	20	2	81	35	1.183	2.58	1.18	34.7	35.0	1.06	41	41	77	30	3
SL	22	1	79	50	.489	1.29	.49	63.1	70.0	.80	31	34	58	22	2
SL	23	1	80	40	.447	1.29	.45	52.0	50.0	.61	23	22	44	17	2
SL	24	1	85	73	.411	1.29	.82	48.7	155.0	1.04	40	127	76	29	9
SL	30	1	89	115	.263	1.29	.79	76.2	386.7	1.56	60	305	114	44	22
SL	65	1	90	89	.056	1.29									
SL	Totals	18	84	58	10.608	23.23	14.42	38.1	102.1	14.28	549	1,473	1,043	401	108
SS	8	1	91	17	3.697	1.29									
SS	9	2	79	41	5.841	2.58	5.84	6.1	25.0	.93	36	146	68	26	11
SS	10	1	76	42	2.366	1.29	2.37	7.4	20.0	.46	18	47	33	13	3
SS	11	1	81	56	1.955	1.29	1.96	12.5	40.0	.64	24	78	46	18	6
SS	12	1	81	45	1.643	1.29	1.64	13.7	30.0	.59	23	49	43	16	4
SS	13	2	79	46	2.800	2.58	2.80	16.8	45.0	1.22	47	126	89	34	9
SS	14	1	79	41	1.207	1.29	1.21	18.0	40.0	.58	22	48	42	16	4
SS	15	1	80	28	1.051	1.29	1.05	16.0	40.0	.43	17	42	31	12	3
SS	16	1	79	33	.924	1.29	.92	20.0	40.0	.48	18	37	35	13	3
SS	Totals	11	81	38	21.484	14.19	17.79	11.5	32.3	5.32	204	574	388	149	42
RA	10	1	79	17	2.366	1.29	2.37	5.4	20.0	.35	13	47	25	9	3
RA	16	1	79	54	.924	1.29	.92	30.5	80.0	.78	28	74	57	21	5
RA	18	2	79	56	1.460	2.58	1.46	43.9	115.0	1.76	64	168	129	47	12
RA	19	1	79	77	.655	1.29	1.31	29.7	100.0	1.07	39	131	78	28	10
RA	Totals	5	79	41	5.406	6.45	6.06	23.7	69.3	3.96	144	420	289	105	31
RC	8	1	85	27	3.697	1.29	3.70	3.4	20.0	.30	13	74	22	9	5
RC	12	1	85	43	1.643	1.29	1.64	12.0	30.0	.46	20	49	34	14	4
RC	18	1	85	43	.730	1.29	.73	30.1	50.0	.52	22	37	38	16	3
RC	20	1	87	48	.591	1.29									
RC	Totals	4	85	35	6.661	5.16	6.07	9.0	26.3	1.28	54	160	93	40	12
Totals		192	85	64	207.839	247.74	294.80	21.9	77.0	193.69	6452	22,708	14,139	4,710	1,658

TC TLOGSTVB

Log Stock Table - MBF

Dave Luttrell

Project: MINICH

T01N R10W S11 T0100

T01N R10W S11 T0100

Twp Rge Sec Tract Type Acres Plots Sample Trees  
 01N 10W 11 AREA1 0100 73.00 31 192

