



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Zeus' Boots Sale 341-07-25

District: Forest Grove

Date: 1/5/07

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,700,282.82	\$64,815.74	\$1,765,098.56
	Project Work		(\$171,620.00)
	Advertised Value		\$1,593,478.56



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal **Timber Description** **Zeus' Boots** **Sale 341-07-25**

District: Forest Grove

Location: Portions of Section 31, T4N, R5W, W.M., Columbia County, Oregon & Portions of Section 36, T4N, R6W, W.M., Clatsop County, Oregon.

Date: 1/5/07

Stand Stocking: 20%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	16	0	98
Western Hemlock / Fir	17	0	98
Alder (Red)	16	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Total
2S	2,661	56	0	2,717
3S	2,195	24	149	2,368
4S	757	16	53	826
Total	5,613	96	202	5,911

Comments: Pond Values Used: 4th Quarter Calendar Year 2006.

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost
 $\$740/\text{MBF} = \$960/\text{MBF} - \$220/\text{MBF}$

HAULING

Hauling costs adjusted to make equivalent to \$700 daily truck cost.

$\$700 - \% \text{ Profit \& Risk } (\$700 / 1.15) = \$608 \text{ Daily Truck Cost.}$

Hauling Cost Calculation Douglas-fir:

$\$608 \text{ Daily Truck Cost} / (3 \text{ trips per day} \times 4.0 \text{ MBF per load}) = \$50.67/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Western Hemlock:

$\$608 \text{ Daily Truck Cost} / (3 \text{ trips per day} \times 4.0 \text{ MBF per load}) = \$50.67/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Red Alder:

$\$608 \text{ Daily Truck Cost} / (2 \text{ trips per day} \times 3.0 \text{ MBF per load}) = \$101.33/\text{MBF Hauling Cost.}$

OTHER COSTS (Profit & Risk to be added):

Brand and Paint: $\$1.00/\text{MBF} \times 5911 \text{ MBF} = \$5,911$

Snag Creation: Top 153 Trees @ $\$50/\text{Snag} \times 153 \text{ snags} = \$7,650$

Intermediate Supports: 5 @ $\$100/\text{Support} = \500

TOTAL OTHER COSTS (P&R to be added) = \$14,061

OTHER COSTS (Profit and Risk included):

Machine Time:

Block skid roads and sort woody debris for firewood - 10 hours @ $\$150/\text{hr} = \$1,500$

Treat slash in Areas 1 & 2 for planting site preparation - 40 acres @ $\$150 \text{ per acre} = \$6,000$

TOTAL OTHER COSTS (P&R included) = \$7,500



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Logging Conditions

Zeus' Boots

Sale 341-07-25

Combination#: 1 Douglas - Fir 75.00%
 Western Hemlock / Fir 75.00%
 Alder (Red) 75.00%

Yarding Distance: Medium (800 ft) **Downhill Yarding:** No
Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Delimbing
Tree Size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
Loads/Day: 6 **Bd. Ft./Load:** 4,000
Cost/MBF: \$138.19

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

Combination#: 2 Douglas - Fir 20.00%
 Western Hemlock / Fir 20.00%
 Alder (Red) 20.00%

Yarding Distance: Short (400 ft) **Downhill Yarding:** Yes
Logging System: Shovel **Process:** Manual Delimbing
Tree Size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
Loads/Day: 10 **Bd. Ft./Load:** 4,000
Cost/MBF: \$58.87

Machines:
 Shovel Logger

Combination#: 3 Douglas - Fir 5.00%
 Western Hemlock / Fir 5.00%
 Alder (Red) 5.00%

Yarding Distance: Medium (800 ft) **Downhill Yarding:** Yes
Logging System: Track Skidder **Process:** Feller Buncher
Tree Size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
Loads/Day: 10 **Bd. Ft./Load:** 4,000
Cost/MBF: \$87.97

Machines:
 Feller Buncher w/ Delimber
 Log Loader (B)
 Stroke Delimber (B)
 Track Skidder



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal **Logging Costs** **Zeus' Boots** **Sale 341-07-25**

Date: 1/5/07

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$171,620

Other Costs (P/R): \$14,061

Slash Disposal: \$0

Other Costs: \$7,500

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	5.0	5.0	0.0

Road Maintenance: \$0.00

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$50.67	3.0	4.0
Western Hemlock / Fir	\$50.67	3.0	4.0
Alder (Red)	\$101.33	2.0	3.0

