



"SUSTAINABLE FORESTRY"

Timber Sale Appraisal
Shroyer Summit

Sale WO-341-2016-34-

District: West Oregon

Date: July 20, 2015

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,160,723.39	\$48,338.72	\$1,209,062.11
		Project Work:	(\$22,640.00)
		Advertised Value:	\$1,186,422.11



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Timber Description

Location: Portions of Section 16, T11S, R7W, W.M., Benton County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	27	0	95
Alder (Red)	16	0	90
Maple	19	0	90

Volume by Grade	2S	3S	3S 12"+	4S	Camprun	Total
Douglas - Fir	2,858	299	337	35	0	3,529
Alder (Red)	0	0	0	0	148	148
Maple	0	0	0	0	34	34
Total	2,858	299	337	35	182	3,711

Comments: Pond Values Used: 2nd Quarter Calendar Year 2015.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
\$218/MBF = \$435/MBF - \$217/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost: (NOTE: Cedar must be scaled)
\$1,058/MBF = \$1,275/MBF - \$217/MBF

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

LOG HAUL:

Conifer costed to Philomath.
Hardwood costed to Eugene.

HAULING COST ALLOWANCE

Hauling costs equivalent to \$780 daily truck cost.

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

Non-project Spurs: \$4,500

Railroad Flaggers: \$3,000

Additional Scaling Cost at \$1 per MBF: \$3,711

TOTAL Other Costs (with Profit & Risk to be added) = \$11,211

Other Costs (No Profit & Risk added):

Equipment Cleaning (Invasive Species Prevention) = \$2,000

Slashing 1" Rule: 16 hrs at 48.53/hr. = \$776

TOTAL Other Costs (No Profit & Risk added) = \$2,776

SLASH DISPOSAL

Move-in: \$750

Project Work: 74 hrs @ \$150/hr = \$11,100

TOTAL Slash Disposal = \$11,850



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Logging Conditions

Combination#: 1

Douglas - Fir	30.00%
Alder (Red)	30.00%
Maple	30.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Falling/Delimiting

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 8 **bd. ft / load:** 5000

cost / mbf: \$165.00

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

Combination#: 2

Douglas - Fir	70.00%
Alder (Red)	70.00%
Maple	70.00%

Logging System: Track Skidder **Process:** Manual Falling/Delimiting

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 8 **bd. ft / load:** 5000

cost / mbf: \$111.38

machines: Log Loader (B)
Track Skidder



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Logging Costs

Operating Seasons: 1.00	Profit Risk: 10%
Project Costs: \$22,640.00	Other Costs (P/R): \$11,211.00
Slash Disposal: \$11,850.00	Other Costs: \$2,776.00

Miles of Road

Road Maintenance: \$2.84

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	5.0
Alder (Red)	\$0.00	2.0	3.5
Maple	\$0.00	2.0	3.5



"STAND FOR FORESTRY"

Timber Sale Appraisal
Shroyer Summit

Sale WO-341-2016-34-

District: West Oregon

Date: July 20, 2015

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$127.47	\$2.98	\$1.18	\$54.60	\$3.02	\$18.92	\$3.19	\$5.00	\$0.75	\$217.11
Alder (Red)									
\$127.47	\$3.12	\$1.18	\$122.57	\$3.02	\$25.74	\$3.19	\$5.00	\$0.75	\$292.04
Maple									
\$127.47	\$3.12	\$1.18	\$122.57	\$3.02	\$25.74	\$3.19	\$5.00	\$0.75	\$292.04

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$546.02	\$328.91	\$0.00
Alder (Red)	\$0.00	\$595.00	\$302.96	\$0.00
Maple	\$0.00	\$395.00	\$102.96	\$0.00



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Date: July 20, 2015

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	3,529	\$328.91	\$1,160,723.39
Alder (Red)	148	\$302.96	\$44,838.08
Maple	34	\$102.96	\$3,500.64

