



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Benton Brigade
Sale 341-13-03

District: West Oregon

Date: July 17, 2012

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$230,480.64	\$0.00	\$230,480.64
Project Work:			\$(39,454.00)
Advertised Value:			\$191,026.64



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timber description

Location: Portions of Section 24, T10S, R7W, and portions of Section 21, T11S, R7W, W.M., Benton County, Oregon.

Stand Stocking: 20%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	100

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	323	420	121	864
Total	323	420	121	864



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comments: Pond Values Used: 1st Quarter Calendar Year 2012.

Western Hemlock and Other Conifers Stumpage Price = Pond Value
minus Logging Cost
 $\$187/\text{MBF} = \$430/\text{MBF} - \$243/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost (NOTE: Cedar must be scaled)
 $\$702/\text{MBF} = \$945/\text{MBF} - \$243/\text{MBF}$

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus
Logging Cost
 $\$307/\text{MBF} = \$550/\text{MBF} - \$243/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

LOG HAUL:
Costed to Philomath.

HAULING COST ALLOWANCE
Hauling costs equivalent to \$780 daily truck cost.

Other Costs (with Profit & Risk to be added):
None.

Other Costs (No Profit & Risk added):
Invasive Species Equipment Cleaning = \$2,000
Snag creation: 80 snags @ \$75 each = \$6,000
Down Wood: 80 trees @ \$14 per tree = \$1,120
TOTAL Other Costs (No Profit & Risk added) = \$9,120

SLASH DISPOSAL
TOTAL Slash Disposal = \$0



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logging conditions

combination#: 1 Douglas - Fir 36.57%
yarding distance: Medium (800 ft) downhill yarding: No
logging system: Cable: Medium Tower >40 - <70 Process: Stroke Delimber
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 6.0 bd. ft / load: 4,000
cost / mbf: \$139.34

machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Medium)

combination#: 2 Douglas - Fir 42.59%
yarding distance: Short (400 ft) downhill yarding: No
logging system: Track Skidder Process: Stroke Delimber
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 4.0 bd. ft / load: 4,000
cost / mbf: \$89.89

machines: Stroke Delimber (B)

combination#: 3 Douglas - Fir 20.83%
yarding distance: Medium (800 ft) downhill yarding: No
logging system: Cable: Small Tower <=40 Process: Stroke Delimber
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 4.0 bd. ft / load: 3,500
cost / mbf: \$202.45

machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Small)



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logging costs

Operating Seasons:	2.00	Profit Risk:	12.00%
Project Costs:	\$39,454.00	Other Costs (P/R):	\$0.00
Slash Disposal:	\$0.00	Other Costs:	\$9,120.00

Miles of Road

Road Maintenance: \$3.50

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	3.0	4.0



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$131.43	\$3.50	\$10.15	\$58.04	\$0.00	\$24.37	\$0.00	\$5.00	\$10.56	\$243.05

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$509.81	\$266.76	\$0.00



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summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	864	\$266.76	\$230,480.64

Gross Timber Sale Value

Recovery: \$230,480.64

Prepared by: Jim Doyal

Phone: 541-929-3266

SUMMARY OF ALL PROJECT COSTS

Sale Name: Benton Brigade

Date: July 2012
Time: 12:30

Project #1 - Improvements

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>	
A to A1	109.4 sta	\$20,211	
A1 to A10	4.7 sta	\$193	
A2 to A3	10.1 sta	\$357	
A4 to A5	3.9 sta	\$1,621	
A6 to A7	2.0 sta	\$955	
A8 to A9	18.2 sta	\$6,429	
A10 to A11	4.0 sta	\$548	
B to B1	0+00 to 60+20	60.2 sta	\$2,441
B to B1	60+20 to Pt. B1	25.8 sta	\$954
B1 to B2	20.8 sta	\$913	

