



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Eck Creek Sale 341-03-27

District: Tillamook

Date: 9/6/02

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$459,974.79	\$131,323.36	\$591,298.15
		Project Work	(\$128,915.00)
		Advertised Value	\$462,383.15



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Timber Description Eck Creek Sale 341-03-27

District: Tillamook

Location: Portions of Sections, 28, 29, 32, and 33, T3N, R9W, W.M., Tillamook County

Date: 9/6/02

Stand Stocking: 20%

Species	Avg. DBH	Amortized %	Recovery %
Douglas - Fir	16	0	95
Western Hemlock / Fir	13	0	95
Alder (Red)	16	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Total
2S	825	871	0	1,696
3S	444	1,306	0	1,750
Camprun	0	0	592	592
Total	1,269	2,177	592	4,038

Comments: Pond Values Used: 2nd Quarter 2002 + Local Pond Values

Hardwoods Local Pond Value quoted on 9/05/02.



Timber Sale Appraisal Logging Conditions Eck Creek Sale 341-03-27

"STEWARDSHIP IN FORESTRY"

Combination#: 1 Douglas - Fir 85.00%
Western Hemlock / Fir 85.00%
Alder (Red) 85.00%

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: 5 **Bd. Ft./Load:** 3,500
Cost/MBF: \$189.52

Machines:

Log Loader (A)

Tower Yarder (Medium)

Combination#: 2 Douglas - Fir 15.00%
Western Hemlock / Fir 15.00%
Alder (Red) 15.00%

Yarding Distance: Short (400 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:** 3,500
Cost/MBF: \$122.48

Machines:

Log Loader (B)

Tire Skidder



Timber Sale Appraisal

Logging Costs

Eck Creek

Sale 341-03-27

"STEWARDSHIP IN FORESTRY"

Date: 9/6/02

Operating Seasons: 1.6

Profit & Risk: 20%

Project Costs: \$128,915

Other Costs (P/R): \$10,076

Slash Disposal: \$0

Other Costs: \$3,360

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

Road Maintenance: \$1.88

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	4.0
Western Hemlock / Fir	\$0.00	3.0	3.5
Alder (Red)	\$0.00	3.0	3.2

Local Pond Values

Date	Species	Grade	Value
9/5/02	Alder (Red)	Camprun	\$500.00



Timber Sale Appraisal Logging Costs Breakdown Eck Creek Sale 341-03-27

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
Logging	179.46	179.46	179.46
Road Maintenance	1.98	1.98	1.98
Fire Protection	1.07	1.07	1.07
Hauling	60.53	46.11	46.11
Other (P/R appl.)	2.50	2.50	2.50
Profit & Risk	49.11	46.22	46.22
Slash Disposal	0.00	0.00	0.00
Scaling	2.00	2.00	0.00
Other	0.83	0.83	0.83
Total	297.48	280.17	278.17

Amortization	0.00	0.00	0.00
Pond Value	523.00	360.00	500.00
Stumpage	225.52	79.83	221.83
Amortized	0.00	0.00	0.00



Timber Sale Appraisal Summary Eck Creek Sale 341-03-27

"STEWARDSHIP IN FORESTRY"

Amortized

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

Unamortized

	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
MBF	1,269.00	2,177.00	592.00
Value	225.52	79.83	221.83
Total	286,184.88	173,789.91	131,323.36

Gross Timber Sale Value

Recovery \$591,298.15

Prepared by: Chris Woodward

Date: 9/6/02

District: Tillamook

Phone: (503) 842-2545

Additional Costs

Eck Creek



Cable Yarding Volume:	3432	MBF
Ground Yarding Volume:	606	MBF
Total Sale Volume:	4038	MBF

"STEWARDSHIP IN FORESTRY"

ADDITIONAL COSTS - PROFIT & RISK TO BE ADDED						
Yarding & Loading:	Cost / MBF		Volume (MBF)			
Brand & Paint:	\$ 2	x	4038	=		\$8,076
	Cost/Each					
Intermediate Supports (per support)	\$ 100	x	20	=		\$2,000
OTHER COSTS TOTAL						\$10,076

ADDITIONAL COSTS - PROFIT & RISK INCLUDED						
Non-Project Roads*						
Road 1	8	Stations	x	\$ 150	=	\$1,200
Road 2	4	Stations	x	\$ 150	=	\$600
	12				Total	\$1,800
	Stations	x	Yrd ³	x	\$/Yard	
Pit Run Rock	12		20	x	\$6.50	\$1,560
OTHER COSTS TOTAL						\$ 3,360

ROAD MAINTENANCE				
	\$/Mile	MMBF	Miles	\$/MBF
**Grading:	\$500	4.04	3	\$0.75
	\$/Yd	MMBF	Miles	\$/MBF
***Maintenance rock	\$15.00	4.04	3	\$1.13
TOTAL ROAD MAINTENANCE COST / MBF:				\$1.88
*The first 100 feet of a non-project road must be rocked with pit run rock.				
** Assumes grading the road once per 2 MMBF				
*** Assumes 50 cy for normal maintenance /2 MMBF/mile				

PROJECT SUMMARY SHEET

Sale: Eck Creek

CONSTRUCTION

Point	A to B	49+49 stations =	\$94,361.53
Point	E to F	12+53 stations =	\$7,213.45
Point	G to H	3+69 stations =	\$3,720.59

