



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Aire Wolf
Sale 341-15-33

District: West Oregon

Date: July 23, 2014

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$876,562.83	\$43,367.67	\$919,930.50
		Project Work:	\$(71,692.00)
		Advertised Value:	\$848,238.50



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timber description

Location: Portions of Section 31, T11S, R8W, and portions of Sections 25 and 36, T11S, R9W, W.M., Lincoln County, Oregon.

Stand Stocking: 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	23	0	100
Alder (Red)	19	0	100
Maple	18	0	100

Volume by Grade	2S	3S	3S 12"+	4S	Camprun	Total
Douglas - Fir	1,765	484	541	57	0	2,847
Alder (Red)	0	0	0	0	123	123
Maple	0	0	0	0	13	13
Total	1,765	484	541	57	136	2,983



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comments: Pond Values Used: 2nd Quarter Calendar Year 2014.

Western Hemlock and Other Conifers Stumpage Price = Pond Value
minus Logging Cost:
 $\$239.75/\text{MBF} = \$505/\text{MBF} - \$265.25/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value minus
Logging Cost:
 $\$784.75/\text{MBF} = \$1,050.00/\text{MBF} - \$265.25/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/GALLON

LOG HAUL:

Conifer costed to Eugene.
Hardwood costed to Eugene.

HAULING COST ALLOWANCE:

Hauling costs equivalent to \$780 daily truck cost.

Other Costs (with Profit & Risk to be added):

Log Branding & Painting: 2,983 MBF @ \$1.00/MBF = \$2,983

Lift/Tail Trees: 12 Trees @ \$100/Tree = \$1,200

TOTAL Other Costs (with Profit & Risk to be added) = \$4,183

Other Costs (No Profit & Risk added):

Equipment Cleaning (Invasive Species): \$2,000

Firewood Sorting: 5 Landings @ \$100/Landing = \$500

TOTAL Other Costs (No Profit & Risk added) = \$2,500

Slash Disposal:

Move-in = \$750

Project Work: 16 hrs @ \$150/hr = \$2,400

TOTAL Slash Disposal = \$3,150



"STEWARDSHIP IN FORESTRY"

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logging conditions

combination#: 1 Douglas - Fir 14.56%
 Alder (Red) 14.47%
 Maple 14.00%

yarding distance: Short (400 ft) downhill yarding: No
logging system: Shovel Process: Manual Delimbing

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 8.0 bd. ft / load: 4,000
cost / mbf: \$78.27

machines: Shovel Logger

combination#: 2 Douglas - Fir 6.70%
 Alder (Red) 6.73%
 Maple 5.85%

yarding distance: Short (400 ft) downhill yarding: No
logging system: Cable: Large Tower >=70 Process: Manual Delimbing

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 8.0 bd. ft / load: 4,000
cost / mbf: \$115.42

machines: Log Loader (A)
Tower Yarder (Large)

combination#: 3 Douglas - Fir 34.93%
 Alder (Red) 34.62%
 Maple 35.15%

yarding distance: Medium (800 ft) downhill yarding: No
logging system: Cable: Large Tower >=70 Process: Manual Delimbing

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 7.0 bd. ft / load: 4,000
cost / mbf: \$131.91

machines: Log Loader (A)
Tower Yarder (Large)

combination#: 4 Douglas - Fir 43.81%
 Alder (Red) 44.18%
 Maple 45.00%

yarding distance: Long (1,500 ft) downhill yarding: No
logging system: Cable: Large Tower >=70 Process: Manual Delimbing

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 6.0 bd. ft / load: 4,000
cost / mbf: \$153.89

machines: Log Loader (A)
Tower Yarder (Large)



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
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Sale 341-15-33

District: West Oregon

Date: July 23, 2014

logging costs

Operating Seasons:	2.00	Profit Risk:	12.00%
Project Costs:	\$71,692.00	Other Costs (P/R):	\$4,183.00
Slash Disposal:	\$3,150.00	Other Costs:	\$2,500.00

Miles of Road

Road Maintenance: \$6.66

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	4.0
Alder (Red)	\$0.00	2.0	3.5
Maple	\$0.00	2.0	3.5



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Timber Sale Appraisal
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Sale 341-15-33

