



# Timber Sale Appraisal Cost Summary Bale Bound Sale 341-03-79

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Date: 5/9/03

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$632,736.09	\$31,133.76	\$663,869.85
		<b>Project Work</b>	(\$288,632.00)
		<b>Advertised Value</b>	\$375,237.85



# Timber Sale Appraisal Timber Description Bale Bound Sale 341-03-79

"STEWARDSHIP IN FORESTRY"

**District:** Tillamook

**Location:** Sections 20, 29, 30, 32 and 33 of T2S, R7W, and Sections 4 & 5, T3S, R7W, W.M., Tillamook County

**Date:** 5/9/03

**Stand Stocking:** 20%

Species	Avg. DBH	Amortized %	Recovery %
Douglas - Fir	12	0	95
Alder (Red)	14	0	95

Volume by Grade	Douglas - Fir	Alder (Red)	Total
2S	33	0	33
3S	2,637	0	2,637
4S	263	0	263
Camprun	0	123	123
<b>Total</b>	2,933	123	3,056

**Comments:** Pond Values Used: 1st Quarter 2003 + Local Pond Values

Road Maintenance:

Areas 1-2

Grading:  $\$200/\text{mile} \times 9 \text{ miles} \times 1 \text{ time} = \$1800$

Surfacing:  $25 \text{ yards/mile} \times 9 \text{ miles} \times \$4.65/\text{yard} = \$1047$

Areas 3-8

2 Gradings:  $\$200/\text{mile}(\text{intermediate}) + \$500/\text{mile}(\text{final}) \times 10 \text{ miles} = \$7000$

Surfacing:  $25 \text{ yards/mile} \times 10 \text{ miles} \times \$6.50/\text{yard} = 1625$

Total Road Maintenance:  $\$11472/3056 \text{ MBF} = \$3.75/\text{MBF}$

Other Costs (plus profit and risk): Total = \$6112

Brand and Paint:  $\$2.00/\text{mbf} \times 3056 \text{ mbf} = \$6112$

Other Cost (profit and risk included): Total = \$9244

Non-project roads:

Spur 1

3 Stations  $\times \$120/\text{Station} = \$360$

Spur 2

22 Stations  $\times \$120/\text{Station} = \$2640$

Total: \$3000

Surfacing:

25 Stations  $\times 30 \text{ yards/station} \times \$6.25/\text{yard} = \$4688$

Total = \$4688

Total non-project road cost: \$7688

Block OHV trails(14) @  $\$75/\text{ea} = \$1050$

Slash Piling and Sorting:

230 acres @ 1 hour per 50 acres =  $4.6 \text{ hrs} \times \$110 = \$506$

Hardwood Pond Value of \$515 obtained locally.



# Timber Sale Appraisal Logging Conditions Bale Bound Sale 341-03-79

"STEWARDSHIP IN FORESTRY"

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<b>Combination#: 1</b>	Douglas - Fir	76.92%	
	Alder (Red)	83.00%	
<b>Yarding Distance:</b>	Medium (800 ft)		<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70		<b>Process:</b> Stroke Delimber
<b>Tree Size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
<b>Loads/Day:</b>	6		<b>Bd. Ft./Load:</b> 3,200
<b>Cost/MBF:</b>	\$170.97		
<b>Machines:</b>			
	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Medium)		
<b>Combination#: 2</b>	Douglas - Fir	15.75%	
	Alder (Red)	17.00%	
<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding:</b> Yes
<b>Logging System:</b>	Track Skidder		<b>Process:</b> Manual Felling/Delimiting
<b>Tree Size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
<b>Loads/Day:</b>	8		<b>Bd. Ft./Load:</b> 3,200
<b>Cost/MBF:</b>	\$127.56		
<b>Machines:</b>			
	Log Loader (B)		
	Track Skidder		
<b>Combination#: 3</b>	Douglas - Fir	7.33%	
<b>Yarding Distance:</b>	Medium (800 ft)		<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70		<b>Process:</b> Stroke Delimber
<b>Tree Size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
<b>Loads/Day:</b>	5		<b>Bd. Ft./Load:</b> 3,200
<b>Cost/MBF:</b>	\$205.16		
<b>Machines:</b>			
	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Medium)		



# Timber Sale Appraisal Logging Costs Bale Bound Sale 341-03-79

"STEWARDSHIP IN FORESTRY"

Date: 5/9/03

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$288,632

Other Costs (P/R): \$6,112

Slash Disposal: \$0

Other Costs: \$9,244

Road Maintenance: \$3.75

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

### Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	3.2
Alder (Red)	\$0.00	3.0	2.8

### Local Pond Values

Date	Species	Grade	Value
5/9/03	Douglas - Fir	2S	\$530.00
5/9/03	Douglas - Fir	3S	\$505.00
5/9/03	Douglas - Fir	4S	\$455.00
5/9/03	Alder (Red)	Camprun	\$515.00



# Timber Sale Appraisal Logging Costs Breakdown Bale Bound Sale 341-03-79

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Alder (Red)
<b>Logging</b>	166.64	163.59
<b>Road Maintenance</b>	3.95	3.95
<b>Fire Protection</b>	1.77	1.77
<b>Hauling</b>	69.16	53.79
<b>Other (P/R appl.)</b>	2.00	2.00
<b>Profit &amp; Risk</b>	36.53	33.76
<b>Slash Disposal</b>	0.00	0.00
<b>Scaling</b>	2.00	0.00
<b>Other</b>	3.02	3.02
<b>Total</b>	285.07	261.88

<b>Amortization</b>	0.00	0.00
<b>Pond Value</b>	500.80	515.00
<b>Stumpage</b>	215.73	253.12
<b>Amortized</b>	0.00	0.00



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Summary Bale Bound Sale 341-03-79

## Amortized

	Douglas - Fir	Alder (Red)
MBF	0.00	0.00
Value	0.00	0.00
Total	0.00	0.00

## Unamortized

	Douglas - Fir	Alder (Red)
MBF	2,933.00	123.00
Value	215.73	253.12
Total	632,736.09	31,133.76

### Gross Timber Sale Value

**Recovery \$663,869.85**

Prepared by: Don Everingham

Date: 5/9/03

District: Tillamook

Phone: (503) 842-2545

## PROJECT SUMMARY SHEET

Sale: Bale Bound

### CONSTRUCTION

Point	C to D	11+00	stations =	\$9,664.00
Point	G to H	4+00	stations =	\$2,628.07
<b>SUBTOTAL CONSTRUCTION</b>				<b>\$12,292.07</b>

### IMPROVEMENT

Point	A to B	154+85	stations =	\$180,116.88
Point	C to D	36+75	stations =	\$29,935.25
Point	E to F	8+65	stations =	\$5,174.71
Point	I to J	38+55	stations =	\$30,538.20
Point	K to L	1+20	stations =	\$1,355.16
Point	M to N	2+65	stations =	\$2,092.80
Point	O to P	20+90	stations =	\$8,633.58
<b>SUBTOTAL IMPROVEMENT</b>				<b>\$257,846.59</b>

### STOCKPILE

2 1/2"-0" Crushed Rock Stockpile Boundary Road				\$16,776.61
<b>SUBTOTAL STOCKPILE</b>				<b>\$16,776.61</b>

**MOVE IN** **\$1,717.21**

**GRAND TOTAL** **\$288,632**



## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: A to B

Construction - 0+00 stations  
0.00 miles

Improvement - 154+85 stations  
2.93 miles

**CLEARING AND GRUBBING -**

Scattering - road	7.45 acres @	\$815.00 per acre =	\$6,071.75	
Piling - waste areas	1.30 acres @	\$905.00 per acre =	<u>\$1,176.50</u>	
			<b>TOTAL CLEARING AND GRUBBING</b>	<b>\$7,248.25</b>