SUBTOTAL CONSTRUCTION \$105,295.57

IMPROVEMENT

Point	A to B	169+30 stations =	\$10,456.88
Point	C to D	7+92 stations =	\$4,964.05
Point	E to F	10+50 stations =	\$6,624.98

SUBTOTAL IMPROVEMENT \$22,045.91

MOVE IN \$1,573.81

GRAND TOTAL \$128,915.30

SUMMARY OF CONSTRUCTION COST

Sale: ECK CR. Road: A to B

Construction - 49+49 stations
0.94 miles

Improvement - 169+30 stations
3.21 miles

CLEARING AND GRUBBING -

Road Brushing (0+00 to 169+30)	3.21 miles @	\$800.00 per mile =	\$2,565.15	
Scattering (169+30 to 199+00, 204+75 to 212+40, 217+00 to 218+79)	3.77 acres @	\$815.00 per acre =	\$3,075.67	
Endhaul (199+00 to 204+75, 212+40 to 217+00)	414 cys. @	\$4.00 per c.y. =	\$1,656.00	
		TOTAL CLEARING AND GRUBBING		\$7,296.82

EXCAVATION -

Common	2146 cys. @	\$1.40 per c.y. =	\$3,003.84	
Common	5636 cys. @	\$1.40 per c.y. =	\$7,890.96	
Common	3695 cys. @	\$1.40 per c.y. =	\$5,172.72	
Common	13724 cys. @	\$1.40 per c.y. =	\$19,214.16	
Spread and Compact	25201 cys. @	\$0.35 per c.y. =	\$8,820.42	
Drifting	175+40 to 178+00	2.60 sta's @	\$100.00 per sta. =	\$260.00
		TOTAL EXCAVATION		\$44,362.10

END-HAULING -

From area of 172+75 to waste area at 169+30, Lt.	2146 cys. @	\$0.54 per c.y. =	\$1,149.63	
From area of 200+10 to area of 183+80	5636 cys. @	\$1.15 per c.y. =	\$6,488.29	
From area of 203+25 to area of 205+50	3695 cys. @	\$0.47 per c.y. =	\$1,733.04	
From area of 213+50 to area of 206+40	13724 cys. @	\$0.73 per c.y. =	\$10,062.43	
		TOTAL END-HAUL		\$19,433.39

CULVERTS - MATERIALS & INSTALLATION

Culverts				
332 LF of 18"	\$4,897.00	36 LF of 24"	\$639.00	
	<u>\$4,897.00</u>		<u>\$639.00</u>	
Half Rounds				
30 LF of 21"	\$342.00	10 LF of 30"	\$145.00	
	<u>\$342.00</u>		<u>\$145.00</u>	
Culvert Stakes		Culvert Markers		
8 stakes	\$64.00	12 markers	\$72.00	
	<u>\$64.00</u>		<u>\$72.00</u>	
		TOTAL CULVERTS		\$6,159.00

SURFACING-

Sta. 169+30 - 218+79	1,210 cy. of 4"-0" CRUSHED @	\$11.19 per c.y. =	\$13,532.76	
Sta. 169+30 - 218+79	609 cy. of 3/4"-0" CRUSHED @	\$15.87 per c.y. =	\$9,663.06	
Spot rock for 8 culvert installations	80 cy. of 3/4"-0" CRUSHED @	\$12.48 per c.y. =	\$998.45	
		TOTAL SURFACING		\$24,194.27

SPECIAL PROJECTS

Construct Waste Area (sta. 14+33, Rt.)	0.50 hrs @	\$130.00 per hr. =	\$65.00	
Construct Waste Area (sta. 165+90, Rt.)	1.00 hrs @	\$130.00 per hr. =	\$130.00	
Construct Waste Area (sta. 189+67, Rt.)	2.00 hrs @	\$130.00 per hr. =	\$260.00	
Construct Waste Area (sta. 206+66, Lt.)	3.00 hrs @	\$130.00 per hr. =	\$390.00	
Compact fills	17.75 sta's @	\$28.00 per sta. =	\$497.00	
Grade and Shape Road (Common, Ditched)	13.76 sta's @	\$14.20 per sta. =	\$195.39	
Grade and Shape Road (Common, Outsloped)	35.73 sta's @	\$9.75 per sta. =	\$348.37	
Roll Subgrade Prior To Rocking	49.49 sta's @	\$11.00 per sta. =	\$544.39	
Erosion Control: Sedimentation	24.00 Bio Bags @	\$4.60 ea. =	\$110.40	
Erosion Control: Grass Seed and Fertilize	3.35 Acres	\$180.00 per acre =	\$603.43	
Erosion Control: Mulching	0.29 Acres	\$1,000.00 per acre =	\$293.85	
		TOTAL SPECIAL PROJECTS		\$3,372.83