TOTALS

259.1 sta

\$34,622

Project #2 - Post Harvest Activities

Landing patch rock

\$3,762

Move in

	<u>Cost</u>	<u>On-site move</u>
Excavator	\$0	
Crawler tractor, D-7 or equiv.	\$0	
Grader, Cat 14-G or equiv.	\$680	
Water Truck	\$0	
Backhoe	\$340	\$50
Vibratory roller	\$0	\$0

TOTAL

\$1,070

GRAND TOTAL**\$39,454**

Compiled by J. Doyal

Date 07/17/2012

SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #1 LENGTH improve 109.4 sta
ROAD A to A1

IMPROVEMENT

Shape surface 109.4 sta. @ @ \$13.75 /sta = \$1,504
(with road grader)

TOTAL IMPROVEMENT \$1,504

SURFACING

		Size	Cost/yd		
Spot rock	90 cy of	1½-0"	\$14.27	=	\$1,284
(0+00 to 45+45)					
Spot rock	36 cy of	2½-0"	\$13.93	=	\$501
(45+45 to 61+40)					
Surface rock (4"lift)	884 cy of	2½-0"	\$15.43	=	\$13,640
(61+40 to 101+60)					
Curve widening rock	88 cy of	2½-0"	\$15.43	=	\$1,358
(61+40 to 101+60)					
Spot rock	18 cy of	1½-0"	\$14.27	=	\$257
(101+60 to 109+40)					

TOTAL ROCK COST = \$17,040

SPECIAL PROJECTS

Clean out culverts	21 culverts	@	\$38.50 ea.	=	\$809
(inlets and outlets)					
Slough removal	250 CY	@	\$3.43 /cy	=	\$858

TOTAL SPECIAL PROJECTS COST = \$1,667

Compiled by: J. Doyal
Date: Jul 17, 2012

GRAND TOTAL =====> \$20,211

SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #1 LENGTH improve 4.7 sta
ROAD A1 to A10

IMPROVEMENT

Shape surface 4.7 sta. @ \$13.75 /sta = \$65
(with road grader)

TOTAL IMPROVEMENT \$65

SURFACING

Spot rock 9 cy of Size Cost/yd
1½-0" \$14.27 = \$128

TOTAL ROCK COST = \$128

Compiled by: J. Doyal
Date: Jul 17, 2012

GRAND TOTAL =====> \$193

SUMMARY OF CONSTRUCTION COST

SALE ROAD	Benton Brigade A2 to A3	- Project #1	LENGTH improve	10.1 sta
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IMPROVEMENT

Shape surface (with road grader)	10.1 sta.	@	\$9.90 /sta	=	\$100
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TOTAL IMPROVEMENT	\$100
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SURFACING

Spot rock	18 cy of	Size 1½-0"	Cost/yd \$14.27	=	\$257
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TOTAL ROCK COST =	\$257
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Compiled by:	J. Doyal
Date:	Jul 17, 2012

GRAND TOTAL =====>	\$357
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SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #1 LENGTH improve 3.9 sta
ROAD A4 to A5

IMPROVEMENT

Re-open road (with road grader)	1 hrs.	@	\$90.75 /hr.	=	\$91
Shape surface (with road grader)	3.9 sta.	@	\$9.90 /sta	=	\$39

TOTAL IMPROVEMENT \$130

SURFACING

		Size	Cost/yd		
Base rock	72 cy of	2½-0"	\$15.43	=	\$1,111
Jaw-run	27 cy of	jaw-run	\$14.08	=	\$380

TOTAL ROCK COST = \$1,491

Compiled by: J. Doyal
Date: Jul 17, 2012

GRAND TOTAL =====> \$1,621

SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #1 LENGTH improve 2.0 sta
ROAD A6 to A7

IMPROVEMENT

Shape surface 2.0 sta. @ \$9.90 /sta = \$20
(with road grader)

TOTAL IMPROVEMENT \$20

SURFACING

		Size	Cost/yd		
Base rock	36 cy of	2½-0"	\$15.43	=	\$555
Landing rock	27 cy of	jaw-run	\$14.08	=	\$380