**EXCAVATION -**

Improvement- 0+00-133+25	133.25 sta. @	\$30.00 per sta. =	\$3,997.50	
Improvement - 133+25-153+20	19.95 sta. @	\$65.00 per sta. =	\$1,296.75	
Improvement - 153+20-154+85	1.65 sta. @	\$100.00 per sta. =	\$165.00	
Widening 20+80 to 22+65	814 cys. @	\$1.15 per cy. =	\$936.10	
Widening 22+65 to 23+60	465 cys. @	\$1.15 per cy. =	\$534.75	
Widening 23+60 to 24+60	86 cys. @	\$1.15 per cy. =	\$98.90	
Widening 24+60 to 25+60	245 cys. @	\$1.15 per cy. =	\$281.75	
Widening 25+60 to 26+25	202 cys. @	\$1.15 per cy. =	\$232.30	
Widening 26+25 to 27+50	118 cys. @	\$1.15 per cy. =	\$135.70	
Widening 27+50 to 28+40	266 cys. @	\$1.15 per cy. =	\$305.90	
Widening 28+40 to 29+75	286 cys. @	\$1.15 per cy. =	\$328.90	
Widening 29+75 to 30+75	194 cys. @	\$1.15 per cy. =	\$223.10	
Berm 30+75 to 31+60	7 cys. @	\$1.15 per cy. =	\$8.05	
Berm 31+60 to 32+95	75 cys. @	\$1.15 per cy. =	\$86.25	
Berm 32+95 to 34+30	38 cys. @	\$1.15 per cy. =	\$43.70	
Berm 34+30 to 35+00	18 cys. @	\$1.15 per cy. =	\$20.70	
Berm 35+00 to 36+20	27 cys. @	\$1.15 per cy. =	\$31.05	
Berm 36+20 to 37+40	35 cys. @	\$1.15 per cy. =	\$40.25	
Berm 37+40 to 38+75	15 cys. @	\$1.15 per cy. =	\$17.25	
Berm 38+75 to 39+30	30 cys. @	\$1.15 per cy. =	\$34.50	
Pullback 39+30 to 40+85	314 cys. @	\$1.40 per cy. =	\$439.60	
Pullback 40+85 to 41+00	400 cys. @	\$1.40 per cy. =	\$560.00	
Pullback 41+00 to 42+35	671 cys. @	\$1.40 per cy. =	\$939.40	
Pullback 42+35 to 43+80	296 cys. @	\$1.40 per cy. =	\$414.40	
Pullback 43+80 to 44+95	408 cys. @	\$1.40 per cy. =	\$571.20	
Pullback 44+95 to 45+70	2,027 cys. @	\$1.40 per cy. =	\$2,837.80	
Pullback - right side of road 45+70 to 46+90	1,027 cys. @	\$1.40 per cy. =	\$1,437.80	
Pullback - left side of road 46+90 to 47+25	457 cys. @	\$1.40 per cy. =	\$639.80	
Pullback 47+25 to 48+05	392 cys. @	\$1.40 per cy. =	\$548.80	
Pullback 48+05 to 49+15	595 cys. @	\$1.40 per cy. =	\$833.00	
Pullback 49+15 to 50+25	158 cys. @	\$1.40 per cy. =	\$221.20	
Pullback 50+25 to 51+15	184 cys. @	\$1.40 per cy. =	<u>\$257.60</u>	
			<b>TOTAL EXCAVATION</b>	<b>\$18,519.00</b>

**ENDHAUL & COMPACTION-**

Endhaul - truck to waste area Sta. 106+45 from	20+80 to 154+15	9,850 cys. @	\$1.16 per cy. =	\$11,426.00
Compact waste area Sta. 106+45		9,850 cys. @	\$0.35 per cy. =	<u>\$3,447.50</u>
			<b>TOTAL ENDHAUL</b>	<b>\$14,873.50</b>

**PIPE ARCH CULVERTS - MATERIALS & INSTALLATION**

Sta. 53+00 (pipe arch) - removal and replacement of fill material				
w/excavator	10 hrs. @	\$130.00 per hr. =	\$1,300.00	
w/dozer	6 hrs. @	\$130.00 per hr. =	\$780.00	
w/hand tamper	4 hrs. @	\$45.00 per hr. =	\$180.00	
Sta. 67+85 (pipe arch) - removal and replacement of fill material				
w/excavator	12 hrs. @	\$130.00 per hr. =	\$1,560.00	
w/dozer	8 hrs. @	\$130.00 per hr. =	\$1,040.00	
w/hand tamper	6 hrs. @	\$45.00 per hr. =	\$270.00	
			<b>TOTAL EXCAVATION</b>	<b>\$5,130.00</b>

**Culverts**

Sta. 53+00	Aluminized 157" x 101", 10 gage Pipe Arch, 3" x 1" Corrugations: 46 feet @ \$227.66/foot	\$10,472.36
	1 1/2 : 1 inlet bevel:	\$158.40
	16 gage connecting band:	\$187.71
	1 bands @ \$187.71/band	\$187.71
	Flat gaskets, 2 foot wide, 10 mm thick:	
	1 gaskets @ \$137.92/gasket	\$137.92
	Assembly time and cost:	
	Excavator 8hrs @ \$130.00/hr	\$1,040.00
	3 preson crew 8hrs @ \$35.00/hr	\$840.00
	Divert live water around installation site:	
	Water pump 1day @ \$75.00/day	<u>\$75.00</u>
	Subtotal	\$12,911.39
Sta. 67+85	Aluminized 137" x 87", 12 gage Pipe Arch, 3" x 1" Corrugations: 74 feet @ \$136.43/foot	\$10,095.82
	1 1/2 : 1 inlet bevel:	\$136.80
	16 gage connecting band:	
	2 bands @ \$168.61/band	\$337.22
	Flat gaskets, 2 foot wide, 10 mm thick:	
	2 gaskets @ \$119.32/gasket	\$238.64
	Assembly time and cost:	
	Excavator 12hrs @ \$130.00/hr	\$1,690.00
	3 preson crew 12hrs @ \$35.00/hr	<u>\$1,260.00</u>
	Subtotal	\$13,758.48

**TOTAL PIPE ARCH CULVERTS**

**\$31,799.87**

CULVERTS - MATERIALS & INSTALLATION

Culverts			660	LF of 18"	\$9,735.00	162	LF of 24"	\$2,875.50
	36	LF of 30"			\$747.00	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
					<u>\$10,482.00</u>			<u>\$2,875.50</u>
Half Rounds			80	LF of 21"	\$912.00	0	LF of 30"	\$0.00
	0	LF of 36"			\$0.00	0	LF of 42"	\$0.00
					<u>\$912.00</u>			<u>\$0.00</u>
Culvert Stakes & Markers			16	stakes	\$128.00			
			27	markers	\$162.00			
					<u>\$290.00</u>			

TOTAL CULVERTS **\$14,559.50**

SURFACING-

0+00 to 126+30 Road	4,758	cy. of	2 1/2" - 0"	@	\$11.18	per c.y.=	\$53,197.74
126+30 to 154+85 Road	2,212	cy. of	Pit Run	@	\$5.51	per c.y.=	\$12,190.83
20+50 Energy dissipater @ outlet	20	cy. of	Riprap	@	\$12.83	per c.y.=	\$256.64
2240-2290 Stabilization	225	cy. of	Riprap	@	\$12.80	per c.y.=	\$2,880.42
27+50 Energy dissipater @ outlet	20	cy. of	Riprap	@	\$12.74	per c.y.=	\$254.84
52+90 Armor inlet	75	cy. of	Riprap	@	\$12.39	per c.y.=	\$929.39
52+90 Armor outlet	50	cy. of	Riprap	@	\$12.39	per c.y.=	\$619.59
53+10 Armor inlet	75	cy. of	Riprap	@	\$12.39	per c.y.=	\$929.39
59+90 Energy dissipater @ outlet	50	cy. of	Riprap	@	\$12.39	per c.y.=	\$619.59
61+80 Energy dissipater @ outlet	40	cy. of	Riprap	@	\$12.30	per c.y.=	\$492.07
53+10 Armor outlet	40	cy. of	Riprap	@	\$12.27	per c.y.=	\$490.87
67+75 Armor inlet	25	cy. of	Riprap	@	\$12.19	per c.y.=	\$304.80
67+75 Armor Outlet	25	cy. of	Riprap	@	\$12.19	per c.y.=	\$304.80
67+95 Armor inlet	25	cy. of	Riprap	@	\$12.19	per c.y.=	\$304.80
67+95 Armor Outlet	25	cy. of	Riprap	@	\$12.19	per c.y.=	\$304.80
53+00 Culvert bedding	165	cy. of	1 1/2"-0"	@	\$10.94	per c.y.=	\$1,805.10
67+85 Culvert bedding	225	cy. of	2 1/2"-0"	@	\$10.80	per c.y.=	\$2,430.00
							<u>\$2,430.00</u>

TOTAL SURFACING **\$78,315.66**

SPECIAL PROJECTS-

Grade and shape road with a ditch	118.45	stations @	\$14.20	per station	\$1,681.99
Grade and shape road with outslope	36.40	stations @	\$9.75	per station	\$354.90
Roll subgrade w/ vibratory roller prior to rockinq	154.85	stations @	\$11.00	per station	\$1,703.35
Remove 8 old culverts form State Land					\$499.86
Remove large stumps	6.00	hours @	\$130.00	per hour	\$780.00
Excavate 9 sediment catch basins and install 1 strawbale per basin					\$324.50
Turnouts, turnarounds, lead off ditches and ditchouts	8.75	hours @	\$130.00	per hour	\$1,137.50
Grass seed and fertilize - road & waste areas	7.05	acres @	\$180.00	per acre	\$1,269.00
Mulch - road & waste areas	7.05	acres @	\$1,000.00	per acre	\$7,050.00