GRAND TOTAL **\$104,818.41**

SUMMARY OF CONSTRUCTION COST

Sale:	<u>ECK CR.</u>					Road:	<u>C to D</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles					Improvement -	<u>7+92</u> stations <u>0.15</u> miles
CLEARING AND GRUBBING -							
Scattering (0+00 to 7+92)		0.77 acres @		\$815.00 per acre =			\$631.25
TOTAL CLEARING AND GRUBBING							\$631.25
EXCAVATION - EMBANKMENT							
Road Const.	+00 to 6+00	6.00 sta's @		\$150.00 per sta. =			\$900.00
Road Const.	6+00 to 7+92	1.92 sta's @		\$65.00 per sta. =			\$124.80
TOTAL EXCAVATION							\$1,024.80
CULVERTS - MATERIALS & INSTALLATION							
	Culverts						
	LF of 18"	\$0.00		LF of 36"	\$0.00		
	LF of 30"	\$0.00		LF of 42"	\$0.00		
		\$0.00			\$0.00		
	Half Rounds						
	LF of 21"	\$0.00		LF of 30"	\$0.00		
	LF of 36"	\$0.00		LF of 42"	\$0.00		
		\$0.00			\$0.00		
	Culvert Stakes						
	stakes	\$0.00		Culvert Markers			
				markers	\$0.00		
TOTAL CULVERTS							\$0.00
SURFACING-							
Sta. 0+00 - 7+92	188	cy. of	4'-0" CRUSHED @	\$8.90 per c.y.=			\$1,674.68
Sta. 0+00 - 7+92	95	cy. of	3/4'-0" CRUSHED @	\$13.48 per c.y.=			\$1,282.62
TOTAL SURFACING							\$2,957.30
SPECIAL PROJECTS							
Compact fills	3.55		sta's @	\$28.00	per sta. =		\$99.40
Grade and Shape Road (Common, Ditched)	2.25		sta's @	\$14.20	per sta. =		\$31.95
Grade and Shape Road (Common, Outsloped)	5.67		sta's @	\$9.75	per sta. =		\$55.28
Roll Subgrade Prior To Rocking	7.92		sta's @	\$11.00	per sta. =		\$87.12
Erosion Control: Grass Seed and Fertilize	0.43		Acres	\$180.00	per acre =		\$76.95
TOTAL SPECIAL PROJECTS							\$350.70
GRAND TOTAL							\$4,964.05

SUMMARY OF CONSTRUCTION COST

Sale:	ECK CR.		Road:	E to F
Construction -	<u>12+53</u> stations 0.24 miles		Improvement -	<u>10+50</u> stations 0.20 miles
CLEARING AND GRUBBING -				
Scattering (0+00 to 23+03)		1.87 acres @	\$815.00 per acre =	\$1,527.10
			TOTAL CLEARING AND GRUBBING	\$1,527.10
EXCAVATION - EMBANKMENT				
Sidecast pullback	5+95 to 7+20	222 cys. @	\$1.40 per c.y. =	\$311.11
Widening	5+95 to 7+20	89 cys. @	\$1.40 per c.y. =	\$124.44
Spread and Compact		311 cys. @	\$0.35 per c.y. =	\$108.89
Road Const.	+00 to 10+50	10.50 sta's @	\$65.00 per sta. =	\$682.50
Road Const.	10+50 to 15+75	5.25 sta's @	\$100.00 per sta. =	\$525.00
Road Const.	15+75 to 23+03	7.28 sta's @	\$65.00 per sta. =	\$473.20
			TOTAL EXCAVATION	\$2,225.14
END-HAULING -				
To Road Fill @ Area near 11+25				
Sidecast pullback	5+95 to 7+20	222 cys. @	\$0.61 per c.y. =	\$135.52
Widening	5+95 to 7+20	89 cys. @	\$0.61 per c.y. =	\$54.21
			TOTAL END-HAUL	\$189.72
CULVERTS - MATERIALS & INSTALLATION				
	Culverts			
	LF of 18"	\$0.00	LF of 36"	\$0.00
	LF of 30"	\$0.00	LF of 42"	\$0.00
		\$0.00		\$0.00
	Half Rounds			
	LF of 21"	\$0.00	LF of 30"	\$0.00
	LF of 36"	\$0.00	LF of 42"	\$0.00
		\$0.00		\$0.00
	Culvert Stakes		Culvert Markers	
	stakes	\$0.00	markers	\$0.00
			TOTAL CULVERTS	\$0.00
SURFACING-				
Sta. 0+00 - 23+03	543 cy. of	4"-0" CRUSHED @	\$9.36 per c.y.=	\$5,077.88
Sta. 0+00 - 23+03	273 cy. of	3/4"-0" CRUSHED @	\$14.04 per c.y.=	\$3,837.56
			TOTAL SURFACING	\$8,915.45
SPECIAL PROJECTS				
Compact fills	9.78	sta's @	\$28.00 per sta. =	\$273.84
Grade and Shape Road (Common, Ditched)	8.30	sta's @	\$14.20 per sta. =	\$117.86
Grade and Shape Road (Common, Outsloped)	14.73	sta's @	\$9.75 per sta. =	\$143.62
Roll Subgrade Prior To Rocking	23.03	sta's @	\$11.00 per sta. =	\$253.33
Erosion Control: Sedimentation	2.00	Bio Bags @	\$4.60 ea. =	\$9.20
Erosion Control: Grass Seed and Fertilize	1.02	Acres	\$180.00 per acre =	\$183.17
			TOTAL SPECIAL PROJECTS	\$981.02
			GRAND TOTAL	\$13,838.43