District: West Oregon

Date: July 23, 2014

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$132.62	\$6.66	\$2.94	\$87.05	\$1.40	\$27.68	\$1.06	\$5.00	\$0.84	\$265.25
Alder (Red)									
\$132.75	\$6.66	\$2.94	\$99.49	\$1.40	\$29.19	\$1.06	\$5.00	\$0.84	\$279.33
Maple									
\$133.33	\$6.66	\$2.94	\$99.49	\$1.40	\$29.26	\$1.06	\$5.00	\$0.84	\$279.98

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$573.14	\$307.89	\$0.00
Alder (Red)	\$0.00	\$615.00	\$335.67	\$0.00
Maple	\$0.00	\$440.00	\$160.02	\$0.00



"STEWARDSHIP IN FORESTRY"

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District: West Oregon

Date: July 23, 2014

summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00
Maple	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	2,847	\$307.89	\$876,562.83
Alder (Red)	123	\$335.67	\$41,287.41
Maple	13	\$160.02	\$2,080.26

Gross Timber Sale Value

Recovery: \$919,930.50

Prepared by: Joe Goldsby

Phone: 541-929-9168

SUMMARY OF ALL PROJECT COSTS

Sale Name: Aire Wolf

Date: 25-Jun-14

Time: 9:15

Project #1 - New Construction

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
C to D	2.9 sta	\$1,002
E to F	18.9 sta	\$7,649
I to J	1.4 sta	\$2,737
K to L	4.1 sta	\$6,325

TOTALS

27.3 sta

\$17,713

Project #2 - Improvements

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	297.6 sta	\$12,057
G to H	350.3 sta	\$14,674

TOTALS

647.9 sta

\$26,731

Project #3 - Post Harvest Activities

Landing patch rock and tank traps

\$1,767

Project #4 - Stockpiles

\$22,736

Move in

	<u>Cost</u>	<u>On-site move</u>
Excavator	\$672	
Crawler tractor, D-7 or equiv.	\$488	\$116
Grader, Cat 14-G or equiv.	\$304	\$36
Water Truck	\$199	
Front end loader	\$304	
Backhoe	\$304	\$18
Vibratory roller	\$304	

TOTAL

\$2,745

GRAND TOTAL

\$71,692

Compiled by J. Doyal

Date 06/25/2014

SUMMARY OF CONSTRUCTION COST

SALE	Aire Wolf	Project # 2	LENGTH improve	297.6 sta
ROAD	A to B			

IMPROVEMENT

Shape surface (with road grader)	297.6 sta.	@	\$13.75 /sta	=	\$4,092
Improve landing (cutting @ Sta. 206+90)	1.0 hr	@	\$79.52 /hr	=	\$80
Improve landing (with dozer)	1.0 hr	@	\$135.80 /hr	=	\$136

TOTAL IMPROVEMENT	\$4,308
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SURAFACING

Spot Rock (50 cy/mi)	279 cy of	Size 1 1/2-0"	Cost/yd \$24.37	=	\$6,799
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TOTAL ROCK COST =	\$6,799
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SPECIAL PROJECTS

Clean out culverts (inlets and outlets)	37 culverts	@	\$25.67 ea.	=	\$950
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TOTAL SPECIAL PROJECTS COST =	\$950
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Compiled by:	J. Doyal
Date:	Jun 25, 2014

GRAND TOTAL =====>	\$12,057
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SUMMARY OF CONSTRUCTION COST

SALE	Aire Wolf	Project # 1	LENGTH	const	2.9 sta
ROAD	C to D				

CLEARING AND GRUBBING

0.16	acres	@	\$1,010.24	/acre	=	\$162	road
0.10	acres	@	\$1,010.24	/acre	=	\$101	landing

TOTAL CLEARING AND GRUBBING = \$263

EXCAVATION

With D7 dozer or equivalent

Construct road	2.9 sta.	@	\$74.28	/sta.	=	\$215
Construct landing	2 hr.	@	\$135.80	/hr.	=	\$272
Shape subgrade (with road grader)	2.9 sta.	@	\$11.55	/sta	=	\$33

TOTAL EXCAVATION = \$520

SURFACING

			Size	Cost/yd		
Junction patch rock	9	cy of	1 1/2-0"	\$24.37	=	\$219

TOTAL ROCK COST = \$219

Compiled by: J. Doyal
Date: Jun 25, 2014

GRAND TOTAL =====> \$1,002

SUMMARY OF CONSTRUCTION COST

SALE	Aire Wolf	Project # 1	LENGTH	const	18.9 sta
ROAD	E to F				

CLEARING AND GRUBBING

1.04 acres	@	\$1,010.24 /acre	=	\$1,051 road
0.10 acres	@	\$1,010.24 /acre	=	\$101 landing