TOTAL SPECIAL PROJECTS **\$14,801.10**

**GRAND TOTAL \$180,116.88**

## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: C to D

Construction - 11+00 stations  
0.21 miles

Improvement - 36+75 stations  
0.70 miles

**CLEARING AND GRUBBING -**

Scattering									
Piling - waste area				3.52 acres @	\$815.00 per acre =		\$2,868.80		
				0.05 acres @	\$905.00 per acre =		\$45.25		
<b>TOTAL CLEARING AND GRUBBING</b>									<b>\$2,914.05</b>

**EXCAVATION -**

Improvement	0+00	to	28+40	28.40 sta. @	\$65.00 per sta. =		\$1,846.00		
Improvement	28+40	to	36+75	8.35 sta. @	\$150.00 per sta. =		\$1,252.50		
Construction	36+75	to	47+75	11.00 sta. @	\$225.00 per sta. =		\$2,475.00		
Rip and remove boulders	0+00	to	5+90	5.90 sta. @	\$35.00 per sta. =		\$206.50		
Raise elevation 2 feet - Drift	5+90	to	7+40	1.50 sta. @	\$100.00 per sta. =		\$150.00		
Raise elevation 2 feet - Drift	12+20	to	13+30	1.10 sta. @	\$125.00 per sta. =		\$137.50		
Sidecast Pullback	20+10	to	20+90	98 cys. @	\$1.40 per cy. =		\$137.20		
Berm - scatter outside of right-of-way	3+80	to	9+50	105 cys. @	\$1.15 per cy. =		\$120.75		
Berm - scatter outside of right-of-way	11+30	to	20+10	63 cys. @	\$1.15 per cy. =		\$72.45		
Berm - scatter outside of right-of-way	26+30	to	27+75	14 cys. @	\$1.15 per cy. =		\$16.10		
<b>TOTAL EXCAVATION</b>									<b>\$6,414.00</b>

**ENDHAUL & COMPACTION-**

Drift & Compact fill - to Sta. 0+00 - 20+10 from	0+00	to	20+10	20.10 sta. @	\$30.00 per sta. =		\$603.00		
Endhaul - truck to waste area Sta. 28+40 C to I	20+10	to	20+90	98 cys. @	\$0.50 per cy. =		\$49.00		
Drift & Compact fill - to Sta. 20+90 - 28+40 from	20+90	to	28+40	7.50 sta. @	\$40.00 per sta. =		\$300.00		
Drift & Compact fill - to Sta. 28+40 - 47+75 from	28+40	to	47+75	19.35 sta. @	\$50.00 per sta. =		\$967.50		
Compact waste area Sta. 28+40				98 cys. @	\$0.35 per cy. =		\$34.30		
<b>TOTAL ENDHAUL</b>									<b>\$1,953.80</b>

**CULVERTS - MATERIALS & INSTALLATION**

<b>Culverts</b>									
	98	LF of 18"	\$1,445.50		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		
			\$1,445.50				\$0.00		
<b>Half Rounds</b>									
	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		
<b>Culvert Stakes &amp; Markers</b>									
	0	stakes	\$0.00						
	3	marker	\$18.00						
			\$18.00						
<b>TOTAL CULVERTS</b>									<b>\$1,463.50</b>

**SURFACING-**

0+00 to 47+75									
0+00 to 7+70			3,510 cy. of Pit Run	@	\$5.64 per c.y. =		\$19,795.09		
			206 cy. of 2 1/2" - 0"	@	\$10.83 per c.y. =		\$2,229.57		
<b>TOTAL SURFACING</b>									<b>\$22,024.66</b>

**SPECIAL PROJECTS**

Grade and shape road with a ditch									
Grade and shape road with outslope			21.40 stations @		\$14.20 per station		\$303.88		
Roll subgrade w/ vibratory roller prior to rocking			26.35 stations @		\$9.75 per station		\$256.91		
Install waterbars			47.75 stations @		\$11.00 per station		\$525.25		
Turnouts, turnaround and ditchouts			5 waterbars @		\$25.00 per waterbar		\$125.00		
Remove large stumps			4.50 hour @		\$130.00 per hour		\$585.00		
Grass seed and fertilize - road and waste area			3.00 hour @		\$130.00 per hour		\$390.00		
Mulch - road and waste area			2.24 acres @		\$180.00 per acre		\$403.20		
			2.24 acres @		\$1,000.00 per acre		\$2,240.00		
<b>TOTAL SPECIAL PROJECTS</b>									<b>\$4,829.24</b>

**GRAND TOTAL** **\$39,599.25**

## SUMMARY OF CONSTRUCTION COST

Sale: **Bale Bound**

Road: **E to F**

Construction - 0+00 stations  
0.00 miles

Improvement - 8+65 stations  
0.16 miles

CLEARING AND GRUBBING -  
Scattering

0.79 acres @ \$815.00 per acre = \$643.85  
TOTAL CLEARING AND GRUBBING

**\$643.85**

EXCAVATION -  
Improvement

0+00 to 8+65 8.65 sta. @ \$65.00 per sta. = \$562.25  
TOTAL EXCAVATION

**\$562.25**

ENDHAUL & COMPACTION-

0+00 to 8+65 8.65 sta. @ \$25.00 per sta. = \$216.25  
TOTAL ENDHAUL

**\$216.25**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18" \$0.00  
0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
0 LF of 54" \$0.00  
\$0.00

0 LF of 24" \$0.00  
0 LF of 36" \$0.00  
0 LF of 48" \$0.00  
0 LF of 60" \$0.00  
\$0.00

Half Rounds

0 LF of 21" \$0.00  
0 LF of 36" \$0.00  
\$0.00

0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
\$0.00

Culvert Stakes & Markers

0 stakes \$0.00  
0 markers \$0.00  
\$0.00

TOTAL CULVERTS

**\$0.00**

SURFACING-

0+00 to 8+65 538 cy. of Pit Run @ \$5.40 per c.y. = \$2,905.88  
TOTAL SURFACING

**\$2,905.88**

SPECIAL PROJECTS-

Grade and shape road with outslope 8.65 stations @ \$9.75 per station \$84.34  
Roll subgrade w/ vibratory roller prior to rocking 8.65 stations @ \$11.00 per station \$95.15  
Turnout and turnaroud 0.50 hour @ \$130.00 per hour \$65.00  
Remove large stumps 1.00 hour @ \$130.00 per hour \$130.00  
Grass seed and fertilize - road and waste area 0.40 acres @ \$180.00 per acre \$72.00  
Mulch - road and waste area 0.40 acres @ \$1,000.00 per acre \$400.00

TOTAL SPECIAL PROJECTS

**\$846.49**

**GRAND TOTAL** **\$5,174.71**

## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: G to H

Construction - 4+00 stations  
0.08 miles

Improvement - +00 stations  
0.00 miles

CLEARING AND GRUBBING -  
Scattering

0.37 acres @ \$815.00 per acre = \$301.55  
TOTAL CLEARING AND GRUBBING

**\$301.55**

EXCAVATION -  
Construction

0+00 to 4+00 4.00 sta. @ \$100.00 per sta. = \$400.00  
TOTAL EXCAVATION

**\$400.00**

ENDHAUL & COMPACTION-

0+00 to 4+00 4 sta. @ \$30.00 per sta. = \$120.00  
TOTAL ENDHAUL

**\$120.00**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18" \$0.00  
0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
0 LF of 54" \$0.00  
\$0.00

0 LF of 24" \$0.00  
0 LF of 36" \$0.00  
0 LF of 48" \$0.00  
0 LF of 60" \$0.00  
\$0.00

Half Rounds

0 LF of 21" \$0.00  
0 LF of 36" \$0.00  
\$0.00

0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
\$0.00

Culvert Stakes & Markers

0 stakes \$0.00  
0 markers \$0.00  
\$0.00

TOTAL CULVERTS

**\$0.00**

SURFACING-

0+00 to 4+00 252 cy. of Pit Run @ \$5.41 per c.y. = \$1,363.32  
TOTAL SURFACING

**\$1,363.32**

SPECIAL PROJECTS-

Grade and shape road with outslope 4.00 stations @ \$9.75 per station \$39.00  
Roll subgrade w/ vibratory roller prior to rocking 4.00 stations @ \$11.00 per station \$44.00  
Turnaround 0.50 hour @ \$130.00 per hour \$65.00  
Remove large stumps 1.00 hour @ \$130.00 per hour \$130.00  
Grass seed and fertilize - road and waste area 0.14 acres @ \$180.00 per acre \$25.20  
Mulch - road and waste area 0.14 acres @ \$1,000.00 per acre \$140.00