Page 2  
 Date 4/9/2007  
 Time 2:37:55PM

Spp	T	S	So	Gr	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+	
DF	DO	4M	31				3		3	1.1		3											
DF	DO	4M	32				2		2	.6		2											
DF	DO	4M	34				4	25.0	3	.9		3											
DF	DO	4M	35				8		8	2.9		8											
DF	DO	4M	36				4		4	1.4		4											
DF	DO	4M	38				3		3	1.0		3											
DF	DO	4M	40				28		28	9.4		19	9										
DF	Totals						298		295	17.8		90	46	50	84	25							
WH	DO	SM	40				15		15	4.6							15						
WH	DO	2M	40				31		31	9.4					7	24							
WH	DO	3M	32				61		61	18.5		10	32	18									
WH	DO	3M	37				9		9	2.6		9											
WH	DO	3M	39				9		9	2.6		9											
WH	DO	3M	40				110		110	33.6		29	30	51									
WH	DO	4M	13				2		2	.5			2										
WH	DO	4M	14				2		2	.5			2										
WH	DO	4M	16				4		4	1.1			4										
WH	DO	4M	17				4		4	1.3			4										
WH	DO	4M	18				2		2	.5			2										
WH	DO	4M	19				2		2	.5		2											
WH	DO	4M	20				3		3	1.0			3										
WH	DO	4M	21				4		4	1.3			4										
WH	DO	4M	23				8		8	2.6			8										
WH	DO	4M	24				12		12	3.5			12										
WH	DO	4M	25				8		8	2.4			8										
WH	DO	4M	26				9		9	2.9			9										
WH	DO	4M	28				2		2	.6			2										
WH	DO	4M	32				7	8.3	7	2.0				7									
WH	DO	4M	37				8	6.8	7	2.2			7										
WH	DO	4M	40				19		19	5.8			19										
WH	Totals						329		328	19.8		2	142	62	76	7	24	15					
DL	DO	2M	40				19	4.2	18	12.3						18							
DL	DO	3M	22				4		4	2.9			1			3							
DL	DO	3M	32				22		22	14.8				14	7								
DL	DO	3M	40				79	4.0	75	51.5			3	29	34			10					
DL	DO	4M	16				3		3	1.9		3											
DL	DO	4M	17				2		2	1.1		2											
DL	DO	4M	18				2		2	1.3		2											
DL	DO	4M	19				1		1	.8		1											
DL	DO	4M	20				2		2	1.6		2											
DL	DO	4M	24				6	12.0	5	3.4		5											
DL	DO	4M	26				1		1	.8		1											
DL	DO	4M	29				2		2	1.1		2											
DL	DO	4M	32				1		1	.8		1											
DL	DO	4M	33				4	25.0	3	2.1		3											
DL	DO	4M	36				2		2	1.2		2											
DL	DO	4M	40				4		4	2.4		4											
DL	Totals						152	3.7	146	8.8		27	4	43	41	21	10						

T01N R10W S11 T0100

T01N R10W S11 T0100

Twp Rge Sec Tract Type Acres Plots Sample Trees  
 01N 10W 11 AREA1 0100 73.00 31 192

Page 3  
 Date 4/9/2007  
 Time 2:37:55PM

S Spp	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
SL	DO	2M	40	25		25	23.1						9		16		
SL	DO	3M	32	23		23	21.4					18	5				
SL	DO	3M	34	12		12	11.3			7	5						
SL	DO	3M	37	4	12.5	3	3.1				3						
SL	DO	3M	38	5	9.1	5	4.4				5						
SL	DO	3M	40	33	1.8	32	30.2			9	6	18					
SL	DO	4M	14	1		1	1.1			1							
SL	DO	4M	17	1		1	1.0			1							
SL	DO	4M	18	1		1	.9			1							
SL	DO	4M	20	1		1	.7				1						
SL	DO	4M	21	2		2	1.5			2							
SL	DO	4M	22	1		1	.6		1								
SL	DO	4M	24	1	33.3	1	.8			1							
SL	Totals			109	1.8	108	6.5		1	21	20	18	18	14		16	
SS	DO	3M	36	6		6	14.6			6							
SS	DO	4M	19	4		4	10.2		4								
SS	DO	4M	20	7		7	15.6			3	3						
SS	DO	4M	21	6		6	15.3			6							
SS	DO	4M	23	3		3	6.4				3						
SS	DO	4M	24	3		3	7.3			3							
SS	DO	4M	27	6		6	13.6			6							
SS	DO	4M	28	4		4	8.6			4							
SS	DO	4M	29	4		4	8.4			4							
SS	Totals			42		42	2.5		4	32	6						
RA	DO	CR	12	3		3	11.3				3						
RA	DO	CR	21	2		2	6.2				2						
RA	DO	CR	32	8		8	25.0					8					
RA	DO	CR	35	5		5	17.6				5						
RA	DO	CR	38	4		4	13.9				4						
RA	DO	CR	41	10	16.7	8	26.1				8						
RA	Totals			32	5.0	31	1.9			23		8					
RC	DO	3M	34	3		3	22.9			3							
RC	DO	4M	17	5		5	46.3		5								
RC	DO	4M	28	4		4	30.9			4							
RC	Totals			12		12	.7		5	6							
Total All Species				1,676	1.1	1,658	100.0		134	361	263	397	183	133	112	75	