TOTAL CLEARING AND GRUBBING = \$1,152

EXCAVATION

With D7 dozer or equivalent

Construct road (with dozer)	18.9 sta.	@	\$74.28 /sta.	=	\$1,404
Construct road (with excavator)	20 hr.	@	\$148.34 /hr.	=	\$2,967
Construct landing	2 hr.	@	\$135.80 /hr.	=	\$272
Extra drift	10 hr.	@	\$135.80 /hr.	=	\$1,358
Shape subgrade (with road grader)	18.9 sta.	@	\$14.66 /sta	=	\$277

TOTAL EXCAVATION = \$6,278

SURFACING

			Size	Cost/yd	
Junction patch rock	9 cy of		1 1/2-0"	\$24.37	= \$219

TOTAL ROCK COST = \$219

Compiled by: J. Doyal
Date: Jun 25, 2014

GRAND TOTAL =====> \$7,649

SUMMARY OF CONSTRUCTION COST

SALE	Aire Wolf	Project # 2	LENGTH improve	350.3 sta
ROAD	G to H			

IMPROVEMENT

Enlarge landing (Sta. 346+90)	2 hr.	@	\$135.80 /hr.	=	\$272
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Shape surface (with road grader)	350.3 sta.	@	\$13.75 /sta	=	\$4,817
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TOTAL IMPROVEMENT	\$5,089
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SURFACING

		Size	Cost/yd		
Spot rock (50 cy/mi)	333 cy of	1 1/2-0"	\$23.97	=	\$7,982
Landing (Sta. 346+90)	36 cy of	pit run	\$21.00	=	\$756

TOTAL ROCK COST =	\$8,738
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SPECIAL PROJECTS

Clean out culverts (inlets and outlets)	33 culverts	@	\$25.67 ea.	=	\$847
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TOTAL SPECIAL PROJECTS COST =	\$847
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Compiled by:	J. Doyal
Date:	Jun 25, 2014

GRAND TOTAL =====>	\$14,674
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SUMMARY OF CONSTRUCTION COST

SALE	Aire Wolf	Project # 1	LENGTH	const	1.4 sta
ROAD	I to J				

CLEARING AND GRUBBING

0.08 acres	@	\$1,010.24 /acre	=	\$81 road
0.10 acres	@	\$1,010.24 /acre	=	\$101 landing

TOTAL CLEARING AND GRUBBING = \$182

EXCAVATION

With D7 dozer or equivalent

Construct road	1.4 sta.	@	\$74.28 /sta.	=	\$104
Construct landing	2 hr.	@	\$135.80 /hr.	=	\$272
Shape subgrade (with road grader)	1.4 sta.	@	\$11.55 /sta	=	\$16
Compact subgrade (with vibratory roller)	1.4 sta.	@	\$8.31 /sta	=	\$12

TOTAL EXCAVATION = \$404

SURFACING

		Size	Cost/yd		
10" lift (0+00 to 0+90)	54 cy of	pit-run	\$22.10	=	\$1,193
Landing (Pt. J)	36 cy of	pit-run	\$20.60	=	\$742
Junction patch rock	9 cy of	1 1/2-0"	\$23.97	=	\$216

TOTAL ROCK COST = \$2,151

Compiled by: J. Doyal
Date: Jun 25, 2014

GRAND TOTAL =====> \$2,737

SUMMARY OF CONSTRUCTION COST

SALE	Aire Wolf	Project # 1	LENGTH	const	4.1 sta
ROAD	K to L				

CLEARING AND GRUBBING

0.23 acres	@	\$1,010.24 /acre	=	\$232 road
0.10 acres	@	\$1,010.24 /acre	=	\$101 landing

TOTAL CLEARING AND GRUBBING = \$333

EXCAVATION

With D7 dozer or equivalent

Construct road	4.1 sta.	@	\$74.28 /sta.	=	\$305
Construct landing	2 hr.	@	\$135.80 /hr.	=	\$272
Shape subgrade (with road grader)	4.1 sta.	@	\$11.55 /sta	=	\$47
Compact subgrade (with vibratory roller)	4.1 sta.	@	\$8.31 /sta	=	\$34

