



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Nehalem Divide Sale 341-04-13

District: Tillamook

Date: 8/6/03

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$383,022.30	\$0.00	\$383,022.30
		Project Work	(\$75,572.09)
		Advertised Value	\$307,450.21



Timber Sale Appraisal

Timber Description

Nehalem Divide

Sale 341-04-13

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Location: Sections 2, 10, 11, 15, and 16, T3N, R9W, WM, Tillamook County, Oregon

Date: 8/6/03

Stand Stocking: 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	13	0	95
Western Hemlock / Fir	12	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Total
3S	1,486	771	2,257
4S	146	0	146
Total	1,632	771	2,403

Comments: Pond Values Used: 2nd Quarter 2003

Hardwood Stumpage = Local Pond Value - Logging Costs

Red alder pond value = \$510 (June 2003)

Logging Costs = \$244.98

Hardwood Stumpage = \$265.02



Timber Sale Appraisal Logging Conditions Nehalem Divide Sale 341-04-13

"STEWARDSHIP IN FORESTRY"

Combination#: 1 Douglas - Fir 70.97%
Western Hemlock / Fir 95.92%

Yarding Distance: Medium (800 ft) **Downhill Yarding:** No
Logging System: Cable: Small Tower <=40 **Process:** Manual Delimiting
Tree Size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
Loads/Day: 5 **Bd. Ft./Load:** 3,200
Cost/MBF: \$161.13
Machines:
Log Loader (A)
Tower Yarder (Small)

Combination#: 2 Douglas - Fir 29.03%
Western Hemlock / Fir 4.08%

Yarding Distance: Medium (800 ft) **Downhill Yarding:** Yes
Logging System: Wheel Skidder **Process:** Manual Falling/Delimiting
Tree Size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
Loads/Day: 7 **Bd. Ft./Load:** 3,200
Cost/MBF: \$133.96
Machines:
Log Loader (B)
Tire Skidder



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Logging Costs

Nehalem Divide

Sale 341-04-13

Date: 8/6/03

Operating Seasons: 2.4

Profit & Risk: 15%

Project Costs: \$75,572

Other Costs (P/R): \$6,806

Slash Disposal: \$0

Other Costs: \$14,219

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

Road Maintenance: \$5.70

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	3.2
Western Hemlock / Fir	\$0.00	4.0	3.2



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Logging Costs Breakdown Nehalem Divide Sale 341-04-13

Costs	Douglas - Fir	Western Hemlock / Fir
Logging	153.24	160.02
Road Maintenance	6.00	6.00
Fire Protection	2.71	2.71
Hauling	69.16	34.58
Other (P/R appl.)	2.83	2.83
Profit & Risk	35.09	30.92
Slash Disposal	0.00	0.00
Scaling	2.00	2.00
Other	5.92	5.92
Total	276.95	244.98

Amortization	0.00	0.00
Pond Value	483.29	305.00
Stumpage	206.34	60.02
Amortized	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Nehalem Divide Sale 341-04-13

Amortized

	Douglas - Fir	Western Hemlock / Fir
MBF	0.00	0.00
Value	0.00	0.00
Total	0.00	0.00

Unamortized

	Douglas - Fir	Western Hemlock / Fir
MBF	1,632.00	771.00
Value	206.34	60.02
Total	336,746.88	46,275.42

Gross Timber Sale Value

Recovery \$383,022.30

Prepared by: Barbara Moore

Date: 8/6/03

District: Tillamook

Phone: (503) 842-2545

Additional Costs

Nehalem Divide



Cable Yarding Volume:	1913 MBF
Ground Yarding Volume:	490 MBF
Total Sale Volume:	2403 MBF

"STEWARDSHIP IN FORESTRY"

ADDITIONAL COSTS - PROFIT & RISK TO BE ADDED						
Yarding & Loading:	Cost / MBF	Volume (MBF)	=			
Brand & Paint:	\$ 2	x 2403	=	\$	4,806	
	Cost/Each					
Intermediate Supports (per support)	\$ 100	x 20	=	\$2,000		
OTHER COSTS TOTAL				\$	6,806	
ADDITIONAL COSTS - PROFIT & RISK INCLUDED						
Non-Project Roads*						
Road 1	6	Stations	x	\$ 65	=	\$390
Road 2	8	Stations	x	\$ 65	=	\$520
Road 3	10	Stations	x	\$ 135	=	\$1,350
Road 4	4	Stations	x	\$ 135	=	\$540
Road 5	11	Stations	x	\$ 65	=	\$715
	39				Total	\$ 3,515
Additional Equipment Move-Ins:	4	Moves	x	\$ 700	=	\$ 2,800
Slash Piling & Sorting	200	acres	x	\$ 2.20	=	\$ 440
		Stations	x	Yrd ³	x	\$/Yard
Pit Run Rock: Rd # 1, 3, 4, 5	32			33	x	\$6.50
**Ditch Pulling and End Haul (per station)				\$20	x	30
OTHER COSTS TOTAL				\$	14,219	

ROAD MAINTENANCE					
	\$/Mile	MMBF	Miles	\$/MBF	
***Grading:	\$500	2.40	12	\$ 3.00	
	\$/Yd	MMBF	Miles	CuYd	\$/MBF
****Maintenance rock	\$18.00	2.40	12	25	\$ 2.70
TOTAL ROAD MAINTENANCE COST / MBF:					\$ 5.70
**Includes cost for excavating, hauling, compaction, and sediment control devices.					
***Assumes grading the road once per 2 MMBF					
****Assumes 25 cy for normal maintenance /2 MMBF/mile					

PROJECT SUMMARY SHEET

Sale: NEHALEM DIVIDE

CONSTRUCTION

Point	K to L	6+60	stations =	\$2,842.10
SUBTOTAL CONSTRUCTION				\$2,842.10

IMPROVEMENT

Point	A to B	256+70	stations =	\$32,590.82
Point	C to D	44+00	stations =	\$2,754.10
Point	E to F	34+55	stations =	\$5,265.39
Point	G to H	121+35	stations =	\$8,277.13
Point	I to J	88+80	stations =	\$11,820.49
Point	K to L	9+90	stations =	\$4,263.15
Point	M to N	6+50	stations =	\$1,536.56
SUBTOTAL IMPROVEMENT				\$66,507.64

SPECIAL PROJECTS

Remove Culverts from State Lands				\$849.89
Brush	2.3	miles of road		\$2,566.67
SUBTOTAL SPECIAL PROJECTS				\$3,416.55