TOTAL ROCK COST = \$935

Compiled by: J. Doyal
Date: Jul 17, 2012

GRAND TOTAL =====> \$955

SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #1 LENGTH improve 18.2 sta
ROAD A8 to A9

IMPROVEMENT

Shape surface 18.2 sta. @ \$9.90 /sta = \$180
(with road grader)

TOTAL IMPROVEMENT \$180

SURFACING

Base rock (4" lift) 405 cy of Size Cost/yd
2½-0" \$15.43 = \$6,249

TOTAL ROCK COST = \$6,249

Compiled by: J. Doyal
Date: Jul 17, 2012

GRAND TOTAL =====> \$6,429

SUMMARY OF CONSTRUCTION COST

SALE ROAD	Benton Brigade A10 to A11	- Project #1	LENGTH improve	4.0 sta
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IMPROVEMENT

Shape surface (with road grader)	4.0 sta.	@	\$9.90 /sta	=	\$40
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TOTAL IMPROVEMENT	\$40
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SURFACING

		Size	Cost/yd		
Spot rock	9 cy of	1½-0"	\$14.27	=	\$128
Landing rock	27 cy of	jaw-run	\$14.08	=	\$380

TOTAL ROCK COST =	\$508
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Compiled by:	J. Doyal
Date:	Jul 17, 2012

GRAND TOTAL =====>	\$548
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SUMMARY OF CONSTRUCTION COST

SALE	Benton Brigade	- Project #1	LENGTH improve	60.2 sta
ROAD	B to B1		LENGTH improve	25.8 sta

IMPROVEMENT

Shape surface	60.2 sta.	@	\$13.75	/sta	=	\$828
(with road grader 0+00 to 60+20)						
Shape surface	25.8 sta.	@	\$9.90	/sta	=	\$255
(with road grader 60+20 to Pt. B1)						

TOTAL IMPROVEMENT	\$1,083
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SURFACING

			Size	Cost/yd		
Spot rock	113	cy of	1½-0"	\$14.27	=	\$1,613
(0+00 to 60+20)						
Spot rock	49	cy of	1½-0"	\$14.27	=	\$699
(60+20 to Pt. B1)						

TOTAL ROCK COST =	\$2,312
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Compiled by:	J. Doyal	(0+00 to 60+20)	\$2,441
Date:	Jul 17, 2012	(60+20 to Pt. B1)	\$954
		GRAND TOTAL =====>	\$3,395

SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #1 LENGTH improve 20.8 sta
ROAD B1 to B2

IMPROVEMENT

Shape surface 20.8 sta. @ \$13.75 /sta = \$286

TOTAL IMPROVEMENT \$286

SURFACING

Spot rock 45 cy of Size Cost/yd
2½-0" \$13.93 = \$627

TOTAL ROCK COST = \$627

Compiled by: J. Doyal
Date: Jul 17, 2012

GRAND TOTAL =====> \$913

SUMMARY OF CONSTRUCTION COST

SALE Benton Brigade - Project #2 Post Harvest
ROAD

SURFACING

		Size	Cost/CY		
Landing patch rock (15) (A to A1)	135 cy of	2½-0"	\$13.93	=	\$ 1,881
Landing patch rock (5) (A8 to A9)	45 cy of	2½-0"	\$13.93	=	\$ 627
Landing patch rock (7) (B1 to B2)	63 cy of	2½-0"	\$13.93	=	\$ 878
Turnaround rock (Pt. B2)	27 cy of	2½-0"	\$13.93	=	\$ 376

TOTAL SURFACING COST = \$3,762

Compiled by:
Date:

J. Doyal
Jul 17, 2012

GRAND TOTAL =====>

\$3,762

TIMBER CRUISE SUMMARY

Sale Name: Benton Brigade 341-13-03

Sale Type: Areas I, II, III, and IV are automark thinnings.

