



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Cost Summary Zig Zag Sale 341-04-018

District: Tillamook

Date: 6/27/03

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$141,001.18	\$48,538.82	\$189,540.00
		<b>Project Work</b>	(\$50,295.00)
		<b>Advertised Value</b>	\$139,245.00



# Timber Sale Appraisal

## Timber Description

### Zig Zag

### Sale 341-04-018

"STEWARDSHIP IN FORESTRY"

**District:** Tillamook

**Location:** Section 28, T1S, R7W, W.M., Tillamook County, Oregon.

**Date:** 6/27/03

**Stand Stocking:** 20%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	13	0	95
Alder (Red)	14	0	95

Volume by Grade	Douglas - Fir	Alder (Red)	Total
<b>2S</b>	87	0	87
<b>3S</b>	442	0	442
<b>4S</b>	93	0	93
<b>Camprun</b>	0	178	178
<b>Total</b>	622	178	800

**Comments:** Pond Values Used: 2nd Quarter 2003

Hardwood pond value used: Local values March 2003.

Road Maintenance Total: \$3.00 /mbf

North Fork Trask Road and Zig Zag Road:

Grading: 4 miles x \$500 /mile x 1 grading /800 mbf = \$2.50 /mbf

Surfacing: \$5 /cu yd x 20 cu yds /mile x 4 miles /800 mbf = \$0.50 /mbf

Other costs (add Profit & Risk):

Brand and paint: \$2.00 /mbf x 800 mbf = \$1,600

Other costs (Profit and Risk included) Total: \$810

Slash piling and sorting: 47 ac clearcut cable harvest x 1 hr x \$110 /hr = \$110

Swing road: 4 ac x 7 mbf/ac x \$25 /mbf = \$700



# Timber Sale Appraisal

## Logging Conditions

### Zig Zag

### Sale 341-04-018

"STEWARDSHIP IN FORESTRY"

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**Combination#: 1**      Douglas - Fir                      40.00%  
                         Alder (Red)                      40.00%

**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:** 6                      **Bd. Ft./Load:** 3,500  
**Cost/MBF:** \$157.93

**Machines:**  
    Log Loader (A)  
    Tower Yarder (Medium)

**Combination#: 2**      Douglas - Fir                      60.00%  
                         Alder (Red)                      60.00%

**Yarding Distance:** Short (400 ft)                      **Downhill Yarding:** Yes  
**Logging System:** Track Skidder                      **Process:** Manual Falling/Delimiting  
**Tree Size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
**Loads/Day:** 7                      **Bd. Ft./Load:** 3,500  
**Cost/MBF:** \$133.28

**Machines:**  
    Log Loader (B)  
    Track Skidder



# Timber Sale Appraisal

## Logging Costs

### Zig Zag

### Sale 341-04-018

"STEWARDSHIP IN FORESTRY"

Date: 6/27/03

Operating Seasons: 1.0

Profit & Risk: 15%

Project Costs: \$50,295

Other Costs (P/R): \$1,600

Slash Disposal: \$0

Other Costs: \$810

Road Maintenance: \$3.00

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	3.5
Alder (Red)	\$0.00	3.0	2.5

#### Local Pond Values

Date	Species	Grade	Value
6/27/03	Alder (Red)	Camprun	\$510.00



# Timber Sale Appraisal Logging Costs Breakdown Zig Zag Sale 341-04-018

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Alder (Red)
<b>Logging</b>	143.14	143.14
<b>Road Maintenance</b>	3.16	3.16
<b>Fire Protection</b>	3.39	3.39
<b>Hauling</b>	69.16	53.79
<b>Other (P/R appl.)</b>	2.00	2.00
<b>Profit &amp; Risk</b>	33.13	30.82
<b>Slash Disposal</b>	0.00	0.00
<b>Scaling</b>	2.00	0.00
<b>Other</b>	1.01	1.01
<b>Total</b>	256.99	237.31

<b>Amortization</b>	0.00	0.00
<b>Pond Value</b>	483.68	510.00
<b>Stumpage</b>	226.69	272.69
<b>Amortized</b>	0.00	0.00



# Timber Sale Appraisal Summary Zig Zag Sale 341-04-018

"STEWARDSHIP IN FORESTRY"