Local Pond Values

Date	Species	Grade	Value
1/5/07	Douglas - Fir	2S	\$540.00
1/5/07	Douglas - Fir	3S	\$490.00
1/5/07	Douglas - Fir	4S	\$465.00
1/5/07	Western Hemlock / Fir	2S	\$365.00
1/5/07	Western Hemlock / Fir	3S	\$340.00
1/5/07	Western Hemlock / Fir	4S	\$320.00
1/5/07	Alder (Red)	3S	\$640.00
1/5/07	Alder (Red)	4S	\$465.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Logging Costs Breakdown

Zeus' Boots

Sale 341-07-25

Costs	Douglas - Fir	Western Hemlock / Fir	Alder (Red)
Logging	119.82	119.82	119.82
Road Maintenance	4.80	4.80	4.95
Fire Protection	0.92	0.92	0.92
Hauling	51.70	51.70	106.66
Other (P/R appl.)	2.38	2.38	2.38
Profit & Risk	26.94	26.94	35.21
Slash Disposal	0.00	0.00	0.00
Scaling	2.00	2.00	2.00
Other	1.27	1.27	1.27
Total	209.83	209.83	273.21

Amortization	0.00	0.00	0.00
Pond Value	510.33	351.25	594.08
Stumpage	300.50	141.42	320.87
Amortized	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Zeus' Boots Sale 341-07-25

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	5,613.00	96.00	202.00
Value	300.50	141.42	320.87
Total	1,686,706.50	13,576.32	64,815.74

Gross Timber Sale Value

Recovery \$1,765,098.56

Prepared by: Mark Reed

Date: 1/5/07

District: Forest Grove

Phone: (503) 359-7435

PROJECT COST SUMMARY SHEET

Timber Sale: Zeus' Boots 341-07-25

CONSTRUCTION

Project No. 1

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	28 + 40	\$13,563.08
C to D	2 + 10	\$827.88
E to F	27 + 70	\$8,813.60
G to H	17 + 00	\$5,477.88
I to J	1 + 80	\$843.24
K to L	12 + 00	\$4,134.46
M to N	9 + 10	\$3,073.84
	59 + 20 stations	
	1.12 miles	

SUBTOTAL CONSTRUCTION

\$36,733.98

SURFACING

Project No. 2

<u>Road Segment</u>	<u>Amount</u>	<u>Type</u>	<u>Cost</u>
A to B	1,980 cy	4" - 0	\$31,996.80
C to D	174 cy	4" - 0	\$2,811.84
E to F	1,807 cy	4" - 0	\$34,604.05
G to H	1,229 cy	4" - 0	\$24,149.85
I to J	157 cy	4" - 0	\$3,085.05
K to L	860 cy	4" - 0	\$16,830.20
M to N	710 cy	4" - 0	\$15,563.20
Total	6,917 cy	4" - 0	

SUBTOTAL SURFACING

\$129,040.99

SPECIAL PROJECTS

Project No. 3	Grass seed and fertilize	
areas of disturbed soil.		\$498.60

SUBTOTAL SPECIAL PROJECTS

\$498.60

MOVE IN

\$5,346.35

TOTAL ALL PROJECTS

\$171,619.92

TOTAL CREDITS

\$171,620.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: A to B

Construction - 28+40 stations Improvement - 0+00 stations
0.54 miles 0.00 miles

CLEARING AND GRUBBING -

Scattering 2.70 acres @ \$980.00 per acre = \$2,646.00

TOTAL CLEARING AND GRUBBING \$2,646.00

EXCAVATION -

Road 20.40 sta @ \$90.00 per sta = \$1,836.00
 8.00 sta @ \$265.00 per sta = \$2,120.00
 Subgrade Reinforcement (6"-0) 100 cy @ \$16.16 per cy = \$1,616.00
 Excavate Puncheon 2 hrs @ \$150.00 per hr = \$300.00
 Landing 1 indg @ \$285.00 per indg = \$285.00
 Grade, ditch and roll 0.54 mi @ \$1,742.00 per mi = \$940.68

TOTAL EXCAVATION \$7,097.68

CULVERTS - MATERIALS & INSTALLATION

Culverts			
188 LF of 18"	\$3,045.60	36 LF of 24"	\$703.80
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>\$3,045.60</u>		<u>\$703.80</u>
Half Rounds			
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 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>
Culvert Stakes			
7 stakes	<u>\$70.00</u>		
			TOTAL CULVERTS \$3,819.40