TOTAL SPECIAL PROJECTS

**\$443.20**

**GRAND TOTAL**

**\$2,628.07**

## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: I to J

Construction - 0+00 stations  
0.00 miles

Improvement - 38+55 stations  
0.73 miles

**CLEARING AND GRUBBING -**

Clearing - road			2.74 acres @	\$815.00 per acre =	\$2,233.10	
Clearing - waste area			0.10 acres @	\$905.00 per acre =	\$90.50	
<b>TOTAL CLEARING AND GRUBBING</b>						<b>\$2,323.60</b>

**EXCAVATION -**

Excavation	0+00	to	8+10	8.10 sta. @	\$65.00 per sta. =	\$526.50	
Excavation	8+10	to	9+50	1.40 sta. @	\$100.00 per sta. =	\$140.00	
Excavation	9+50	to	19+60	10.10 sta. @	\$30.00 per sta. =	\$303.00	
Excavation	19+60	to	27+55	7.95 sta. @	\$130.00 per sta. =	\$1,033.50	
Excavation	27+55	to	38+55	11.00 sta. @	\$150.00 per sta. =	\$1,650.00	
Decast Pullback	3+00	to	5+40	294 cys. @	\$3.20 per cy. =	\$940.80	
Scatter outside of right-of-way	9+50	to	19+60	62 cys. @	\$1.15 per cy. =	\$71.30	
<b>TOTAL EXCAVATION</b>						<b>\$4,665.10</b>	

**ENDHAUL & COMPACTION-**

Endhaul - truck to waste area Sta. 19+60 I to J from	3+00	to	5+40	294 cys. @	\$0.63 per cy. =	\$185.22	
Grift & Compact - fill	19+60	to	38+55	18.95 sta. @	\$30.00 per sta. =	\$568.50	
Compact waste area Sta. 19+60 I to J				294 cys. @	\$0.35 per cy. =	\$102.90	
<b>TOTAL ENDHAUL</b>						<b>\$856.62</b>	

**CULVERTS - MATERIALS & INSTALLATION**

<b>Culverts</b>							
96	LF of 18"	\$1,416.00		40	LF of 24"	\$710.00	
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	
		<u>\$1,416.00</u>				<u>\$710.00</u>	
<b>Half Rounds</b>							
0	LF of 21"	\$0.00		20	LF of 30"	\$290.00	
0	LF of 36"	\$0.00		0	LF of 42"	\$0.00	
		<u>\$0.00</u>				<u>\$290.00</u>	
<b>Culvert Stakes &amp; Markers</b>							
4	stakes	\$32.00					
3	marker	\$18.00					
		<u>\$50.00</u>					
<b>TOTAL CULVERTS</b>						<b>\$2,466.00</b>	

**SURFACING-**

19+60	to	38+55	1,461 cy. of	Pit Run	@	\$5.57 per c.y. =	\$8,138.51	
0+00	to	19+60	762 cy. of	2 1/2" - 0"	@	\$10.52 per c.y. =	\$8,017.71	
<b>TOTAL SURFACING</b>							<b>\$16,156.22</b>	

**SPECIAL PROJECTS-**

Grade and shape road with a ditch				30.60 stations @	\$14.20 per station	\$434.52	
Grade and shape road with outslope				7.95 stations @	\$9.75 per station	\$77.51	
Roll subgrade w/ vibratory roller prior to rocking				38.55 stations @	\$11.00 per station	\$424.05	
Remove debris from behind new culvert catch basin @ Sta. 3+45				0.50 hour @	\$130.00 per hour	\$65.00	
Remove buried logs				8.00 hour @	\$130.00 per hour	\$1,040.00	
Turnouts, turnarounds and ditchouts				3.00 hour @	\$130.00 per hour	\$390.00	
Remove large stumps				5.00 hour @	\$130.00 per hour	\$650.00	
Grass seed and fertilize - road and waste area				1.54 acres @	\$180.00 per acre	\$277.20	
Mulch - road and waste area				1.54 acres @	\$1,000.00 per acre	\$1,540.00	
<b>TOTAL SPECIAL PROJECTS</b>						<b>\$4,898.28</b>	

**GRAND TOTAL** **\$30,538.20**

## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: K to L

Construction - 0+00 stations  
0.00 miles

Improvement - 1+20 stations  
0.02 miles

CLEARING AND GRUBBING -  
Scattering

0.06 acres @ \$815.00 per acre = \$48.90  
TOTAL CLEARING AND GRUBBING **\$48.90**

EXCAVATION -  
Improvement

0+00 to 1+20 1.20 sta. @ \$100.00 per sta. = \$120.00  
TOTAL EXCAVATION **\$120.00**

ENDHAUL & COMPACTION-

0+00 to 1+20 1.20 sta. @ \$30.00 per sta. = \$36.00  
TOTAL ENDHAUL **\$36.00**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18" \$0.00  
0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
0 LF of 54" \$0.00  
\$0.00

0 LF of 24" \$0.00  
0 LF of 36" \$0.00  
0 LF of 48" \$0.00  
0 LF of 60" \$0.00  
\$0.00

Half Rounds

0 LF of 21" \$0.00  
0 LF of 36" \$0.00  
\$0.00

0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
\$0.00

Culvert Stakes & Markers

0 stakes \$0.00  
0 markers \$0.00  
\$0.00

TOTAL CULVERTS **\$0.00**

SURFACING-

0+00 to 1+20 62 cy. of 2 1/2" - 0" @ \$10.61 per c.y. = \$653.36  
TOTAL SURFACING **\$653.36**

SPECIAL PROJECTS-

Grade and shape road with outslope 1.20 stations @ \$9.75 per station \$11.70

Roll subgrade w/ vibratory roller prior to rocking 1.20 stations @ \$11.00 per station \$13.20

Grass seed and fertilize - road and waste area 0.40 acres @ \$180.00 per acre \$72.00

Mulch - road and waste area 0.40 acres @ \$1,000.00 per acre \$400.00

TOTAL SPECIAL PROJECTS **\$496.90**

**GRAND TOTAL** **\$1,355.16**

## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: M to N

Construction - 0+00 stations  
0.00 miles

Improvement - 2+65 stations  
0.05 miles

CLEARING AND GRUBBING -  
Scattering

0.24 acres @ \$815.00 per acre = \$195.60  
TOTAL CLEARING AND GRUBBING **\$195.60**

EXCAVATION -  
Improvement

0+00 to 2+65 2.65 sta. @ \$65.00 per sta. = \$172.25  
TOTAL EXCAVATION **\$172.25**

ENDHAUL & COMPACTION-

0+00 to 2+65 2.65 sta. @ \$25.00 per sta. = \$66.25  
TOTAL ENDHAUL **\$66.25**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18" \$0.00  
0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
0 LF of 54" \$0.00  
\$0.00

0 LF of 24" \$0.00  
0 LF of 36" \$0.00  
0 LF of 48" \$0.00  
0 LF of 60" \$0.00  
\$0.00

Half Rounds

0 LF of 21" \$0.00  
0 LF of 36" \$0.00  
\$0.00

0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
\$0.00

Culvert Stakes & Markers

0 stakes \$0.00  
0 markers \$0.00  
\$0.00

TOTAL CULVERTS **\$0.00**

SURFACING-

0+00 to 2+65 156 cy. of Pit Run @ \$5.57 per c.y. = \$869.62  
TOTAL SURFACING **\$869.62**

SPECIAL PROJECTS-

Grade and shape road with outslope 2.65 stations @ \$9.75 per station \$25.84  
Roll subgrade w/ vibratory roller prior to rocking 2.65 stations @ \$11.00 per station \$29.15  
Install waterbars 2 waterbars @ \$25.00 per waterbar \$50.00  
Turnaroud 0.25 hour @ \$130.00 per hour \$32.50  
Remove large stumps 1.00 hour @ \$130.00 per hour \$130.00  
Grass seed and fertilize - road and waste area 0.12 acres @ \$180.00 per acre \$21.60  
Mulch - road and waste area 0.50 acres @ \$1,000.00 per acre \$500.00