TC TSTNDSUM

## Stand Table Summary

Project MINICH

T01N R10W S11 T0200

T01N R10W S11 T0200

Twp Rge Sec Tract  
01N 10W 11 AREA2Type  
0200Acres  
17.00Plots  
13Sample Trees  
78Page: 1  
Date: 05/02/201  
Time: 9:27:11AM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Cu.Ft.	Net Cu.Ft.	Net Bd.Ft.	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons Acre	Tons	Cunits
DF		10	2	80	60	5.641	3.08	5.64	10.4	35.0	1.68	59	197	29	10	3
DF		11	8	85	57	18.649	12.31	18.65	12.6	41.2	6.69	235	769	114	40	13
DF		12	10	80	58	19.588	15.38	21.55	14.4	44.5	8.86	311	960	151	53	16
DF		13	9	83	65	15.022	13.85	18.36	17.4	49.1	9.08	319	901	154	54	15
DF		14	13	81	64	18.709	20.00	25.90	17.7	50.0	13.07	458	1,295	222	78	22
DF		15	6	84	67	7.522	9.23	12.54	17.5	58.0	6.27	220	727	107	37	12
DF		16	5	83	56	5.509	7.69	7.71	22.0	60.0	4.82	169	463	82	29	8
DF		17	3	84	64	2.928	4.62	5.86	18.6	70.0	3.10	109	410	53	19	7
DF		18	2	85	76	1.741	3.08	3.48	24.6	85.0	2.44	86	296	42	15	5
DF		19	1	79	53	.781	1.54	.78	43.3	60.0	.96	34	47	16	6	1
DF		21	1	79	60	.640	1.54	1.28	27.9	75.0	1.02	36	96	17	6	2
DF		22	2	81	68	1.166	3.08	2.33	35.5	105.0	2.36	83	245	40	14	4
DF	Totals		62	82	61	97.896	95.38	124.08	17.1	51.6	60.35	2,118	6,407	1,026	360	109
WH		9	2	84	62	6.965	3.08	6.96	9.2	40.0	2.06	64	279	35	11	5
WH		11	4	85	66	9.325	6.15	9.32	14.6	52.5	4.35	136	490	74	23	8
WH		14	2	84	75	2.878	3.08	5.76	14.8	57.5	2.74	85	331	47	15	6
WH		15	2	77	74	2.507	3.08	3.76	21.8	53.3	2.62	82	201	45	14	3
WH		16	1	85	69	1.102	1.54	2.20	18.9	70.0	1.33	42	154	23	7	3
WH		18	1	85	67	.871	1.54	1.74	23.5	80.0	1.31	41	139	22	7	2
WH		19	1	85	113	.781	1.54	.78	58.0	230.0	1.45	45	180	25	8	3
WH		22	1	68	74	.583	1.54	1.17	42.5	80.0	1.59	49	93	27	8	2
WH		25	1	84	72	.451	1.54	.90	51.0	155.0	1.47	46	140	25	8	2
WH	Totals		15	83	68	25.463	23.08	32.60	18.1	61.5	18.91	591	2,006	321	100	34
RC		12	1	85	70	1.959	1.54	1.96	19.6	60.0	.90	38	118	15	7	2
RC	Totals		1	85	70	1.959	1.54	1.96	19.6	60.0	0.90	38	118	15	7	2
Totals			78	83	63	125.318	120.00	158.64	17.3	53.8	80.16	2747	8,530	1,363	467	145