SURFACING:

	10" deep =	56 cy/sta	
Subgrade	1,590 cy of	4" - 0	@ \$16.16 per cy = \$25,694.40
Curve Widening	190 cy of	4" - 0	@ \$16.16 per cy = \$3,070.40
Turnouts (4)	112 cy of	4" - 0	@ \$16.16 per cy = \$1,809.92
Turnarounds (2)	32 cy of	4" - 0	@ \$16.16 per cy = \$517.12
Landing	56 cy of	4" - 0	@ \$16.16 per cy = \$904.96
Total =	1,980 cy of	4" - 0	TOTAL SURFACING \$31,996.80

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil.	0.27 acres x \$180 / acre	\$48.60
		\$0.00
		\$0.00
		\$0.00
TOTAL SPECIAL PROJECTS		\$48.60

TOTAL COST = \$45,608.48

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: C to D

Construction - 2+10 stations
0.40 miles

Improvement - 0+00 stations
0.00 miles

CLEARING AND GRUBBING -

Scattering 0.29 acres @ \$980.00 per acre = \$284.20
TOTAL CLEARING AND GRUBBING **\$284.20**

EXCAVATION -

Road 2.10 sta @ \$90.00 per sta = \$189.00
Landing 1.00 Indg @ \$285.00 per Indg = \$285.00
Grade, ditch and roll 0.04 mi @ \$1,742.00 per mi = \$69.68
TOTAL EXCAVATION **\$543.68**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18"	\$0.00	0 LF of 24"	\$0.00
0 LF of 30"	\$0.00	0 LF of 36"	\$0.00
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	\$0.00	0 LF of 60"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Half Rounds

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 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Culvert Stakes

0 stakes \$0.00

TOTAL CULVERTS **\$0.00**

SURFACING-

10" deep = 56 cy/sta
Subgrade 118 cy of 4" - 0 @ \$16.16 per cy = \$1,906.88
Landing 56 cy of 4" - 0 @ \$16.16 per cy = \$904.96
Total = 174 cy of 4" - 0
TOTAL SURFACING **\$2,811.84**

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil. 0.20 acres x \$180 / acre \$36.00

TOTAL SPECIAL PROJECTS **\$36.00**

TOTAL COST = \$3,675.72

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: E to F

Construction - 27+70 stations
0.52 miles

Improvement - 0+00 stations
0.00 miles

CLEARING AND GRUBBING -

Scattering 2.64 acres @ \$784.00 per acre = \$2,069.76
TOTAL CLEARING AND GRUBBING **\$2,069.76**

EXCAVATION -

Road 17.50 sta @ \$60.00 per sta = \$1,050.00
10.20 sta @ \$90.00 per sta = \$918.00
Excavate puncheon 4 hrs @ \$150.00 per hr = \$600.00
Landing 1 Indg @ \$285.00 per Indg = \$285.00
Grade, ditch and roll 0.52 mi @ \$1,742.00 per mi = \$905.84
TOTAL EXCAVATION **\$3,758.84**

CULVERTS - MATERIALS & INSTALLATION

Culverts		
110 LF of 18"	\$1,782.00	60 LF of 24" \$1,173.00
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>\$1,782.00</u>	<u>\$1,173.00</u>
Half Rounds		
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 LF of 48"	\$0.00	0 LF of 54" \$0.00
0 LF of 60"	\$0.00	0 LF of 66" \$0.00
	<u>\$0.00</u>	<u>\$0.00</u>
Culvert Stakes		
3 stakes	<u>\$30.00</u>	

TOTAL CULVERTS **\$2,985.00**

SURFACING-

	10" deep =	56 cy/sta	
Subgrade	1,551 cy of	4" - 0	@ \$19.15 per cy = \$29,701.65
Curve Widening	72 cy of	4" - 0	@ \$19.15 per cy = \$1,378.80
Turnouts (4)	112 cy of	4" - 0	@ \$19.15 per cy = \$2,144.80
Turnaround	16 cy of	4" - 0	@ \$19.15 per cy = \$306.40
Landing	56 cy of	4" - 0	@ \$19.15 per cy = \$1,072.40
Total =	1,807 cy of	4" - 0	TOTAL SURFACING \$34,604.05

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil.	0.27 acres x \$180 / acre	\$48.60
		\$0.00
		\$0.00
		\$0.00
TOTAL SPECIAL PROJECTS		\$48.60