TOTAL SPECIAL PROJECTS **\$789.09**

**GRAND TOTAL** **\$2,092.80**



## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: O to P

Construction - 0+00 stations  
0.00 miles

Improvement - 20+90 stations  
0.40 miles

CLEARING AND GRUBBING -  
Scattering

1.92 acres @ \$815.00 per acre = \$1,564.80  
TOTAL CLEARING AND GRUBBING

**\$1,564.80**

EXCAVATION -  
Improvement

0+00 to 20+90 2563 cys. @ \$1.15 per cy. = \$2,947.45  
TOTAL EXCAVATION

**\$2,947.45**

ENDHAUL & COMPACTION-  
Drift & Compact fill

0+00 to 20+90 2563 cys. @ \$0.35 per cy. = \$897.05  
TOTAL ENDHAUL

**\$897.05**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18" \$0.00  
0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
0 LF of 54" \$0.00  
\$0.00

0 LF of 24" \$0.00  
0 LF of 36" \$0.00  
0 LF of 48" \$0.00  
0 LF of 60" \$0.00  
\$0.00

Half Rounds

0 LF of 21" \$0.00  
0 LF of 36" \$0.00  
\$0.00

0 LF of 30" \$0.00  
0 LF of 42" \$0.00  
\$0.00

Culvert Stakes & Markers

0 stakes \$0.00  
0 marker \$0.00  
\$0.00

TOTAL CULVERTS

**\$0.00**

SURFACING-

0 cy. of @ \$0.00 per c.y. = \$0.00  
TOTAL SURFACING

**\$0.00**

SPECIAL PROJECTS

Grade and shape road with outslope	20.90 stations @	\$9.75 per station	\$203.78
Roll subgrade w/ vibratory roller prior to rocking	20.90 stations @	\$11.00 per station	\$229.90
Install waterbars	8 waterbars @	\$25.00 per waterbar	\$200.00
Turnouts, turnaround and ditchouts	1.00 hour @	\$130.00 per hour	\$130.00
Remove large stumps	1.50 hour @	\$130.00 per hour	\$195.00
Grass seed and fertilize - road	1.92 acres @	\$180.00 per acre	\$345.60
Mulch - road	1.92 acres @	\$1,000.00 per acre	\$1,920.00

TOTAL SPECIAL PROJECTS

**\$3,224.28**

**GRAND TOTAL**

**\$8,633.58**

## SUMMARY OF CONSTRUCTION COST

Sale: Bale Bound

Road: Stockpile at 1.23 mile on Boundary Road from  
the junction of Bales Creek Road and Miller Road.

Construction - 0 stations  
0.00 miles

Improvement - 0 stations  
0.00 miles

### CLEARING AND GRUBBING -

Sidecast - stockpile location

0.15 acres @ \$540.00 per acre = \$81.00  
TOTAL CLEARING AND GRUBBING

**\$81.00**

### EXCAVATION -

Level stockpile location - D-8 cat

1 hrs. @ \$130.00 per hr. = \$130.00  
TOTAL EXCAVATION

**\$130.00**

Stockpile Rock-

Boundary Road @ Pit

1,998 cy. of 2 1/2"-0" @ \$8.29 per c.y. = \$16,565.61

TOTAL SURFACING

**\$16,565.61**

### SPECIAL PROJECTS

\$0.00

TOTAL SPECIAL PROJECTS

**\$0.00**

**GRAND TOTAL**

**\$16,776.61**

MOVE-IN CALCULATIONS

Sale: **Bale Bound**

LOWBOY HAUL (One Way)		
DISTANCE	ROADWAY	AVE SPEED (MPH)
14.2	Highway	40
4.5	Main Lines (Off Road)	15
2.5	Pulling Steep Grades	5

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	0	\$0.00	\$0.00
0	Rock Breaker	\$0.00		\$4.00	0	0	0	\$0.00	\$0.00
1	Graders	\$87.48		\$3.65	0	5	5	\$18.25	\$105.73
0	Loader (Small)	\$0.00	1	\$3.55	0	0	0	\$0.00	\$0.00
0	Loader (Med. & Large)	\$0.00	1	\$9.00	0	0	0	\$0.00	\$0.00
1	Rollers & Compactors	\$160.21		\$5.00	0	5	5	\$25.00	\$185.21
0	Excavators (Small)	\$0.00		\$22.00	0	0	0	\$0.00	\$0.00
0	Excavators (Med.)	\$0.00		\$35.50	0	0	0	\$0.00	\$0.00
1	Excavators (Large)	\$280.53	1	\$44.80	0	5	5	\$224.00	\$504.53
0	Rubber Tired Backhoes/Skidders	\$0.00		\$3.00	0	0	0	\$0.00	\$0.00
0	Tractors (D6)	\$0.00	2	\$7.10	0	0	0	\$0.00	\$0.00
1	Tractors (D7)	\$254.68	2	\$11.30	0	3.5	3.5	\$39.55	\$294.23
1	Tractor (D8)	\$267.96	2	\$15.10	0	5	5	\$75.50	\$343.46
5	Dump Truck (10 cy +)	\$234.18		\$2.85	0	3.5	3.5	\$49.88	\$284.05
0	Dump Truck (Off Hiway)	\$0.00	1	\$4.75	0	0	0	\$0.00	\$0.00
0	Water Truck (1500 Gal)	\$0.00		\$2.85	0	0	0	\$0.00	\$0.00
0	Water Truck (2500 Gal)	\$0.00		\$2.85	0	0	0	\$0.00	\$0.00
0	Jaw	\$1,066.00							
0	2-Stage Crusher	\$1,597.00							
0	3-Stage Crusher	\$2,489.00							

TOTAL MOVE-IN COSTS:	\$1,717.21
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## PIT RUN ROCK DEVELOPMENT COST SUMMARY

**Sale: Cook East**

**Pit starts at Sta. 88+75 on A to B**

Pit: <u>Bales #1</u>	Location: <u>NE 1/4, NW 1/4, Sec 32, T2S, R7W, W.M.</u>
Rock: <u>Pit-run</u>	Road: <u>8130 c.y.</u>
Swell: <u>1.40</u>	Stockpile Base: <u>c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>8130 c.y.</u>
Drill Pct.: <u>50%</u>	In Place Total: <span style="border: 1px solid black; padding: 2px;"><u>5807 c.y.</u></span>

Clear, scalp, load & compact overburden; construct access road:	
D-8 Cat and excavator - 20 Hrs. @ \$260.00/Hr	\$5,200.00
End-haul overburden to waste area:	
Dump Truck- 50 Hrs. @ \$57.00/Hr	\$2,850.00
Grass seed, fertilize and mulch waste area and access road :	
0.20 acres @ \$1180.00/acre	\$236.00
Drill and Shoot	\$2.10 /cu.yd. : <u>2903 cu.yds.</u> = \$6,097.23
Strip	\$1.75 /cu.yd. : <u>2903 cu.yds.</u> = \$5,081.03
Push Rock	\$0.60 /cu.yd. : <u>8130 cu.yds.</u> = \$4,877.79
- Load Dump Truck:	\$0.60 /cu.yd. : <u>8130 cu.yds.</u> = \$4,877.79
	Subtotal <span style="border-top: 1px solid black;">\$29,219.83</span>

Move in Drill from Crushed Pit	143.00
Move in Loader from Crushed Pit	28.00
Move in D8 from Crushed Pit	47.00
Move in Excavator	354.00
Move-in Trucks from Crushed Pit	44.00
	Subtotal <span style="border-top: 1px solid black;">\$616.00</span>

**TOTAL PRODUCTION COSTS     \$29,835.83**

Base Cost= \$3.67 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	\$0.94	\$0.90	\$3.67	\$5.51	2212	\$12,190.83
<b>Sta. 126+30-154+85</b>						
C to D	\$1.07	\$0.90	\$3.67	\$5.64	3510	\$19,795.09
E to F	\$0.83	\$0.90	\$3.67	\$5.40	538	\$2,905.88
G to H	\$0.84	\$0.90	\$3.67	\$5.41	252	\$1,363.32
I to J	\$1.00	\$0.90	\$3.67	\$5.57	1461	\$8,138.51
<b>Sta. 19+60-38+55</b>						
M to N	\$1.00	\$0.90	\$3.67	\$5.57	156	\$869.62
			Total C.Y.		8130	Sub Total <span style="border-top: 1px solid black;">\$45,263.24</span>

**TOTAL ROCKING COSTS     \$45,263.24**

## ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

**Sale: Bale Bound Pit is on Boundary Rd 1.23 miles from the Jnct. of Bales Cr. Rd. and**

Pit: <u>Boundary #1</u>	Location: <u>NE 1/4, SW 1/4, Sec 4, T3S, R7W, W.M.</u>
Rock: <u>2 1/2"-0"</u>	Road & Riprap: <u>6,873 c.y.</u>
Swell: <u>1.40</u>	Stockpile: <u>1,998 c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>8,870 c.y.</u>
Drill Pct.: <u>100%</u>	In Place Total: <u>6,336 c.y.</u>