**Amortized**

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

**Unamortized**

	Douglas - Fir	Alder (Red)
MBF	622.00	178.00
Value	226.69	272.69
<b>Total</b>	<b>141,001.18</b>	<b>48,538.82</b>

**Gross Timber Sale Value**

**Recovery \$189,540.00**

Prepared by: Elissa Wells

Date: 6/27/03

District: Tillamook

Phone: (503) 842-2545

**PROJECT SUMMARY SHEET**

Sale: **Zig Zag**

**CONSTRUCTION**

Point	A to B	0+00	stations =	\$0.00
Point	C to D	0+00	stations =	\$0.00
<b>SUBTOTAL CONSTRUCTION</b>				<b>\$0.00</b>

**IMPROVEMENT**

Point	A to B	34+00	stations =	\$27,074.99
Point	C to D	28+15	stations =	\$22,090.94

**SUBTOTAL IMPROVEMENT** \$49,165.93

**SPECIAL PROJECTS**

Remove Culverts from State Lands **\$108.69**

**SUBTOTAL SPECIAL PROJECTS** \$108.69

**MOVE IN** **\$1,020.39**

**GRAND TOTAL** **\$50,295.00**



## SUMMARY OF CONSTRUCTION COST

Sale:	<u>ZigZag</u>		Road:	<u>A to B</u>								
Construction -	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">0+00</td> <td style="text-align: left;">stations</td> </tr> <tr> <td style="text-align: right; border-top: 1px solid black;">0.00</td> <td style="text-align: left; border-top: 1px solid black;">miles</td> </tr> </table>	0+00	stations	0.00	miles		Improvement -	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">34+00</td> <td style="text-align: left;">stations</td> </tr> <tr> <td style="text-align: right; border-top: 1px solid black;">0.64</td> <td style="text-align: left; border-top: 1px solid black;">miles</td> </tr> </table>	34+00	stations	0.64	miles
0+00	stations											
0.00	miles											
34+00	stations											
0.64	miles											
<b>CLEARING AND GRUBBING -</b>												
Scattering	1.560 acres @		\$815.00 per acre =	\$1,271.40								
			<b>TOTAL CLEARING AND GRUBBING</b>	<b>\$1,271.40</b>								
<b>EXCAVATION -</b>												
Road Earthwork	34.00 sta. @		\$65.00 per sta. =	\$2,210.00								
			<b>TOTAL EXCAVATION</b>	<b>\$2,210.00</b>								
<b>CULVERTS - MATERIALS &amp; INSTALLATION</b>												
<u>Culverts</u>												
210	LF of 18"	\$3,097.50	0	LF of 24" \$0.00								
0	LF of 30"	\$0.00	142	LF of 36" \$2,612.80								
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								
		\$3,097.50		\$2,612.80								
<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 &amp; Markers</u>												
0 stakes		\$0.00										
8 markers		\$48.00										
		\$48.00										
			<b>TOTAL CULVERTS</b>	<b>\$5,758.30</b>								
<b>SURFACING-</b>												
0+00 to 0+00	0 cy. of		Pit-Run @	\$4.54 per c.y. = \$0.00								
0+00 to 34+00	1,862 cy. of		Pit-Run @	\$7.60 per c.y. = \$14,144.77								
Energy Dissipator 15+60	10 cy. of		Riprap @	\$12.31 per c.y. = \$123.14								
Energy Dissipator 20+10	20 cy. of		Riprap @	\$12.31 per c.y. = \$246.28								
Energy Dissipator 26+85	10 cy. of		Riprap @	\$12.31 per c.y. = \$123.14								
Energy Dissipator 29+55	20 cy. of		Riprap @	\$12.31 per c.y. = \$246.28								
			<b>TOTAL SURFACING</b>	<b>\$14,883.62</b>								
<b>SPECIAL PROJECTS</b>												
36" culvert bands/bevels -				\$233.05								
Grade and shape road -	34.00 stations @		\$14.20 per station	\$482.80								
Handheld tamper and pump -				\$220.00								
Roll subgrade w/ vibratory roller prior to rocking -	34.00 stations @		\$11.00 per station	\$374.00								
Remove log culverts, install culverts and repair fills @ Sta. 17+75, 20+10 & 29+55	12.00 hours @		\$110.00 per hour	\$1,320.00								
Grass seed and fertilize -	1.25 acres @		\$180.00 per acre	\$225.00								
Mulching -	0.097 acres @		\$1,000.00 per acre	\$96.82								
			<b>TOTAL SPECIAL PROJECTS</b>	<b>\$2,951.67</b>								
			<b>GRAND TOTAL</b>	<b>\$27,074.99</b>								