MOVE IN

\$2,805.80

GRAND TOTAL	\$75,572.09
--------------------	--------------------

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>		Road: <u>A to B</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Improvement - <u>256+70</u> stations <u>4.86</u> miles
CLEARING AND GRUBBING -			
Side cast	0.039 acres @		\$540.00 per acre = \$21.07
Widening	0.009 acres @		\$540.00 per acre = \$5.02
Scattering/Brushing	2.360 acres @		\$815.00 per acre = <u>\$1,923.40</u>
			TOTAL CLEARING AND GRUBBING
			\$1,949.50
EXCAVATION -			
Pullback	76 cy. @		\$1.40 per c.y.= \$106.40
Widening	45 cy. @		\$1.40 per c.y.= <u>\$63.00</u>
			TOTAL EXCAVATION
			\$169.40
ENDHAUL -			
Widening	167+15 to 168+50	45 cy. @	\$1.31 per c.y.= \$58.79
Spread & compact		121 cy. @	\$0.20 per c.y.= <u>\$24.20</u>
			TOTAL ENDHAUL
			\$202.12
CULVERTS - MATERIALS & INSTALLATION			
	<u>Culverts</u>		
	84 LF of 18"	\$1,239.00	32 LF of 24" \$568.00
	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>\$1,239.00</u>	<u>\$568.00</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 & Markers</u>		
	0 stakes	\$0.00	
	4 markers	\$24.00	
		<u>\$24.00</u>	
			TOTAL CULVERTS
			\$1,831.00
SURFACING-			
0+00 to 84+00	1,549 cy. of	Crushed	@ \$15.26 per c.y.= \$23,630.00
Culvert Backfill	33+90, 178+95, 183+50 and 221+85	40 cy. of	Crushed @ \$14.50 per c.y.= \$579.80
Fill Armor	155+60 to 156+45	120 cy. of	Riprap @ \$8.20 per c.y.= \$984.07
Energy Dissipator	33+90	20 cy. of	Riprap @ \$8.63 per c.y.= <u>\$172.65</u>
			TOTAL SURFACING
			\$25,366.51
SPECIAL PROJECTS			
Construct waste areas -	1.00 hours @		\$130.00 per hour \$130.00
Grade and shape road -	84.00 stations @		\$14.20 per station \$1,192.80
Roll subgrade w/ vibratory roller -	84.00 stations @		\$11.00 per station \$924.00
Grass seed and fertilize -	1.06 acres @		\$180.00 per acre \$190.50
Mulching -	1.058 acres @		\$600.00 per acre \$634.99
			TOTAL SPECIAL PROJECTS
			\$3,072.29
			GRAND TOTAL
			\$32,590.82

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>		Road:	<u>C to D</u>								
Construction -	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-bottom: 1px solid black;">0+00</td> <td style="padding: 0 5px;">stations</td> </tr> <tr> <td style="border-bottom: 1px solid black;">0.00</td> <td style="padding: 0 5px;">miles</td> </tr> </table>	0+00	stations	0.00	miles		Improvement -	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-bottom: 1px solid black;">44+00</td> <td style="padding: 0 5px;">stations</td> </tr> <tr> <td style="border-bottom: 1px solid black;">0.83</td> <td style="padding: 0 5px;">miles</td> </tr> </table>	44+00	stations	0.83	miles
0+00	stations											
0.00	miles											
44+00	stations											
0.83	miles											
CLEARING AND GRUBBING -												
Scattering/Brushing	1.010 acres @		\$815.00 per acre =	\$823.15								
			TOTAL CLEARING AND GRUBBING	\$823.15								
CULVERTS - MATERIALS & INSTALLATION												
	<u>Culverts</u>											
	60 LF of 18"	\$885.00	30 LF of 24"	\$532.50								
	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								
		\$885.00		\$532.50								
	<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								
		\$0.00		\$0.00								
	<u>Culvert Stakes & Markers</u>											
	0 stakes	\$0.00										
	3 markers	\$18.00										
		\$18.00										
			TOTAL CULVERTS	\$1,435.50								
SURFACING-												
Culvert Backfill	5+75, 13+55 and 32+30	30 cy. of Crushed	@ \$15.22 per c.y. =	\$456.45								
			TOTAL SURFACING	\$456.45								
SPECIAL PROJECTS												
Grass seed and fertilize -		0.05 acres @	\$180.00 per acre	\$9.00								
Mulching -		0.050 acres @	\$600.00 per acre	\$30.00								
			TOTAL SPECIAL PROJECTS	\$39.00								
			GRAND TOTAL	\$2,754.10								

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>		Road: <u>E to F</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Improvement - <u>34+55</u> stations <u>0.65</u> miles
CLEARING AND GRUBBING -			
Scattering/Brushing	0.480 acres @	\$815.00 per acre =	<u>\$391.20</u>
		TOTAL CLEARING AND GRUBBING	\$391.20
EXCAVATION -			
Road Earthwork	34.55 sta. @	\$30.00 per sta. =	<u>\$1,036.50</u>
		TOTAL EXCAVATION	\$1,036.50
CULVERTS - MATERIALS & INSTALLATION			
	<u>Culverts</u>		
	0 LF of 18" \$0.00	62 LF of 24" \$1,100.50	
	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	
	\$0.00	\$1,100.50	
	<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	
	\$0.00	\$0.00	
	<u>Culvert Stakes & Markers</u>		
	0 stakes \$0.00		
	2 markers \$12.00		
	\$12.00		
		TOTAL CULVERTS	\$1,112.50
SURFACING-			
0+00 to 34+55	0 cy. of Crushed	@ \$10.76 per c.y.=	\$0.00
Spot Rock 2+70 & 6+50	40 cy. of Crushed	@ \$14.08 per c.y.=	\$563.15
Culvert Backfill 7+65 & 10+10	20 cy. of Crushed	@ \$14.08 per c.y.=	\$281.57
0+00 to 0+00	34 cy. of Pit-Run	@ \$10.61 per c.y.=	\$360.60
		TOTAL SURFACING	\$1,205.32
SPECIAL PROJECTS			
Grade and shape road -	34.55 stations @	\$14.20 per station	\$490.61
Establish moisture content prior to rolling -	34.55 stations @	\$6.75 per station	\$233.21
Roll reprocessed rock w/ vibratory roller -	34.55 stations @	\$11.00 per station	\$380.05
Remove log culvert @ station: 10+10	2.00 hours @	\$130.00 per hour	\$260.00
Grass seed and fertilize -	0.20 acres @	\$180.00 per acre	\$36.00
Mulching -	0.200 acres @	\$600.00 per acre	\$120.00
		TOTAL SPECIAL PROJECTS	\$1,519.87
		GRAND TOTAL	\$5,265.39