Gross Timber Sale Value

Recovery: \$1,209,062.11

Prepared By: Dave Wiger

Phone: 541-929-9163

SUMMARY OF ALL PROJECT COSTS

Sale Name: Shroyer Summit

Date: June 22, 2015
Time: 16:18

Project #1 - Improvement

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to A1	216.6 sta	\$ 17,143
B to B1	7.5 sta	\$ 446
B2 to B3	3.3 sta	\$ 218

TOTALS	227.4 sta	\$ 17,807
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Project #3 - Brushing

Brushing on haul routes	216.6 sta	\$ 2,739
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Project #4 - Post Harvest Activities

Post harvest rock, ripping, and road closure		\$ 984
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Move in

	<u>Cost</u>	<u>On-site move</u>
Brusher	\$ 340	
Crawler tractor, D-4 or equiv.	\$ 340	\$ 90
Grader, Cat 14-G or equiv.	\$ 340	

TOTAL		\$ 1,110
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GRAND TOTAL \$ 22,640

Compiled by D. Wiger

Date 06/22/2015

SUMMARY OF CONSTRUCTION COST

SALE	Shroyer Summit	- Project #1	LENGTH improve	216.6 sta
ROAD	A to A1	Surfaced	WOSHROYER00 & 400	
			Ditched 0+00 to 135+90	135.9 sta
			Outsloped 135+90 to 216+60	80.7 sta

IMPROVEMENT

Shape surface	135.9 sta.	@	\$13.75 /sta	=	\$1,869
Shape surface (with road grader)	80.7 sta.	@	\$9.90 /sta	=	\$799

TOTAL IMPROVEMENT \$2,668

SURFACING

			Size	Cost/yd	
Spot rock (4.1 miles) (200 CY/Mile)	810 cy of		1½-0"	\$17.87	= \$14,475

TOTAL ROCK COST = \$14,475

GRAND TOTAL =====> \$17,143

Compiled by: D. Wiger

Date: Jun 22, 2015

SUMMARY OF CONSTRUCTION COST

SALE Shroyer Summit - Project #1 LENGTH improve 7.5 sta
ROAD B to B1 Unsurfaced, Outsloped

IMPROVEMENT

Re-open road with dozer (D-4 or equiv.)	3 hr.	@	\$89.60 /hr.	=	\$269
Re-open landing	1 hr.	@	\$89.60 /hr.	=	\$90
Shape surface (with road grader)	7.5 sta.	@	\$11.55 /sta	=	\$87

TOTAL IMPROVEMENT \$446

GRAND TOTAL =====> \$446

Compiled by:

D. Wiger

Date:

Jun 22, 2015

SUMMARY OF CONSTRUCTION COST

SALE Shroyer Summit - Project #1 LENGTH construct 3.3 sta
ROAD B2 to B3 Unsurfaced, Outsloped

IMPROVEMENT

Re-open road with dozer (D-4 or equiv.)	1 hr.	@	\$89.60 /hr.	=	\$90
Re-open landing	1 hr.	@	\$89.60 /hr.	=	\$90
Shape surface (with road grader)	3.3 sta.	@	\$11.55 /sta	=	\$38

TOTAL IMPROVEMENT \$218

GRAND TOTAL =====> \$218

Compiled by: D. Wiger

Date: Jun 22, 2015

SUMMARY OF CONSTRUCTION COST

SALE Shroyer Summit - Project #3 Post Harvest
ROAD

SURFACING

		Size	Cost/yd		
Landing patch rock					
5 landings	45 cy of	1½-0"	\$17.87	=	\$804

TOTAL ROCK COST = \$804

MISCELLANEOUS PROJECTS

Rip non-project roads/skid trails	14.5 sta.	@	\$10.77 /sta. =	\$156
Tank trap (1) at Pt. B	0.5 hr.	@	\$48.35 /hr. =	\$24

TOTAL MISCELLANEOUS PROJECTS = \$180

GRAND TOTAL =====> \$984

Compiled by: D. Wiger

Date:

Jun 22, 2015

SUMMARY OF MAINTENANCE COST

SALE Shroyer Summit - Final Maintenance Cost Estimate
 ROAD (Costed in appraisal, not in project costs)