## SUMMARY OF CONSTRUCTION COST

Sale:	<u>ZigZag</u>		Road:	<u>C to D</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles		Improvement -	<u>28+15</u> stations <u>0.53</u> miles
CLEARING AND GRUBBING -				
Scattering	1.900	acres @	\$815.00 per acre =	<u>\$1,548.50</u>
			TOTAL CLEARING AND GRUBBING	<b>\$1,548.50</b>
EXCAVATION -				
Road Earthwork	28.00	sta. @	\$65.00 per sta. =	<u>\$1,820.00</u>
			TOTAL EXCAVATION	<b>\$1,820.00</b>

### CULVERTS - MATERIALS & INSTALLATION

<u>Culverts</u>				
138	LF of 18"	\$2,035.50	0	LF of 24" \$0.00
60	LF of 30"	\$1,245.00	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>\$3,280.50</u>		<u>\$0.00</u>
<u>Half Rounds</u>				
0	LF of 21"	\$0.00	0	LF of 30" \$0.00
0	LF of 36"	\$0.00	0	LF of 42" \$0.00
		<u>\$0.00</u>		<u>\$0.00</u>
<u>Culvert Stakes &amp; Markers</u>				
0	stakes	\$0.00		
4	markers	\$24.00		
		<u>\$24.00</u>		
			TOTAL CULVERTS	<b>\$3,304.50</b>

### SURFACING-

Energy Dissipator	14+65 & 21+95	40	cy. of	Riprap	@	\$12.22 per c.y.=	\$488.85
0+00 to	28+15	1,542	cy. of	Pit-Run	@	\$7.52 per c.y.=	<u>\$11,599.31</u>
						TOTAL SURFACING	<b>\$12,088.16</b>

### SPECIAL PROJECTS

Pump							\$75.00
Remove log cribbing @ 19+10 to 19+65		1.00	hours @	\$110.00 per hour			\$110.00
Grade and shape road -		28.15	stations @	\$14.20 per station			\$399.73
Roll subgrade w/ vibratory roller prior to rocking -		28.15	stations @	\$11.00 per station			\$309.65
Remove log culvert @ station 21+95		20.00	hours @	\$110.00 per hour			\$2,200.00
Grass seed and fertilize -		1.03	acres @	\$180.00 per acre			\$185.40
Mulching -		0.050	acres @	\$1,000.00 per acre			<u>\$50.00</u>
				TOTAL SPECIAL PROJECTS			<b>\$3,329.78</b>

**GRAND TOTAL**

**\$22,090.94**

## ROCK DEVELOPMENT COST SUMMARY

Pit:	Pit Run/Rip Rap	Location:	Sec. 25, T1S, R7W, W.M.
Sale:	<b>ZigZag</b>	Road:	3544 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	3544 c.y.
Drill Pct.:	0%	In Place Total:	2531 c.y.

Pit Development - Including overburden removal and endhaul \$1,075.13

Dig rock	\$1.50	/cu.yd.	x	3544	cu.yds.	=	\$5,316.00
Load Dump Truck:	\$0.60	/cu.yd.	x	3544	cu.yds.	=	\$2,126.40
						Subtotal	\$8,517.53

Move in Roller and Compactor	1	@	\$319.29	=	\$319.29
Move in Grader	1	@	\$124.10	=	\$124.10
Move in Excavator	1	@	\$462.20	=	\$462.20
Move in Trucks	4	@	\$107.49	=	\$429.94
				Subtotal	\$1,335.53

TOTAL PRODUCTION COSTS \$9,853.06

Base Cost= \$2.78 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	\$3.92	\$0.90	\$2.78	\$7.60	1862	\$14,144.77
C to D	\$3.84	\$0.90	\$2.78	\$7.52	1542	\$11,599.31
A to B Riprap	\$5.01	\$2.80	\$4.50	\$12.31	60	\$738.85
C to D Riprap	\$4.92	\$2.80	\$4.50	\$12.22	40	\$488.85
				Total C.Y.	3544	Sub Total <span style="border-top: 1px solid black;">\$26,971.78</span>

TOTAL ROCKING COSTS \$26,971.78



# OREGON DEPARTMENT OF FORESTRY CRUISE REPORT

## Zig Zag

**1. Type of Sale**

100% Clearcut harvest, Recovery

**2. Legal Description**

Portions of Section 28, T1S, R7W, W.M., Tillamook County, Oregon.