TC TLOGSTVB

**Log Stock Table - MBF**

Project: **MINICH**

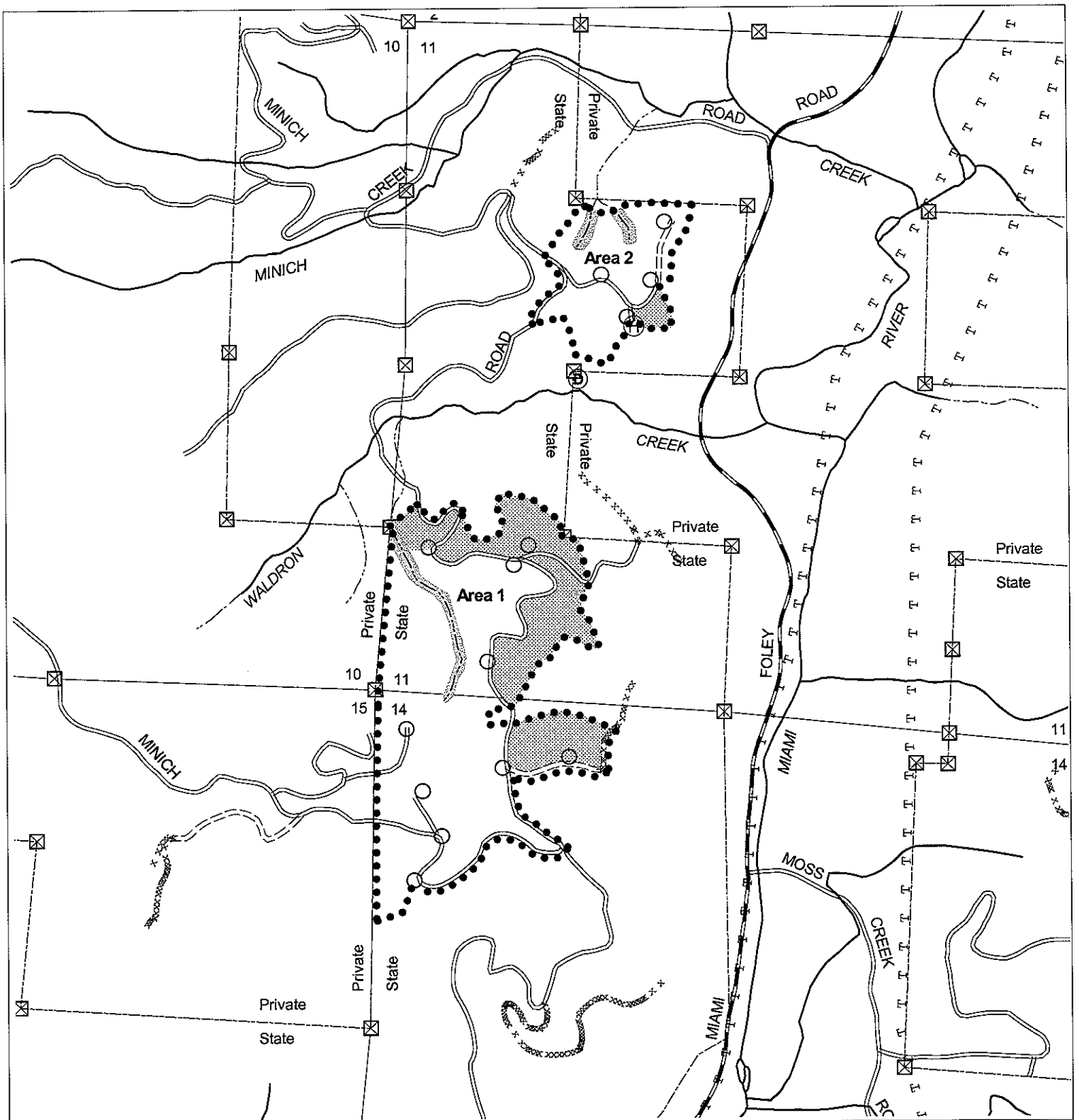
**T01N R10W S11 T0200**

**T01N R10W S11 T0200**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1
01N	10W	11	AREA2	0200	17.00	13	78	Date	5/2/2007
								Time	3:07:57PM