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>				Road: <u>G to H</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles				Improvement - <u>121+35</u> stations <u>2.30</u> miles
CLEARING AND GRUBBING - Scattering/Brushing		1.110 acres @		\$815.00 per acre =	<u>\$904.65</u>
				TOTAL CLEARING AND GRUBBING	\$904.65
EXCAVATION - Road Earthwork		121.35 sta. @		\$20.00 per sta. =	<u>\$2,427.00</u>
				TOTAL EXCAVATION	\$2,427.00
CULVERTS - MATERIALS & INSTALLATION					
	<u>Culverts</u>				
	96	LF of 18"	\$1,416.00	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"	<u>\$0.00</u>	0	LF of 72" <u>\$0.00</u>
			\$1,416.00		<u>\$0.00</u>
	<u>Half Rounds</u>				
	0	LF of 21"	\$0.00	0	LF of 30" \$0.00
	0	LF of 36"	<u>\$0.00</u>	0	LF of 42" <u>\$0.00</u>
			\$0.00		<u>\$0.00</u>
	<u>Culvert Stakes & Markers</u>				
	0	stakes	\$0.00		
	3	markers	<u>\$18.00</u>		
			\$18.00		
				TOTAL CULVERTS	\$1,434.00
SURFACING-					
Culvert Backfill	4+40, 10+90 and 121+35	30 cy. of	Crushed	@	\$14.95 per c.y.= \$448.58
Embankment Fill	3+80 to 4+50	30 cy. of	Pit-Run	@	\$11.20 per c.y.= \$336.08
Spot Rock	121+35	10 cy. of	Pit-Run	@	\$11.20 per c.y.= \$112.03
					<u>TOTAL SURFACING</u>
					\$896.69
SPECIAL PROJECTS					
Build embankment: 3+80 to 4+50 -		1.00	hours @	\$130.00	per hour \$130.00
Grade and shape road (Pt. G to Pt. I) -		68.25	stations @	\$14.20	per station \$969.15
Establish moisture content prior to rolling (Pt. G to Pt. I) -		68.25	stations @	\$6.75	per station \$460.69
Roll reprocessed rock w/ vibratory roller (Pt. G to Pt. I) -		68.25	stations @	\$11.00	per station \$750.75
Grass seed and fertilize -		0.39	acres @	\$180.00	per acre \$70.20
Mulching -		0.390	acres @	\$600.00	per acre \$234.00
					<u>TOTAL SPECIAL PROJECTS</u>
					\$2,614.79
GRAND TOTAL					\$8,277.13

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>				Road: <u>I to J</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles				Improvement - <u>88+80</u> stations <u>1.68</u> miles
CLEARING AND GRUBBING -					
Side cast		0.142	acres @	\$540.00	per acre = \$76.86
Scattering/Brushing		0.820	acres @	\$815.00	per acre = \$668.30
				TOTAL CLEARING AND GRUBBING	
					\$745.16
EXCAVATION -					
Road Earthwork		88.80	sta. @	\$25.00	per sta. = \$2,220.00
Pullback		520	cy. @	\$1.40	per c.y.= \$728.00
				TOTAL EXCAVATION	
					\$2,948.00
ENDHAUL -					
Pullback	25+60	to	26+75	205	cy. @ \$2.24 per c.y.= \$460.10
Pullback	37+10	to	37+80	125	cy. @ \$2.00 per c.y.= \$249.51
Pullback	43+65	to	44+15	89	cy. @ \$1.85 per c.y.= \$165.06
Pullback	46+15	to	46+70	74	cy. @ \$1.80 per c.y.= \$133.25
Pullback	47+20	to	47+40	27	cy. @ \$1.78 per c.y.= \$48.01
Spread & compact				520	cy. @ \$0.20 per c.y.= \$104.00
					TOTAL ENDHAUL
					\$1,159.93
CULVERTS - MATERIALS & INSTALLATION					
			<u>Culverts</u>		
		26	LF of 18"	\$383.50	0 LF of 24" \$0.00
		40	LF of 30"	\$830.00	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
				\$1,213.50	\$0.00
			<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
				\$0.00	\$0.00
			<u>Culvert Stakes & Markers</u>		
		0	stakes	\$0.00	
		2	markers	\$12.00	
				\$12.00	
					TOTAL CULVERTS
					\$1,225.50
SURFACING-					
85+70 to 88+80	194	cy. of	Pit-Run	@ \$7.67	per c.y.= \$1,488.74
Spot Rock 25+60, 41+50 & 76+50	60	cy. of	Pit-Run	@ \$7.20	per c.y.= \$431.72
Spot Rock 28+00 & 51+30	20	cy. of	Pit-Run	@ \$7.08	per c.y.= \$141.55
Energy Dissipator 85+70	10	cy. of	Riprap	@ \$7.39	per c.y.= \$73.92
Bedding/Backfill 0+00	0	cy. of	Pit-Run	@ \$6.74	per c.y.= \$0.00
					TOTAL SURFACING
					\$2,135.92
SPECIAL PROJECTS					
Build embankment: 86+90 to 87+50 -		2.00	hours @	\$130.00	per hour \$260.00
Grade and shape road -		88.80	stations @	\$14.20	per station \$1,260.96
Establish moisture content prior to rolling -		88.80	stations @	\$6.75	per station \$599.40
Roll reprocessed rock w/ vibratory roller -		88.80	stations @	\$11.00	per station \$976.80
Grass seed and fertilize -		0.65	acres @	\$180.00	per acre \$117.42
Mulching -		0.652	acres @	\$600.00	per acre \$391.40
					TOTAL SPECIAL PROJECTS
					\$3,605.98
					GRAND TOTAL
					\$11,820.49

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>		Road:	<u>K to L</u>
Construction -	<u>6+60</u> stations <u>0.13</u> miles		Improvement -	<u>9+90</u> stations <u>0.19</u> miles
CLEARING AND GRUBBING -				
Scattering/Brushing	1.270 acres @	\$815.00 per acre =	<u>\$1,035.05</u>	
		TOTAL CLEARING AND GRUBBING		\$1,035.05
EXCAVATION -				
Road Earthwork	16.50 sta. @	\$100.00 per sta. =	<u>\$1,650.00</u>	
		TOTAL EXCAVATION		\$1,650.00
SPECIAL PROJECTS				
Remove culvert @ 2+25 -	1.00 lump sum @	\$2,000.00 per hour	\$2,000.00	
Grade and shape road -	16.50 stations @	\$14.20 per station	\$234.30	
Establish moisture content prior to rolling -	16.50 stations @	\$6.75 per station	\$111.38	
Roll subgrade/reprocessed rock w/ vibratory roller -	16.50 stations @	\$24.25 per station	\$400.13	
Remove large stumps -	1.00 lump sum @	\$1,300.00	\$1,300.00	
Grass seed and fertilize -	0.48 acres @	\$180.00 per acre	\$86.40	
Mulching -	0.480 acres @	\$600.00 per acre	\$288.00	
		TOTAL SPECIAL PROJECTS		\$4,420.20
		GRAND TOTAL		\$7,105.25

