



# Timber Sale Appraisal Cost Summary North Cronin Alder Sale 341-05-57

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Date: 2/28/05

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$69,819.65	\$343,285.64	\$413,105.29
		<b>Project Work</b>	(\$165,545.00)
		<b>Advertised Value</b>	\$247,560.29



# Timber Sale Appraisal Timber Description North Cronin Alder Sale 341-05-57

"STEWARDSHIP IN FORESTRY"

**District:** Tillamook

**Location:** Portions of Sections 31 and 32, T4N, R7W, W.M., Clatsop County, Oregon.

**Date:** 2/28/05

**Stand Stocking:** 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	16	0	95
Western Hemlock / Fir	14	0	95
Alder (Red)	14	0	90

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Total
2S	43	119	0	162
3S	66	361	0	427
4S	16	90	0	106
Camprun	0	0	1,268	1,268
<b>Total</b>	125	570	1,268	1,963

**Comments:** Pond Values Used: 4th Quarter 2004.

Cedar Stumpage: \$1050/ MBF (Local pond value) - \$ 327.53/MBF (logging cost) =  
\$ 722.47/ MBF

Additional Costs (Profit and Risk to be added)  
Brand and Paint - \$2/MBF x 1,963 MBF = \$3,926  
Total Other Costs + P&R = \$3,926

Additional Costs (No P&R)

Vacating

Point C to D 11+20 stations = \$523  
Point G to H 7+80 stations = \$4,040  
Move in = \$2,545

Total Other Costs no P & R = \$7,115

Road Maintenance

Grading (once per 2 MMBF)

\$500/Mile x 1 Grading x 12.5 miles / 1,963 MBF = \$ 3.18

Maintenance Rock - approximately 25 yds<sup>3</sup> / MMBF/10.5 haul miles

Crushed - 519 yds<sup>3</sup> x \$19.00/ yard / 1,963 MBF = \$ 5.02

Maintenance Rock - approximately 50 yds<sup>3</sup> / MMBF

Pit-run - 200 yds<sup>3</sup> x \$ 4.00 / yard / 1,963 MBF = \$ 0.40

Total Maintenance Cost = \$ 8.60



# Timber Sale Appraisal Logging Conditions North Cronin Alder Sale 341-05-57

"STEWARDSHIP IN FORESTRY"

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**Combination#: 1**  
Douglas - Fir 68.48%  
Western Hemlock / Fir 59.84%  
Alder (Red) 62.29%

**Yarding Distance:** Medium (800 ft) **Downhill Yarding:** No  
**Logging System:** Cable: Medium Tower >40 - <70 **Process:** Manual Delimiting  
**Tree Size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
**Loads/Day:** 4 **Bd. Ft./Load:** 3,400  
**Cost/MBF:** \$221.70  
**Machines:**  
Log Loader (A)  
Tower Yarder (Medium)

**Combination#: 2**  
Douglas - Fir 31.52%  
Western Hemlock / Fir 40.16%  
Alder (Red) 37.71%

**Yarding Distance:** Medium (800 ft) **Downhill Yarding:** Yes  
**Logging System:** Track Skidder **Process:** Manual Falling/Delimiting  
**Tree Size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
**Loads/Day:** 6 **Bd. Ft./Load:** 3,400  
**Cost/MBF:** \$160.07  
**Machines:**  
Log Loader (B)  
Track Skidder



# Timber Sale Appraisal Logging Costs North Cronin Alder Sale 341-05-57

"STEWARDSHIP IN FORESTRY"

Date: 2/28/05

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$165,545

Other Costs (P/R): \$3,926

Slash Disposal: \$0

Other Costs: \$7,115

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

Road Maintenance: \$8.60

### Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	3.4
Western Hemlock / Fir	\$0.00	2.0	3.4
Alder (Red)	\$0.00	2.0	3.4



# Timber Sale Appraisal Logging Costs Breakdown North Cronin Alder Sale 341-05-57

"STEWARDSHIP IN FORESTRY"

<b>Costs</b>	<b>Douglas - Fir</b>	<b>Western Hemlock / Fir</b>	<b>Alder (Red)</b>
<b>Logging</b>	202.27	196.95	198.46
<b>Road Maintenance</b>	9.05	9.05	9.56
<b>Fire Protection</b>	2.76	2.76	2.76
<b>Hauling</b>	69.16	69.16	73.00
<b>Other (P/R appl.)</b>	2.00	2.00	2.00
<b>Profit &amp; Risk</b>	42.79	41.99	42.87
<b>Slash Disposal</b>	0.00	0.00	0.00
<b>Scaling</b>	2.00	2.00	2.00
<b>Other</b>	3.62	3.62	3.62
<b>Total</b>	333.65	327.53	334.27

<b>Amortization</b>	0.00	0.00	0.00
<b>Pond Value</b>	589.56	393.90	605.00
<b>Stumpage</b>	255.91	66.37	270.73
<b>Amortized</b>	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Summary North Cronin Alder Sale 341-05-57

**Amortized**

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

**Unamortized**

	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
<b>MBF</b>	125.00	570.00	1,268.00
<b>Value</b>	255.91	66.37	270.73
<b>Total</b>	31,988.75	37,830.90	343,285.64

**Gross Timber Sale Value**

**Recovery \$413,105.29**

Prepared by: Amber Winslow

Date: 2/28/05

District: Tillamook

Phone: (503) 842-2545



## PROJECT SUMMARY SHEET

Sale: North Cronin Alder

### CONSTRUCTION

Point	A to B	18+15	stations =	\$17,395.19
Point	C to D	11+20	stations =	\$10,554.14
Point	G to H	12+80	stations =	\$34,248.49
Point	I to J	7+00	stations =	\$20,313.59
<b>SUBTOTAL CONSTRUCTION</b>				<b>\$82,511.41</b>

### IMPROVEMENT

Point	A to B	51+40	stations =	\$49,262.43
Point	E to F	36+30	stations =	\$20,924.08
<b>SUBTOTAL IMPROVEMENT</b>				<b>\$70,186.51</b>

### SPECIAL PROJECTS

Remove Culverts from State Lands				\$2,132.50
Miscellaneous Pit-Run (As needed and marked in Field)			569 CY	\$1,601.25
Road Vacating (K to L)	0.20	miles of road		\$1,613.10
<b>SUBTOTAL SPECIAL PROJECTS</b>				<b>\$5,346.85</b>