Sale Area: The sale is located in the NE ¼ Section 24, Township 10S, Range 7W, and the S½ Section 21, Township 11S, Range 7W, WM, Benton County, Oregon.

Cruise Summary:

MBF Volume							
Area	Gross Acres	Net Acres	Species	Gross Volume	Net Volume	% Hidden D & B	Final Adjusted Volume
I	15	13	Douglas-fir	97	92	3	89
II	46	44	Douglas-fir	457	454	7	423
III	25	23	Douglas-fir	174	173	1	172
IV	31	30	Douglas-fir	180	180	0	180
Totals	117	110		908	899		864

Net acres represent a reduction of gross acres to account for stream buffers and road right-of-ways. Acres were determined using the STATE Geographic Information System and orthographic photographs.

Grade by Percent						
Area	Species	2-Saw	3-Saw	4-Saw	Special Mill	Camprun
I	Douglas-fir	27%	40%	33%		
II	Douglas-fir	54%	40%	6%		
III	Douglas-fir	41%	50%	9%		
IV	Douglas-fir	0%	72%	28%		

Cruise Methods: Timber Sale Area – Data was taken using variable radius plots using a 20 BAF plot factor for basal area, and a 128 BAF plot factor to choose the measure trees. All measure trees were measured and graded. Volumes are based on a gross acre cruise with leave trees and take trees tallied.

Tree Form: A form point of 16' was used for all species. Form factors were measured on all grade trees using a relaskop to get the number bars at form point divided by bars at D4H to calculate the form factor.

Measurement Standards: Heights were measured to the nearest foot to a top cruise diameter of 6 inches outside bark or 25% of DBH for Douglas-fir. Red alder were measured to a top cruise diameter of 7 inches outside bark or where the shape of the top would not contain a minimum length log segment.

Grading System: All trees were graded in 40 foot segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.

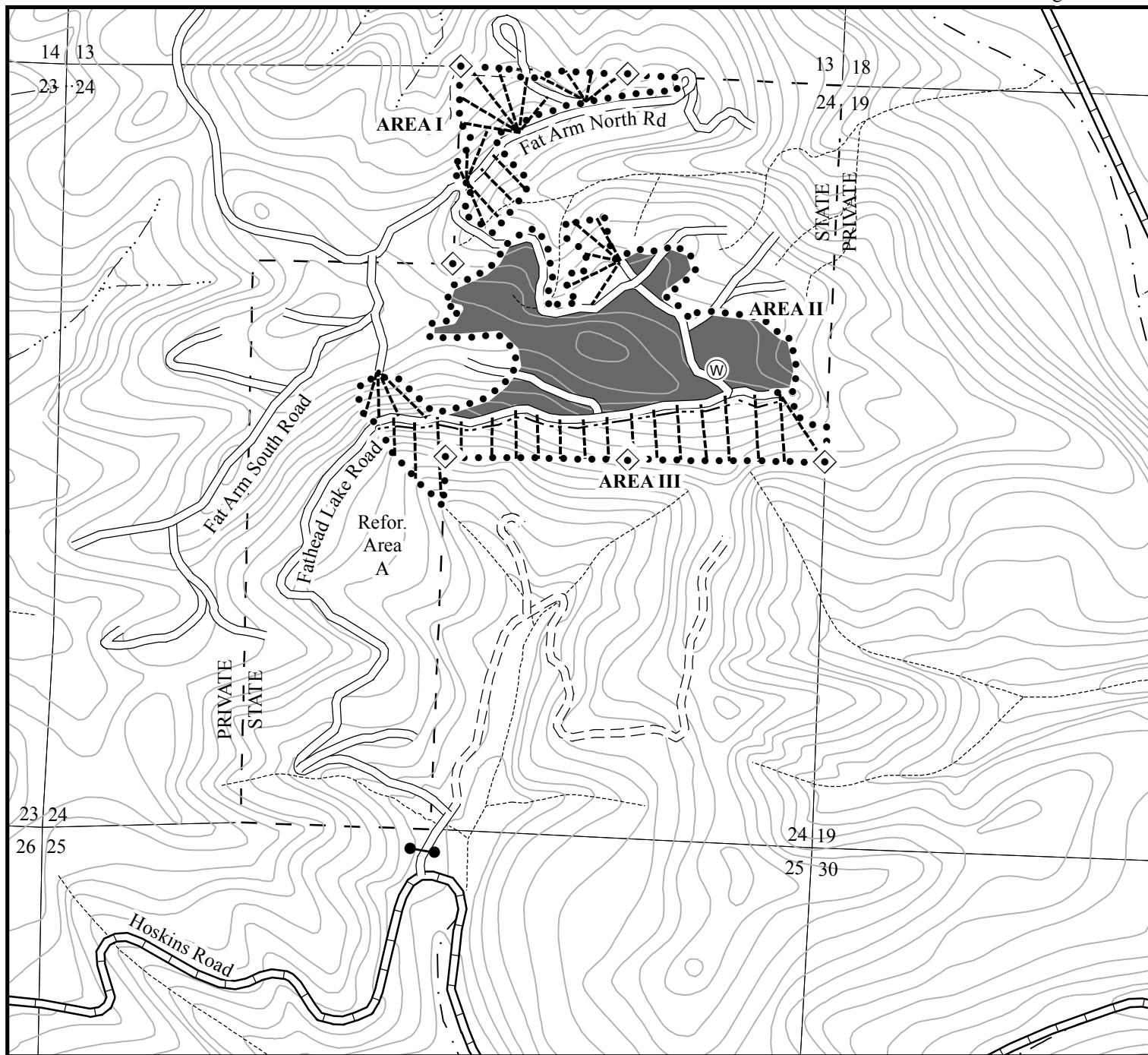
Utilization Standards: The minimum log diameter for Douglas-fir was 6 inches, and for red alder it was 7 inches. The minimum segment length was 13 feet (12 feet plus 1 foot of trim).