SUMMARY OF CONSTRUCTION COST

Sale:	<u>NEHALEM DIVIDE</u>		Road: <u>M to N</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Improvement - <u>6+50</u> stations <u>0.12</u> miles
CLEARING AND GRUBBING -			
Scattering	0.240 acres @	\$815.00 per acre =	<u>\$195.60</u>
		TOTAL CLEARING AND GRUBBING	\$195.60
EXCAVATION -			
Road Earthwork	6.50 sta. @	\$45.00 per sta. =	<u>\$292.50</u>
		TOTAL EXCAVATION	\$292.50
CULVERTS - MATERIALS & INSTALLATION			
	<u>Culverts</u>		
	0 LF of 18"	\$0.00	
	0 LF of 30"	\$0.00	
	0 LF of 42"	\$0.00	
	0 LF of 54"	\$0.00	
	0 LF of 66"	<u>\$0.00</u>	
		\$0.00	
	<u>Havf Rounds</u>		
	0 LF of 21"	\$0.00	
	0 LF of 36"	<u>\$0.00</u>	
		\$0.00	
	<u>Culvert Stakes & Markers</u>		
	0 stakes	\$0.00	
	1 markers	<u>\$6.00</u>	
		\$6.00	
			TOTAL CULVERTS
			\$503.00
SURFACING-			
Energy Dissipator	1+40	20 cy. of Riprap	@ \$8.05 per c.y.= \$161.01
Spot Rock	1+40 & 3+00	20 cy. of Pit-Run	@ \$7.28 per c.y.= <u>\$145.58</u>
			TOTAL SURFACING
			\$306.59
SPECIAL PROJECTS			
Grade and shape road -	6.50 stations @	\$14.20 per station	\$92.30
Establish moisture content prior to rolling -	6.50 stations @	\$6.75 per station	\$43.88
Roll reprocessed rock w/ vibratory roller -	6.50 stations @	\$11.00 per station	\$71.50
Grass seed and fertilize -	0.04 acres @	\$180.00 per acre	\$7.20
Mulching -	0.040 acres @	\$600.00 per acre	<u>\$24.00</u>
			TOTAL SPECIAL PROJECTS
			\$238.88
		GRAND TOTAL	\$1,536.56

CRUSHED/RIPRAP ROCK COST SUMMARY

Pit:	Crushing	Location:	Sec. 14, T3N, R10W, W.M.
Sale:	NEHALEM DIVIDE	Road:	1849 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage:	1.16	Total Truck Loads:	1849 c.y.
Drill Pct.:	na	In Place Total:	1321 c.y.

Crushed Base Cost = \$8.60 Per Cu.Yd.

Note: Fill Armor and Energy Dissipator Rock may be obtained from rock pits shown on exhibit "A"

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	5.36	1.30	8.60	15.26	1549	23,630.00
A to B Culvert Backfill	5.30	0.60	8.60	14.50	40	579.80
A to B Fill Armor	2.20	2.80	3.20	8.20	120	984.07
A to B Energy Dissipator	2.63	2.80	3.20	8.63	20	172.65
C to D Culvert Backfill	6.02	0.60	8.60	15.22	30	456.45
E to F Spot Rock	4.88	0.60	8.60	14.08	40	563.15
E to F Culvert Backfill	4.88	0.60	8.60	14.08	20	281.57
G to H Culvert Backfill	5.75	0.60	8.60	14.95	30	448.58
				Total C.Y.	1849	Sub Total
						27,116.26

TOTAL ROCKING COSTS	27,116.26
----------------------------	-----------

PIT-RUN/RIPRAP ROCK DEVELOPMENT COST SUMMARY

Pit:	<u>SEGMENT I-J, 56+70</u>	Location:	<u>Sec. 2, T3N, R9W, W.M.</u>
Sale:	<u>NEHALEM DIVIDE</u>	Road:	<u>324 c.y.</u>
Swell:	<u>1.40</u>	Stockpile:	<u>c.y.</u>
Shrinkage	<u>1.16</u>	Total Truck Loads:	<u>324 c.y.</u>
Drill Pct.:	<u>0%</u>	In Place Total:	<u>231 c.y.</u>

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.	\$503.72
Rip Rock	\$1.75 /cu.yd. x 231 cu.yds. = \$405.00
Load Dump Truck:	<u>\$0.60 /cu.yd. x 324 cu.yds. = \$194.40</u>

Subtotal \$1,103.12

Move in Excavator	1	@	\$488.87	=	\$488.87
Move in Trucks	1	@	\$121.60	=	\$121.60
				Subtotal	\$610.47

TOTAL PRODUCTION COSTS \$1,713.59

Base Cost= \$5.29 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
I to J	\$1.49	\$0.90	\$5.29	\$7.67	194	\$1,488.74
I to J Spot Rock	\$1.31	\$0.60	\$5.29	\$7.20	60	\$431.72
I to J Spot Rock	\$1.19	\$0.60	\$5.29	\$7.08	20	\$141.55
I to J Energy Dissipator	\$1.50	\$0.60	\$5.29	\$7.39	10	\$73.92
M to N Energy Dissipator	\$1.36	\$1.40	\$5.29	\$8.05	20	\$161.01
M to N Spot Rock	\$1.39	\$0.60	\$5.29	\$7.28	20	\$145.58
				Total C.Y.	324	Sub Total \$2,442.51

TOTAL ROCKING COSTS \$2,442.51

PIT-RUN ROCK COST SUMMARY

Pit:	Pit Run	Location:	Sec. 14, T3N, R10W, W.M.
Sale:	NEHALEM DIVIDE	Road:	74 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	74 c.y.
Drill Pct.:	na	In Place Total:	53 c.y.

Base Cost= \$4.85 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	\$4.86	\$0.90	\$4.85	\$10.61	34	\$360.60
G to H Embankment Fill	\$5.75	\$0.60	\$4.85	\$11.20	30	\$336.08
G to H Spot Rock	\$5.75	\$0.60	\$4.85	\$11.20	10	\$112.03
				Total C.Y.	74	Sub Total
						\$808.71

TOTAL ROCKING COSTS \$808.71

MOVE-IN CALCULATIONS

Sale: NEHALEM DIVIDE

LOWBOY HAUL (Round Trip)		
DISTANCE	ROADWAY	AVE SPEED (MPH)
60.0	Highway	37
7.6	Main Lines (Off Road)	15
0.1	Pulling 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	Brush Cutter	\$356.31		\$4.00	0.00	0.00	0	\$0.00	\$356.31
1	Graders	\$175.11		\$3.65	0.00	4.00	4	\$14.60	\$189.71
1	Rollers & Compactors	\$356.31		\$5.00	0.00	4.00	4	\$20.00	\$376.31
1	Excavators (Med.)	\$407.74		\$35.50	0.00	4.00	4	\$142.00	\$549.74
1	Rubber Tired Backhoes/Skidlers	\$356.31		\$3.00	0.00	4.00	4	\$12.00	\$368.31
1	Tractor (D8)	\$518.88	2	\$15.10	0.00	4.00	4	\$60.40	\$579.28
2	Dump Truck (10 cy +)	\$243.20		\$2.85	0.00	0.00	0	\$0.00	\$243.20
1	Water Truck (2500 Gal)	\$142.93		\$2.85	0.00	0.00	0	\$0.00	\$142.93

TOTAL MOVE-IN COSTS:	\$2,805.80
-----------------------------	-------------------

Oregon Department of Forestry

Cruise Report

Nehalem Divide

1. **Type of Sale:** Partial Cut and Clearcut/ Recovery.
2. **Legal Description:** Portions of Sections 2, 10, 11, 15, and 16, Township 3 North, Range 9 West, W.M. Tillamook County, Oregon.
3. **Acreage:** The sale boundaries were plotted on a digital orthophotograph and the acreage was calculated with GIS.