TOTAL EXCAVATION = \$658

SURFACING

		Size	Cost/yd		
10" lift (0+00 to 3+60)	198 cy of	pit-run	\$22.10	=	\$4,376
Landing (Pt. L)	36 cy of	pit-run	\$20.60	=	\$742
Junction patch rock	9 cy of	1 1/2-0"	\$23.97	=	\$216

TOTAL ROCK COST = \$5,334

Compiled by: J. Doyal
Date: Jun 25, 2014

GRAND TOTAL =====> \$6,325

SUMMARY OF CONSTRUCTION COST

SALE Aire Wolf

Project # 3 - Post Harvest

SURFACING

			Size	Cost/CY		
Landing Patch Rock						
A to B	18	cy of	1 1/2-0"	\$24.37	=	\$ 439
(Sta. 206+90)						
G to H	9	cy of	1 1/2-0"	\$23.97	=	\$ 216
(Sta. 340+75)						
G to H	9	cy of	1 1/2-0"	\$23.97	=	\$ 216
(Sta. 346+90)						
Turnaround Rock						
Point L	27	cy of	3-0"	\$22.28	=	\$ 602
Junction Patch Rock						
Point H	9	cy of	1 1/2-0"	\$23.97	=	\$ 216

TOTAL SURFACING COST = \$1,689

MISCELLANEOUS PROJECTS

Tank Traps						
Point C	0.5	hr.	@	\$77.00 /hr.	=	\$39
Point E	0.5	hr.	@	\$77.00 /hr.	=	\$39

TOTAL MISCELLANEOUS PROJECTS = \$78

Compiled by: J. Doyal
Date: Jun 25, 2014

GRAND TOTAL =====> \$1,767

SUMMARY OF CONSTRUCTION COST

SALE Aire Wolf Project # 4 - Rock Stockpile
ROAD

STOCKPILE

		Size	Cost/yd		
Base rock	1000 cy of	3-0"	\$21.03	=	\$21,030

TOTAL ROCK COST = \$21,030

EQUIPEMENT

Front-end loader	16.7 hr.	@	\$90.00 /hr.	=	\$1,500
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IMPROVEMENT

Shape surface (with road grader)	15.0 sta.	@	\$13.75 /sta.	=	\$206
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Compiled by: J. Doyal
Date: Jun 25, 2014

GRAND TOTAL =====> \$22,736

SUMMARY OF MAINTENANCE COST

SALE
ROAD

Aire Wolf

- Final Maintenance Cost Estimate
(Costed in appraisal, not in project costs)

Grading

Move-in

\$ 380

Road Segment	Length	Cost/Sta	Cost	Mileage
A to B	297.6	\$13.75	\$4,092.00	5.64
G to H	350.3	\$13.75	\$4,816.63	6.63
Totals	647.9		\$8,908.63	12.27

Maintenance Rock:

	Volume	Cost/CY	Cost
1½-0"	441	\$23.97	\$10,570.77
3-0"	0	\$22.28	\$0.00

Grand Total

\$ 19,859.40

TS Volume

2,983 MBF

Cost / MBF =

\$6.66

NOTES:

Rock Haul Cost Computation

SALE NAME: Aire Wolf AreaProject # 4
ROAD NAME: Deer Creek Ridge Road CLASS: Medium
ROCK SOURCE: Rickard 9 CY truck
Route: Garrett Ln, Hwy 20, Salmon Ck Rd, Wolf Ck Rd, Baber Ridge Rd,
Deer Ck Ridge Rd

TIME Computation:

Road speed time factors:

1.	55 MPH	36.8	MRT	40.1 minutes
2.	50 MPH		MRT	0.0 minutes
3.	45 MPH		MRT	0.0 minutes
4.	40 MPH		MRT	0.0 minutes
5.	35 MPH		MRT	0.0 minutes
6.	30 MPH	2.4	MRT	4.8 minutes
7.	25 MPH		MRT	0.0 minutes
8.	20 MPH	9.0	MRT	27.0 minutes
9.	15 MPH		MRT	0.0 minutes
10.	10 MPH		MRT	0.0 minutes
11.	05 MPH		MRT	0.0 minutes

Dump or spread time per RT 0.50 minutes

Total hauling cycle time for this setting
(100% efficiency) 72.40 minutes

Operator efficiency correction 0.85 85.18 minutes

Job efficiency correction 0.90 94.64 minutes

Truck capacity (CY) 9.00 10.52 min/CY

Loading time, delay time per CY 0.25 min/CY

TIME (minutes) per cubic yard 10.77 min/CY

COST per CY computation

Cost of truck and operator per hour \$75.50 /hr.