SUMMARY OF CONSTRUCTION COST

Sale:	ECK CR.		Road: G to H	
Construction -	3+69 stations 0.07 miles		Improvement -	+00 stations 0.00 miles
CLEARING AND GRUBBING - Scattering (0+00 to 3+69)	0.41 acres @		\$815.00 per acre =	\$331.39
TOTAL CLEARING AND GRUBBING				\$331.39
EXCAVATION - EMBANKMENT				
Road Const.	+00 to 1+26	1.26 sta's @	\$65.00 per sta. =	\$81.90
Road Const.	1+26 to 3+69	993 cys. @	\$0.75 per cy =	\$745.11
Spread and Compact	@ 3+35, Rt.	993 cys. @	\$0.35 per c.y. =	\$347.72
TOTAL EXCAVATION				\$1,174.73
CULVERTS - MATERIALS & INSTALLATION				
Culverts	LF of 18"	\$0.00	LF of 36"	\$0.00
	LF of 30"	\$0.00	LF of 42"	\$0.00
		\$0.00		\$0.00
Half Rounds	LF of 21"	\$0.00	LF of 30"	\$0.00
	LF of 36"	\$0.00	LF of 42"	\$0.00
		\$0.00		\$0.00
Culvert Stakes	stakes	\$0.00	Culvert Markers	
			markers	\$0.00
TOTAL CULVERTS				\$0.00
SURFACING-				
Sta. 0+00 - 3+69	95 cy. of	4"-0" CRUSHED @	\$12.38 per c.y. =	\$1,178.28
Sta. 0+00 - 3+69	49 cy. of	3/4"-0" CRUSHED @	\$16.46 per c.y. =	\$799.82
TOTAL SURFACING				\$1,978.10
SPECIAL PROJECTS				
Compact fills	1.15	sta's @	\$28.00 per sta. =	\$32.20
Construct Waste Area (sta. 3+35, Rt.)	0.50	hrs @	\$130.00 per hr. =	\$65.00
Grade and Shape Road (Common, Ditched)	3.69	sta's @	\$14.20 per sta. =	\$52.40
Roll Subgrade Prior To Rocking	3.69	sta's @	\$11.00 per sta. =	\$40.59
Erosion Control: Grass Seed and Fertilize	0.26	Acres	\$180.00 per acre =	\$46.18
TOTAL SPECIAL PROJECTS				\$236.37
 GRAND TOTAL				\$3,720.59

MOVE-IN CALCULATIONS

Sale: **ECK CREEK**

LOWBOY HAUL (One Way)		
DISTANCE	ROADWAY	AVE SPEED (MPH)
23.4	Highway	45
2.2	Main Lines (Off Road)	15
1.1	Pulling 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
0	Drill & Compressor	\$0.00		\$46.00	0	0.00	0.00	\$0.00	\$0.00
1	Brush Cutter	\$148.01		\$4.00	0	0.00	0.00	\$0.00	\$148.01
1	Graders	\$81.03		\$3.65	0	0.00	0.00	\$0.00	\$81.03
0	Loader (Small)	\$0.00		\$3.55	0	0.00	0.00	\$0.00	\$0.00
0	Loader (Med. & Large)	\$0.00		\$9.00	0	0.00	0.00	\$0.00	\$0.00
2	Rollers & Compactors	\$296.01		\$5.00	0	1.61	1.61	\$16.08	\$312.09
0	Excavators (Small)	\$0.00		\$22.00	0	0.00	0.00	\$0.00	\$0.00
0	Excavators (Med.)	\$0.00		\$35.50	0	0.00	0.00	\$0.00	\$0.00
1	Excavators (Large)	\$295.51	2	\$44.80	0	1.61	1.61	\$72.06	\$367.57
1	Rubber Tired Backhoes/Skidlers	\$148.01		\$3.00	0	0.00	0.00	\$0.00	\$148.01
0	Tractors (D6)	\$0.00		\$7.10	0	0.00	0.00	\$0.00	\$0.00
0	Tractors (D7)	\$0.00		\$11.30	0	0.00	0.00	\$0.00	\$0.00
1	Tractor (D8)	\$274.52	2	\$15.10	0	1.61	1.61	\$24.29	\$298.81
4	Dump Truck (10 cy +)	\$168.72		\$2.85	0	0.00	0.00	\$0.00	\$168.72
0	Dump Truck (Off Hiway)	\$0.00		\$4.75	0	0.00	0.00	\$0.00	\$0.00
0	Water Truck (1500 Gal)	\$0.00		\$2.85	0	0.00	0.00	\$0.00	\$0.00
1	Water Truck (2500 Gal)	\$49.58		\$2.85	0	0.00	0.00	\$0.00	\$49.58
0	Jaw	\$1,066.00							\$0.00
0	2-Stage Crusher	\$1,597.00							\$0.00
0	3-Stage Crusher	\$2,489.00							\$0.00
TOTAL MOVE-IN COSTS:									\$1,573.81

OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT

Eck Creek

1. **Type of Sale:** Partial cut/recovery
2. **Legal Description:** Portions of Sections 28, 29, 32 & 33, T3N, R9W, WM, Tillamook County, Oregon.
2. **Sale Acreage:** The sale boundaries were plotted on a digital ortho photograph and acreage was calculated on GIS

	Gross Acres	Net Acres
Area 1	82	73
Area 2	146	103
Area 3	18	18
Total	246	194

Gross Acres: *Area within the Timber Sale Boundary signs.*

Net Acres: *Used for calculating the advertised volume.*

Gross acres: less roads, stream buffers inside the sale boundary, green tree retention areas, and non-required thinning acres.