Clear, scalp, load & compact overburden; construct access road:	
D-8 Cat and excavator - 30 Hrs. @ \$260.00/Hr	\$7,800.00
End-haul overburden to waste area at 6.82 mile on Cook Creek Road:	
Dump Truck-90 Hrs. @ \$57.00/Hr	\$5,130.00
Grass seed, fertilize and mulch waste area and access road :	
0..50 acres @ \$1180.00/acre	\$590.00
Drill & shoot access road: <u>\$2.50 /cu.yd. x 1,000 cu.yds. =</u>	<u>\$2,500.00</u>
Drill & Shoot: <u>\$2.10 /cu.yd. x 5,336 cu.yds. =</u>	<u>\$11,205.59</u>
Push Rock: <u>\$0.60 /cu.yd. x 8,870 cu.yds. =</u>	<u>\$5,322.24</u>
Load Crusher: <u>\$0.60 /cu.yd. x 8,175 cu.yds. =</u>	<u>\$4,905.24</u>
Crushing: 2 1/2"-0" <u>\$2.25 /cu.yd. x 7,785 cu.yds. =</u>	<u>\$17,517.14</u>
Crushing: 1 1/2"-0" <u>\$2.50 /cu.yd. x 390 cu.yds. =</u>	<u>\$975.00</u>
Load truck - crushed: <u>\$0.60 /cu.yd. x 8,175 cu.yds. =</u>	<u>\$4,905.24</u>
Load truck- riprap: <u>\$1.40 /cu.yd. x 695 cu.yds. =</u>	<u>\$973.00</u>
Oversize Reduction: <u>\$4.50 /cu.yd. x 444 cu.yds. =</u>	<u>\$1,995.84</u>
Change Gradation	<u>\$210.00</u>
Subtotal	<u>\$64,029.29</u>

Move in and set up crusher	\$2,652.02
Move in and set up drill and compressor	\$203.17
Move in D-8	\$330.96
Move in loader	\$306.91
Move in grader	\$113.94
Move in roller	\$203.17
Move in water truck	\$74.30
Move in 5 dump trucks	\$316.07
Subtotal	<u>\$4,200.54</u>

**TOTAL PRODUCTION COSTS \$68,229.83**

Base Cost= \$7.69 Per Cu.Yd.

2 1/2"-0" Crushed 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 0+00 to 126+30	\$2.19	\$1.30	\$7.69	\$11.18	4,758	<u>\$53,194.44</u>
C to D 0+00 to 7+70	\$1.84	\$1.30	\$7.69	\$10.83	206	<u>\$2,230.98</u>
I to J 0+00 to 19+60	\$1.53	\$1.30	\$7.69	\$10.52	762	<u>\$8,016.24</u>
K to L 0+00 to 1+20	\$1.62	\$1.30	\$7.69	\$10.61	62	<u>\$653.36</u>
Total C.Y.					5,788	Sub Total <u>\$64,095.02</u>

2 1/2"-0" Crushed Stockpile	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu.Yds.	ROCK COST
6.82 mile on Cook Cr Rd	\$0.30	\$0.30	\$7.69	\$8.29	1,998	<u>\$16,565.61</u>
Total C.Y.					1,998	Sub Total <u>\$16,565.61</u>

1 1/2"-0" Crushed 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 53+00	\$1.85	\$1.40	\$7.69	\$10.94	165	<u>\$1,805.10</u>
A to B 67+85	\$1.71	\$1.40	\$7.69	\$10.80	225	<u>\$2,430.00</u>
Total C.Y.					390	Sub Total <u>\$4,235.10</u>

Riprap 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 20+50	\$3.74	\$1.40	\$7.69	\$12.83	20	<u>\$256.64</u>
A to B 22+40-22+90	\$3.71	\$1.40	\$7.69	\$12.80	225	<u>\$2,880.42</u>
A to B 27+50	\$3.65	\$1.40	\$7.69	\$12.74	20	<u>\$254.84</u>
A to B 52+90	\$3.30	\$1.40	\$7.69	\$12.39	75	<u>\$929.39</u>
A to B 52+90	\$3.30	\$1.40	\$7.69	\$12.39	50	<u>\$619.59</u>
A to B 53+10	\$3.30	\$1.40	\$7.69	\$12.39	75	<u>\$929.39</u>
A to B 53+10	\$3.30	\$1.40	\$7.69	\$12.39	50	<u>\$619.59</u>
A to B 59+90	\$3.21	\$1.40	\$7.69	\$12.30	40	<u>\$492.07</u>
A to B 61+80	\$3.18	\$1.40	\$7.69	\$12.27	40	<u>\$490.87</u>
A to B 67+75	\$3.10	\$1.40	\$7.69	\$12.19	25	<u>\$304.80</u>
A to B 67+75	\$3.10	\$1.40	\$7.69	\$12.19	25	<u>\$304.80</u>
A to B 67+95	\$3.10	\$1.40	\$7.69	\$12.19	25	<u>\$304.80</u>
A to B 67+95	\$3.10	\$1.40	\$7.69	\$12.19	25	<u>\$304.80</u>
Total C.Y.					695	Sub Total <u>\$8,691.99</u>

**TOTAL ROCKING COSTS \$93,587.73**

OREGON DEPARTMENT OF FORESTRY  
CRUISE REPORT



"STEWARDSHIP IN FORESTRY"

***Bale Bound***

1. **Type of Sale:**  
Clearcut and Partial Cut, Recovery.
2. **Legal Description:**  
Portions of Sections 4 and 5, T3S, R7W, and Sections 20, 29, 30, 32, and 33, T2S, R7W, W.M., Tillamook County, Oregon.
3. **Sale Acreage:**  
The sale boundaries were plotted on a digital orthophotograph and the acreage was calculated with GIS.

ACREAGES				
Area	Harvest Type	Sale	Total	Net
1	Partial cut	64	63	55
2	Clearcut	39	45	36
3	Clearcut	70	76	69
4	Clearcut	98	109	93
5	Clearcut	27	30	25
6	Clearcut	9	11	9
7	Clearcut	24	29	23
8	Clearcut	21	24	21
Total		352	387	331

**Sale acres:**

Area within the Timber Sale Boundary signs.

**Total acres:**

Sale acres; plus green tree retention acres outside the sale boundary; less roads and riparian areas classified as Special Stewardship in LMCS inside the sale boundary. For accomplishment reporting - clearcut (regeneration) harvest.

**Net acres:**

Less green tree retention, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary. For calculating the advertised volume.

4. **Cruise Measures:**

**A: Cruise Method:**

A total of 138 plots were taken in the sale area; 20 in Area 1, 19 in Area 2, 26 in Area 3, 38 in Area 4, 12 in Area 5, 4 in Area 6, 10 in Area 7 and 9 in Area 8. Cruise lines and plots were placed to obtain equal sampling intensities per sale area. All tree diameters were recorded to the nearest inch. On every third plot, sample trees were measured for height (to the nearest foot) and graded. On Area 1, tree count by diameter and species was recorded on all 20 plots and one tree per plot was measured to obtain volume to basal area (VBAR) information. Residual and surplus

trees were designated to calculate a residual basal area of 120 square feet per acre on Area 1. Trees less than 9" DBH were not sampled in either method. The designed cruise for Areas 2 through 8 had a coefficient of variation of 41.6 and a SE% of 3.8 for net board feet/acre.

**B: Plot size**

A 20 BAF was used for Douglas-fir. A 10 BAF was used for other species and snags. Trees were sighted at 4.5'.

**C: Grading System:**

Douglas-fir was measured and graded to a 6" top favoring 40 foot log lengths using Columbia River rules. Alder was measured to an 8" top and graded camprun.

5. **Computation Procedure:**

Plot data was entered into SuperAce for computation of basal area, V-BAR, stand tables and diameters. This data was then entered into the Volume Summary Worksheet to compute sale volumes. The residual basal area for Area 1 is to be within the range of 120 square feet to 140 square feet per acre. For computation purposes, the volume was calculated using a residual basal area of 120 square feet.

6. **Defect and Breakage:**

A 5% reduction for defect and breakage was applied to the volume.

7. **Timber Description:**

All areas were burned in the 1933, 1939, and 1951 Tillamook Fires and were aerial seeded from 1959 through 1962. The areas were pre-commercial thinned from 1989 through 1992 and are comprised of predominately 43 year old Douglas-fir averaging 13 inches DBH with 160 trees per acre and 160 square feet of basal area. The Douglas-fir trees on Area 1 have moderate symptoms of Swiss needle cast with 2 to 3 years of needle retention while the remaining Areas have severe symptoms with less than 2 full years of needle retention. Understory vegetation is sword fern, salmonberry, and vine maple.