### MOVE IN

**\$7,496.04**

**GRAND TOTAL**

**\$165,540.81**



**SUMMARY OF CONSTRUCTION COST**

Sale:	<u>North Cronin Alder</u>				Road:	<u>A to B</u>	
	Construction -	18+15	stations		Improvement -	51+40	stations
		0.34	miles			0.97	miles
<b>CLEARING AND GRUBBING -</b>							
Roadside Brushing		0.97	miles @		\$1,000.00	per mile =	\$970.00
Side cast		0.025	acres @		\$540.00	per acre =	\$13.50
Widening		0.580	acres @		\$540.00	per acre =	\$313.20
Scattering		2,400	acres @		\$815.00	per acre =	\$1,956.00
Piling		0.000	acres @		\$905.00	per acre =	\$0.00
Endhaul		0.000	acres @		\$1,500.00	per acre =	\$0.00
					<b>TOTAL CLEARING AND GRUBBING</b>		<b>\$3,252.70</b>
<b>EXCAVATION -</b>							
Road Earthwork		51.40	sta. @		\$100.00	per sta. =	\$5,140.00
Pullback		96	cy. @		\$1.40	per c.y. =	\$137.20
Widening (Common)		653	cy. @		\$1.40	per c.y. =	\$914.20
Widening (Rippable)		512	cy. @		\$2.25	per c.y. =	\$1,152.00
Widening (Solid)		2120	cy. @		\$4.90	per c.y. =	\$10,388.00
New Construction (common)		2576	cy. @		\$1.40	per c.y. =	\$3,606.40
New Construction (Rippable)		821	cy. @		\$2.25	per c.y. =	\$1,847.25
New Construction (Solid)		285	cy. @		\$4.90	per c.y. =	\$1,396.50
Remove Berms (Sta. 33+05 - 34+30)		65	cy. @		\$1.40	per c.y. =	\$91.00
Slope Stabilization Prep. (Sta. 31+50 to 31+70)		1	hr. @		\$140.00	per hour =	\$140.00
Logs & Log Fill Removal (Sta. 26+80, 57+55, 61+00, 65+15)		10	hrs. @		\$140.00	per hour =	\$1,400.00
					<b>TOTAL EXCAVATION</b>		<b>\$26,212.55</b>
<b>ENDHAUL -</b>							
Pullback	32+50	to	33+05	98	cy. @	\$1.20	per c.y. = \$117.60
Widening (common): Waste Area	36+55 to 45+05	and	51+75 to 52+9C	656	cy. @	\$1.38	per c.y. = \$905.28
Widening: to A to B Fill (New Const.)				408	cy. @	\$1.16	per c.y. = \$473.28
Widening: to C to D Fill (New Const.)				1826	cy. @	\$1.35	per c.y. = \$2,465.10
Widening(Rock): Waste Area	36+55 to 45+05	and	51+75 to 52+9C	398	cy. @	\$1.65	per c.y. = \$656.70
Outside berm material	33+05	to	34+30	65	cy. @	\$0.86	per c.y. = \$55.90
Slope Stabilization Prep.	31+50	to	31+70	2	hrs. @	\$140.00	per hour = \$280.00
Spread & Compact (Fill Material)				4087	cy. @	\$0.35	per c.y. = \$1,430.45
Spread & compact (Waste Area)				1217	cy. @	\$0.20	per c.y. = \$243.40
					<b>TOTAL ENDHAUL</b>		<b>\$6,627.71</b>
<b>CULVERTS - MATERIALS &amp; INSTALLATION</b>							
	<u>Culverts</u>						
	482	LF of 18"	\$7,712.00	34	LF of 24"	\$765.00	
	0	LF of 30"	\$0.00	156	LF of 36"	\$5,840.00	
	0	LF of 42"	\$0.00	0	LF of 48"	\$0.00	
	0	LF of 54"	\$0.00	0	LF of 60"	\$0.00	
	0	LF of 66"	\$0.00	0	LF of 72"	\$0.00	
			<u>\$7,712.00</u>			<u>\$6,605.00</u>	
	<u>Half Rounds</u>						
	110	LF of 21"	\$1,955.80	20	LF of 30"	\$452.40	
	0	LF of 36"	\$0.00	0	LF of 42"	\$0.00	
			<u>\$1,955.80</u>			<u>\$452.40</u>	
	<u>Culvert Stakes &amp; Markers</u>						
	26	stakes	\$208.00				
	19	markers	\$152.00				
			<u>\$360.00</u>				
				<b>TOTAL CULVERTS</b>			<b>\$17,085.20</b>
<b>ROCK</b>							
Surfacing:	46+85 to 51+75	324	cy. of Pit-Run @	\$2.66	per c.y. =	\$861.84	
Spot Rock Surfacing: 26+15 - 27+80, 29+60 - 30+60, 57+05 - 58+05, 60+50 - 61+50, 64+65 - 65+65		311	cy. of Pit-Run @	\$2.69	per c.y. =	\$836.59	
Spot Rock Surfacing (CAP): 26+15 - 27+80, 29+60 - 30+60, 57+05 - 58+05, 60+50 - 61+50, & 64+65 - 65+65		68	cy. of Crushed @	\$4.71	per c.y. =	\$320.28	
Inlet Armor (Sta. 26+80, 57+55, 61+00, & 65+15)		165	cy. of Riprap @	\$3.85	per c.y. =	\$635.25	
Outlet Armor/Dissipator: (26+80, 57+55, 61+00, & 65+15)		275	cy. of Riprap @	\$3.85	per c.y. =	\$1,058.75	
Slope Stabilization: Sta. 31+50 to 31+70		55	cy. of Riprap @	\$3.83	per c.y. =	\$210.65	
Culvert Bedding/Backfill: Sta. 26+80, 30+10, 57+55, 61+00, & 65+15		210	cy. of Crushed @	\$3.92	per c.y. =	\$823.20	
					<b>TOTAL ROCK</b>		<b>\$5,756.35</b>
<b>SPECIAL PROJECTS</b>							
Blast Cobbles and Boulders in subgrade		10.50	stations @	\$300.00	per station	\$3,150.00	
Drill and Shoot Ditchlines		100.00	CYS @	\$4.90	per CY	\$490.00	
Construct waste areas -		4.00	hours @	\$130.00	per hour	\$520.00	
Construct ditchouts (Sta. 10+80 & 69+55)-		2.00	@	\$60.00	each	\$120.00	
Proof-Roll Subgrade		69.55	stations @	\$3.00	per station	\$208.65	
Grade and shape road -		69.55	stations @	\$14.20	per station	\$987.61	
Roll subgrade w/ vibratory roller prior to rocking -		69.55	stations @	\$11.00	per station	\$765.05	
Grass seed and fertilize -		2.38	acres @	\$220.00	per acre	\$523.60	
Mulching -		1.597	acres @	\$600.00	per acre	\$958.20	
					<b>TOTAL SPECIAL PROJECTS</b>		<b>\$7,723.11</b>
				<b>GRAND TOTAL</b>			<b>\$66,657.62</b>

## SUMMARY OF CONSTRUCTION COST

Sale:	<u>North Cronin Alder</u>	Road: <u>E to F</u>	
Construction -	<u>0+00</u> stations <u>0.00</u> miles	Improvement -	<u>36+30</u> stations <u>0.69</u> miles
<b>CLEARING AND GRUBBING -</b>			
Roadside Brushing	0.69 miles @	\$1,000.00 per mile =	\$690.00
Side cast	0.399 acres @	\$540.00 per acre =	\$215.46
Widening	0.250 acres @	\$540.00 per acre =	\$135.00
Scattering	0.500 acres @	\$815.00 per acre =	\$407.50
		<b>TOTAL CLEARING AND GRUBBING</b>	<b>\$1,447.96</b>
<b>EXCAVATION -</b>			
Road Earthwork	36.30 sta. @	\$65.00 per sta. =	\$2,359.50
Pullback	1359 cy. @	\$1.40 per c.y. =	\$1,902.60
Widening (common)	524 cy. @	\$1.15 per c.y. =	\$602.60
Widening (Rippable)	352 cy. @	\$2.25 per c.y. =	\$792.00
Widening (Solid)	334 cy. @	\$4.90 per c.y. =	\$1,636.60
Log Fill Removal (Sta. 9+25 & 10+60)	6 hrs. @	\$140.00 per hour =	\$840.00
Fix Fill Failure (Sta. 13+20 to 13+30)	2 hrs. @	\$140.00 per hour =	\$280.00
		<b>TOTAL EXCAVATION</b>	<b>\$8,413.30</b>
<b>ENDHAUL -</b>			
Pullback	0+35 to 1+25	120 cy. @	\$1.31 per c.y. = \$157.20
Pullback	3+50 to 4+85	120 cy. @	\$1.41 per c.y. = \$169.20
Pullback	4+85 to 5+50	87 cy. @	\$1.43 per c.y. = \$124.41
Pullback	12+80 to 18+60	1032 cy. @	\$1.65 per c.y. = \$1,702.80
Widening	0+35 to 1+25	21 cy. @	\$1.31 per c.y. = \$27.51
Widening	3+50 to 6+85	70 cy. @	\$1.44 per c.y. = \$100.80
Widening	13+70 to 21+05	894 cy. @	\$1.67 per c.y. = \$1,492.98
Log Fill Material		4 hrs. @	\$57.00 per hour = \$228.00
Spread & compact (Waste Area)		2344 cy. @	\$0.20 per c.y. = \$468.80
		<b>TOTAL ENDHAUL</b>	<b>\$4,471.70</b>
<b>CULVERTS - MATERIALS &amp; INSTALLATION</b>			
<u>Culverts</u>			
70	LF of 18"	\$1,120.00	32 LF of 24" \$720.00
0	LF of 30"	\$0.00	36 LF of 36" \$1,361.00
0	LF of 42"	\$0.00	0 LF of 48" \$0.00
0	LF of 54"	\$0.00	0 LF of 60" \$0.00
0	LF of 66"	\$0.00	0 LF of 72" \$0.00
		<u>\$1,120.00</u>	<u>\$2,081.00</u>
<u>Half Rounds</u>			
10	LF of 21"	\$177.80	0 LF of 30" \$0.00
0	LF of 36"	\$0.00	0 LF of 42" \$0.00
		<u>\$177.80</u>	<u>\$0.00</u>
<u>Culvert Stakes &amp; Markers</u>			
2	stakes	\$16.00	
4	markers	\$32.00	
		<u>\$48.00</u>	
			<b>TOTAL CULVERTS \$3,426.80</b>
<b>ROCK</b>			
Surfacing (Sta. 8+90 to 11+10)	114 cy. of	Pit-Run @	\$3.20 per c.y. = \$364.80
Surfacing Spot Rock Sta. 22+35 to 23+35	51 cy. of	Pit-Run @	\$3.18 per c.y. = \$162.18
Surfacing: CAP: (Sta. 8+90 to 11+10)	25 cy. of	Crushed @	\$5.08 per c.y. = \$127.00
Surfacing Spot Rock (CAP) Sta. 22+35 to 23+35	11 cy. of	Crushed @	\$5.08 per c.y. = \$55.88
Fill Armor (Inlet): Sta. 9+25	5 cy. of	Riprap @	\$3.74 per c.y. = \$18.70
Fill Armor/Energy Dissipator (Outlet): Sta. 9+25 & 10+60	20 cy. of	Riprap @	\$3.74 per c.y. = \$74.80
Slope Stabilization: Sta. 13+20 to 13+30	20 cy. of	Riprap @	\$3.68 per c.y. = \$73.60
Culvert Bedding/Backfill: Sta. 9+25 & 10+60	30 cy. of	Crushed @	\$4.29 per c.y. = \$128.70
			<u>\$1,005.66</u>
			<b>TOTAL ROCK \$1,005.66</b>
<b>SPECIAL PROJECTS</b>			
Construct waste areas -	2.00 hours @	\$130.00 per hour	\$260.00
Grade and shape road -	36.30 stations @	\$14.20 per station	\$515.46
Construct Rolling Dips (Sta. 25+00) -	1.00 @	\$150.00 each	\$150.00
Proof-Rolling Subgrade	36.30 stations @	\$3.00 per station	\$108.90
Roll subgrade w/ vibratory -	36.30 stations @	\$11.00 per station	\$399.30
Grass seed and fertilize -	1.25 acres @	\$220.00 per acre	\$275.00
Mulching -	0.750 acres @	\$600.00 per acre	\$450.00
		<b>TOTAL SPECIAL PROJECTS</b>	<b>\$2,158.66</b>