ACRES			
Area	Type	Sale	Net
1	Clearcut	113	94
1 - Riparian	Partial Cut	10	10
2	Partial Cut	43	36
3	Partial Cut	113	90
4	Partial Cut	29	23
	Total Clearcut	113	94
	Total Partial Cut	195	159
Grand Total		308	253

Sale Acres: Area within the Timber Sale Boundary signs.

Net Acres: For accomplishment reporting and for calculating advertised volume.

Sale acres less; roads, stream buffers inside the sale boundary and non required acres (Non-required only in partial cut areas).

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

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

4. **Cruising Procedures:**

- A **Cruising Method:** A total of 81 plots were taken in the sale area; 29 in Area 1, 11 in Area 2, 24 in Area 3, and 17 in Area 4. The areas were sampled on a grid of varying intensity to adequately sample the sale areas. Diameters were measured to the nearest inch, heights to the nearest foot. Trees less than 8" DBH were not recorded.

In Area 4 all conifer trees on all plots were measured and graded. The coefficient of variation was 40% and standard error was 9.6% based on the basal area per acre. In Areas 1, 2, and 3 the total basal area was recorded and two conifer trees of each species were measured and graded on each plot. The CV of the combined areas was 31% and SE

was 4% based on the basal area per acre.

Variable radius full point plots were established and all the conifer trees 8 inches DBH and greater were measured. V-BAR (volume to basal area ratio) was calculated using the conifer trees in each area which were measured and graded on each plot.

- B Plot Size:** A basal area factor of 33.61 was used on Areas 1, 2, and 3 and a basal area factor of 40 was used on Area 4. Point of observation was at 4.5 feet.
- C Grading System:** The segment grading system was used for all V-BAR conifer trees following the Columbia River Official Log Scaling and Grading Bureau rules. Douglas-fir was measured and graded to a 5" top favoring 40 foot log lengths. Heights were measured to the nearest foot. All conifer diameters were measured at a height of 4.5 feet to the nearest 1". Conifers less than 20 board feet were not recorded.
5. **Computation Procedures:** Information from plots was entered into a spread sheet to develop a stand table for volume computation, basal area, trees per acre, average diameter of the trees to be removed, stand density estimates, and clear cut/ partial cut acre determination. V-BAR (Volume-Basal Area Ratio) for the take trees was computed using SuperAce 98 from Atterbury Consultant Inc. (Stand Table and Volume Computation Summary attached). A 5% defect and breakage reduction has been applied to the volume.
6. **Timber Description:** The sale contains four areas, which were harvested in the 1960's and 1970's. These areas were planted with Douglas-fir but also include a component of naturally regenerated hemlock, cedar, and spruce. Red alder is present in the draws and along old skid roads. The Douglas-fir is severely infected with Swiss needle cast.
7. **Cruiser Names/Dates:** Dave Wells, Matt Frison, Neal Bond.
March 2003.
8. **Revenue Distribution:**
100% FDF
Tax Code: 100% 56 -1
Deed Numbers: 35, 70, and 211
No Rehabilitation Obligation
9. **Attachments:**
Stand Table
Volume Summary
Logging Plan

Area 1

TC TSTNDSUM		Stand Table Summary														
Project NEHALEMD																
T3N R9W S00 T0123																
T3N R9W S00 T0123																
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:								
3N	9W	00	TAKEBA1	0123	140.00	29	144	1	Date:	3/25/03						
								Time:	8:44:33AM							
Spc	T	DBH	Trees	FF 16'	Av Ht 17'	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DX		8	2	88	17	6.619	2.31									
DX		9	3	88	17	7.961	3.52									
DX		10	4	89	17	8.472	4.62									
DX		11	16	89	17	28.215	18.62									
DX		12	12	88	17	17.738	13.93									
DX		13	11	88	17	13.879	12.79									
DX		14	25	88	17	27.063	28.93									
DX		15	23	89	17	21.805	26.76									
DX		16	17	89	17	14.176	19.79									
DX		17	7	88	17	5.163	8.14									
DX		18	8	89	17	5.288	9.34									
DX		19	1	88	17	.595	1.17									
DX	Totals		129	88	17	156.974	149.93									
RA		10	1	87	17	2.086	1.14									
RA	Totals		1	87	17	2.086	1.14									
WH		8	2	90	17	6.520	2.28									
WH		9	3	90	17	7.883	3.48									
WH		10	1	91	17	2.150	1.17									
WH		14	1	91	17	1.097	1.17									
WH		15	2	91	17	1.855	2.28									
WH		16	3	90	17	2.519	3.52									
WH		17	1	90	17	.744	1.17									
WH		19	1	90	17	.595	1.17									
WH	Totals		14	90	17	23.362	16.24									
Totals			144	89	17	182.423	167.31									

VBAR leave Trees = 25/Ac
DF = 68

Oregon Department of Forestry
Stand Table

Nehalem Divide - Area 2
120 BA Residual

DBH	total TK tr/acre	total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	hemlock TK tr/acre	hemlock LV tr/acre	spruce TK tr/acre	spruce LV tr/acre
7"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8"	8.8	8.8	0.0	8.8	8.8	0.0	0.0	0.0
9"	6.9	0.0	0.0	0.0	6.9	0.0	0.0	0.0
10"	22.4	0.0	5.6	0.0	16.8	0.0	0.0	0.0
11"	18.5	9.3	0.0	0.0	18.5	9.3	0.0	0.0
12"	27.2	23.3	11.7	3.9	15.6	19.4	0.0	0.0
13"	23.2	3.3	6.6	0.0	16.6	3.3	0.0	0.0
14"	14.3	5.7	8.6	5.7	5.7	0.0	0.0	0.0
15"	2.5	10.0	0.0	0.0	2.5	10.0	0.0	0.0
16"	0.0	15.3	0.0	10.9	0.0	4.4	0.0	0.0
17"	0.0	19.4	0.0	3.9	0.0	15.5	0.0	0.0
18"	0.0	5.2	0.0	0.0	0.0	5.2	0.0	0.0
19"	0.0	3.1	0.0	0.0	0.0	3.1	0.0	0.0
20"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26"	0.0	0.7	0.0	0.0	0.0	0.7	0.0	0.0
28"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4