TOTAL COST = \$43,466.25

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: G to H

Construction - 17+00 stations
0.32 miles

Improvement - 0+00 stations
0.00 miles

CLEARING AND GRUBBING -

Scattering 1.66 acres @ \$1,274.00 per acre = \$2,114.84
TOTAL CLEARING AND GRUBBING **\$2,114.84**

EXCAVATION -

Road 10.80 sta @ \$90.00 per sta = \$972.00
6.20 sta @ \$175.00 per sta = \$1,085.00
Landing 1 Indg @ \$285.00 per Indg = \$285.00
Grade, ditch and roll 0.32 mi @ \$1,742.00 per mi = \$557.44
TOTAL EXCAVATION **\$2,899.44**

CULVERTS - MATERIALS & INSTALLATION

Culverts

28 LF of 18"	\$453.60	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
	<u>\$453.60</u>		<u>\$0.00</u>

Half Rounds

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 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Culvert Stakes

1 stakes \$10.00

TOTAL CULVERTS **\$463.60**

SURFACING-

10" deep = 56 cy/sta

Subgrade	952 cy of 4" - 0	@	\$19.65 per cy =	\$18,706.80
Curve Widening	105 cy of 4" - 0	@	\$19.65 per cy =	\$2,063.25
Turnouts (3)	84 cy of 4" - 0	@	\$19.65 per cy =	\$1,650.60
Turnarounds (2)	32 cy of 4" - 0	@	\$19.65 per cy =	\$628.80
Landing	56 cy of 4" - 0	@	\$19.65 per cy =	<u>\$1,100.40</u>
Total =	1,229 cy of 4" - 0		TOTAL SURFACING	\$24,149.85

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil.	0.83 acres x \$180 / acre	\$149.40
		\$0.00
		\$0.00
		<u>\$0.00</u>
	TOTAL SPECIAL PROJECTS	\$149.40

TOTAL COST = \$29,777.13

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: I to J

Construction - 1+80 stations
0.03 miles

Improvement - 0+00 stations
0.00 miles

CLEARING AND GRUBBING -

Scattering 0.27 acres @ \$1,274.00 per acre = \$343.98
TOTAL CLEARING AND GRUBBING **\$343.98**

EXCAVATION -

Road 1.80 sta @ \$90.00 per sta = \$162.00
Landing 1 Indg @ \$285.00 per Indg = \$285.00
Grade, ditch and roll 0.03 mi @ \$1,742.00 per mi = \$52.26
TOTAL EXCAVATION **\$499.26**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18"	\$0.00	0 LF of 24"	\$0.00
0 LF of 30"	\$0.00	0 LF of 36"	\$0.00
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	\$0.00	0 LF of 60"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Half Rounds

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 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Culvert Stakes

0 stakes \$0.00

TOTAL CULVERTS **\$0.00**

SURFACING-

10" deep = 56 cy/sta
Subgrade 101 cy of 4" - 0 @ \$19.65 per cy = \$1,984.65
Landing 56 cy of 4" - 0 @ \$19.65 per cy = \$1,100.40
Total = 157 cy of 4" - 0
TOTAL SURFACING **\$3,085.05**

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil. 0.13 acres x \$180 / acre \$23.40

TOTAL SPECIAL PROJECTS **\$23.40**

TOTAL COST = \$3,951.69

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: K to L

Construction - 12+00 stations
0.23 miles

Improvement - 0+00 stations
0.00 miles

CLEARING AND GRUBBING -

Scattering 1.20 acres @ \$1,274.00 per acre = \$1,528.80
TOTAL CLEARING AND GRUBBING **\$1,528.80**

EXCAVATION -

Road 5.00 sta @ \$90.00 per sta = \$450.00
7.00 sta @ \$210.00 per sta = \$1,470.00
Landing 1 Indg @ \$285.00 per Indg = \$285.00
Grade, ditch and roll 0.23 mi @ \$1,742.00 per mi = \$400.66
TOTAL EXCAVATION **\$2,605.66**

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18"	\$0.00	0 LF of 24"	\$0.00
0 LF of 30"	\$0.00	0 LF of 36"	\$0.00
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	\$0.00	0 LF of 60"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Half Rounds

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 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Culvert Stakes