Cost of truck and operator per minute \$1.26 /min

Cost per CY \$13.57 /CY

Spread and compact Water truck, Grader & Roller \$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.80	\$24.37	\$25.87
3 - 0"	\$ 9.11	\$22.68	\$24.18
Jaw Run	\$ 8.10	\$21.67	\$23.17
pit-run	7.43	\$21.00	\$22.50

Note: Pit costs November 28, 2012 Rickard Rock Quarry

Rock Haul Cost Computation

SALE NAME: Aire Wolf AreaProject # 4
ROAD NAME: Deer Creek Ridge Road CLASS: Medium
ROCK SOURCE: Rickard 9 CY truck
Route: Garrett Ln, Hwy 20, Harlan/Burnt Woods Rd, Burnt Woods Ridge Rd,
Long Haul Rd

TIME Computation:

Road speed time factors:

1.	55 MPH	24.6	MRT	26.8	minutes
2.	50 MPH		MRT	0.0	minutes
3.	45 MPH		MRT	0.0	minutes
4.	40 MPH		MRT	0.0	minutes
5.	35 MPH	4.0	MRT	6.9	minutes
6.	30 MPH		MRT	0.0	minutes
7.	25 MPH		MRT	0.0	minutes
8.	20 MPH	12.0	MRT	36.0	minutes
9.	15 MPH		MRT	0.0	minutes
10.	10 MPH		MRT	0.0	minutes
11.	05 MPH		MRT	0.0	minutes

Dump or spread time per RT 0.50 minutes

Total hauling cycle time for this setting
(100% efficiency) 70.20 minutes

Operator efficiency correction 0.85 82.59 minutes

Job efficiency correction 0.90 91.77 minutes

Truck capacity (CY) 9.00 10.20 min/CY

Loading time, delay time per CY 0.25 min/CY

TIME (minutes) per cubic yard 10.45 min/CY

COST per CY computation

Cost of truck and operator per hour \$75.50 /hr.

Cost of truck and operator per minute \$1.26 /min

Cost per CY \$13.17 /CY

Spread and compact Water truck, Grader & Roller \$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.80	\$23.97	\$25.47
3 - 0"	\$ 9.11	\$22.28	\$23.78
Jaw Run	\$ 8.10	\$21.27	\$22.77
pit-run	7.43	\$20.60	\$22.10

Note: Pit costs November 28, 2012 Rickard Rock Quarry

Rock Haul Cost Computation

SALE NAME: Aire Wolf Stock Project # 4
ROAD NAME: Deer Creek Ridge Road CLASS: Medium
ROCK SOURCE: Rickard 9 CY truck
Route: Garrett Ln, Hwy 20, Salmon Ck Rd

TIME Computation:

Road speed time factors:

1.	55 MPH	36.8	MRT	40.1 minutes
2.	50 MPH		MRT	0.0 minutes
3.	45 MPH		MRT	0.0 minutes
4.	40 MPH		MRT	0.0 minutes
5.	35 MPH		MRT	0.0 minutes
6.	30 MPH	2.4	MRT	4.8 minutes
7.	25 MPH		MRT	0.0 minutes
8.	20 MPH	6.0	MRT	18.0 minutes
9.	15 MPH		MRT	0.0 minutes
10.	10 MPH		MRT	0.0 minutes
11.	05 MPH		MRT	0.0 minutes

Dump or spread time per RT 0.50 minutes

Total hauling cycle time for this setting
(100% efficiency) 63.40 minutes

Operator efficiency correction 0.85 74.59 minutes

Job efficiency correction 0.90 82.88 minutes

Truck capacity (CY) 9.00 9.21 min/CY

Loading time, delay time per CY 0.25 min/CY

TIME (minutes) per cubic yard 9.46 min/CY

COST per CY computation

Cost of truck and operator per hour \$75.50 /hr.