**GRAND TOTAL** **\$20,924.08**

## SUMMARY OF CONSTRUCTION COST

Sale:	<u>North Cronin Alder</u>	Road: <u>G to H</u>								
Construction -	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">12+80</td> <td style="text-align: left;">stations</td> </tr> <tr> <td style="text-align: right;">0.24</td> <td style="text-align: left;">miles</td> </tr> </table>	12+80	stations	0.24	miles	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">+00</td> <td style="text-align: left;">stations</td> </tr> <tr> <td style="text-align: right;">0.00</td> <td style="text-align: left;">miles</td> </tr> </table>	+00	stations	0.00	miles
12+80	stations									
0.24	miles									
+00	stations									
0.00	miles									
CLEARING AND GRUBBING -										
Scattering	1.070 acres @	\$815.00 per acre = \$872.05								
Piling	0.00 acres @	\$905.00 per acre = \$0.00								
Endhaul	0.00 acres @	\$1,500.00 per acre = \$0.00								
		<b>TOTAL CLEARING AND GRUBBING</b>								
		<b>\$872.05</b>								
EXCAVATION -										
Road Earthwork	0.00 sta. @	\$20.00 per sta. = \$0.00								
Excavation (common)	8172 cy. @	\$1.15 per c.y. = \$9,397.80								
Remove Log Fills (between Sta. 1+25 to 1+50, Sta. 6+05 to 6+65, 8+25 to 8+45, & 10+80 to 11+00)	8 hrs. @	\$140.00 per hr. = \$1,120.00								
		<b>TOTAL EXCAVATION</b>								
		<b>\$10,517.80</b>								
ENDHAUL -										
Road Excavation	0+00 to 6+55	5997 cy. @								
Spread & compact (fill)		2175 cy. @								
Spread & compact (Waste)		5997 cy. @								
		\$1.31 per c.y. = \$7,856.07								
		\$0.35 per c.y. = \$761.25								
		\$0.20 per c.y. = \$1,199.40								
		<b>TOTAL ENDHAUL</b>								
		<b>\$9,823.60</b>								
CULVERTS - MATERIALS & INSTALLATION										
	<u>Culverts</u>									
	114 LF of 18"	\$1,824.00								
	0 LF of 30"	\$0.00								
	0 LF of 42"	\$0.00								
	0 LF of 54"	\$0.00								
	0 LF of 66"	\$0.00								
		<b>\$1,824.00</b>								
	<u>Half Rounds</u>									
	0 LF of 21"	\$0.00								
	0 LF of 36"	\$0.00								
		<b>\$0.00</b>								
	<u>Culvert Stakes &amp; Markers</u>									
	0 stakes	\$0.00								
	6 markers	\$48.00								
		<b>\$48.00</b>								
		<b>TOTAL CULVERTS</b>								
		<b>\$6,432.00</b>								
ROCK										
0+00 to 5+60	348 cy. of	Pit-Run @								
0+00 to 5+60	77 cy. of	Crushed @								
Spot Rock (CAP) Sta. 6+05 to 7+05, 7+85 to 8+85, & 10+40 to 11+40	36 cy. of	Crushed @								
Fill Armor (Inlet) Sta. 1+40, 6+55, 8+35, 10+90	45 cy. of	Riprap @								
Slope Stabilization /Dissipator (Outlet) Sta. 1+40, 5+10, 6+55, 8+35, 10+90	165 cy. of	Riprap @								
Spot Rock Sta. 6+05 to 7+05, 7+85 to 8+85, & 10+40 to 11+40	168 cy. of	Pit-Run @								
Bedding/Backfill Sta. 1+40, 5+10, 6+55, 8+35, & 10+90	125 cy. of	Crushed @								
		\$2.68 per c.y. = \$932.64								
		\$4.93 per c.y. = \$379.61								
		\$4.97 per c.y. = \$178.92								
		\$3.93 per c.y. = \$176.85								
		\$3.93 per c.y. = \$648.45								
		\$2.77 per c.y. = \$465.36								
		\$4.17 per c.y. = \$521.25								
		<b>TOTAL ROCK</b>								
		<b>\$4,370.68</b>								
SPECIAL PROJECTS										
Construct Sediment Catch Basins Sta. 1+00, 2@1+75, 2@7+95, & 10+50	6.00 @	\$50.00 each \$300.00								
Construct waste areas -	3.00 hours @	\$130.00 per hour \$390.00								
Construct ditchouts - Sta. 1+50, 8+10, 10+90, & 11+80	4.00 @	\$60.00 each \$240.00								
Grade and shape road -	12.80 stations @	\$14.20 per station \$181.76								
Roll subgrade w/ vibratory roller prior to rocking -	12.80 stations @	\$11.00 per station \$140.80								
Grass seed and fertilize -	1.59 acres @	\$220.00 per acre \$349.80								
Mulching -	1.050 acres @	\$600.00 per acre \$630.00								
		<b>TOTAL SPECIAL PROJECTS</b>								
		<b>\$2,232.36</b>								
		<b>GRAND TOTAL</b>								
		<b>\$34,248.49</b>								

## SUMMARY OF CONSTRUCTION COST

Sale:	<b>North Cronin Alder</b>		Road: <b>I to J</b>
Construction -	<u>7+00</u> stations <u>0.13</u> miles		<u>+00</u> stations <u>0.00</u> miles
<b>CLEARING AND GRUBBING -</b>			
Scattering	0.450 acres @	\$815.00 per acre =	\$366.75
Piling	0.00 acres @	\$905.00 per acre =	\$0.00
Endhaul	0.00 acres @	\$1,500.00 per acre =	\$0.00
		<b>TOTAL CLEARING AND GRUBBING</b>	<b>\$366.75</b>
<b>EXCAVATION -</b>			
Road Earthwork (Common)	624.00 cy. @	\$1.15 per c.y. =	\$717.60
Road Earthwork (Rippable)	1835 cy. @	\$2.25 per c.y. =	\$4,128.75
Road Earthwork (Solid)	2346 cy. @	\$4.90 per c.y. =	\$11,495.40
Remove outside berm	0 cy. @	\$1.40 per c.y. =	\$0.00
		<b>TOTAL EXCAVATION</b>	<b>\$16,341.75</b>
<b>ENDHAUL -</b>			
Road Excavation	2164 cy. @	\$1.26 per c.y. =	\$2,726.64
Waste Area (Spread and Compact): Common	509 cy. @	\$0.20 per c.y. =	\$101.80
Waste Area (Spread and Compact): Rock	1655 cy. @	\$0.20 per c.y. =	\$331.00
Fills (Spread & compact)	115 cy. @	\$0.35 per c.y. =	\$40.25
		<b>TOTAL ENDHAUL</b>	<b>\$3,199.69</b>
<b>CULVERTS - MATERIALS &amp; INSTALLATION</b>			
	<u>Culverts</u>		
0 LF of 18"	\$0.00	0 LF of 24"	\$0.00
0 LF of 30"	\$0.00	0 LF of 36"	\$0.00
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	\$0.00	0 LF of 60"	\$0.00
0 LF of 66"	\$0.00	0 LF of 72"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</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>\$0.00</u>
	<u>Culvert Stakes &amp; Markers</u>		
0 stakes	\$0.00		
0 markers	\$0.00		
	<u>\$0.00</u>		
		<b>TOTAL CULVERTS</b>	<b>\$0.00</b>
<b>ROCK</b>			
0 cy. of Pit-Run	@	\$0.00 per c.y. =	\$0.00
		<b>TOTAL ROCK</b>	<b>\$0.00</b>
<b>SPECIAL PROJECTS</b>			
Construct ditchouts (Sta. 3+15 & 5+70) -	2.00 @	\$60.00 each	\$120.00
Grade and shape road -	7.00 stations @	\$14.20 per station	\$99.40
Proof-Rolling Subgrade	7.00 stations @	\$3.00 per station	\$21.00
Roll subgrade w/ vibratory roller -	7.00 stations @	\$11.00 per station	\$77.00
Grass seed and fertilize -	0.40 acres @	\$220.00 per acre	\$88.00
Mulching -	0.000 acres @	\$600.00 per acre	\$0.00
		<b>TOTAL SPECIAL PROJECTS</b>	<b>\$405.40</b>
<b>GRAND TOTAL</b>			<b>\$20,313.59</b>