0 stakes \$0.00

TOTAL CULVERTS **\$0.00**

SURFACING-

	10" deep =	56 cy/sta	
Subgrade	672 cy of	4" - 0	@ \$19.57 per cy = \$13,151.04
Curve Widening	60 cy of	4" - 0	@ \$19.57 per cy = \$1,174.20
Turnouts (2)	56 cy of	4" - 0	@ \$19.57 per cy = \$1,095.92
Turnaround	16 cy of	4" - 0	@ \$19.57 per cy = \$313.12
Landing	56 cy of	4" - 0	@ \$19.57 per cy = \$1,095.92
Total =	860 cy of	4" - 0	TOTAL SURFACING \$16,830.20

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil.	0.60 acres x \$180 / acre	\$108.00
		\$0.00
		\$0.00
		\$0.00
	TOTAL SPECIAL PROJECTS	\$108.00

TOTAL COST = \$21,072.66

SUMMARY OF CONSTRUCTION COST

Timber Sale: Zeus' Boots 341-07-25 Road: M to N

Construction - 9+10 stations
0.17 miles

Improvement - 0+00 stations
0.00 miles

CLEARING AND GRUBBING -

Scattering	0.94 acres @	\$980.00 per acre =	\$921.20
TOTAL CLEARING AND GRUBBING			\$921.20

EXCAVATION -

Road	5.50 sta @	\$175.00 per sta =	\$962.50
	3.60 sta @	\$90.00 per sta =	\$324.00
Landings	2 Indg @	\$285.00 per Indg =	\$570.00
Grade, ditch and roll	0.17 mi @	\$1,742.00 per mi =	\$296.14
TOTAL EXCAVATION			\$2,152.64

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18"	\$0.00	0 LF of 24"	\$0.00
0 LF of 30"	\$0.00	0 LF of 36"	\$0.00
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	\$0.00	0 LF of 60"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Half Rounds

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 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$0.00</u>		<u>\$0.00</u>

Culvert Stakes

0 stakes	<u>\$0.00</u>
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TOTAL CULVERTS **\$0.00**

SURFACING:

	10" deep =	56 cy/sta	
Subgrade	510 cy of	4" - 0 @	\$21.92 per cy = \$11,179.20
Curve Widening	60 cy of	4" - 0 @	\$21.92 per cy = \$1,315.20
Turnouts	28 cy of	4" - 0 @	\$21.92 per cy = \$613.76
Landings	112 cy of	4" - 0 @	\$21.92 per cy = \$2,455.04
Total =	710 cy of	4" - 0	TOTAL SURFACING \$15,563.20

SPECIAL PROJECTS

Grass seed and fertilize areas of disturbed soil.	0.47 acres x \$180 / acre	\$84.60
		<u>\$0.00</u>
		<u>\$0.00</u>
		<u>\$0.00</u>
TOTAL SPECIAL PROJECTS		\$84.60

TOTAL COST = \$18,721.64

MOBILIZATION COST SUMMARY

Timber Sale: Zeus' Boots 341-07-25

MILEAGE FACTORS

Distance Factor		Distance Factor	
0-25	0.58	55	1.07
30	0.66	60	1.15
35	0.74	65	1.23
40	0.82	70	1.31
45	0.91	75	1.40
50	1.00	80	1.48

MILEAGE FACTOR = 1.15

No.	EQUIPMENT DESCRIPTION	Base Cost	Move in Cost	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
0	Drill & Compressor	\$235	\$0.00						\$0.00
1	Graders	\$570	\$655.50	\$7.33	0	0	10	\$73.30	\$728.80
0	Loader (1.5 - 2.5 cy)	\$545	\$0.00	\$8.42	0	0	0	\$0.00	\$0.00
1	Loader (3 cy +)	\$570	\$655.50	\$9.56	0	0	0	\$0.00	\$655.50
1	Rollers & Compactors	\$235	\$270.25	\$14.25	0	0	0	\$136.30	\$406.55
1	Excavators	\$750	\$862.50	\$36.60	0	0	0	\$495.00	\$1,357.50
0	Large Backhoes	\$275	\$0.00	\$5.53	0	0	0	\$0.00	\$0.00
0	Small backhoes	\$235	\$0.00	\$4.84	0	0	0	\$0.00	\$0.00
1	Tractors (D5 - D7)	\$570	\$655.50	\$18.47	0	0	0	\$518.70	\$1,174.20
0	Tractors (D8)	\$750	\$0.00	\$25.53	0	0	0	\$0.00	\$0.00
5	Dump Truck (12 cy)	\$120	\$690.00	\$2.88	0	0	10	\$144.00	\$834.00
0	Belly Dump	\$140	\$0.00	\$3.68	0	0	0	\$0.00	\$0.00
1	Water Truck (3000 gal)	\$140	\$161.00	\$2.88	0	0	10	\$28.80	\$189.80