Cost of truck and operator per minute \$1.26 /min

Cost per CY \$11.92 /CY

Spread and compact Water truck, Grader & Roller \$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.80	\$22.72	\$24.22
3 - 0"	\$ 9.11	\$21.03	\$22.53
Jaw Run	\$ 8.10	\$20.02	\$21.52
pit-run	7.43	\$19.35	\$20.85

Note: Pit costs November 28, 2012 Rickard Rock Quarry

TIMBER CRUISE REPORT

1. **Sale Area Location:** Portions of Section 31, T11S, R8W, & Portions of Sections 25 and 36, T11S, R9W, W.M., Lincoln County, Oregon.
2. **Fund Distribution:**
 - a. **Fund** BOF 100%
 - b. **Tax Code**
3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Acreage Adjustment	Net Sale Acres	Acreage Comp. Method
1	Modified Clearcut	16	Cruise	14	Ortho photo, GIS, GPS
2	Modified Clearcut	27	Cruise	25	Ortho photo, GIS, GPS
3	Modified Clearcut	42	Cruise	34	Ortho photo, GIS, GPS

4. **Cruisers and Cruise Dates:** The sale was cruised by Joe Goldsby and Matt Flock in April of 2014.
5. **Cruise Method and Computation:** The sale consists of three modified clearcut areas that were cruised using variable radius plot sampling. All areas were cruised using a 40 BAF with plots on a 300 by 300 foot grid. A total of 49 plots were taken with 11 plots sampled in Area 1, 17 plots sampled in Area 2, and 21 plots sampled in Area 3. Every other plot was measured for DBH, height, form factor, grade, and defect. Data was entered into the Atterbury SuperACE 2004 cruise program to calculate net board feet per acre. Individually marked green trees within the sale areas were tallied and removed from the final calculated volume.

Stereo photos, digital ortho photos, LiDar data, and GPS data from a Garmin GPSmap 62s were used to map the boundaries for the sale, and ArcMap 10.2 was used to determine gross and net acreage.
6. **Measurement Standards:** Heights were measured to the nearest foot, to a top diameter of 6 inches inside bark for conifers and 7 inches inside bark for hardwoods. Diameters were measured to the nearest inch, and a form point of 16 feet was used to calculate form factor. All trees were graded in 40 foot segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.
7. **Timber Description:** Timber in Area 1 is 64 year-old Douglas-fir. Area 2 contains 72 to 87 year-old Douglas-fir and red alder. Area 3 contains approximately 9 acres of 58 year-old Douglas-fir and red alder and 26 acres of 154 year-old Douglas-fir and red alder. Conifer trees other than Douglas-fir are reserved from cutting in all sale areas but were not observed during cruising or other field work.
8. **Statistical Analysis and Stand Summary:** (See attached "Statistics").