## SUMMARY OF VACATING COST

Sale:	<u>North Cronin Alder</u>	Road:	<u>K to L</u>				
		Vacating -	<table style="margin-left: auto; margin-right: 0;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;">10+55</td> <td style="text-align: right;">stations</td> </tr> <tr> <td style="text-align: center; border-bottom: 1px solid black;">0.20</td> <td style="text-align: right;">miles</td> </tr> </table>	10+55	stations	0.20	miles
10+55	stations						
0.20	miles						
CLEARING AND GRUBBING -		TOTAL CLEARING AND GRUBBING	<b>\$0.00</b>				
EXCAVATION -		TOTAL EXCAVATION	<b>\$0.00</b>				
ENDHAUL -		TOTAL ENDHAUL	<b>\$0.00</b>				
CULVERTS - MATERIALS & INSTALLATION		TOTAL CULVERTS	<b>\$0.00</b>				
ROCK		TOTAL ROCK	<b>\$0.00</b>				
<b>SPECIAL PROJECTS</b>							
Upper North Cronin Road (K to L)							
--- Waterbar, remove berms	10.55 stations @	\$9.75 per station	\$102.86				
--- Rip Road Subgrade	See attached Spreadsheet		\$969.04				
--- Grass Seed and Fertilize	0.66 acres @	\$220.00 per acre	\$145.20				
--- Mulching	0.66 acres @	\$600.00 per acre	\$396.00				
			<b>TOTAL SPECIAL PROJECTS</b>				
			<b>\$1,613.10</b>				
<b>GRAND TOTAL</b>			<b>\$1,613.10</b>				

TIME TO RIP PER MINUTES PER 100 FEET

	Ideal			Average			Adverse		
	D-7	D-8	D-9	D-7	D-8	D-9	D-7	D-8	D-9
Soft(3000fps)	0.54	0.42	0.30	0.74	0.58	0.42	0.97	0.82	0.67
Med-soft(3900fps)	0.80	0.61	0.42	1.14	0.88	0.62	2.74	1.99	1.24
Med(4800fps)	1.05	0.79	0.53	1.54	1.18	0.82	M.	3.16	1.81
Med-hard(5750ft)	1.54	1.26	0.93	M.	2.82	1.79	N.R.	4.45	3.70
Hard(6700fps)	M.	1.73	1.33	N.R.	4.45	2.75	N.R.	M.	
Very hard(8000ft)	N.R.	4.45	2.98	N.R.	M.		N.R.		
Extremely hard(9000fps +)				N.R.	M.		N.R.		

0.00 = FACTOR

N.R.--Non Rippable

M.--Marginal

RIPPER PRODUCTION SHEET

Sale: North Cronin Alder Road: Existing Road: K to L

TIME Computation-

Sta.:

Basic rip time per 100 feet from table	(1)	4.45
Time per pass = 10.55 Stations	(2)	46.95
Turn time	(3)	0.25
Total time per pass (100% efficiency)	(4)	47.20
Operator efficiency correction = line 4/.75	(5)	62.93
Job efficiency correction = line 5/.75	(6)	83.91

Time per cubic yard:

Ripping time per cu.yd. = line 6/cu.yd. per pass

(distance) x (width) x (depth)	
1,055.00 x 3.00 x 1.00	
-----	(7) 0.72
27.00	

COST PER CU.YD. Computation-

Cost of tractor and ripper per hour	\$94.71	
Cost of operator per hour	\$35.60	
Total operating cost per hour	(8)	\$130.31
Operating cost per minute	(9)	\$2.17
Cost per cu.yd. = line 7 x line 9	(10)	\$1.55

## ROCK DEVELOPMENT COST SUMMARY

Pit:	RipRap	Location:	E to F Construction
Sale:	North Cronin Alder	Road:	45 c.y.
Swell:	0.00	Stockpile:	c.y.
Shrinkage	0.00	Total Truck Loads:	45 c.y.
Drill Pct.:	0%	In Place Total:	c.y.

Load Dump Truck:	\$1.40	/cu.yd.	x	45	cu.yds.	=	\$63.00
					Subtotal		\$63.00

Base Cost=	\$1.40	Per Cu.Yd.		TOTAL PRODUCTION COSTS	\$63.00
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Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E to F: Armor/Dissipator (Outlet)	\$0.94	\$1.40	\$1.40	\$3.74	20	\$74.80
E to F: Armor (Inlet)	\$0.94	\$1.40	\$1.40	\$3.74	5	\$18.70
E to F: Slope Stabilization	\$0.88	\$1.40	\$1.40	\$3.68	20	\$73.60
				Total C.Y.	45	Sub Total
						\$167.10

TOTAL ROCKING COSTS	\$167.10
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## ROCK DEVELOPMENT COST SUMMARY

Pit:	Pit Run	Location:	E to F Construction
Sale:	<b>North Cronin Alder</b>	Road:	165 c.y.
Swell:	0.00	Stockpile:	c.y.
Shrinkage	0.00	Total Truck Loads:	165 c.y.
Drill Pct.:	0%	In Place Total:	c.y.

Load Dump Truck: \$0.60 /cu.yd. x 165 cu.yds. = \$99.00

Subtotal \$99.00

Move in Excavator 1 excavator within area: 2 miles @ \$44.80/m = \$89.60

Move in Trucks 3 trucks within area: \$2.85/truck/mile = \$17.10

Subtotal \$106.70

**TOTAL PRODUCTION COSTS** \$205.70

Base Cost= \$1.25 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E to F: Sta. 8+90 - 11+10	\$1.05	\$0.90	\$1.25	\$3.20	114	\$364.80
E to F (Spot): Sta. 22+35 - 23+35	\$1.03	\$0.90	\$1.25	\$3.18	51	\$162.18
				Total C.Y.	165	Sub Total
						\$526.98

**TOTAL ROCKING COSTS** \$526.98



## ROCK DEVELOPMENT COST SUMMARY

Pit:	I to J Excavation RipRap	Location:	SE 1/4 of Sec. 31, T4N, R7W, W.M.
Sale:	<b>North Cronin Alder</b>	Road:	705 c.y.
Swell:	0.00	Stockpile:	c.y.
Shrinkage	0.00	Total Truck Loads:	705 c.y.
Drill Pct.:	0%	In Place Total:	c.y.

Load Dump Truck: \$1.40 /cu.yd. x 705 cu.yds. = \$987.00

Subtotal \$987.00

TOTAL PRODUCTION COSTS \$987.00

Base Cost= \$1.40 Per Cu.Yd.

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: Inlet Armor	\$1.05	\$1.40	\$1.40	\$3.85	165	\$635.25
A to B: Outlet Armor/Dissipator	\$1.05	\$1.40	\$1.40	\$3.85	275	\$1,058.75
A to B: Slope Stabilization	\$1.03	\$1.40	\$1.40	\$3.83	55	\$210.65
G to H: Outlet Energy Dissipator	\$1.13	\$1.40	\$1.40	\$3.93	165	\$648.45
G to H: Inlet Fill Armor	\$1.13	\$1.40	\$1.40	\$3.93	45	\$176.85
				Total C.Y.	705	Sub Total
						\$2,729.95

**TOTAL ROCKING COSTS** \$2,729.95

## ROCK DEVELOPMENT COST SUMMARY

Pit:	I to J Excavation Pit Run	Location:	SE 1/4 of Sec. 31, T4N, R7W, W.M.
Sale:	<b>North Cronin Alder</b>	Road:	1676 c.y.
Swell:	0.00	Stockpile:	c.y.
Shrinkage:	0.00	Total Truck Loads:	1676 c.y.
Drill Pct.:	0%	In Place Total:	c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.				\$0.00
Drill & Shoot:	\$2.10 /cu.yd.	x	0 cu.yds.	= \$0.00
Rip Rock	\$1.75 /cu.yd.	x	0 cu.yds.	= \$0.00
Load Dump Truck:	\$0.60 /cu.yd.	x	1676 cu.yds.	= \$1,005.60
Subtotal				\$1,005.60

Move in Excavator	1 excavator within area: 1.5 miles @ \$44.80/Mile	=	\$67.20
Move in Trucks	3 trucks within area: \$2.85/truck/mile	=	\$12.83
Subtotal			\$80.03

**TOTAL PRODUCTION COSTS** \$1,085.63

Base Cost=           \$0.65           Per Cu.Yd.

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: Sta. 46+85 - 51+75	\$1.11	\$0.90	\$0.65	\$2.66	324	\$861.84
A to B: Spot Rock	\$1.14	\$0.90	\$0.65	\$2.69	311	\$836.59
G to H	\$1.13	\$0.90	\$0.65	\$2.68	348	\$932.64
G to H Spot Rock	\$1.22	\$0.90	\$0.65	\$2.77	168	\$465.36
Miscellaneous (as marked)	\$1.50	\$0.90	\$0.65	\$3.05	525	\$1,601.25
Total C.Y.					1676	Sub Total
						\$4,697.68

**TOTAL ROCKING COSTS** \$4,697.68

**ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY**

Pit:	<u>Crushed Stockpile</u>	Location:	<u>SE 1/4 of Sec. 32, T4N, R7W, W.M.</u>
Sale:	<u>North Cronin Aider</u>	Road:	<u>582 c.y.</u>
Swell:	<u>0.00</u>	Stockpile:	<u>      c.y.</u>
Shrinkage:	<u>0.00</u>	Total Truck Loads:	<u>582 c.y.</u>
Drill Pct.:	<u>0%</u>	In Place Total:	<u>      c.y.</u>

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact. \$0.00

Load Dump Truck:       \$0.60 /cu.yd. x       582 cu.yds. =       \$349.20

Subtotal       \$349.20

Move in Loader       1 @       \$725.24 =       \$725.24

Move in Trucks       3 Trucks within area \$2.85/mile/truck =       \$11.29

Subtotal       \$736.53

TOTAL PRODUCTION COSTS       \$1,085.73

Base Cost=       \$1.87 Per Cu.Yd.