**3. Sale Acreage**

Using GIS, sale boundaries were plotted on a digital orthophotos and acres were calculated.

	ACRES		
	<b>Sale<sup>1</sup></b>	<b>Total<sup>2</sup></b>	<b>Net<sup>3</sup></b>
<b>Area 1 (Clearcut)</b>	106	108	103
<b>Area 2 (Clearcut)</b>	5	8	5
<b>Area 3 (Clearcut)</b>	7	14	7
<b>Total</b>	<b>118</b>	<b>130</b>	<b>115</b>

**1 Sale Acres**

Area within the Timber Sale Boundary signs

**2 Total acres**

*For accomplishment reporting*

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.

**3 Net acres**

*For calculating the advertised volume.*

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

**4. Cruising Procedures**

**A. Cruise Method:**

67 variable-radius plots were taken (57 plots in Area 1, 4 in Area 2, and 6 in Area 3). Plots were spaced along lines at a 200-foot spacing. In Area 1, lines were oriented in a NW-SE direction with an average of 250 feet between lines. In Areas 2 and 3, lines were oriented in a N-S direction with 200 feet between lines. On each plot, diameters of sample trees were measured to the nearest inch. On every other plot, sample trees were measured for height (to the nearest foot) and graded. Form factors were also measured for Douglas-fir sample trees on these plots. Trees less than 9" DBH were not sampled.

## **B. Plot size**

A basal area factor (BAF) of 20 was used for Douglas-fir and alder, while a BAF of 10 was used for other species and snags. The point of observation for all species was 4.5 feet.

## **C. Grading System**

Douglas-fir was graded to a 6" top diameter, favoring 40-foot log lengths, based on the Columbia River Official Log Scaling and Grading Bureau rules. Alder was measured to an 8" top diameter and graded camprun.

## **5. Computation Procedure**

Average DBH, basal area, and volume-basal-area ratio (VBAR) were computed using SuperAce Timberland Appraisal and Planning System software (Atterbury Consultants Inc, version 95.02.21). SuperAce data were entered into an Excel Volume Summary spreadsheet to calculate total net volume. This cruise had a coefficient of variation of 63.9, and a standard error of 7.1% for net board feet per acre.

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

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

## **7. Timber Description**

This area burned in the 1933 and 1939 Tillamook fires and was planted in 1963 and 1964. Portions were replanted in 1967 through 1970. The 35 to 40-year-old Douglas-fir in this area is showing severe signs of Swiss Needle Cast. The majority of the alder in this area was treated with herbicides about 35 years ago resulting in poorly-formed crowns and short boles.

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

E. Wells, E. Keith, and D. Everingham / Jan. 2003

## **9. Revenue Distribution**

100% FDF

Tax Code: 9-2

Deed Numbers: 161, 162, and 230

100% Rehabilitation Obligated

## **10. Attachments**

Volume Summary

Logging Plan



"STEWARDSHIP IN FORESTRY"