TOTAL MOBILIZATION COSTS = \$5,346.35

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Timber Sale: Zeus' Boots 341-07-25
Pit Name: West Mac

Swell:	<u>1.30</u>	1-1/2"-0 (trk measure)	<u>cy</u>
Shrinkage:	<u>1.16</u>	4"-0 (trk measure)	<u>6,917 cy</u>
Drill Pct.:	<u>100%</u>	Pit Run (trk measure)	<u>100 cy</u>
		Total Truck Yardage	<u>7,017 cy</u>
		Total In Place Yardage	<u>5,398 cy</u>

Move in D8		\$862.50
Scalp & Clear Overburden		<u>\$0.00</u>
	Subtotal	\$862.50

Move in Drill and Compressor		\$270.25
Drill & Shoot	<u>\$2.40 /cy x</u> <u>5,398 cy</u>	= <u>\$12,955.20</u>
	Subtotal	\$13,225.45

Strip Rock	<u>\$0.00 /cy x</u> <u>0 cy</u>	=	\$0.00
Push Rock	<u>\$0.53 /cy x</u> <u>7,017 cy</u>	=	\$3,719.01
Oversize Reduction	<u>\$4.00 /cy x</u> <u>540 cy</u>	=	\$2,160.00
Move in Crusher			\$2,202.00
Set Up Crusher			\$2,202.00
Move in Screening plant			\$0.00
Move in Loaders			\$1,310.00
Load Crusher	<u>\$0.70 /cy x</u> <u>6,917 cy</u>	=	\$4,841.90
Crushing (1-1/2" - 0)	<u>\$2.50 /cy x</u> <u>0 cy</u>	=	\$0.00
Crushing (4" - 0)	<u>\$2.00 /cy x</u> <u>6,917 cy</u>	=	\$13,834.00
Crushing (Jaw Run)	<u>\$1.75 /cy x</u> <u>0 cy</u>	=	\$0.00
Load Dump Truck	<u>\$0.59 /cy x</u> <u>7,017 cy</u>	=	\$4,140.03
	Subtotal		\$34,408.94

Gradation Tests	<u>\$65.00 /2000 cy x</u> <u>6,917 cy</u>	=	\$224.80
Change Gradation			\$0.00
Clean Up Pit			<u>\$260.00</u>
	Subtotal		\$484.80

BASE COST	<u>\$6.98/cy</u>	TOTAL PRODUCTION COST	<u>\$48,981.69</u>
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TIMBER SALE SUMMARY

Zeus' Boots

Sale No. 341-07-25

1. **Type of Sale:** Automark thin, recovery, sealed bid auction.

2. **Revenue Distribution:** 100% BOF, 45% Columbia and 55% Clatsop County (Tax Code 8-01). Rehab. Obligation = 45% (Columbia County).

3. **Sale Acreage:** The acres available for harvest are eighty acres in Area 1, sixty-nine acres in Area 2, two acres in Area 3, and two acres in Area 4. Areas 3 and 4 will be an automark thinning to a target RD of 28. All acreage's were determined by geographic information system (GIS).

4. **Volume :**

VOLUME SUMMARY

Species	Volume (mbf)
Douglas-fir	5,613
Hemlock	96
Hardwoods	202
Total	5,911

5. **Cruise Data:** The sale area was variable plot cruised for the Stand Level Inventory (SLI) by IRM contract cruisers. Stands 7238, 7244, and 7250 make up the sale. Stand 7238 was cruised with a 46.95 BAF, stand 7244 was cruised with a 40 and 54.45 BAF and stand 7250 was cruised with a 33.61 BAF. All sampled trees were viewed at DBH. The data from plots within the sale boundary were combined using the SuperACE 2004 cruising program. The take, leave and log grades were assigned based on diameter and height measurements provided by the SLI cruise.

6. **Timber Description:** The timber sale areas consist of medium to well-stocked stands of approximately 52 year old Douglas-fir with an average take diameter of 16 inches. Hemlock, and hardwoods are a minor component of the species mix within the timber sale area.