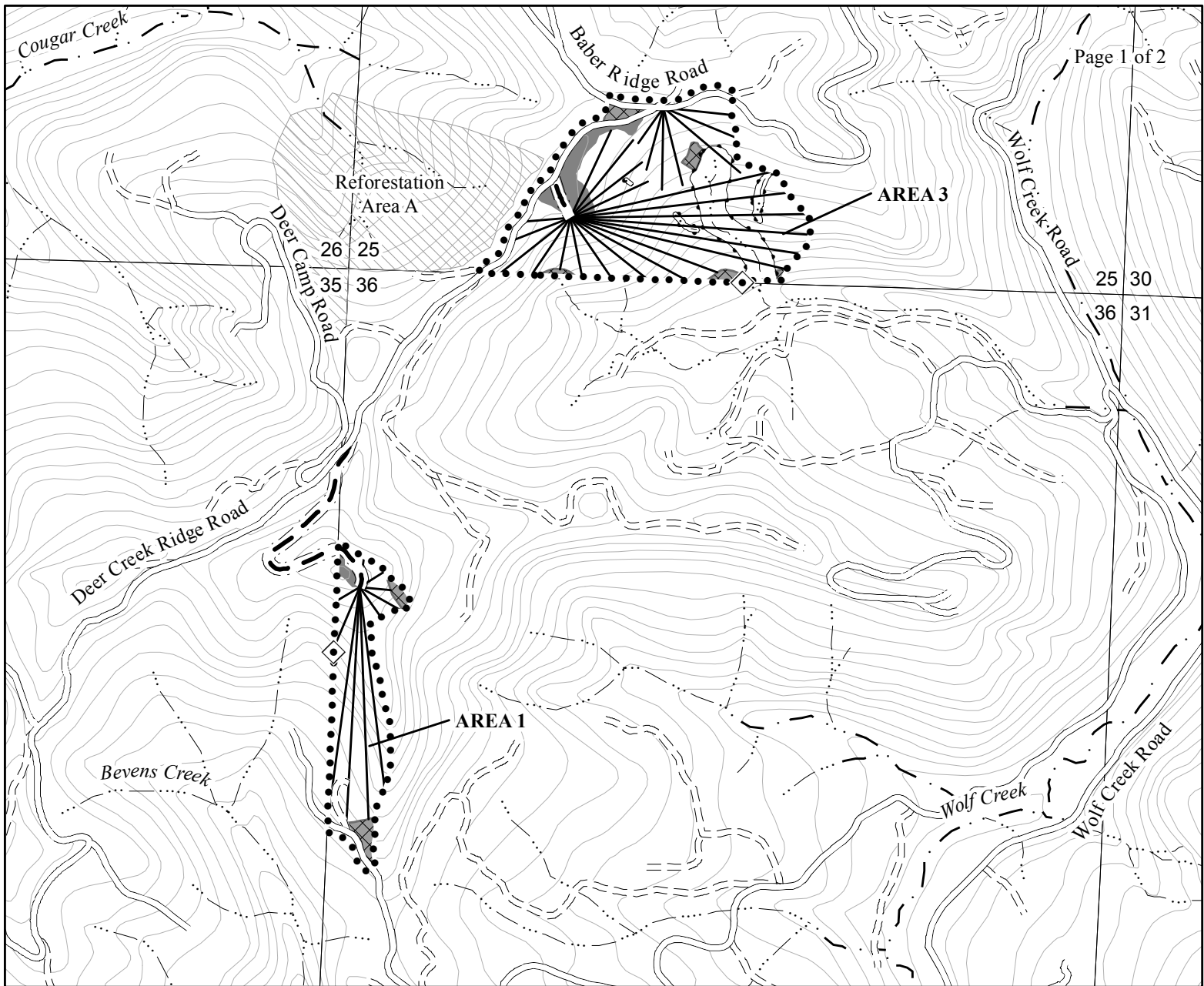
Target CV	Target SE	Actual CV	Actual SE
70%	9%	62.6%	8.9%

Note: Statistics shown are for Douglas-fir and hardwood trees combined. Percentages are for net board foot volume.

9. **Total Volume (MBF) by Species and Grade:** (See attached “Stand Table Summary” and “Species, Sort Grade”).

Species	Gross Cruise Volume	Cruised D & B	Cruised D & B (MBF)	Hidden D & B	Hidden D & B (MBF)	GTR (MBF)	Net Sale Volume
Douglas-fir	3129	3%	94	6%	188	47	2847
Red alder	134	5%	7	3%	4	--	123
Bigleaf maple	14	0%	0	8%	1	--	13
Total	3277	3%	101	6%	193	47	2983

Species	DBH	Net Vol.	2-Saw	3-Saw	3-Saw 12”+	4-Saw	Camp Run
	Grade Percentages		62%	17%	19%	2%	--
Douglas-fir	22.9	2847	1765	484	541	57	--
	Grade Percentages		--	--	--	--	100%
Red alder	19.3	123	--	--	--	--	123
	Grade Percentages		--	--	--	--	100%
Bigleaf maple	18.0	13	--	--	--	--	13
	Grade Percentages		59%	16%	18%	2%	5%
Total	22.0	2983	1765	484	541	57	136



Legend

Boundaries

- Timber Sale Boundary
- — State Forest Property Boundary
- == == Right of Way (Posted)

Roads

- ==== Surfaced Road
- == == Unsurfaced Road
- — New Construction

Streams

- — · Type F Stream
- — ··· Type N Stream
- Posted Stream Buffer

Yarding Method

- Tractor Yarding Area
- Cable Corridors
- Reforestation Area
- Green Tree Retention Area
- Land Survey Monument

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-15-33
 AIRE WOLF
 PORTIONS OF SECTION 31, T11S, R8W,
 & SECTIONS 25 & 36, T11S, R9W, W.M.,
 LINCOLN COUNTY, OREGON

This product is for informational use and may not have been prepared for or be suitable for legal, engineering or survey purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of this information.