# Zig Zag

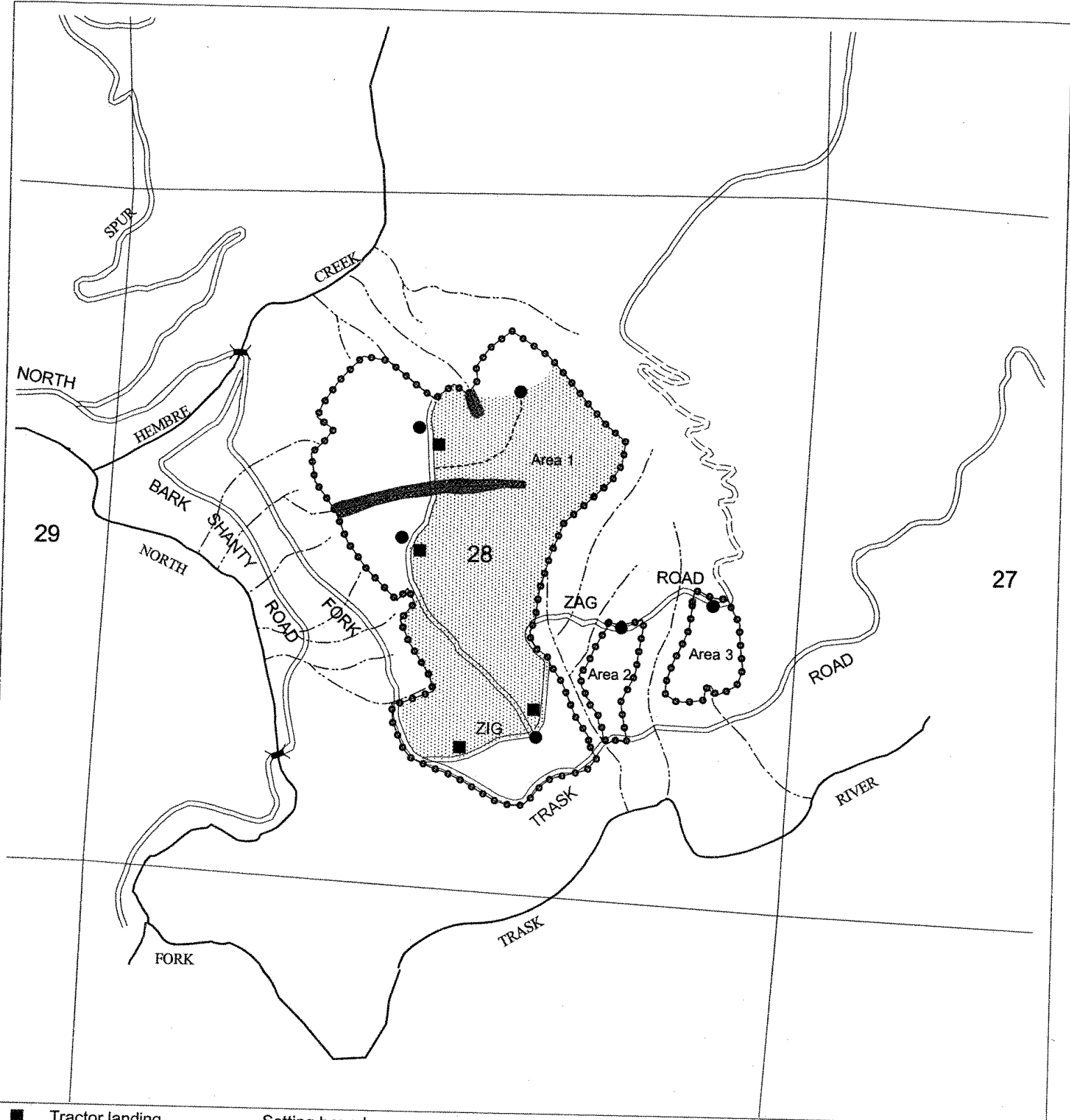
## Volume Summary

Area 1							
CC		103 acres					
SPECIES	QMD	Basal Area	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	14	61	87	5.3	546	5%	519
Red Alder	13	53	32	1.7	175	5%	166
<b>TOTAL</b>							<b>685</b>

Area 2							
CC		5 acres					
SPECIES	QMD	Basal Area	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	12	100	76	7.6	38	5%	36
Red Alder	15	35	47	1.6	8	5%	8
<b>TOTAL</b>							<b>44</b>

Area 3							
CC		7 acres					
SPECIES	QMD	Basal Area	V-BAR	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	14	133	76	10.1	71	5%	67
Red Alder	13	23	24	0.6	4	5%	4
<b>TOTAL</b>							<b>71</b>

TOTAL SALE VOLUME 115 net harvest acres				
SPECIES	QMD	MBF	D&B	Net Vol. (MBF)
Douglas-fir	13	655	5%	622
Red Alder	14	187	5%	178
<b>TOTAL</b>		<b>842</b>		<b>800</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. 341-04-18  
 Zig Zag  
 Portions of section 28, T1S, R7W, W. M.  
 Tillamook County, Oregon

Area	Type of Operation	Acres	
		Sale	Net
1	clearcut	106	103
2	clearcut	5	5
3	clearcut	7	7
<b>Total</b>		<b>118</b>	<b>115</b>