4. **Cruise Procedures:**

- A. **Cruising Method:** A total of 50, 17, and 7 variable radius full point plots were established for areas 1, 2 and 3 respectively. Diameters and species were recorded and a minimum of two trees per plot were graded and measured for merchantable height and form factor. Conifer trees were measured to either a 6 inch top or to a top diameter four tenths of D.B.H. Alders were measured to an 8 inch top. Cruise lines and plots were spaced 500 and 200 feet apart respectively. Conifer 8 inches DBH or greater and hardwoods 10 inches DBH or greater were recorded on all plots.
- B. **Plot Size:** A basal area factor of 40 was used in area 2 and a 28 BAF was used in areas 1 & 3. The point of observation was at 4.5 feet.

C. Grading Systems: All hardwoods were assigned camp-run grades. Conifer trees were graded according to Columbia River Log Scaling and Grading Rules

D. Cruiser Names/Dates Woodward/Travers/Wells; July 2001

5. Computation Procedures: Measured trees were used to develop a volume basal area ratio (V-BAR) for each species. V-Bar for take trees were computed using the Atterbury SuperA.C.E.98 program (see attached volume computation summary). Residual and surplus trees were designated on each cruise plot to develop a stand table which was used to expand the volume for the sale. A 5% deduction was applied to the volume to account for the defect and breakage.
6. Timber description: The sale consists of three areas of approximately 50-60 year old naturally regenerated conifer and alder. All areas have dense conifer on the upper slopes and scattered alder and conifer along the lower slopes and in the draws. Douglas-fir has moderate to severe symptoms of Swiss needle cast.
7. Revenue Distribution:
FDF: 100%
Tax Code: 56
Deed #'s: 35, 96, 138, 161
Rehab. Obligation: 0%
8. Attachments
Volume Summary
Stand table
Logging plan



"STEWARDSHIP IN FORESTRY"

Eck Creek

Volume Summary

Area 1						
73 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	0	158	0.00	0	5%	0
Hemlock	55	143	7.87	574	5%	545
Alder	68	118	8.02	586	5%	556
TOTAL				1160		1102

Area 2						
103 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	36	209	7.52	775	5%	736
Hemlock	71	207	14.70	1514	5%	1438
TOTAL				2289		2174

Area 3						
18 acres						
SPECIES	Basal Area Per Acre	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	132	236	31.2	561	5%	533
Hemlock	56	202	11.3	204	5%	193
Alder	32	65	2.1	37	5%	36
TOTAL				37		762

TOTAL SALE VOLUME		
194 acres		
SPECIES	MBF	Net Vol. (MBF)
Douglas-fir	1336	1269
Hemlock	2292	2177
Alder	623	592
TOTAL	4250	4038

Eck Creek Table Summary

Area 1

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	Sprce/Cdr TK tr/acre	Sprce/Cdr LV tr/acre	Red Alder TK tr/acre	Red Alder LV tr/acre
8"	4.7	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0
9"	15.0	3.7	0.0	0.0	7.5	0.0	0.0	3.7	7.5	0.0
10"	12.0	3.0	0.0	3.0	6.0	0.0	0.0	0.0	6.0	0.0
11"	7.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	5.0	0.0
12"	12.6	2.1	0.0	2.1	6.3	0.0	0.0	0.0	6.3	0.0
13"	10.7	0.0	0.0	0.0	8.9	0.0	0.0	0.0	1.8	0.0
14"	12.3	1.5	0.0	1.5	9.2	0.0	0.0	0.0	3.1	0.0
15"	16.1	1.3	0.0	1.3	10.7	0.0	0.0	0.0	5.4	0.0
16"	17.7	0.0	0.0	0.0	5.9	0.0	0.0	0.0	11.8	0.0
17"	3.1	6.2	0.0	1.0	0.0	5.2	0.0	0.0	3.1	0.0
18"	3.7	4.7	0.0	0.0	0.0	4.7	0.0	0.0	3.7	0.0
19"	3.3	4.2	0.0	0.0	0.0	4.2	0.0	0.0	3.3	0.0
20"	2.3	1.6	0.0	0.8	0.0	0.8	0.0	0.0	2.3	0.0
21"	0.0	2.8	0.0	0.7	0.0	2.1	0.0	0.0	0.0	0.0
22"	0.6	5.6	0.0	1.2	0.0	4.4	0.0	0.0	0.6	0.0
24"	0.0	2.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0
26"	0.0	0.9	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0
28"	0.0	0.8	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0
30"	0.0	1.0	0.0	0.3	0.0	0.7	0.0	0.0	0.0	0.0
32"	0.0	0.3	0.0	0.0	0.0	0.3	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	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	167	15	88	4	60
Residual	45	15	26	4	0
Take	122	0	62	0	60

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	205	20	114	3	68
Residual	82	20	59	3	0
Take	123	0	55	0	68

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	15.0	15.6	15.4	11.7	14.4
Residual	18.3	15.6	20.4	11.7	0.0
Take	13.6	0.0	12.8	0.0	14.4

Stand Density Index (%)