Grading Move-in \$ 340.10

Road Segment	Length	Cost/Sta	Cost	Mileage
A to A1	135.9	\$13.75	\$1,868.63	2.6
A to A1	80.7	\$ 9.90	\$798.93	1.5
B to B1	7.5	\$11.55	\$86.63	0.1
B2 to B3	3.3	\$11.55	\$38.12	0.1
Totals	227.4		\$2,792.31	4.3

Maintenance Rock: 1½-0"

	Volume	Cost/CY	Cost
	414	\$17.87	\$7,398.18

Grand Total \$ 10,530.59

TS Volume 3,711 MBF

Cost / MBF = \$2.84

NOTES:

Rock Haul Cost Computation

SALE NAME: Shroyer Summit DATE: Jun 22, 2015
 ROAD NAME: Beaver Creek CLASS: Medium
 ROCK SOURCE: Rickard 9 CY truck
 Route: Hwy 223, Hwy 20, Byrd Lane, follow signs to sale area

TIME Computation:

Road speed time factors:

1.	55 MPH	9.6	MRT	10.5	minutes
2.	50 MPH	2.0	MRT	2.4	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		MRT	0.0	minutes
7.	25 MPH		MRT	0.0	minutes
8.	20 MPH	6.4	MRT	19.2	minutes
9.	15 MPH	2.0	MRT	8.0	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) 40.60 minutes

Operator efficiency correction 0.85 47.76 minutes
 Job efficiency correction 0.90 53.07 minutes

Truck capacity (CY) 9.00 5.90 min/CY
 Loading time, delay time per CY 0.25 min/CY
 TIME (minutes) per cubic yard 6.15 min/CY

COST per CY computation

Cost of truck and operator per hour \$68.88 /hr.
 Cost of truck and operator per minute \$1.15 /min

Cost per CY \$7.07 /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	\$17.87	\$19.37
3 - 0"	\$ 10.46	\$17.53	\$19.03
Jaw Run	\$ 9.11	\$16.18	\$17.68

Note: Pit costs November 2012

Rock Haul Cost Computation

SALE NAME: Shroyer Summit DATE: Jun 22, 2015
 ROAD NAME: Beaver Creek CLASS: Medium
 ROCK SOURCE: Rickard 18 CY truck
 Route: Hwy 223, Hwy 20, Byrd Lane, follow signs to sale area

TIME Computation:

Road speed time factors:

1.	55 MPH	9.6	MRT	10.5	minutes
2.	50 MPH		MRT	0.0	minutes
3.	45 MPH	2.0	MRT	2.7	minutes
4.	40 MPH		MRT	0.0	minutes
5.	35 MPH		MRT	0.0	minutes
6.	30 MPH		MRT	0.0	minutes
7.	25 MPH		MRT	0.0	minutes
8.	20 MPH	6.0	MRT	18.0	minutes
9.	15 MPH	2.4	MRT	9.6	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) 41.30 minutes

Operator efficiency correction 0.85 48.59 minutes
 Job efficiency correction 0.85 57.16 minutes

Truck capacity (CY) 18.00 3.18 min/CY
 Loading time, delay time per CY 0.25 min/CY
 TIME (minutes) per cubic yard 3.43 min/CY

COST per CY computation

Cost of truck and operator per hour \$90.22 /hr.
 Cost of truck and operator per minute \$1.50 /min

Cost per CY \$5.15 /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	\$15.95	\$17.45
3 - 0"	\$ 10.46	\$15.61	\$17.11
Jaw Run	\$ 9.11	\$14.26	\$15.76

Note: Pit costs November 2012 Hardrock Quarry

TIMBER CRUISE SUMMARY

Sale Name: Shroyer Summit 341-16-34

Sale Type: The Sale Area is a modified clearcut.

Fund Distribution: BOF 100%

Sale Area: Portions of Section 16, T11S, R7W, W.M., Benton County, Oregon.

Area	Treatment	Gross Acres	Acreage Adjustment	Net Sale Acres	Acreage Comp. Method
1	Modified Clearcut	114	Cruise	90	Ortho photo, GIS, GPS

Timber Description: Timber on the sale area consists of a natural stand of 79 year old timber with some older trees scattered throughout the stand. Conifer trees other than Douglas-fir are reserved from cutting. There were some small hemlock seen during reconnaissance of the sale but none were encountered during the cruise and some cedar was observed inside posted stream buffers. There is *Phellinus weirii* (laminated root rot) in the stand which will require marking of infected stumps.