8. **Cruiser Names/Dates:**

Everingham, Wells, Pine, Jan/Feb. 2003.

9. **Revenue Distribution:**

100% FDF  
Tax Code: 9-1, 8-1, 8.  
Deed Numbers: 169, 194  
Rehabilitation Obligated: 100%

10. **Attachments:**

Stand Table (Area 1)  
Volume Summary  
Logging Plan

**STAND TABLE**

**Bale Bound - Area 1 - Thin**

Expected BA - 120

DBH	Douglas-fir T - Trees	Douglas-fir L - Trees	No. Plots
8"	0	0	20
9"	10	2	20
10"	10	6	20
11"	8	4	20
12"	12	7	20
13"	6	18	20
14"	3	20	20
15"	1	30	20
16"		14	20
17"		5	20
18"		2	20
19"		2	20
20"		2	20
21"		0	20
22"		4	20
23"		2	20
24"		1	20
25"		1	20

DBH	Douglas-fir Tk trs/acre	Douglas-fir Lv trs/acre
8"	0.0	0.0
9"	22.6	4.5
10"	18.3	11.0
11"	12.1	6.1
12"	15.3	8.9
13"	6.5	19.5
14"	2.8	18.7
15"	0.8	24.5
16"	0.0	10.0
18"	0.0	3.2
20"	0.0	1.1
22"	0.0	1.0
24"	0.0	0.9
26"	0.0	0.0
28"	0.0	1.5
30"	0.0	0.7
32"	0.0	0.3
34"	0.0	0.3
Total	78.5	112.3

DBH	Douglas-fir Tk trs/plt	Douglas-fir Lv trs/plt	20 BAF
8"	0	0.0	57.3
9"	0.50	0.1	45.27
10"	0.50	0.3	36.67
11"	0.40	0.2	30.3
12"	0.60	0.4	25.46
13"	0.30	0.9	21.69
14"	0.15	1.0	18.71
15"	0.05	1.5	16.3
16"	0.00	0.7	14.32
18"	0	0.3	12.69
20"	0	0.1	11.32
22"	0	0.1	10.16
24"	0	0.1	9.17
26"	0	0.0	8.31
28"	0	0.2	7.58
30"	0	0.1	6.93
32"	0	0.1	6.37
34"	0	0.1	5.87

Douglas-fir

Trees/plt	8.50
Lv trs/plt	6.00
Tk trs/plt	2.50

**TOTAL STAND**

BA/acre	170
Lv BA/ac	120
Tk BA/ac	50
RD Total	48

Current Ave Stand Diameter	12.8
Leave Stand QM Diameter	14.0
Take trees QM Diameter	10.8
Relative Density - expected	32

Douglas-fir	BA	QMD
Total	170	12.8
Leave	120	14.0
Take	50	10.8

Douglas-fir

Stand Density Index	47
SDI - Expected	32



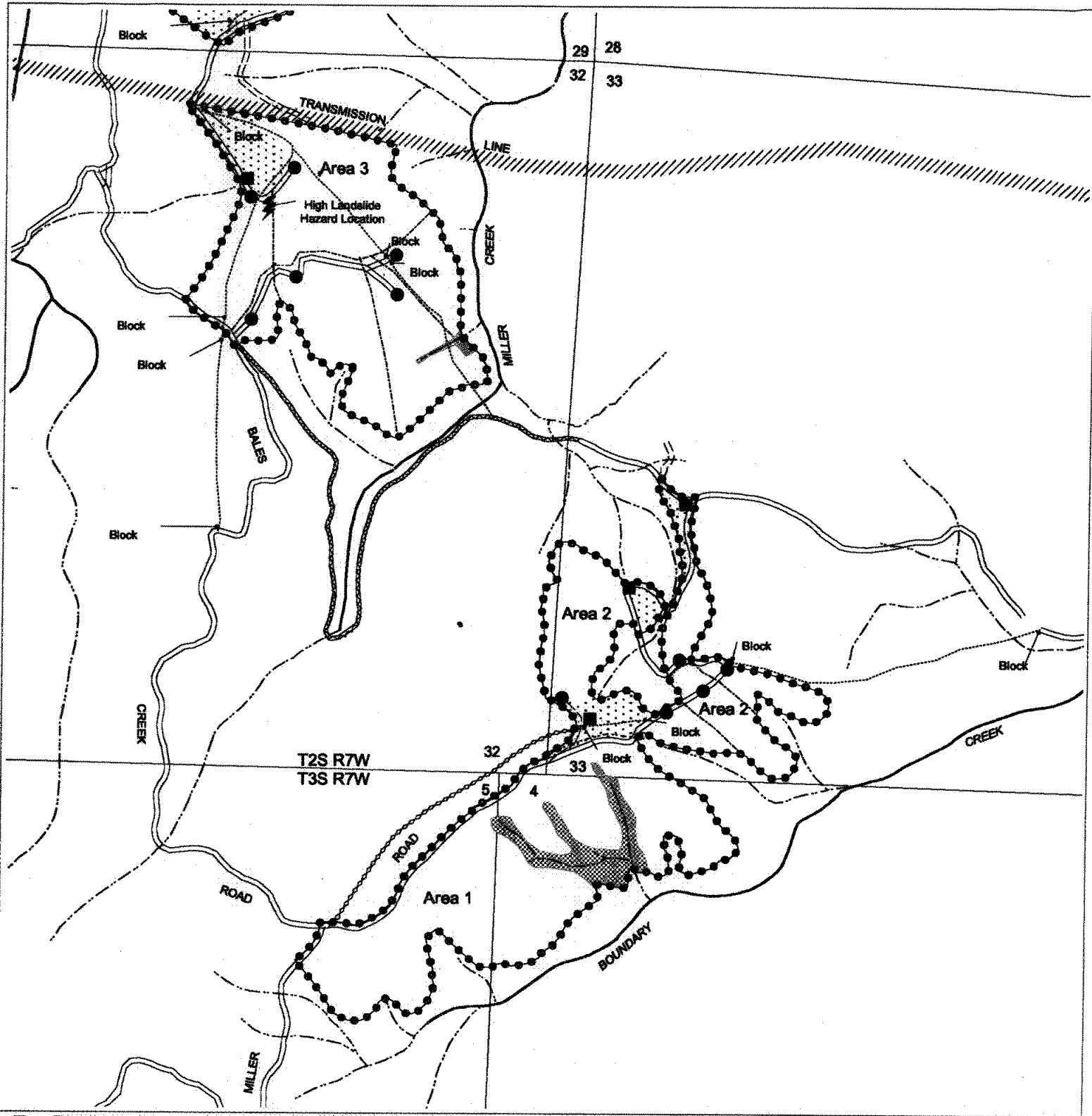


Area 6							
9 acres							
SPECIES	QMD	Basal Area	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	12.4	125	97	12.1	109	5%	104
<b>TOTAL</b>							104

Area 7							
23 acres							
SPECIES	QMD	Basal Area	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	11.6	104	77	8.0	184	5%	175
<b>TOTAL</b>							175

Area 8							
21 acres							
SPECIES	QMD	Basal Area	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	11.4	133	87	11.6	244	5%	232
Alder	16.9	4	84	0.3	6	5%	6
<b>TOTAL</b>							238

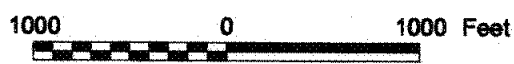
TOTAL SALE VOLUME 331 net harvest acres				
SPECIES	QMD	MBF	D&B	Net Vol. (MBF)
Douglas-fir	12.1	3086	5%	2933
Alder	13.7	129	5%	123
<b>TOTAL</b>		3215		3056