	Doug-fir	Hemlock	Sprce/Cdr
Current	53	40	46
Residual	20	15	17

Eck Creek Table Summary

Area 2

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	Sprce/Cdr TK tr/acre	Sprce/Cdr LV tr/acre	Red Alder TK tr/acre	Red Alder LV tr/acre
8"	4.8	2.4	0.0	0.0	4.8	2.4	0.0	0.0	0.0	0.0
9"	5.7	7.6	1.9	0.0	3.8	3.8	0.0	0.0	0.0	3.8
10"	12.2	4.6	1.5	1.5	10.7	0.0	0.0	0.0	0.0	3.1
11"	11.3	3.8	2.5	1.3	8.8	0.0	0.0	0.0	0.0	2.5
12"	5.3	4.3	1.1	1.1	4.2	1.1	0.0	0.0	0.0	2.1
13"	9.9	4.5	0.0	0.0	9.9	1.8	0.0	0.0	0.0	2.7
14"	13.3	6.3	4.7	0.8	8.6	0.8	0.0	0.8	0.0	3.9
15"	10.9	4.8	3.4	0.7	7.5	0.7	0.0	0.0	0.0	3.4
16"	7.2	6.0	3.0	1.8	4.2	1.2	0.0	0.0	0.0	3.0
17"	7.9	4.7	3.7	1.6	4.2	0.5	0.0	0.5	0.0	2.1
18"	5.7	6.7	2.4	1.9	3.3	1.9	0.0	0.5	0.0	2.4
19"	5.0	8.9	2.5	3.0	2.5	3.0	0.0	0.4	0.0	2.5
20"	4.2	3.4	2.3	1.9	1.9	1.1	0.0	0.0	0.0	0.4
21"	2.7	4.8	1.7	3.5	1.0	0.7	0.0	0.3	0.0	0.3
22"	1.8	7.3	0.9	4.4	0.9	1.6	0.0	0.0	0.0	1.3
24"	1.6	4.5	1.1	1.3	0.5	2.1	0.0	0.0	0.0	1.1
26"	0.5	3.1	0.5	1.8	0.0	0.9	0.0	0.2	0.0	0.2
28"	0.0	2.1	0.0	1.9	0.0	0.2	0.0	0.0	0.0	0.0
30"	0.2	1.4	0.2	1.2	0.0	0.2	0.0	0.0	0.0	0.0
32"	0.0	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.6	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44"	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	203	64	101	3	35
Residual	93	31	24	3	35
Take	110	33	77	0	0

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	291	124	120	4	43
Residual	160	73	40	4	43
Take	131	51	80	0	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	16.2	18.8	14.8	15.6	15.0
Residual	17.8	20.8	17.5	15.6	15.0
Take	14.8	16.8	13.8	0.0	0.0

Stand Density Index (%)

	Doug-fir	Hemlock	Sprce/Cdr
Current	73	55	63
Residual	39	29	33

Eck Creek-Table Summary

Area 3 cut of 26" and under cut hem 16" and under

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	Sprce/Cdr TK tr/acre	Sprce/Cdr LV tr/acre	Red Alder TK tr/acre	Red Alder LV tr/acre
8"	34.4	0.0	0.0	0.0	34.4	0.0	0.0	0.0	0.0	0.0
9"	9.1	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0
10"	14.7	0.0	0.0	0.0	14.7	0.0	0.0	0.0	0.0	0.0
11"	12.1	0.0	0.0	0.0	12.1	0.0	0.0	0.0	0.0	0.0
12"	20.4	0.0	10.2	0.0	10.2	0.0	0.0	0.0	0.0	0.0
13"	12.9	0.0	4.3	0.0	4.3	0.0	0.0	0.0	4.3	0.0
14"	7.4	0.0	0.0	0.0	3.7	0.0	0.0	0.0	3.7	0.0
15"	6.6	0.0	0.0	0.0	3.3	0.0	0.0	0.0	3.3	0.0
16"	8.6	0.0	5.7	0.0	2.9	0.0	0.0	0.0	0.0	0.0
17"	10.2	2.5	5.1	0.0	0.0	2.5	0.0	0.0	5.1	0.0
18"	0.0	4.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0
19"	2.0	4.1	2.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0
20"	11.0	5.5	7.3	0.0	0.0	5.5	0.0	0.0	3.7	0.0
21"	3.3	3.3	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0
22"	9.1	6.1	9.1	0.0	0.0	6.1	0.0	0.0	0.0	0.0
24"	10.2	6.4	8.9	0.0	0.0	6.4	0.0	0.0	1.3	0.0
26"	6.5	3.3	6.5	0.0	0.0	3.3	0.0	0.0	0.0	0.0
28"	0.0	8.5	0.0	6.6	0.0	1.9	0.0	0.0	0.0	0.0
30"	0.0	2.4	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	1.4	0.0	0.0	0.0	0.7	0.0	0.7	0.0	0.0
34"	0.0	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
36"	0.0	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
38"	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
40"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44"	0.0	1.1	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	230	74	134	1	21
Residual	52	12	39	1	0
Take	178	62	95	0	21