Cruise Summary:

Total Volume (MBF) by Species and Grade: (See attached "Stand Table Summary" and "Species, Sort Grade").

Species	Gross Cruise Volume	Cruised D & B ¹	Cruised D & B (MBF) ¹	Hidden D & B	Hidden D & B (MBF)	GTR (MBF)	Net Sale Volume
Douglas-fir	3902	5%	178	5%	195	--	3,529
Red alder	166	6%	10	5%	8	--	148
Bigleaf maple	42	14%	6	5%	2	--	34
Total	4110	5%	194	5%	205	--	3,711

¹ Includes volume graded as Utility.

Species	DBH	Net Vol.	2-Saw	3-Saw	3-Saw 12"+	4-Saw	Camp Run
	Grade Percentages		81%	9%	9%	1%	--
Douglas-fir	27.2	3529	2,858	299	337	35	--
	Grade Percentages		--	--	--	--	100%
Red alder	16.2	148	--	--	--	--	148
	Grade Percentages		--	--	--	--	100%
Bigleaf maple	19.2	34	--	--	--	--	34
	Grade Percentages		77%	8%	9%	1%	5%
Total	26.7	3711	2,858	299	337	35	182

Cruise Methods: On all species type data was taken using variable radius plots using a 40 BA plot factor. All trees on every third plot were measured and graded, trees on other plots were counted, by species, for basal area calculation. A total of 22 plots were measured and 44 plots were counted for basal area. Plots were 127 feet apart on lines that were 441 feet apart. Volumes are based on a net acre cruise (approximately 89.7 acres).

Green Tree Retention Areas, reforested patch cuts, roads, and posted stream & wetland RMA's were not cruised (approximately 24 acres).

Tree Form: A form point of 16' was used for all species. Form factors for conifer were measured on grade trees using a relaskop to get the number bars at form point divided by bars at D+4 to calculate the form factor.

Measurement Standards: Heights were measured to the nearest foot to a top cruise diameter of 6-7 inches outside bark or 40% of Form Point for Douglas-fir. Red alder and big leaf maple were measured to a top cruise diameter of 7 inches outside bark or to the point 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.