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: Culvert Bedding/Backfill	1.45	0.60	1.87	3.92	210	823.20
A to B: Spot Rock Surfacing	1.54	1.30	1.87	4.71	68	320.28
E to F: Spot Rock Surfacing (8+90 - 11+10)	1.91	1.30	1.87	5.08	25	127.00
E to F: Spot Rock Surfacing (22+35 - 23+35)	1.91	1.30	1.87	5.08	11	55.88
E to F: Culvert Bedding/Backfill	1.82	0.60	1.87	4.29	30	128.70
G to H: 0+00 - 5+60	1.76	1.30	1.87	4.93	77	379.61
G to H: Spot Rock Surfacing	1.80	1.30	1.87	4.97	36	178.92
G to H: Culvert Bedding/Backfill	1.70	0.60	1.87	4.17	125	521.25
Total C.Y.					582	Sub Total 4,713.17

TOTAL ROCKING COSTS       4,713.17

**MOVE-IN CALCULATIONS**

Sale: North Cronin Alder

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
110.0	Highway	43
28.0	Main Lines	15
0.1	Steep Grades	4

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Drill & Compressor	\$699.88		\$46.00	0.00	2.59	2.59	\$119.14	\$819.02
1	Brush Cutter	\$699.88		\$4.00	0.00	2.59	2.59	\$10.36	\$710.24
1	Graders	\$371.33		\$3.65	0.00	2.59	2.59	\$9.45	\$380.78
0	Loader (Small)	\$0.00	1	\$3.55	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Med. & Large)	\$0.00	1	\$9.00	0.00	0.00	0	\$0.00	\$0.00
1	Rollers & Compactors	\$699.88		\$5.00	0.00	2.59	2.59	\$12.95	\$712.83
0	Excavators (Small)	\$0.00		\$22.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Med.)	\$0.00		\$35.50	0.00	0.00	0	\$0.00	\$0.00
2	Excavators (Large)	\$1,966.35	1	\$44.80	0.00	1.30	1.3	\$116.48	\$2,082.83
1	Tired Backhoes/Skidders	\$699.88		\$3.00	0.00	2.59	2.59	\$7.77	\$707.65
0	Tractors (D6)	\$0.00	2	\$7.10	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D7)	\$0.00	2	\$11.30	0.00	0.00	0	\$0.00	\$0.00
1	Tractor (D8)	\$959.37	2	\$15.10	0.00	2.59	2.59	\$39.11	\$998.48
3	Dump Truck (10 cy +)	\$757.78		\$2.85	0.00	2.59	2.59	\$22.14	\$779.92
0	Dump Truck (Off Hiway)	\$0.00	1	\$4.75	0.00	0.00	0	\$0.00	\$0.00
0	Water Truck (1500 Gal)	\$0.00		\$2.85	0.00	0.00	0	\$0.00	\$0.00
1	Water Truck (2500 Gal)	\$296.91		\$2.85	0.00	2.59	2.59	\$7.38	\$304.29
0	Jaw	\$1,066.00							
0	2-Stage Crusher	\$1,597.00							
0	3-Stage Crusher	\$2,489.00							

**TOTAL MOVE-IN COSTS: \$7,496.04**



## OREGON DEPARTMENT OF FORESTRY CRUISE REPORT *North Cronin Alder*

### 1. Type of Sale

Partial cut and Clear-cut, Recovery

### 2. Legal Description

Sections 31 and 32, T4N, R7W, WM, Clatsop County, Oregon.

### 3. Sale Acreage

	ACRES		
	<u>Sale</u>	<u>Total</u>	<u>Net</u>
Area 1 - Clearcut	77	73	69
Area 2 - Partial Cut	55	52	47
Area 3 - Partial Cut	6	6	6
<b>Total</b>	138	131	122

Sale Acres: Area within the Timber Sale Boundary signs.

Total Acres: For accomplishment reporting.

Sale acres, plus green tree retention areas outside the timber sale boundary; less roads and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Net acres: Used for calculating the advertised volume.

Clearcut - Sale acres, less green tree retention, roads, buffers, voids, and riparian areas inside the sale boundary.

Partial Cut - Sale acres minus areas of low stocking, buffers, non-required areas, void, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

### 4. Cruising Procedures

#### A. Cruise Method

A total of 75 variable radius plots were taken; 33 in Area 1, 36 in Area 2, and 6 in Area 3. Plots were taken every two chains (132 feet) in Areas 1 and 2 and every 100 feet in Area 3 using transect lines. All conifers 8 inches DBH and greater and all hardwoods 10 inches DBH and greater were measured and graded on these plots.

#### B. Plot size

A basal area factor of 20 was used in Area 1 and a basal area factor of 40 was used in Areas 2 and 3. The point of observation was at 4.5 feet.

### **C. Grading System**

All trees were graded according to Columbia River Log Scaling and Grading Rules. Conifer trees were measured to a 6-inch top outside bark and hardwood trees were measured to an 9-inch top outside bark, both favoring 40-foot lengths. All heights were measured to the nearest foot. All diameters were measured 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 Super A.C.E 98 program for computation of basal area, stand tables, diameters, and volume to basal area ratios. This data was then entered into the Volume Summary Worksheet to compute sale volumes.

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

A 10% deduction was applied to the hardwood volume and a 5% deduction was applied to the conifer volume to account for the defect and breakage.

### **7. Timber Description**

Portions of the sale area burned in the 1945 Salmonberry Fire. These stands were naturally regenerated. There has been no management activity in these stands since they were established. The understory consists of sword fern, salmonberry, and vine maple. Swiss needle cast symptoms are very low with six to seven years of needle retention in the Douglas-fir. The Douglas-fir is expected to respond favorably to the thinning.

**Area 1:** Predominately 60 year old Red alder with patches of hemlock and Douglas-fir.

**Area 2:** A mix of 60 year old hemlock, Douglas-fir, and alder.

**Area 3:** Predominately 93 year old Douglas-fir and Western hemlock

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

Travers/ Winslow/ Wells, June, 2004.