7. **Topography and Logging Method**

AREA	CABLE	GROUND BASED
1	90%	10%
2	60%	40%
3		100%
4		100%

Access will be on rocky spurs. Slopes range from 5% to 75%. This contract contains watershed protection measures and seasonal operating restrictions to protect water quality. All streams adjacent to the sale area have significant buffer zones which provide for streamside protection.

8. **Access:** West on Highway 26 (Sunset Hwy.) to North Fork Wolf Creek Road. North on North Fork Wolf Creek Road for 150 feet to the southwest corner of Area 2.

9. **Projects:**

Project No. 1 consists of constructing 1.1 miles of road for a total cost of \$36,733.98.

Project No. 2 consists of road surfacing, costing \$129,040.99.

Project No. 3 consists of grass seeding and fertilizing areas of disturbed soil, costing \$498.60.

Move in cost: \$5,346.35

Total project credits: \$171,620.00

10. **Other Costs:**

Create 153 snags by tree topping at \$50.00 per tree = \$7,650

Brand and paint at \$1.00 per MBF = \$5,911.

Intermediate supports: 5 at \$100/support = \$500.

Shovel time to block and waterbar skid roads, and sort woody debris for firewood: 10 hours at \$150 per hour = \$1,500.

Treat slash in Areas 1 and 2 for planting site preparation: 40 acres at \$150.00 per acre = \$6,000.

Total of other costs is \$21,561.

CRUISE REPORT

Zeus' Boots

Sale No. 341-07-25

1. Acreage Calculation: The net acres available for harvest are eighty acres in Area 1, sixty-nine acres in Area 2, two acres in Area 3, and two acres in Area 4. All acreage's were determined by geographic information system (GIS).

2. Cruise Method: The sale area was variable plot cruised for the Stand Level Inventory (SLI) by IRM contract cruisers. Stands 7238, 7244, and 7250 make up the sale. Stand 7238 was cruised with a 46.95 BAF, stand 7244 was cruised with a 40 and 54.45 BAF and stand 7250 was cruised with a 33.61 BAF. All sampled trees were viewed at DBH. The data from plots within the sale boundary were combined using the SuperACE 2004 cruising program. The take, leave and log grades were assigned based on diameter and height measurements provided by the SLI cruise.

3. Sampling Intensity: Douglas-fir for Areas 1 & 2:

CV	52.4%
SE	7.8%
No. of plots	45

Douglas-fir (take) for Areas 3 & 4

CV	78.9%
SE	45.1%
No. of plots	4

4. Form Factors: Form factors were estimated at 16 feet.

5. Height Standards: The total height of conifers and hardwoods measured to the nearest foot.

6. Diameter Standards: Diameters were measured outside bark at breast height to the nearest inch.

7. Grading System: All trees were graded favoring 40-foot segments.

8. Merchantable Top: Conifer merchantable tops were calculated in SuperACE 2004 to 6 inches outside bark, or 25% DBH outside bark whichever was greater.

9. Computation Procedures: Volumes were computed using the SuperACE 2004 program.

10. Cruisers: The sale area was cruised in 2003 - 2004 by IRM contract cruisers.

Preparer:

Mark Reed 9/19/06
Mark Reed Date

Unit Forester:

Erik Marcy 10/6/06
Erik Marcy Date

Zeus' Boots

Sale No. 341-07-25

Residual Stand Specifications

Partial Cut

AREAS 3 & 4

Residual QMD assumption – 21 inches.

Target Relative Density – 28

	Minimum	Target	Maximum
Relative Density	26	28	31
Basal Area	120	130	140
Trees per Acre	98	106	114