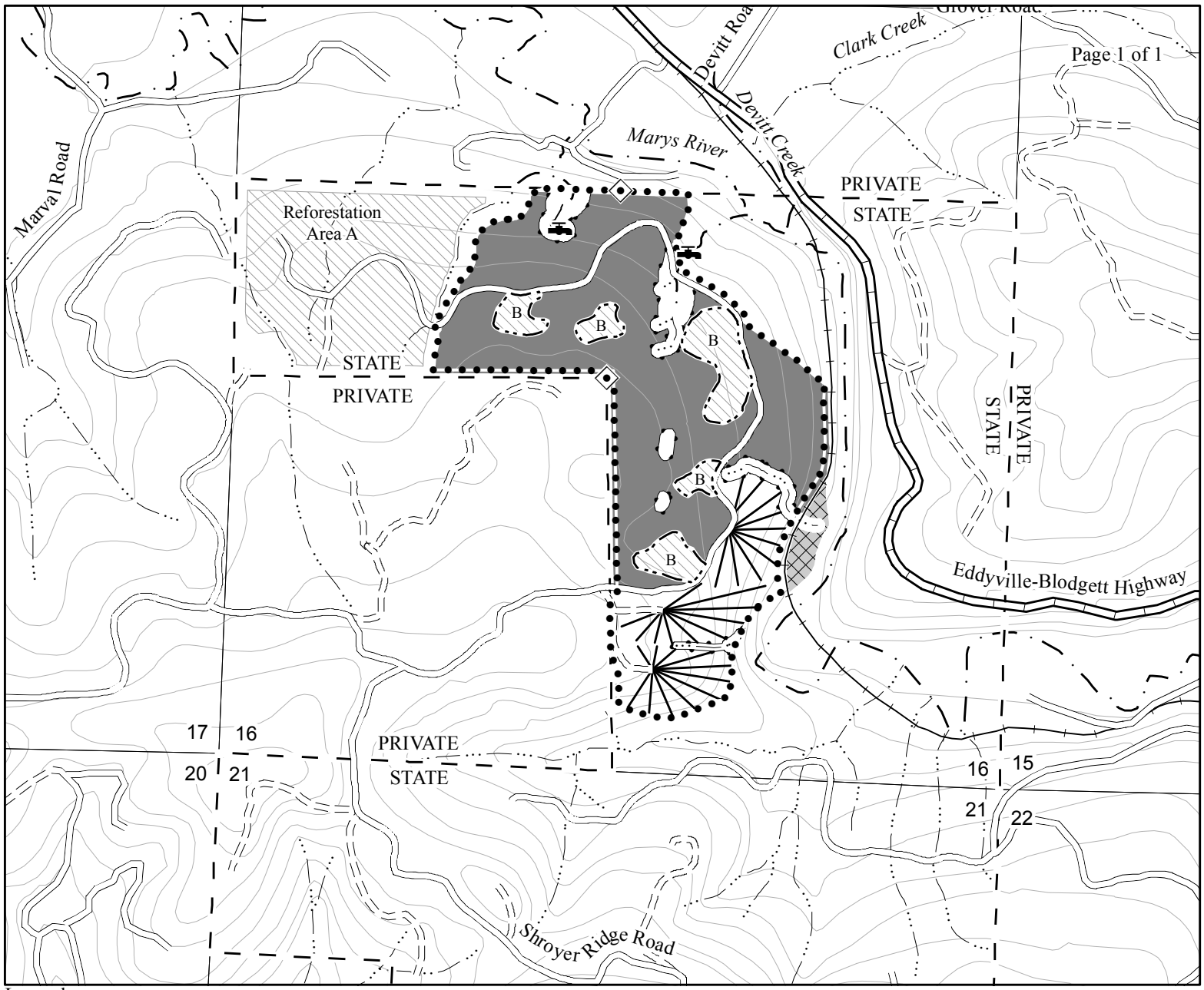
Utilization Standards: The minimum log diameter used for Douglas-fir is 6 inches and for hardwoods is 7 inches in diameter (inside bark). The minimum segment length was 13 feet (12 feet plus 1 foot of trim).

Hidden Defect and Breakage: A hidden D&B of 5% was applied to the Douglas-fir and hardwood volumes.

Computation Procedures: The cruise volumes were computed using Atterbury SuperAce 2008. The net acreage for the cruise on the stand is 89.7 acres. Hidden defect and breakage were applied to the cruised volumes. Reserve trees are in GTRA's, RMA's, or posted out of the unit. No ingrowth was added to the volumes.

Statistics: Target coefficient of variation for the sale was estimated at 75% with a desired sampling error not to exceed 11%. For Net board-foot per acre Douglas-fir the calculated coefficient of variation is 50% and the sampling error is 6.2%. See attached reports for additional information.

Cruisers/Dates: Goldsby, McBride, and Wiger in May and June of 2015.



- Legend**
- Boundaries**
- Timber Sale Boundary
 - - - - Area Boundary (Posted)
 - - - State Forest Property Boundary
- Roads**
- ==== County Road
 - ==== Surfaced Road
 - ==== Unsurfaced Road
 - + + + Railroad
- Streams**
- · · Type F Stream
 - Type D Stream
 - · · · · Type N Stream
 - · — · — Posted Stream Buffer
 - ▨▨▨▨ Reforestation Area
- Yarding Method**
- Tractor Yarding Area
 - Cable Corridors
- ⊕ Domestic Water Intake
 - ◊ Land Survey Monument
 - ▨▨▨▨ Green Tree Retention Area

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-16-34
 SHROYER SUMMIT
 PORTIONS OF SECTION 16, T11S, R7W, W.M.,
 BENTON COUNTY, OREGON

NET ACRES CABLE = 23
 NET ACRES TRACTOR = 67

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



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