Basal Area/acre

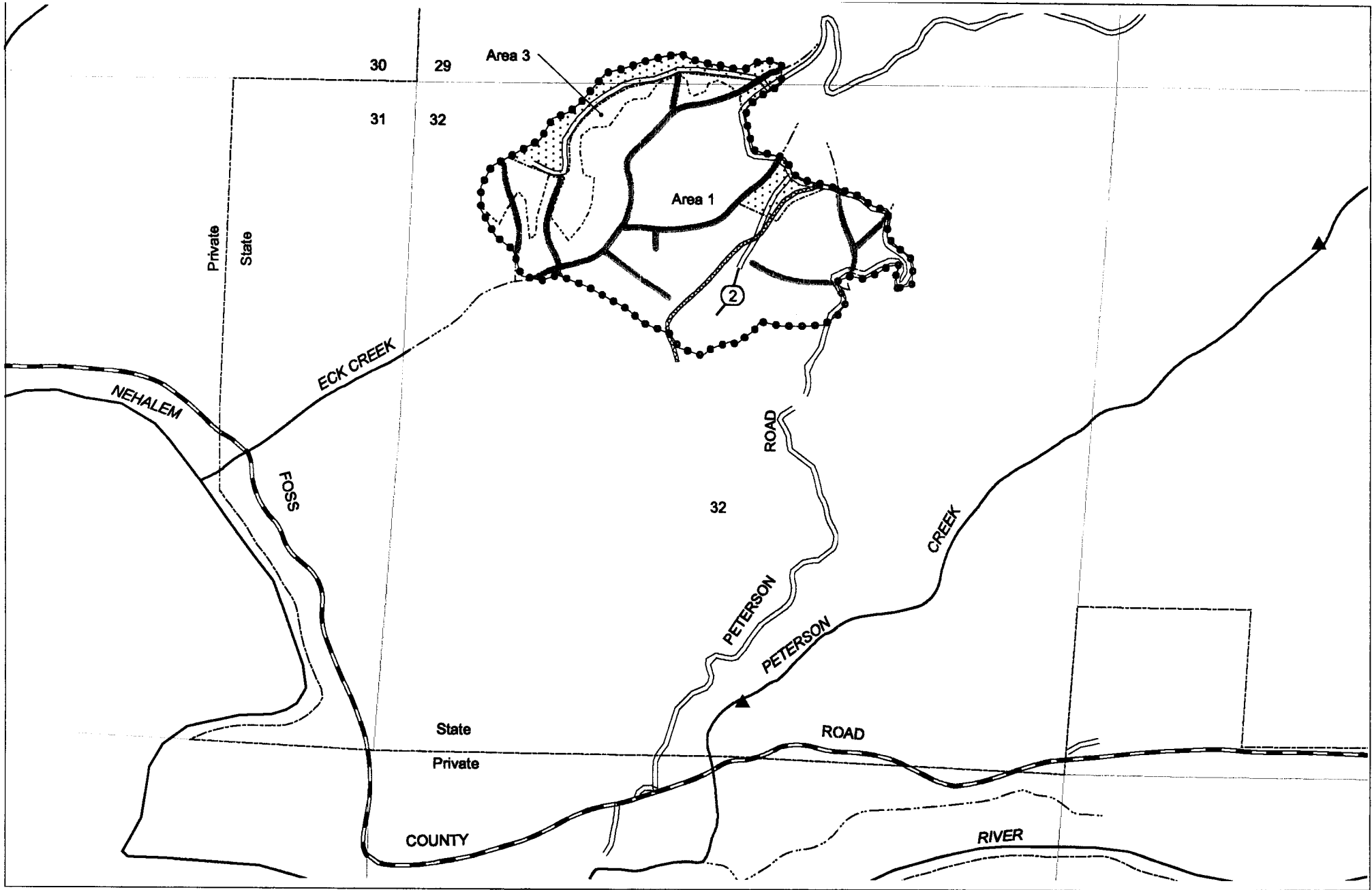
	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	391	196	160	3	32
Residual	171	64	104	3	0
Take	220	132	56	0	32

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Sprce/Cdr	Red Alder
Current	17.7	22.0	14.8	23.5	16.7
Residual	24.6	31.3	22.1	23.5	0.0
Take	15.1	19.8	10.4	0.0	16.7

Stand Density Index (%)