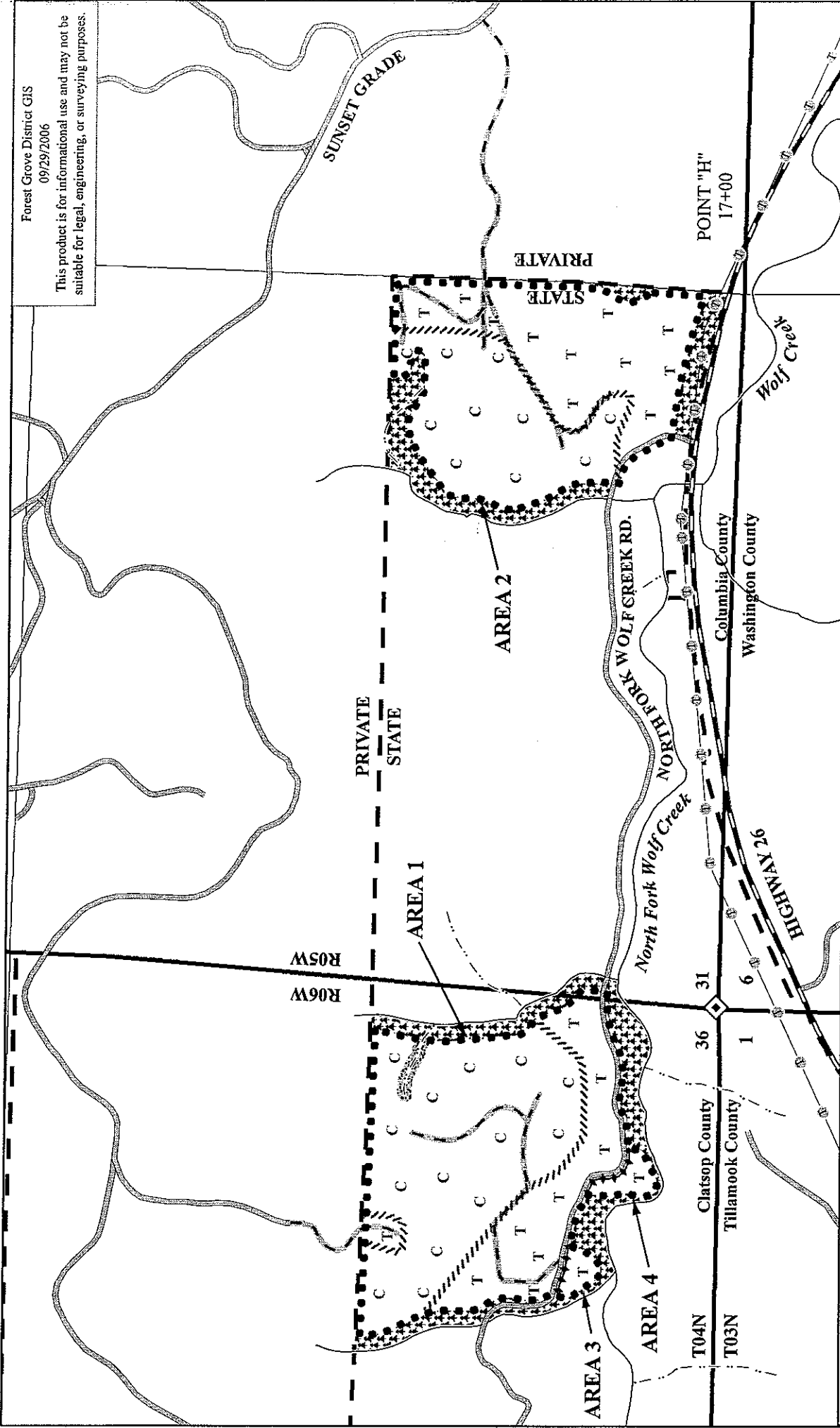
$$RD = BA / (\text{sq. root of DBH})$$

$$BA = (\text{sq. root of DBH})(RD)$$

$$BA/\text{Tree} = (\pi(r^2))/144 \text{ sq.in.}$$

$$TPA = (BA/\text{Acre}) / (BA/\text{Tree})$$

This product is for informational use and may not be suitable for legal, engineering, or surveying purposes.



LEGEND

- Timber Sale Boundary
- ++++ Area Boundary
- Green Tree Retention Area
- Unposted Stream Buffer
- Existing Roads
- Surfaced Road Construction
- Logging Setting Boundary
- Type F Stream
- - - Type N Stream, Perennial
- Highway
- Power Line
- ODF Ownership
- Cable Ground
- Tractor Ground

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-07-25
ZEUS' BOOTS
PORTIONS OF SECTION 31, T04N, R05W, W.M.
AND SECTION 36, T04N, R06W, W.M.
COLUMBIA COUNTY AND CLATSOP COUNTY, OREGON

Scale
1:12000
1 inch = 1000 feet
1,000 500 0 1,000 Feet

APPROXIMATE NET ACREAGE

AREA 1	80	ACRES (MC)
AREA 2	69	ACRES (MC)
AREA 3	2	ACRES (PC-M)
AREA 4	2	ACRES (PC-M)
TOTAL	153	ACRES