Trees/acre

	all spec	Doug-fir	hemlock	spruce
current	228	66	162	0
residual	104	33	71	0
take	124	32	91	0

Basal Area/acre

	all spec	Doug-fir	hemlock	spruce
current	214	61	150	3
residual	119	34	86	3
take	92	27	64	0

Quadratic Mean Diameter

	all spec	Doug-fir	hemlock	spruce
current	13.1	13.1	13.0	38.0
residual	14.5	13.6	14.9	38.0
take	11.7	12.5	11.4	0.0

Stand Density Index (%)

	Douglas fir	hemlock
current	59	44
residual	31	24

Am 3

TC TSTNDSUM		Stand Table Summary											
Project NEHALEMD											T3N R9W S00 T0123		
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	T3N R9W S00 T0123					
3N	9W	00	TAKEBA3	0123	320.00	24	148	Page: 1	Date: 4/3/03	Time: 11:54:52AM			
S Spc	T	Av			Average Log			Net			Totals		
		Sample DBH	FF Trees	Ht 16'	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft. Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Tons	Cunits	MBF
BM		10	1	86	17	2.521	1.38						
BM	Totals		1	86	17	2.521	1.38						
DX		8	1	89	17	3.939	1.38						
DX		9	2	89	17	6.225	2.75						
DX		10	5	89	17	12.834	7.00						
DX		11	5	89	17	10.670	7.04						
DX		12	6	88	17	10.823	8.50						
DX		13	8	89	17	12.295	11.33						
DX		14	3	89	17	3.976	4.25						
DX		15	6	89	17	6.859	8.42						
DX		16	5	89	17	5.043	7.04						
DX		17	2	89	17	1.745	2.75						
DX	Totals		43	89	17	74.408	60.46						
HX		9	3	91	17	9.337	4.13						
HX		10	6	90	17	15.432	8.42						
HX		11	5	91	17	10.607	7.00						
HX		12	13	90	17	23.131	18.17						
HX		13	5	90	17	7.504	6.92						
HX		14	4	91	17	5.145	5.50						
HX	Totals		36	90	17	71.155	50.13						
RA		8	1	87	17	3.939	1.38						
RA		9	1	87	17	3.112	1.38						
RA		12	3	86	17	5.358	4.21						
RA		20	1	87	17	.649	1.42						
RA	Totals		6	87	17	13.059	8.38						
RC		23	1	77	17	.477	1.38						
RC		24	1	77	17	.451	1.42						
RC	Totals		2	77	17	.928	2.79						
WH		9	1	91	17	3.112	1.38						
WH		10	2	90	17	5.195	2.83						
WH		11	3	91	17	6.440	4.25						
WH		12	3	90	17	5.411	4.25						
WH		13	7	90	17	10.623	9.79						
WH		14	8	91	17	10.563	11.29						
WH		15	7	90	17	8.013	9.83						
WH		16	4	90	17	3.999	5.58						
WH		17	5	90	17	4.388	6.92						
WH		18	5	91	17	3.914	6.92						
WH		19	6	91	17	4.232	8.33						
WH		20	2	90	17	1.299	2.83						
WH		21	4	91	17	2.321	5.58						
WH		22	2	90	17	1.073	2.83						
WH		30	1	91	17	.289	1.42						
WH	Totals		60	90	17	70.872	54.04						
Totals		148	90	17		232.942	207.17						

VBAR
 DF = 85
 1.114 - 1.05

Leave Trees = 84/Acre

Area 4

Stand Table Summary																
Project NEHALEMD																
T3N R9W S00 T0004										T3N R9W S00 T0004						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	1					
3N	9W	00	TAKEBA4	0004	28.00	17	80			Date:	4/3/03					
										Time:	12:59:29PM					
Spc	T	DBH	Sample Trees	Av FF 16'	Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Cu.Ft. Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DX		9	1	80	54	5.326	2.35	5.33	8.0	20.0	1.41	43	107	40	12	3
DX		10	2	82	52	8.543	4.71	8.54	9.2	35.1	2.55	78	300	71	22	8
DX		11	2	88	69	7.478	4.71	7.48	13.9	60.0	3.34	104	449	94	29	13
DX		12	1	89	82	2.996	2.35	5.99	10.5	45.0	1.98	63	270	55	18	8
DX		13	2	86	65	4.992	4.71	7.43	13.2	53.4	3.05	98	397	85	27	11
DX		14	7	86	71	15.287	16.47	28.37	14.0	45.2	12.21	397	1,283	342	111	36
DX		15	6	87	76	11.506	14.12	21.09	18.1	61.7	11.65	382	1,302	326	107	36
DX		16	3	87	64	5.209	7.06	10.42	15.9	51.8	5.01	165	540	140	46	15
DX		17	8	85	78	11.895	18.82	22.37	23.6	81.1	15.88	529	1,814	445	148	51
DX		18	4	87	78	5.311	9.41	10.62	26.3	87.6	8.32	279	930	233	78	26
DX		19	2	88	93	2.390	4.71	4.78	33.1	117.5	4.70	158	562	131	44	16
DX		20	1	88	79	1.079	2.35	2.16	32.9	110.0	2.09	71	237	59	20	7
DX	Totals	39	86	70		82.011	91.76	134.58	17.6	60.9	72.20	2,368	8,190	2,022	663	229
WH		12	1	90	71	3.206	2.35	3.21	21.0	70.0	2.13	67	224	60	19	6
WH		15	5	89	91	9.561	11.76	19.12	23.4	83.0	13.65	448	1,588	382	125	44
WH		16	1	83	74	1.728	2.35	3.46	22.5	55.0	2.36	78	190	66	22	5
WH		17	1	75	68	1.441	2.35	1.44	37.0	60.0	1.60	53	86	45	15	2
WH		18	1	90	78	1.331	2.35	2.66	29.5	100.0	2.34	79	266	66	22	7
WH		20	4	91	77	4.314	9.41	8.63	36.6	110.0	9.32	316	949	261	88	27
WH		21	6	85	76	5.928	14.12	11.86	37.0	105.6	12.89	439	1,252	361	123	35
WH		22	2	90	82	1.759	4.71	3.52	46.7	157.5	4.80	164	554	134	46	16
WH		23	2	89	79	1.631	4.71	3.26	49.3	175.0	4.68	161	571	131	45	16
WH		24	3	90	83	2.235	7.06	4.47	55.7	201.7	7.21	249	901	202	70	25
WH		25	1	91	67	.713	2.35	1.43	45.5	175.0	1.88	65	250	53	18	7
WH		26	1	86	84	.648	2.35	1.30	66.0	210.0	2.47	86	272	69	24	8
WH	Totals	28	88	80		34.496	65.88	64.34	34.2	110.4	65.33	2,204	7,105	1,829	617	199
HX		12	1	91	85	2.996	2.35	8.99	7.7	30.0	2.17	69	270	61	19	8
HX		14	2	91	87	4.402	4.71	8.80	19.2	72.5	5.22	169	638	146	47	18
HX		16	3	89	83	5.166	7.06	10.33	24.3	84.6	7.59	251	874	213	70	24
HX		18	1	90	80	1.331	2.35	2.66	29.5	100.0	2.34	79	266	66	22	7
HX		19	3	90	89	3.585	7.06	7.17	37.8	133.3	8.05	271	956	225	76	27
HX		20	1	90	79	1.068	2.35	2.14	38.5	125.0	2.42	82	267	68	23	7
HX		21	1	90	79	.969	2.35	1.94	40.0	130.0	2.27	78	252	64	22	7
HX		22	1	91	108	.891	2.35	2.67	41.3	180.0	3.23	111	481	90	31	13
HX	Totals	13	90	86		20.409	30.59	44.70	24.8	89.6	33.30	1,109	4,004	932	311	112
Totals		80	87	75		136.916	188.24	243.63	23.3	79.2	170.83	5681	19,299	4,783	1,591	540