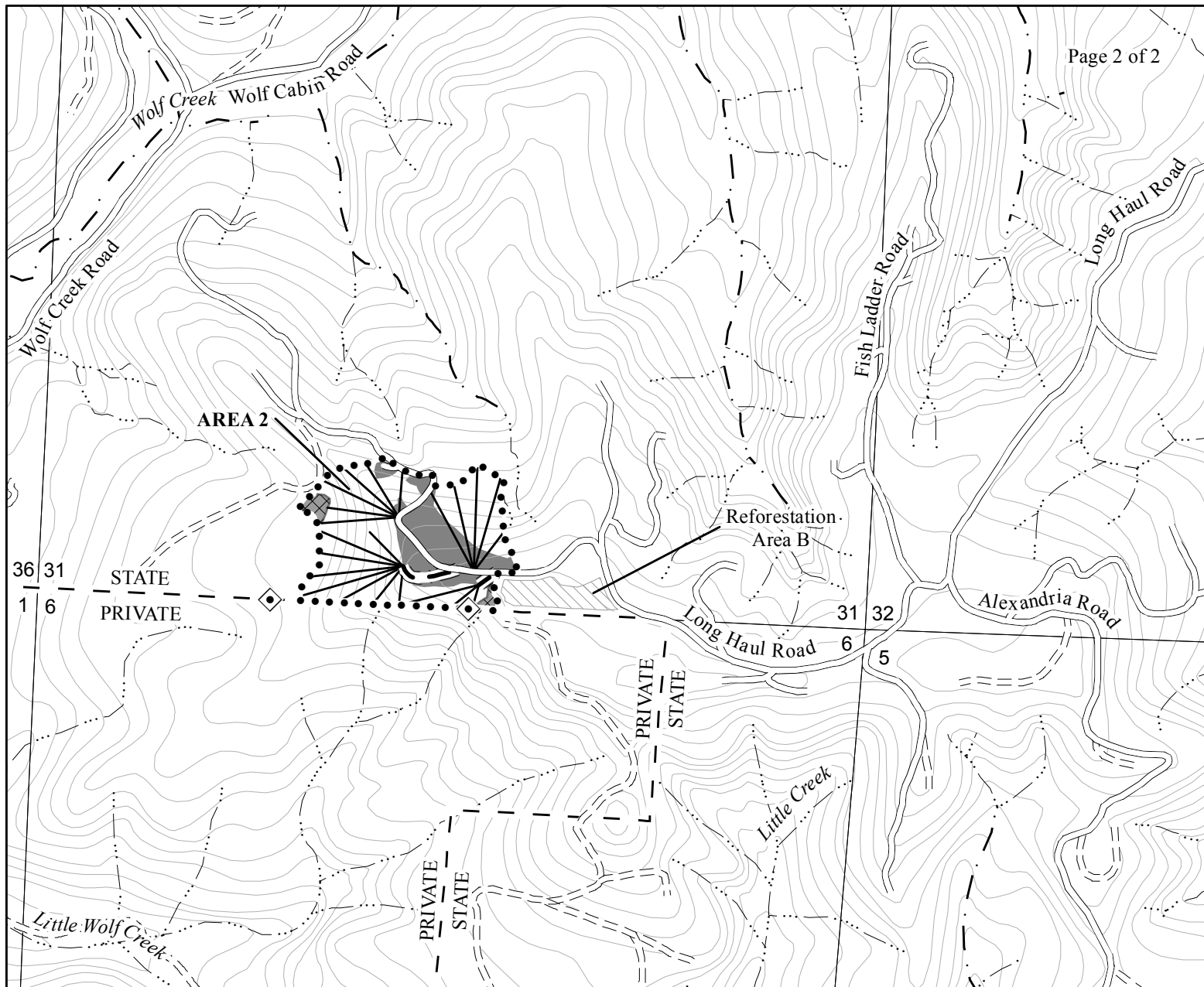
Scale

1:12,000



	NET ACRES	NET ACRES
AREA	TRACTOR	CABLE
1 (MC)	1	13
2 (MC)	7	18
3 (MC)	3	31
TOTAL	11	62





Legend

Boundaries

- Timber Sale Boundary
- — State Forest Property Boundary
- — Right of Way (Posted)

Roads

- ==== Surfaced Road
- == == Unsurfaced Road
- — New Construction

Streams

- — · Type F Stream
- — ··· Type N Stream

Yarding Method

- Tractor Yarding Area
- Cable Corridors
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Scale

1:12,000



AREA	NET ACRES	
	TRACTOR	CABLE
1 (MC)	1	13
2 (MC)	7	18
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TOTAL	11	62



Created By: Blake McKinley
 bmckinley@odf.state.or.us
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