### **9. Revenue Distribution**

FDF: 100%

Tax Code: 8-01 - 100%

Deed Number: 336

1% - Rehabilitation Obligated

### **10. Attachments**

Stand Tables

Volume Summary

Logging Plan

**Stand Table Summary**

Project **NCRONIN**

**T04N R07W S31 T00A1**

**T04N R07W S31 T00A1**

**Twp Rge Sec Tract**  
**04N 07W 31 AREA 1**

**Type Acres Plots Sample Trees**  
**00A1 69.00 33 264**

**Page: 1**  
**Date: 11/17/04**  
**Time: 9:01:17AM**

S SpC	T	Sample			Av	Trees/ BA/ Logs			Average Log		Net	Net	Totals			
		DBH	Trees	FF	Ht	Trees/	BA/	Logs	Net	Net	Tons/	Cu.Ft.	Bd.Ft	Tons	Cunits	MBF
				16'	Tot	Ac	Ac	Ac	Cu.Ft.	Bd.Ft.	Ac	Ac	Ac			
RA	10	6	93	39	6.783	3.64	6.78	8.2	40.0	1.54	56	271	106	39	19	
RA	11	13	93	38	12.380	7.88	12.38	9.5	40.6	3.25	118	502	224	82	35	
RA	12	19	94	61	14.322	11.52	15.04	15.6	67.0	6.45	235	1,008	445	162	70	
RA	13	15	93	76	9.949	9.09	11.22	20.0	89.5	6.17	225	1,004	426	155	69	
RA	14	36	94	81	20.647	21.82	28.53	21.3	95.5	16.73	609	2,724	1,155	420	188	
RA	15	22	93	84	11.056	13.33	17.62	23.2	100.2	11.23	408	1,765	775	282	122	
RA	16	23	94	81	10.018	13.94	16.12	26.6	112.6	11.78	429	1,815	813	296	125	
RA	17	27	93	83	10.538	16.36	18.29	28.8	118.2	14.49	527	2,161	1,000	364	149	
RA	18	10	94	77	3.477	6.06	5.92	31.5	120.6	5.12	186	714	353	129	49	
RA	19	11	93	101	3.463	6.67	6.60	40.2	171.7	7.29	265	1,134	503	183	78	
RA	20	8	94	90	2.226	4.85	4.16	41.6	178.8	4.76	173	744	329	120	51	
RA	21	5	94	79	1.280	3.03	2.56	38.7	161.4	2.72	99	413	188	68	29	
RA	22	3	93	86	.691	1.82	1.38	48.1	208.2	1.83	66	288	126	46	20	
RA	23	1	93	65	.205	.61	.20	74.2	290.0	.42	15	59	29	10	4	
RA	24	3	93	40	.571	1.82	.57	55.5	99.5	.87	32	57	60	22	4	
RA	25	1	93	82	.185	.61	.37	57.0	230.0	.58	21	85	40	15	6	
RA	26	2	93	80	.337	1.21	.67	61.3	247.4	1.14	41	167	78	28	11	
RA	Totals	205	93	71	108.127	124.24	148.41	23.6	100.5	96.36	3,506	14,910	6,649	2,419	1,029	
DL	9	1	88	40	1.502	.61	1.50	5.8	30.0	.24	9	45	17	6	3	
DL	12	1	87	45	.840	.61	.84	12.7	30.0	.29	11	25	20	7	2	
DL	15	1	86	121	.501	.61	1.00	23.6	105.0	.65	24	105	45	16	7	
DL	17	4	89	87	1.570	2.42	3.14	25.2	97.4	2.18	79	306	150	55	21	
DL	18	2	81	82	.695	1.21	1.39	25.9	86.0	.98	36	120	68	25	8	
DL	19	1	84	100	.308	.61	.62	36.7	110.0	.62	23	68	43	16	5	
DL	20	2	81	96	.564	1.21	1.13	36.9	115.1	1.14	42	130	79	29	9	
DL	21	3	85	98	.761	1.82	1.52	43.0	150.7	1.80	65	229	124	45	16	
DL	25	2	73	118	.354	1.21	.89	56.0	176.2	1.37	50	156	94	34	11	
DL	26	1	75	81	.167	.61	.33	56.4	125.0	.52	19	42	36	13	3	
DL	45	1	89	118	.055	.61	.16	165.7	680.0	.75	27	112	52	19	8	
DL	Totals	19	85	78	7.317	11.52	12.53	30.6	106.8	10.55	384	1,338	728	265	92	
WL	9	1	78	29	1.372	.61	1.37	5.5	20.0	.24	8	27	17	5	2	
WL	10	1	80	18	1.231	.61	1.23	4.6	20.0	.18	6	25	13	4	2	
WL	11	1	76	24	.918	.61	.92	7.6	20.0	.22	7	18	15	5	1	
WL	12	2	84	44	1.546	1.21	1.55	13.5	44.3	.68	21	68	47	14	5	
WL	13	1	88	62	.619	.61	.62	18.4	40.0	.37	11	25	25	8	2	
WL	15	1	89	67	.481	.61	.48	30.0	100.0	.47	14	48	32	10	3	
WL	19	1	91	105	.325	.61	.65	38.9	120.0	.81	25	78	56	17	5	
WL	21	2	91	94	.524	1.21	1.05	44.1	165.0	1.48	46	173	102	32	12	
WL	22	1	81	134	.223	.61	.67	42.6	180.0	.91	29	121	63	20	8	
WL	23	1	93	103	.212	.61	.42	61.4	275.0	.83	26	117	57	18	8	
WL	24	2	81	107	.386	1.21	.77	63.8	229.9	1.58	49	177	109	34	12	
WL	26	2	86	108	.330	1.21	.66	76.0	323.2	1.61	50	213	111	35	15	
WL	27	1	94	114	.148	.61	.30	89.4	455.0	.85	26	135	58	18	9	
WL	43	1	94	112	.062	.61	.12	183.5	780.0	.72	23	96	50	16	7	
WL	Totals	18	83	55	8.377	10.91	10.81	31.6	122.2	10.93	341	1,321	754	236	91	
WH	9	1	93	30	1.313	.61	1.31	5.3	20.0	.22	7	26	15	5	2	
WH	10	1	94	45	1.027	.61	1.03	10.9	30.0	.36	11	31	25	8	2	
WH	11	1	92	51	.886	.61	.89	12.6	40.0	.36	11	35	25	8	2	
WH	12	1	93	34	.798	.61	.80	11.0	20.0	.27	9	16	19	6	1	
WH	13	3	88	55	1.944	1.82	1.93	14.6	59.8	.90	28	116	62	19	8	

TC TSTNDSUM		Stand Table Summary													
Project NCRONIN											T04N R07W S31 T00A1				
T04N R07W S31 T00A1											Page: 2				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees		Date: 11/17/04			Time: 9:01:17AM			
04N	07W	31	AREA 1	00A1	69.00	33	264								
S Spc	T	Av			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
		Sample DBH	FF Trees	16' Tot				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
WH		15	1	89	.501	.61	.50	28.4	90.0	.45	14	45	31	10	3
WH		16	3	87	1.353	1.82	2.26	23.5	94.0	1.71	53	212	118	37	15
WH	Totals	11	90	51	7.821	6.67	8.72	15.3	55.2	4.28	134	482	295	92	33
DF		11	1	75	.953	.61	1.91	9.8	40.0	.53	19	76	37	13	5
DF		12	1	88	.747	.61	1.49	9.3	35.0	.39	14	52	27	10	4
DF		13	1	88	.628	.61	1.26	14.0	55.0	.50	18	69	35	12	5
DF		14	1	76	.567	.61	1.13	17.0	55.0	.55	19	62	38	13	4
DF		15	1	88	.494	.61	.99	19.2	75.0	.54	19	74	37	13	5
DF		16	1	79	.434	.61	.87	22.4	75.0	.55	19	65	38	13	4
DF	Totals	6	82	93	3.822	3.64	7.64	14.1	52.2	3.07	108	399	212	74	28
BM		10	1	94	1.111	.61	1.11	6.7	30.0	.20	7	33	14	5	2
BM		11	1	93	.918	.61	.92	8.5	40.0	.21	8	37	14	5	3
BM		13	1	93	.668	.61	.67	12.6	70.0	.22	8	47	15	6	3
BM		16	2	93	.863	1.21	.86	31.3	119.9	.72	27	103	49	19	7
BM	Totals	5	93	37	3.560	3.03	3.56	14.3	61.9	1.35	51	220	93	35	15
Totals		264	92	69	139.024	160.00	191.67	23.6	97.4	126.54	4523	18,671	8,732	3,121	1,288