VBAR

DF = 89

WH = .. 130

leave Trees = 35/Acre



"STEWARDSHIP IN FORESTRY"

Nehalem Divide

Volume Summary

Area 1						
94 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	150	68	10.20	959	5%	911
Hemlock	0	0	0.00	0	5%	0
TOTAL			10.20	959		911

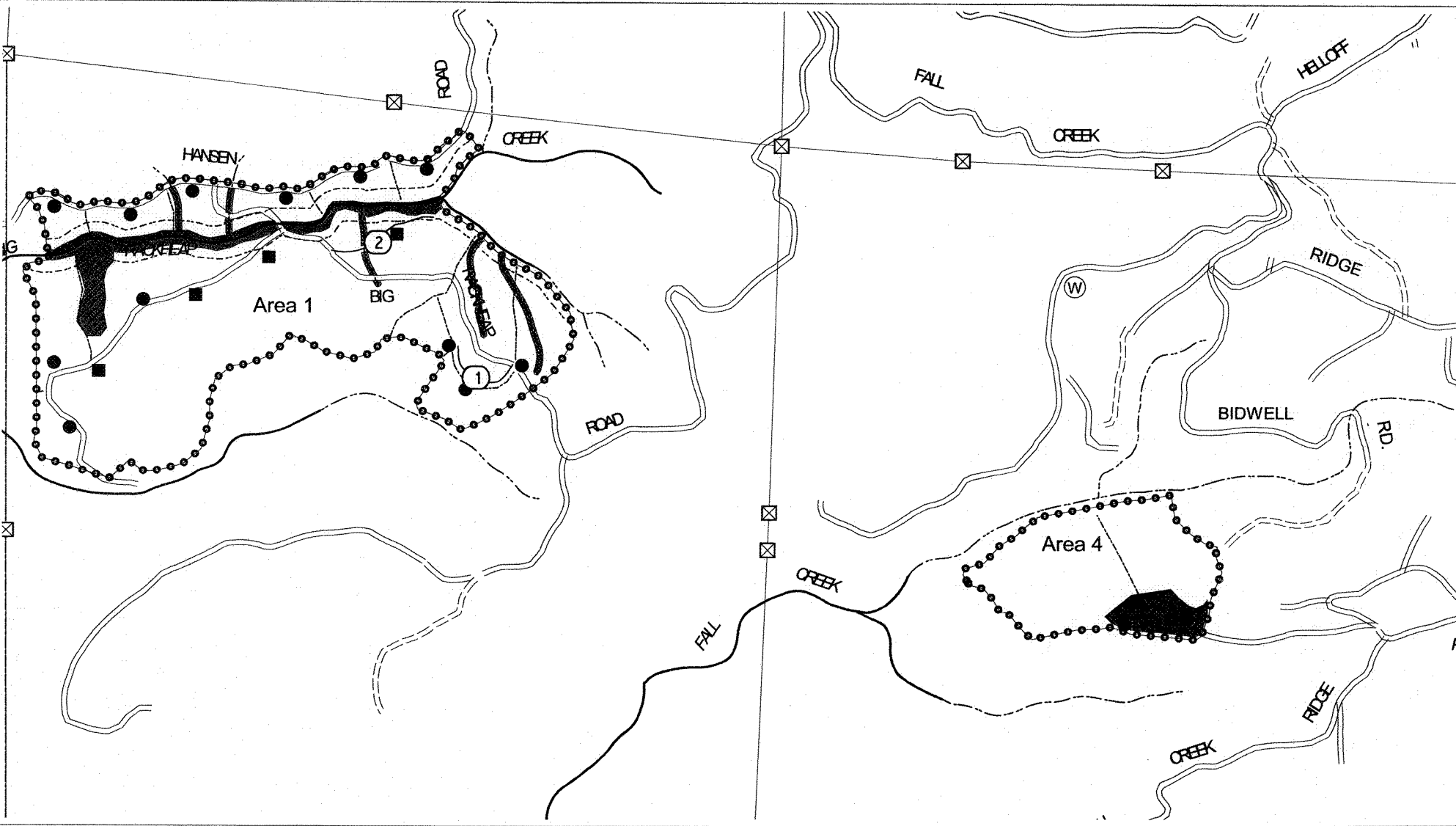
Area 1 - Riparian						
10 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	50	68	3.40	34	5%	32
TOTAL			3.40	34		32

Area 2						
36 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	27	80	2.16	78	5%	74
Hemlock	64	110	7.04	253	5%	240
TOTAL			9.20	331		314

Area 3						
90 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	60	85	5.10	459	5%	436
Hemlock	50	105	5.25	473	5%	449
TOTAL			10.35	932		885

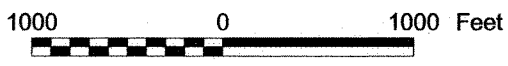
Area 4						
23 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	92	89	8.19	188	5%	179
Hemlock	30	125	3.75	86	5%	82
TOTAL			11.94	274		261