	Doug-fir	Hemlock	Sprce/Cdr
Current	96	72	82
Residual	37	27	31



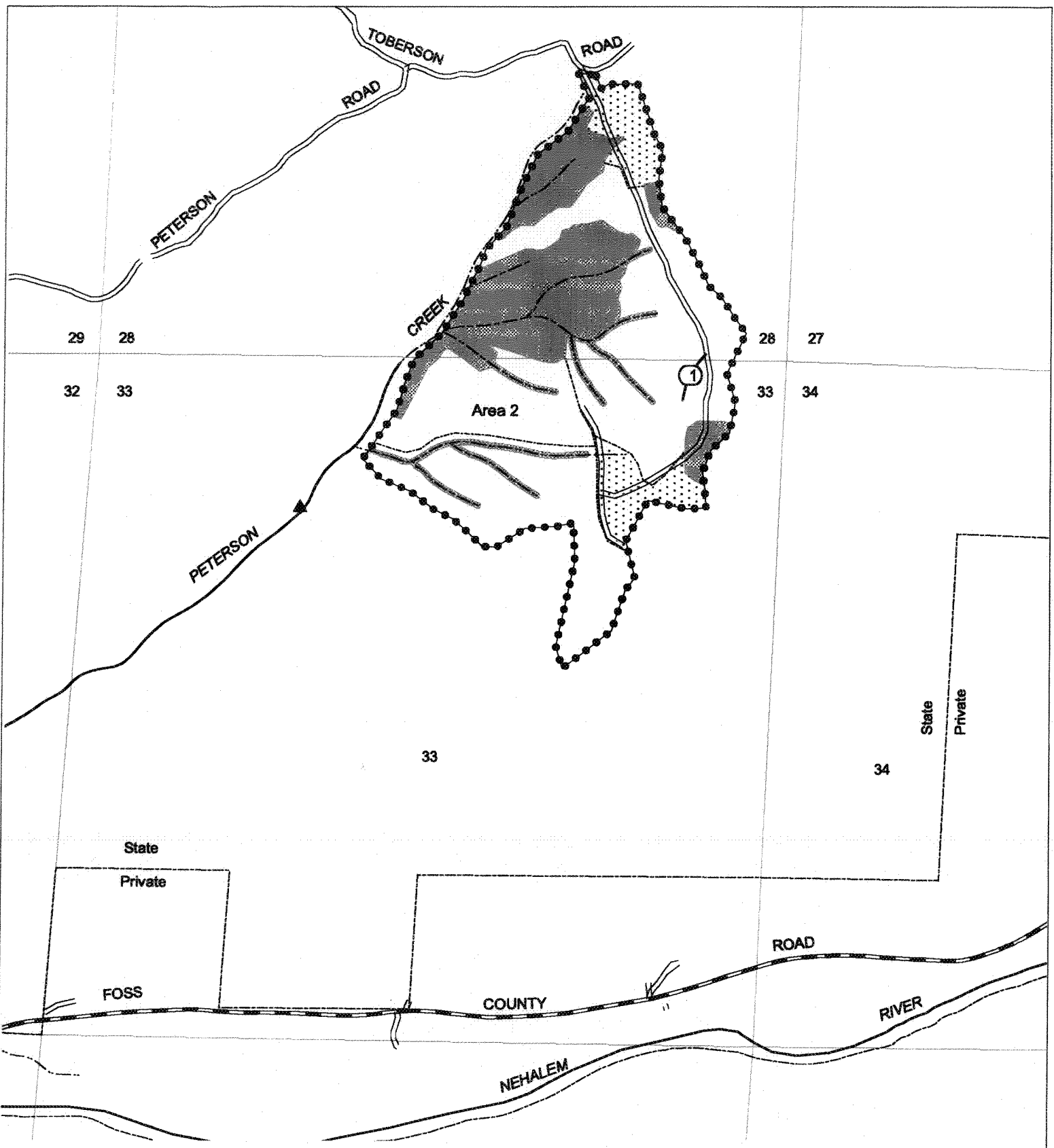
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|--|-----------------------|--|------------------|--|------------------|
| | Non-required thinning | | Setting boundary | | Surfaced road |
| | Cable yarding | | Area boundary | | Unsurfaced road |
| | Ground yarding | | Sale boundary | | State highway |
| | Domestic water intake | | Type-F stream | | County road |
| | | | Type-N stream | | Non-project road |
| | | | | | Swing road |
| | | | | | Abandoned road |

LOGGING PLAN
 Timber Sale Contract No. 341-03-27
 Eck Creek
 Sections 28, 29, 32, and 33, T3N, R9W, WM,
 Tillamook County, Oregon

1000 0 1000 Feet

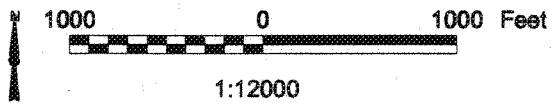
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- Non-required thinning
- Cable yarding
- Ground yarding
- Domestic water intake
- Setting boundary
- Area boundary
- Sale boundary
- Type-F stream
- Type-N stream
- Surfaced road
- Unsurfaced road
- State highway
- County road
- Non-project road
- Swing road
- Abandoned road

LOGGING PLAN
 Timber Sale Contract No. 341-03-27
 Eck Creek
 Sections 28, 29, 32, and 33, T3N, R9W, WM,
 Tillamook County, Oregon



State
Private

State
Private

FOSS

COUNTY

NEHALEM

ROAD

RIVER

Area 2

1

29 28
32 33

28 27
33 34

33

34

PETERSON

ROBBERSON

ROAD

CREEK

PETERSON

**OREGON DEPARTMENT OF FORESTRY
WRITTEN PLAN**

SALE NAME: Eck Creek

PROTECTED RESOURCES: Peterson Creek

LOCATION: Portions of Section 28, 29, 32 and 33 T3N, R9W, W.M., Tillamook County, Oregon.

ACTIVITIES: Logging cables strung across Type F streams for deflection; cable and ground yarding;

Riparian Management Area (RMA): The area within 100 feet horizontal distance from the high water mark on each side of the protected small Type F stream. **High Risk Sites:** Active landslides and slumps; slopes steeper than 80%; and headwalls or draws steeper than 70%.

PROTECTION MEASURES:

YARDING and FELLING:

- All trees in the RMA are reserved from cutting.
- Adjacent trees will be felled away from or parallel to the RMA.
- Trees or logs that fall or slide into a type F stream will not be limbed, bucked or removed without approval from ODF.
- When cable yarding lines are strung across RMA's they will be at least 150 feet apart and pulled out prior to rigging the next yarding road.
- Cable yarding will be used on high risk sites.
- A self-clamping carriage capable of passing over intermediate supports and being positioned and repositioned for each turn of logs without lowering the skyline will be used to control the direction of yarding.
- Intermediate supports will be used to provide lift.
- Logs will have at least one end suspended when yarded.
- Soil gouging will be incidental and limited to a depth of 1 foot (measured vertically).
- Ground yarding equipment will not operate within 50 feet of Type F streams
- High risk sites discovered within the harvest areas will be reviewed by the State to determine protective measures for these areas. Further consultation with the Area geotechnical specialist and/or removal of the sites from the harvest area may be required.