*Leave Conifer = 15.68 trees/acre*  
*= 22.43 BA/acre*



TC TSTNDSUM		Stand Table Summary														
Project NCRONIN																
T04N R07W S31 T00A2										T04N R07W S31 T00A2						
Twp		Rge	Sec	Tract	Type			Acres	Plots	Sample Trees			Page:			
04N		07W	31	AREA 2	00A2			47.00	36	238			1			
												Date:	11/17/04			
												Time:	9:03:34AM			
S Spc	T	Sample			Av	Trees/ BA/		Average Log		Net		Net	Totals			
		DBH	Trees	16'	Ht	Acres	Acres	Acres	Net	Net	Tons/	Cu.Ft.	Bd.Ft	Tons	Cunits	MBF
WH		8	1	90	43	3.105	1.11	3.10	4.8	30.0	.48	15	93	23	7	4
WH		9	2	88	28	5.175	2.22	5.18	5.4	20.0	.90	28	104	42	13	5
WH		10	3	90	45	6.038	3.33	6.04	9.4	33.2	1.81	56	200	85	27	9
WH		11	2	91	47	3.221	2.22	3.22	12.4	35.1	1.28	40	113	60	19	5
WH		12	9	90	69	12.662	10.00	19.47	13.5	48.6	8.44	264	947	397	124	45
WH		13	7	91	87	8.588	7.78	16.04	16.2	69.5	8.31	260	1,115	391	122	52
WH		14	3	88	111	3.076	3.33	7.13	18.1	75.6	4.14	129	539	195	61	25
WH		15	6	90	113	5.598	6.67	13.02	21.4	93.0	8.90	278	1,211	418	131	57
WH		16	8	92	108	6.426	8.89	15.33	23.4	102.7	11.47	358	1,575	539	168	74
WH		17	8	92	108	5.710	8.89	13.57	27.1	109.8	11.73	367	1,490	551	173	70
WH		18	6	92	126	3.718	6.67	11.15	29.0	133.7	10.36	324	1,491	487	152	70
WH		19	4	91	126	2.282	4.44	6.85	31.1	141.5	6.81	213	969	320	100	46
WH		20	2	93	77	1.040	2.22	2.06	34.6	159.3	2.27	71	328	107	34	15
WH		21	3	93	110	1.377	3.33	3.67	39.3	175.0	4.62	144	642	217	68	30
WH	Totals	64	91	82	68.016	71.11	125.83	20.3	86.0	81.53	2,549	10,818	3,832	1,198	508	
WL		11	1	92	22	1.747	1.11	1.75	6.5	20.0	.36	11	35	17	5	2
WL		12	2	92	38	2.909	2.22	2.91	11.6	34.7	1.08	34	101	51	16	5
WL		13	1	93	61	1.283	1.11	2.57	10.8	35.0	.90	28	90	42	13	4
WL		14	1	92	88	1.010	1.11	2.02	19.3	90.0	1.25	39	182	59	18	9
WL		16	1	92	67	.826	1.11	1.65	18.6	65.0	.98	31	107	46	14	5
WL		17	5	93	118	3.567	5.56	9.98	25.2	108.4	8.07	252	1,082	379	118	51
WL		18	4	90	109	2.510	4.44	5.63	32.8	135.8	5.90	184	765	277	87	36
WL		19	4	92	134	2.217	4.44	6.65	33.7	162.7	7.18	224	1,082	337	105	51
WL		20	5	90	121	2.533	5.56	7.11	36.1	157.1	8.20	256	1,116	385	120	52
WL		21	8	90	119	3.773	8.89	10.36	39.7	180.5	13.16	411	1,870	619	193	88
WL		22	4	89	112	1.692	4.44	4.64	42.6	187.1	6.32	198	868	297	93	41
WL		23	2	92	109	.771	2.22	1.94	49.5	205.6	3.08	96	399	145	45	19
WL		24	1	93	118	.363	1.11	1.09	43.2	193.3	1.50	47	210	71	22	10
WL		25	1	83	91	.323	1.11	.65	65.9	200.0	1.36	43	129	64	20	6
WL		26	2	93	132	.627	2.22	1.88	57.8	291.7	3.48	109	548	164	51	26
WL	Totals	42	91	97	26.151	46.67	60.81	32.3	141.2	62.83	1,963	8,585	2,953	922	404	
RA		10	2	91	27	4.158	2.22	4.16	6.3	25.1	.72	26	104	34	12	5
RA		11	7	90	42	11.705	7.78	11.70	11.3	46.7	3.65	133	547	172	62	26
RA		12	11	91	57	14.685	11.67	14.69	15.4	61.4	6.23	226	902	293	106	42
RA		13	10	91	83	11.792	10.56	14.28	19.7	82.8	7.72	281	1,183	363	132	56
RA		14	13	89	61	12.916	13.89	15.10	19.1	76.3	7.95	289	1,152	374	136	54
RA		15	15	90	64	11.089	13.89	12.39	26.8	92.0	9.15	332	1,140	430	156	54
RA		16	7	89	70	4.378	6.11	6.78	24.1	89.5	4.50	164	607	211	77	29
RA		17	6	89	64	3.567	5.56	4.63	28.3	97.2	3.61	131	451	170	62	21
RA		18	6	88	91	3.141	5.56	6.28	31.7	122.0	5.48	199	767	258	94	36
RA		19	4	88	69	1.991	3.89	3.13	33.3	107.3	2.88	104	336	135	49	16
RA		20	4	88	76	1.531	3.33	2.28	44.2	160.1	2.77	101	365	130	47	17
RA		21	2	88	62	.473	1.11	.72	39.4	120.2	.77	28	86	36	13	4
RA		22	1	88	93	.413	1.11	.83	50.9	210.0	1.16	42	174	54	20	8
RA		23	2	88	74	.392	1.11	.39	77.5	308.7	.84	30	121	39	14	6
RA		26	1	86	72	.301	1.11	.60	46.7	155.0	.77	28	93	36	13	4
RA		31	1	83	70	.212	1.11	.42	80.3	245.0	.94	34	104	44	16	5
RA	Totals	92	90	62	82.745	90.00	98.39	21.8	82.7	59.14	2,150	8,132	2,780	1,010	382	
DL		16	1	91	100	.757	1.11	1.51	26.6	100.0	1.10	40	151	52	19	7
DL		17	1	85	109	.730	1.11	1.46	28.7	120.0	1.15	42	175	54	20	8

**Stand Table Summary**

Project **NCRONIN**

**T04N R07W S31 T00A2**

**T04N R07W S31 T00A2**

**Twp Rge Sec Tract**  
**04N 07W 31 AREA 2**

**Type Acres Plots Sample Trees**  
**00A2 47.00 36 238**

**Page: 2**  
**Date: 11/17/04**  
**Time: 9:03:34AM**

S Spc	T	Sample			Av FF Ht 16' Tot	Trees/ BA/		Logs Acres	Average Log		Net		Net Bd.Ft Acres	Totals		
		DBH	Trees			Acres	Acres		Acres	Net Cu.Ft.	Net Cu.Ft.	Acres		Tons	Cunits	MBF
DL		18	1	90	111	.602	1.11	1.20	36.9	155.0	1.22	44	187	57	21	9
DL		19	1	89	122	.589	1.11	1.18	39.6	165.0	1.28	47	194	60	22	9
DL		20	3	89	117	1.523	3.33	4.06	33.3	147.5	3.72	135	599	175	64	28
DL		21	8	88	119	3.716	8.89	9.75	38.1	154.0	10.21	371	1,501	480	174	71
DL		22	2	91	132	.847	2.22	2.54	39.8	182.5	2.78	101	464	131	48	22
DL		23	1	90	127	.395	1.11	1.19	44.1	203.3	1.44	52	241	68	25	11
DL		24	3	89	129	1.079	3.33	2.87	54.9	253.7	4.34	158	729	204	74	34
DL		25	2	90	130	.655	2.22	1.97	52.0	238.2	2.81	102	468	132	48	22
DL		26	1	89	126	.304	1.11	.91	55.6	253.3	1.39	51	231	65	24	11
DL		28	1	80	116	.269	1.11	.81	50.2	203.3	1.12	41	164	52	19	8
DL		29	1	86	149	.246	1.11	.74	75.7	376.7	1.53	56	278	72	26	13
DL		31	1	90	132	.211	1.11	.63	84.4	400.0	1.47	53	253	69	25	12
DL		34	1	88	130	.176	1.11									
DL	Totals	28	89	120		12.099	31.11	30.82	42.0	182.8	35.57	1,293	5,635	1,672	608	265
DF		10	1	89	32	1.883	1.11	1.88	6.9	30.0	.37	13	57	18	6	3
DF		11	1	88	44	1.684	1.11	1.68	10.6	30.0	.51	18	51	24	8	2
DF		12	1	89	89	1.391	1.11	2.78	11.3	45.0	.90	31	125	42	15	6
DF		15	1	88	105	.870	1.11	1.74	24.5	95.0	1.22	43	165	57	20	8
DF		18	1	82	117	.658	1.11	1.97	20.6	80.0	1.16	41	158	54	19	7
DF		19	1	90	120	.558	1.11	1.68	27.4	113.3	1.31	46	190	62	22	9
DF		21	1	89	126	.471	1.11	1.41	37.2	176.7	1.50	52	250	70	25	12
DF		22	2	91	126	.846	2.22	2.54	39.4	184.5	2.85	100	468	134	47	22
DF		24	1	89	56	.354	1.11	.35	66.0	180.0	.67	23	64	31	11	3
DF	Totals	10	88	78		8.715	11.11	16.04	22.9	95.2	10.47	367	1,527	492	173	72
SS		17	1	91	42	.748	1.11	.75	22.0	90.0	.42	16	67	20	8	3
SS		20	1	90	117	.494	1.11	1.48	35.1	126.7	1.36	52	188	64	24	9
SS	Totals	2	91	72		1.243	2.22	2.23	30.7	114.4	1.79	69	255	84	32	12
Totals		238	90	78		198.968	252.22	334.13	25.1	104.6	251.33	8390	34,953	11,812	3,943	1,643