SPECIES	MBF	Net Vol. (MBF)
Douglas-fir	1718	1632
Hemlock	812	771
TOTAL	2530	2403

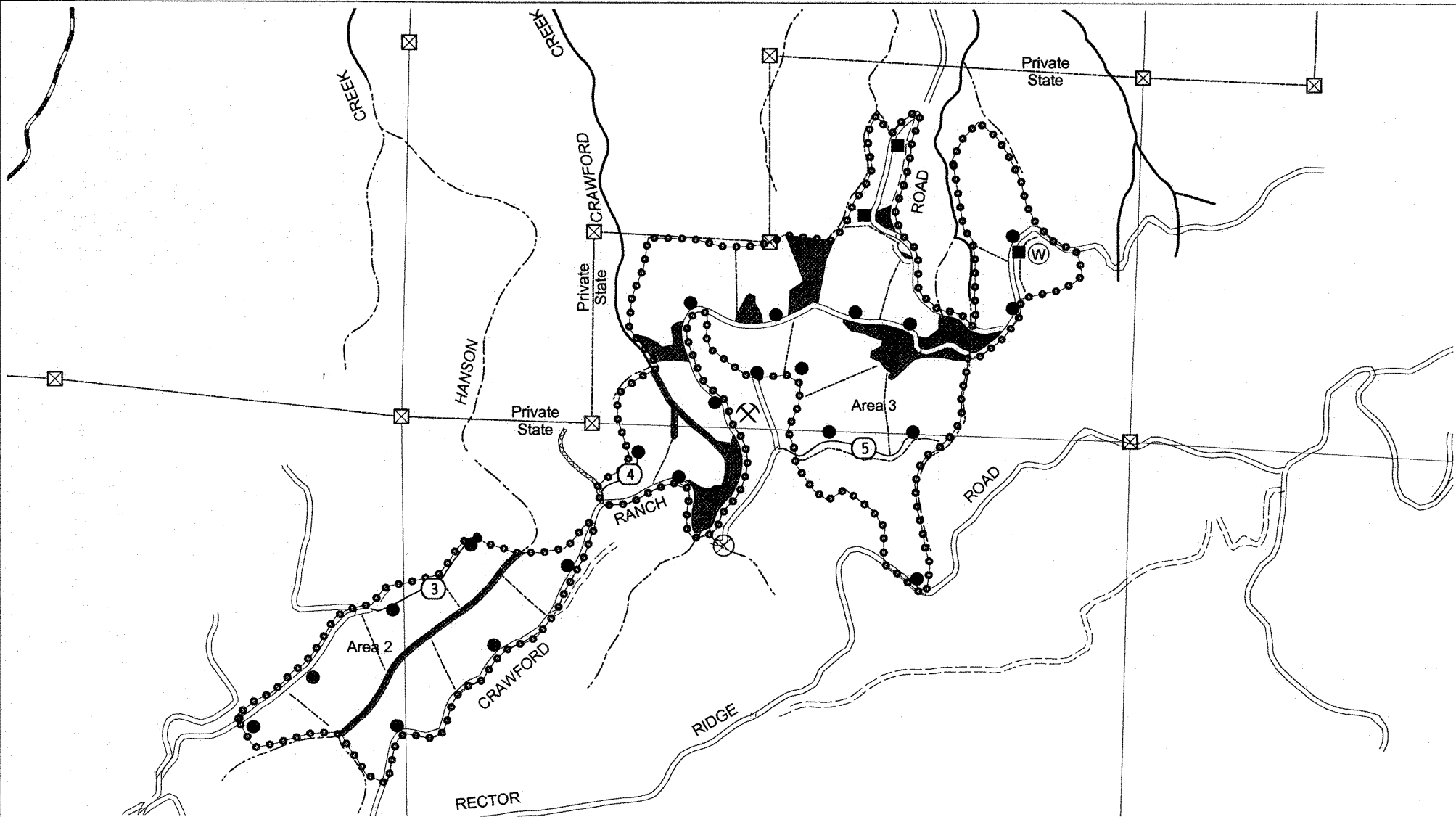


- Tractor landing
- Cable landing
- ▲ Domestic water supply
- ⊗ Blocked
- Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- Buffer zone
- Non-required thinning
- ⊃ Green tree retention area
- Setting boundary
- Area boundary
- Sale boundary
- Ownership boundary
- Type-F stream
- Type-N stream
- ==== Surfaced road
- Unsurfaced road
- ==== State highway
- ==== County road
- ② Non-project road
- Swing road
- Abandoned road
- OHV trail
- Non-motorized trail

LOGGING PLAN
 Timber Sale Contract No. 341-04-13
 Nehalem Divide
 Portions of sections 2, 10, 11, 15, and 16, T3N, R9W, W. M.
 Tillamook County, Oregon

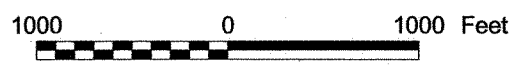


Area	Type of Operation	Acres Gross	Net
1	Clearcut	113	94
Riparian	Partial Cut	10	10
2	Partial Cut	43	36
3	Partial Cut	113	90
4	Partial Cut	29	23
Total		308	253



- Tractor landing
- Cable landing
- ▲ Domestic water supply
- ⊗ Blocked
- Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- Buffer zone
- Non-required thinning
- ⊿ Green tree retention area
- Setting boundary
- Area boundary
- Sale boundary
- Ownership boundary
- Type-F stream
- Type-N stream
- ==== Surfaced road
- Unsurfaced road
- ==== State highway
- County road
- ② Non-project road
- Swing road
- ⊘ Abandoned road
- ⊘ OHV trail
- Non-motorized trail

LOGGING PLAN
 Timber Sale Contract No. 341-04-13
 Nehalem Divide
 Portions of sections 2, 10, 11, 15, and 16, T3N, R9W, W. M.
 Tillamook County, Oregon



Area	Type of Operation	Acres	
		Gross	Net
1	Clearcut	113	94
Riparian	Partial Cut	10	10
2	Partial Cut	43	36
3	Partial Cut	113	90
4	Partial Cut	29	23
Total		308	253

**OREGON DEPARTMENT OF FORESTRY
WRITTEN PLAN**

SALE NAME: Nehalem Divide

PROTECTED RESOURCES: Big Rackheap Creek, medium Type F stream
Hanson Creek, small Type F stream

LOCATION: A portion of Sections 10, 11, and 16, Township 3 North, Range 9 West, W.M. Tillamook County, Oregon.

ACTIVITIES: Logging cables strung across Type F streams for deflection

Riparian Management Area (RMA): The area within 100 feet horizontal distance from the high water mark on each side of the protected Type F stream.

PROTECTION MEASURES:

YARDING and FELLING:

- When cable yarding lines are strung across RMA's they will be at least 100 feet apart and pulled out prior to rigging the next yarding road.
- Soil gouging will be incidental and limited to a depth of 1 foot (measured vertically).
- Intermediate supports will be used to provide lift where needed.
- Logs will have at least one end suspended when yarded.

Prepared by: Barbara Moore

Date: June 20, 2003