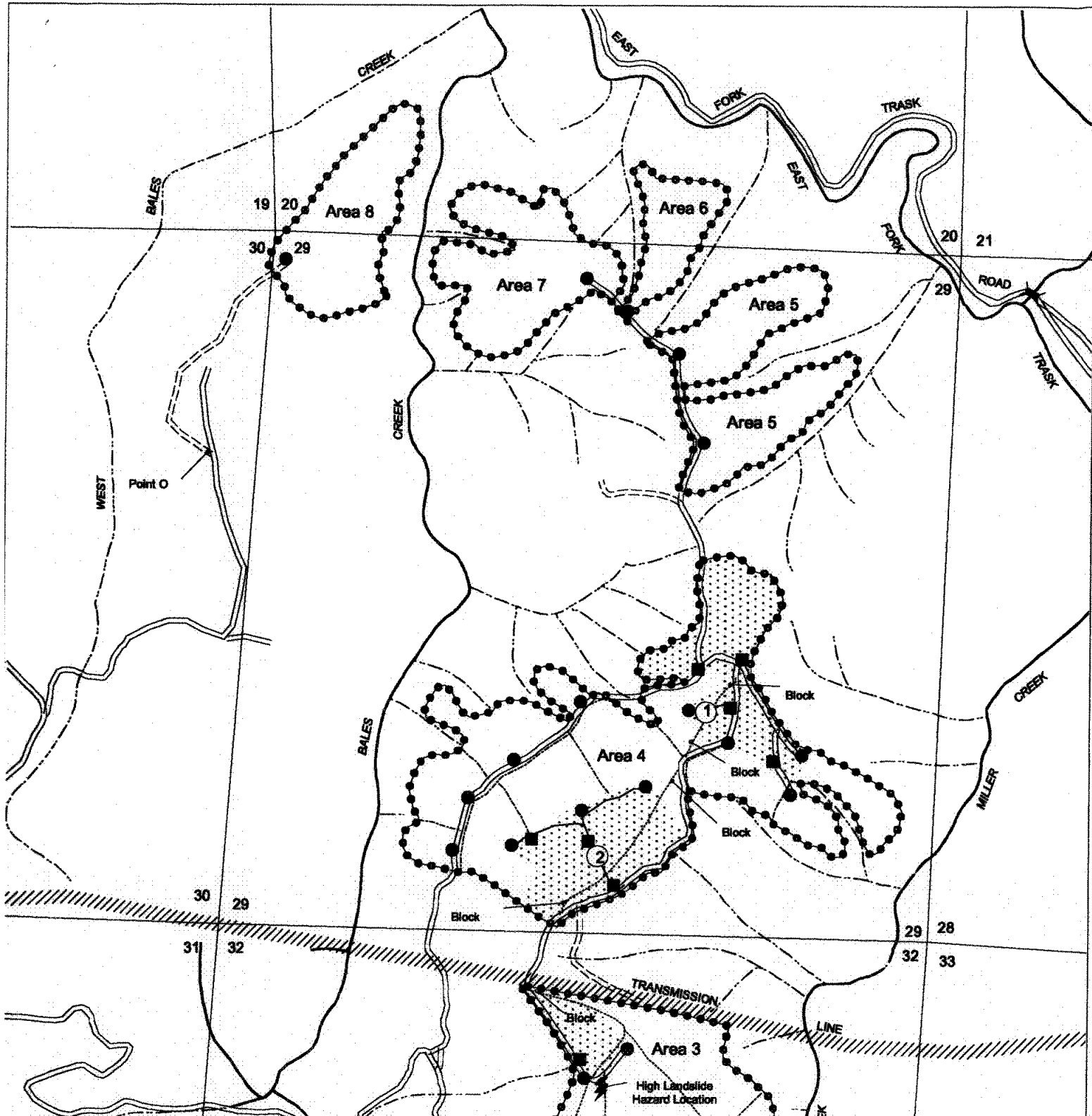


- Tractor landing
- Cable landing
- ▲ Domestic water supply
- ⊗ Block
- Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- ▧ Buffer
- ▨ Non-required thinning
- ⊂ Green tree retention area
- Setting boundary
- Area boundary
- Sale boundary
- Ownership boundary
- Type-F stream
- Type-N stream
- Surfacd 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. 341-03-79  
 Bale Bound  
 Portions of Sections 4 and 5, T3S, R7W,  
 and Sections 20, 29, 30, 32,  
 and 33, T2S R7W, W. M.,  
 Tillamook County, Oregon

Area	Type of Operation	Acres	
		Sale	Net
1	Partial Cut	64	55
2	Clearcut	39	36
3	Clearcut	70	69
4	Clearcut	98	93
5	Clearcut	27	25
6	Clearcut	9	9
7	Clearcut	24	23
8	Clearcut	21	21
<b>Total</b>		<b>352</b>	<b>331</b>





- Tractor landing
- Cable landing
- ▲ Domestic water supply
- ⊗ Block
- ▭ Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- ▧ Buffer
- ▦ 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. 341-03-79**  
**Bale Bound**  
**Portions of Sections 4 and 5, T3S, R7W,**  
**and Sections 20, 29, 30, 32,**  
**and 33, T2S, R7W, W. M.,**  
**Tillamook County, Oregon**

Area	Type of Operation	Acres	
		Sale	Net
1	Partial Cut	64	55
2	Clearcut	39	36
3	Clearcut	70	69
4	Clearcut	98	93
5	Clearcut	27	25
6	Clearcut	9	9
7	Clearcut	24	23
8	Clearcut	21	21
<b>Total</b>		<b>352</b>	<b>331</b>





## Oregon Department of Forestry

### WRITTEN PLAN

**SALE NAME:**

**Bale Bound**

**PROTECTED WATERS:**

Bales Creek, Boundary Creek, and Miller Creek.

**LOCATION:**

Portions of Sections 4 and 5, T3S R7W, and Sections 20, 29, 32, and 33, T2S R7 W, W.M., Tillamook County, Oregon.

**Riparian Management Area:**

The area measured 100 feet slope distance from the high water mark on Bales Creek, Boundary Creek, and Miller Creek, type F streams.

**Protection Measures:**

**Yarding Systems, Layout, and Stream Protection**

When yarding with cables hanging within or across the streams, cables will be pulled out of the Riparian Management Area prior to rigging the next yarding road. Yarding roads will be spaced an average of 150 feet apart where they extend over or through the buffer.

**Date:** April 22, 2003

**By:** Don Everingham

OREGON DEPARTMENT OF FORESTRY  
WRITTEN PLAN  
FOR PROJECT WORK ONLY

SALE NAME: Bale Bound

PROTECTED WATERS Bales Creek and Unnamed Tributaries of Bales Creek

LOCATIONS: Portions of the following: Sections 29, 31, 32 T2S, R7W, W.M. Tillamook County, Oregon.

ACTIVITIES: Culvert removals and installations and riprap placement in Type F streams, road reconstruction, and riprap placement within 100 feet of Type F stream

PROTECTION MEASURES:

- No in stream activity will be conducted prior to July 1<sup>st</sup> or after September 15<sup>th</sup> without prior approval.
- All necessary measures will be taken to prevent sediment from entering "live" streams, including but not limited to:
  - Machine activity in the stream and disturbance of existing vegetation will be kept to a minimum.
  - Work will be performed only during dry weather periods and low water stream flows.
  - Operations will cease when rain or periods of high stream flows result in a visual increase in turbidity.
  - Stream water will be diverted around the work areas when water quality is likely to be jeopardized.
  - Ditchouts and culvert leadoff ditches will be constructed to direct water with sediment away from streams.
  - Sediment catch basins will be constructed to remove sediment from ditchline water.
  - Fill material will be placed and compacted in 8 inch lifts. Fill slopes will be constructed at a 1 ½:1 fill width to height ratio.
  - Waste material will be end-hauled to stable locations marked in the field.
  - Riprap rock will be placed by a track mount excavator to minimize erosion.
  - All disturbed soil will be grass seeded, fertilized and mulched to minimize erosion.

PIPE GEOMETRY FOR FISH PASSAGE CULVERTS:

Bales Creek at Station 53+00

- The existing stream gradient is 3.0%. The full bank stream width is 12.5 feet.
- Bed material consists of medium cobbles.
- A 157" x 101" x 46' aluminized steel culvert will be installed at 1.5%.
- The inlet invert of the culvert will be placed 2.8 feet below the existing stream gradient. The result will be an embedded natural stream bottom through the length of the culvert. This will result in a cross sectional area at the inlet of 62 square feet which can handle a

maximum flow of 450 cubic feet per second.

- The 100 year peak flow for this drainage is 191.9 cubic feet per second.

#### Unnamed Tributary of Bales Creek at Station 67+85

- The existing stream gradient is 4.0%. The full bank stream width is 11.4 feet.
- Bed material consists of medium cobbles.
- A 137" x 87" x 74' aluminized steel culvert will be installed at 2.5%.
- The inlet invert of the culvert will be placed 3.2 feet below the existing stream gradient. The result will be an embedded natural stream bottom through the length of the culvert. This will result in a cross sectional area at the inlet of 38.6 square feet which can handle a maximum flow of 260 cubic feet per second.
- The 100 year peak flow for this drainage is 137.8 cubic feet per second.

Both sites will be monitored to insure that embedding is achieved. Further information is available in Exhibit "B" of the contract.

PREPARED BY: David L. Stone, Road Specialist  
May 7, 2003