Computation Procedures: The cruise volumes were computed using SuperAce 2004. The net acreage for the cruise was 116 acres.

Cruisers/Dates: Areas I, II, and III were cruised by Doyal, Wiger, and McMinds. Area IV was cruised by Doyal. All areas cruised in 2012.

Signatures: Cruise Specialist: Don McMinds

Unit Forester: Chris Hunk



LEGEND

- Cable Corridors
- Tractor Yarding Area
- (W) Waste Area
- ◆ Monuments
- Gate
- Boundaries
- Timber Sale Boundary
- - - Area Boundary
- - - State Forest Property Boundary
- Roads
- == Highway
- == County Road
- == Surfaced Road
- == Unsurfaced Road
- == New Road Construction
- Streams
- Type F Stream
- - - Type N Stream
- - - Unknown Stream

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-13-03
BENTON BRIGADE
PORTIONS OF SECTION 24, T10S, R7W, W.M.,
& SECTION 21, T11S, R7W, W.M.,
BENTON COUNTY, OREGON

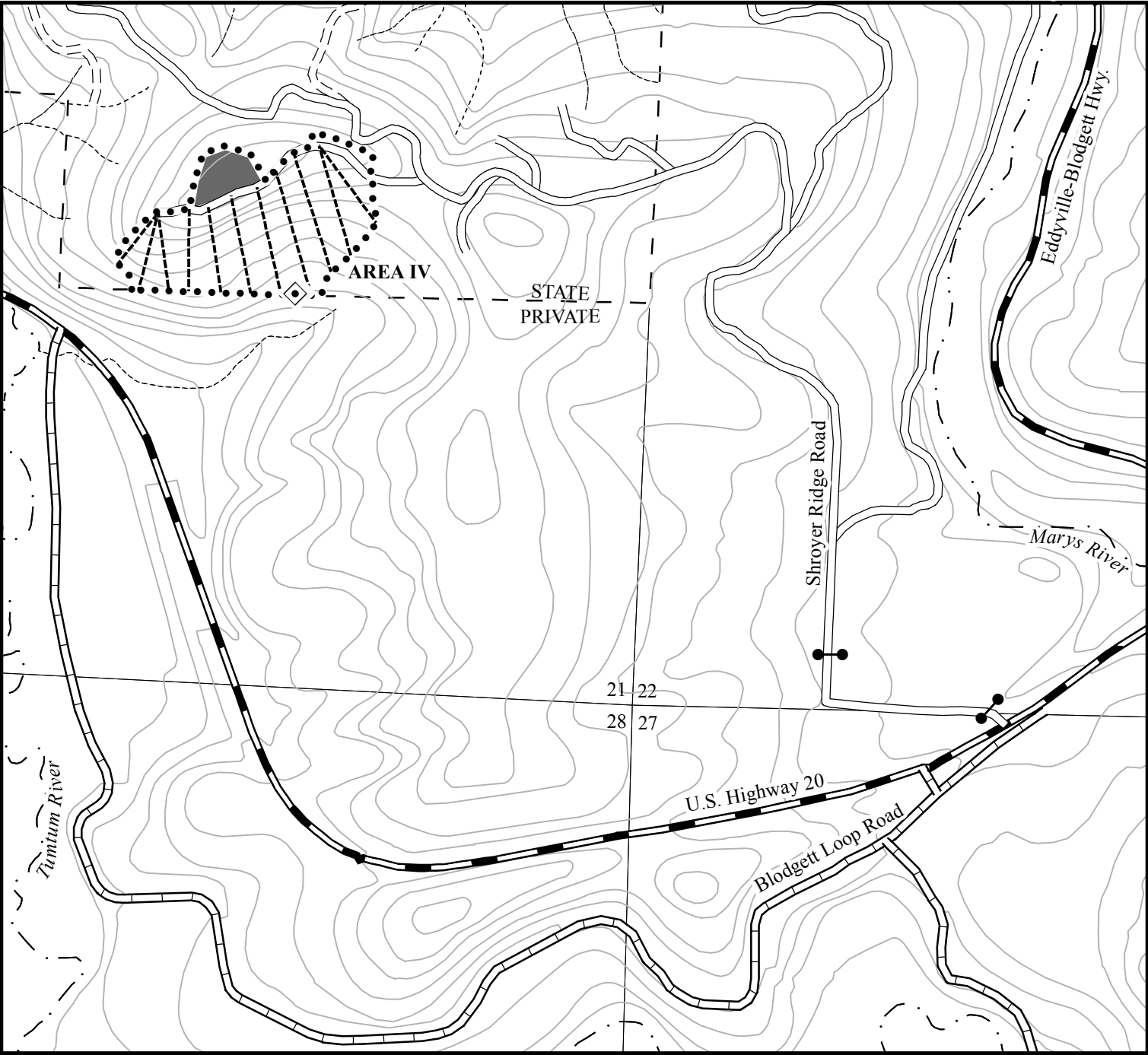
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sources to ascertain the usability of this information.



1 inch = 1,000 feet



	GROSS ACRES	NET ACRES
AREA I (PC)	15	13
AREA II (PC)	46	44
AREA III (PC)	25	23
AREA IV (PC)	31	30
TOTAL	117	110



LEGEND

- Cable Corridors
- Tractor Yarding Area
- Ⓢ Waste Area
- ◆ Monuments
- Gate
- Boundaries**
- Timber Sale Boundary
- - - Area Boundary
- - - State Forest Property Boundary
- Roads**
- ▬ Highway
- ▬ County Road
- ▬ Surfaced Road
- ▬ Unsurfaced Road
- ▬ New Road Construction
- Streams**
- Type F Stream
- Type N Stream
- Unknown Stream

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-13-03
BENTON BRIGADE
PORTIONS OF SECTION 24, T10S, R7W, W.M.,
& SECTION 21, T11S, R7W, W.M.,
BENTON COUNTY, OREGON

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