Spp	T	S	So	Gr	Log	Gross	% Def	Net	% Spc	Net Volume by Scaling Diameter in Inches										
										MBF	MBF	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23
DF		DO	3M	32		30	.4	29	27.1			3	13	13						
DF		DO	3M	40		28		28	25.3			16	5	4	2					
DF		DO	4M	15		0		0	.4		0									
DF		DO	4M	16		3		3	2.7		3									
DF		DO	4M	17		1		1	.5		1									
DF		DO	4M	18		1		1	1.1		1									
DF		DO	4M	19		0		0	.3		0									
DF		DO	4M	20		1		1	.6		1									
DF		DO	4M	21		1		1	1.2		1									
DF		DO	4M	22		1		1	.7		1									
DF		DO	4M	23		0		0	.2		0									
DF		DO	4M	25		1		1	1.3		1									
DF		DO	4M	26		1		1	.6		1									
DF		DO	4M	29		1		1	1.1		1									
DF		DO	4M	31		1		1	.9		1									
DF		DO	4M	32		4		4	3.6		2	2								
DF		DO	4M	33		4		4	3.9		4									
DF		DO	4M	35		8		8	7.3		8									
DF		DO	4M	36		1		1	.7		1									
DF		DO	4M	39		1		1	.9		1									
DF		DO	4M	40		21		21	19.6		12	9								
DF		Totals				109		109	75.1		39	30	20	18	2					
WH		DO	3M	32		8		8	23.5			4	4							
WH		DO	3M	40		11	2.8	11	31.8		4		1	3	2					
WH		DO	4M	14		0		0	1.4		0									
WH		DO	4M	16		0		0	.6		0									
WH		DO	4M	17		0		0	1.2		0									
WH		DO	4M	18		1		1	1.8		1									
WH		DO	4M	19		0		0	.9		0									
WH		DO	4M	21		1		1	2.2		1									
WH		DO	4M	28		2		2	5.2		2									
WH		DO	4M	30		2		2	4.6		2									
WH		DO	4M	31		2		2	4.6		2									
WH		DO	4M	32		2		2	6.5			2								
WH		DO	4M	34		3		3	8.7		3									
WH		DO	4M	40		2		2	7.0		2									
WH		Totals				34		34	23.5		17	6	6	3	2					
RC		DO	4M	40		2		2	100.0		2									
RC		Totals				2		2	1.4		2									
Total All Species						145		145	100.0		39	50	26	23	5	2				



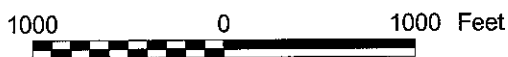


- Landing
- Ⓧ Domestic water supply intake
- Ⓜ Helicopter landing zone
- Ⓣ Truck turn-around
- ⊠ Survey corner
- Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- ▧ Downhill yarding
- ▤ Buffer
- ▦ Non-required thinning
- - - Area boundary
- Sale boundary
- - - Ownership boundary
- Perennial Type-F stream
- - - Perennial Type-N stream
- == Surfaced road
- - - Unsurfaced road
- == State/Federal highway
- County road
- ② Non-project road
- . - . Swing road
- ▨ Legacy road
- x x x Blocked road
- ○ ○ OHV trail
- - - Non-motorized trail
- T T Transmission line

**LOGGING PLAN**

Timber Sale Contract No. 341-08-03  
 Minich Ridge  
 Portions of Sections 11 and 14,  
 T1N, R10W, W. M.  
 Tillamook County, Oregon

Area	Type of Operation	Gross	Net
1	Partial Cut	81	73
2	Modified Clearcut	20	17
<b>Total</b>		<b>101</b>	<b>90</b>



Tillamook District GIS  
 April 24, 2007

This product is for informational use and may not have been prepared for, or suitable for legal, engineering, or surveying purposes.