Conifer leave = 39.48 trees/acre  
 = 80.00 BA/acre

TC TSTNDSUM	Stand Table Summary														
Project NCRONIN															
T04N R07W S31 T00A3										T04N R07W S31 T00A3					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	Date:	Time:					
04N	07W	31	AREA 3	00A3	6.00	6	44	1	9/22/04	2:27:10PM					
S Spc	T	Sample		Av	Trees/ BA/ Logs			Average Log		Net		Net	Totals		
		DBH	Trees	FF	Ht	16'	Tot	Acres	Acres	Acres	Net	Net	Acres	Tons	Cunits
WL	17	1	85	127	4.436	6.67	13.31	23.3	96.7	9.90	309	1,286	59	19	8
WL	19	1	86	159	3.281	6.67	9.84	37.5	176.7	11.81	369	1,739	71	22	10
WL	20	1	84	127	3.118	6.67	9.35	33.9	136.7	10.15	317	1,278	61	19	8
WL	22	1	89	168	2.549	6.67	7.65	51.6	270.0	12.63	395	2,064	76	24	12
WL	28	1	84	110	1.582	6.67	3.16	88.7	390.0	8.98	281	1,234	54	17	7
WL	29	3	83	151	4.301	20.00	11.45	79.2	359.0	29.01	907	4,110	174	54	25
WL	30	2	85	132	2.809	13.33	7.02	88.7	438.0	19.94	623	3,076	120	37	18
WL	32	1	81	151	1.194	6.67	3.58	88.0	400.0	10.08	315	1,432	60	19	9
WL	35	2	84	132	1.990	13.33	4.99	131.6	612.1	21.01	657	3,054	126	39	18
WL	36	2	82	168	1.924	13.33	5.77	131.9	660.8	24.39	761	3,813	146	46	23
WL	Totals	15	85	142	27.183	100.00	76.13	64.8	303.3	157.90	4,934	23,087	947	296	139
DL	23	1	88	190	2.251	6.67	9.01	45.5	235.0	11.28	410	2,116	68	25	13
DL	25	2	85	170	3.835	13.33	15.34	48.8	243.7	20.58	748	3,738	123	45	22
DL	26	1	84	155	1.865	6.67	5.60	59.7	286.7	9.19	334	1,604	55	20	10
DL	27	1	86	167	1.640	6.67	4.92	72.8	370.0	9.84	358	1,820	59	21	11
DL	28	1	85	125	1.559	6.67	3.12	90.0	400.0	7.72	281	1,247	46	17	7
DL	30	1	84	171	1.358	6.67	4.07	90.2	466.7	10.11	368	1,901	61	22	11
DL	33	1	84	215	1.150	6.67	4.60	95.6	545.0	12.09	440	2,507	73	26	15
DL	34	1	84	165	1.089	6.67	3.27	96.8	496.7	8.70	316	1,623	52	19	10
DL	35	1	84	168	1.009	6.67	3.03	117.9	603.3	9.82	357	1,827	59	21	11
DL	36	1	85	158	.970	6.67	2.91	118.7	640.0	9.50	345	1,862	57	21	11
DL	37	1	84	173	.874	6.67	2.62	138.1	766.7	9.96	362	2,010	60	22	12
DL	Totals	12	85	169	17.601	80.00	58.48	73.9	380.6	118.78	4,319	22,257	713	259	134
WH	10	1	79	41	12.223	6.67	12.22	8.9	30.0	3.47	108	367	21	7	2
WH	15	1	85	43	5.580	6.67	5.58	21.1	40.0	3.77	118	223	23	7	1
WH	22	1	89	147	2.458	6.67	7.37	50.9	250.0	12.01	375	1,843	72	23	11
WH	24	1	84	140	2.176	6.67	6.53	51.1	236.7	10.67	333	1,545	64	20	9
WH	26	2	87	137	3.660	13.33	9.20	73.3	330.9	21.53	674	3,044	129	40	18
WH	27	1	81	127	1.702	6.67	3.40	86.0	310.0	9.36	293	1,055	56	18	6
WH	30	1	85	134	1.405	6.67	4.21	77.2	343.3	10.43	325	1,447	63	20	9
WH	Totals	8	83	79	29.204	53.33	48.52	45.9	196.3	71.24	2,227	9,524	427	134	57
DF	16	1	85	72	5.023	6.67	10.05	17.7	55.0	5.07	178	552	30	11	3
DF	18	1	91	148	3.946	6.67	11.84	29.7	143.3	10.01	351	1,697	60	21	10
DF	22	1	89	153	2.480	6.67	7.44	49.0	246.7	10.39	364	1,835	62	22	11
DF	32	1	85	129	1.209	6.67	3.63	80.8	370.0	8.35	293	1,342	50	18	8
DF	Totals	4	88	117	12.658	26.67	32.95	36.0	164.7	33.81	1,186	5,426	203	71	33
RA	15	1	79	78	5.154	6.67	5.15	36.8	120.0	5.21	189	618	31	11	4
RA	18	1	79	83	3.690	6.67	7.38	30.3	105.0	6.15	224	775	37	13	5
RA	20	1	79	82	3.025	6.67	6.05	37.0	115.0	6.16	224	696	37	13	4
RA	25	1	80	80	1.956	6.67	3.91	55.7	165.0	5.99	218	645	36	13	4
RA	Totals	4	79	80	13.825	26.67	22.50	38.0	121.6	23.52	855	2,735	141	51	16
Totals		43	84	117	100.471	286.67	238.58	56.7	264.2	405.25	13522	63,029	2,432	811	378

conifer leave = 44.78 tree/acre  
180 BA/acre



"STEWARDSHIP IN FORESTRY"

## North Cronin Alder

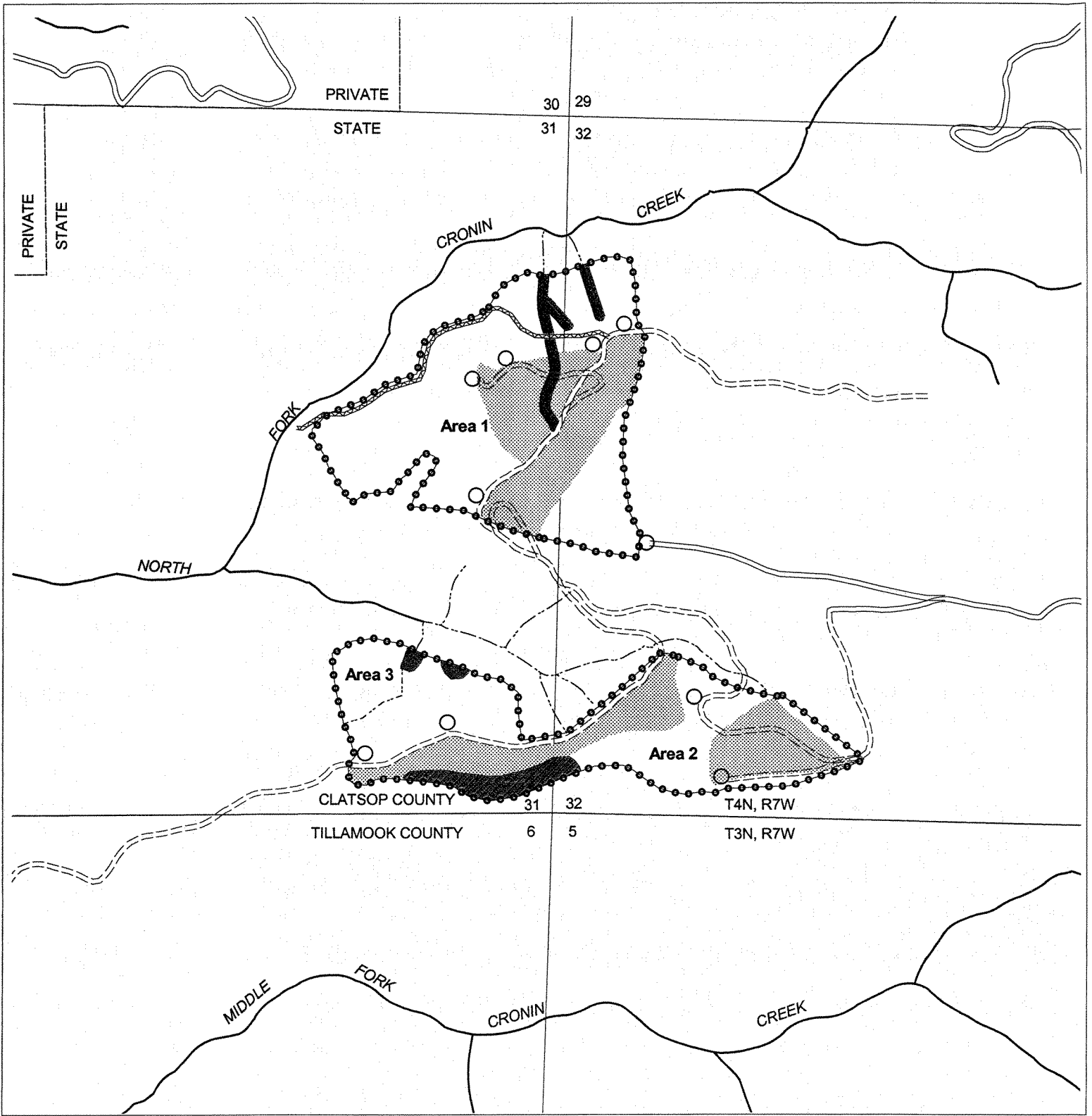
### Volume Summary

Area 1 - Clearcut						
69 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	4	110	0.4	28	5%	27
Hemlock	7	72	0.5	35	5%	33
Alder	124	120	14.9	1028	10%	925
<b>TOTAL</b>				1091		985

Area 2 - Partial Cut						
47 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	11	137	1.5	71	5%	67
Hemlock	71	152	10.8	508	5%	483
Alder	90	90	8.1	381	10%	343
<b>TOTAL</b>				960		893

Area 3 - Partial Cut						
6 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	27	204	5.5	33	5%	31
Hemlock	53	179	9.5	57	5%	54
<b>TOTAL</b>				90		85

TOTAL SALE VOLUME			
SPECIES	Gross (MBF)		Net Vol. (MBF)
Douglas-fir	132		125
Hemlock	600		570
Alder	1409		1268
<b>TOTAL</b>	2141		<b>1963</b>



- Landing
- ▲ Domestic water supply
- ⊗ Blocked
- 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 highway
- County road
- (2)— Non-project road
- - - Swing road
- Abandoned road
- OHV trail
- ..... Non-motorized trail
- T T Transmission line

**LOGGING PLAN**  
 Timber Sale Contract No. 341-05-57  
 North Cronin Alder  
 Portions of Sections 31 and 32,  
 T4N, R7W, W. M.  
 Clatsop County, Oregon

Area	Type of Operation	Acres	
		Sale	Net
1	Modified Clearcut	77	69
2	Partial Cut	55	47
3	Partial Cut	6	6
<b>Total</b>		<b>138</b>	<b>122</b>



Tillamook District GIS  
 11-19-2004  
 This product is for informational use and may not have been prepared for, or suitable for legal, engineering, or surveying purposes.

