



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
SS Johnson Combo
Sale 341-15-49

District: West Oregon

Date: July 23, 2014

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$954,907.89	\$4,472.52	\$959,380.41
		Project Work:	\$(98,154.00)
		Advertised Value:	\$861,226.41



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal SS Johnson Combo Sale 341-15-49

District: West Oregon

Date: July 23, 2014

timber description

Location: Portions of Sections 22, 27, and 34, T11S, R8W, and portions of Section 3, T12S, R8W, W.M., Lincoln County, Oregon.

Stand Stocking: 40%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	27	0	95
Alder (Red)	14	0	90
Maple	16	0	90

Volume by Grade	2S	3S	4S	CR 6" - 8	CR 8" - 1	Total
Douglas - Fir	2,412	557	52	0	0	3,021
Alder (Red)	0	0	0	14	0	14
Maple	0	0	0	0	27	27
Total	2,412	557	52	14	27	3,062



Timber Sale Appraisal
SS Johnson Combo
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District: West Oregon

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

Port Orford Cedar, Western Hemlock and Other Conifers Stumpage
Price = Pond Value minus Logging Cost:
\$189/MBF = \$505/MBF - \$316/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost: (NOTE: Cedar must be scaled)
\$734/MBF = \$1,050/MBF - \$316/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):

Vehicle assist Area 3,
5 hrs/day x 6 days x \$81.03/hr (Grader) = \$2,431
Brand & Paint Logs: 3,062 MBF @ \$1/MBF = \$3,062
Cable Corridor Layout: 2 days @ \$430/day = \$860
Rigging: 10 Intermediate Supports = \$1,000
Rigging: 20 Tail Trees = \$2,000
Directional Felling Road & Powerline: 12 ac @ \$200/ac = \$2,400
Slashing, Area 4, Hardwoods and Brush Larger than 1" = \$2,400
TOTAL Other Costs (with Profit & Risk to be added) = \$14,153

Other Costs (No Profit & Risk added):

Equipment Cleaning (Invasive Species Prevention) = \$2,000
Down Wood: (36 trees~2 fallers) @ \$430/day x 2 days = \$860
Snag Creation: 24 Snags x \$75 per Snag = \$1,800
Flagging County Road: 2 flaggers X 10 days X \$400/day = \$4,000
Firewood Sorting: 8 landings x \$100 landing = \$800
TOTAL Other Costs (No Profit & Risk added) = \$9,460

SLASH DISPOSAL

Move-in = \$750
Project Work: 20 hrs @ \$150/hr = \$3,000
TOTAL Slash Disposal = \$3,750



"STEWARDSHIP IN FORESTRY"

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District: West Oregon

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logging conditions

combination#: 1 Douglas - Fir 61.59%
 Alder (Red) 78.57%
 Maple 100.00%

yarding distance: Long (1,500 ft) **downhill yarding:** No
logging system: Cable: Large Tower >=70 **Process:** Manual Falling/Delimbing
tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 5.0 **bd. ft / load:** 4,500
cost / mbf: \$164.15

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

combination#: 2 Douglas - Fir 10.77%
 Alder (Red) 21.43%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Track Skidder **Process:** Manual Falling/Delimbing
tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 8.0 **bd. ft / load:** 4,000
cost / mbf: \$107.51

machines: Log Loader (B)
 Track Skidder

combination#: 3 Douglas - Fir 27.64%

yarding distance: Long (1,500 ft) **downhill yarding:** No
logging system: Cable: Large Tower >=70 **Process:** Manual Falling/Delimbing
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 4.0 **bd. ft / load:** 4,500
cost / mbf: \$205.19

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



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
SS Johnson Combo
Sale 341-15-49

District: West Oregon

Date: July 23, 2014

logging costs

Operating Seasons:	1.00	Profit Risk:	14.00%
Project Costs:	\$98,154.00	Other Costs (P/R):	\$14,153.00
Slash Disposal:	\$3,750.00	Other Costs:	\$9,460.00

Miles of Road

Road Maintenance: \$3.43

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
Red Cedar	\$0.00	4.0	3.5
Port Orford Cedar	\$0.00	4.0	3.5
Alder (Red)	\$0.00	2.0	3.0
Maple	\$0.00	2.0	3.0



"STEWARDSHIP IN FORESTRY"

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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									
\$169.39	\$3.60	\$1.43	\$89.81	\$4.62	\$37.64	\$1.22	\$5.00	\$3.09	\$315.80
Alder (Red)									
\$152.01	\$3.77	\$1.43	\$125.44	\$4.62	\$40.22	\$1.22	\$5.00	\$3.09	\$336.80
Maple									
\$164.15	\$3.77	\$1.43	\$125.44	\$4.62	\$41.92	\$1.22	\$5.00	\$3.09	\$350.64

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$631.89	\$316.09	\$0.00
Alder (Red)	\$0.00	\$455.00	\$118.20	\$0.00
Maple	\$0.00	\$455.00	\$104.36	\$0.00



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Sale 341-15-49

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	3,021	\$316.09	\$954,907.89
Alder (Red)	14	\$118.20	\$1,654.80
Maple	27	\$104.36	\$2,817.72

Gross Timber Sale Value

Recovery: \$959,380.41

Prepared by: Dave Wiger

Phone: 541-929-3266

SUMMARY OF ALL PROJECT COSTS

Sale Name: SS Johnson Combo

Date: May 27, 2014
Time: 15:37

Project #1 - Construction

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
B2 to B3	14.1 sta	\$ 8,608

TOTALS	14.1 sta	\$ 8,608
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Project #2 - Improvements

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to C	200.4 sta	\$ 63,122
A1 to A2	5.4 sta	\$ 62
B to B1	41.2 sta	\$ 4,531

TOTALS	247.0 sta	\$ 67,715
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Project #3 - Brushing

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to C (29+00 to C)	171.4 sta	\$ 2,857
B to B1	41.2 sta	\$ 687

TOTALS	212.6 sta	\$ 3,544
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Project #4 - Stock Pile

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A3 to A4 (Stockpile)	3.3 sta	\$ 12,927

TOTALS	3.3 sta	\$ 12,927
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Project #5 - Post Harvest Activities

Post harvest rock and road closure	\$ 2,129
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Move in

	<u>Cost</u>	<u>On-site move</u>
Excavator, Cat 320 or equiv.	\$ 752	\$ 100
Crawler tractor, D-7 or equiv.	\$ 546	\$ 100
Grader, Cat 14-G or equiv.	\$ 340	
Water Truck	\$ 223	
Vibratory roller	\$ 340	\$ 50
Backhoe (x 2)	\$ 680	\$ 100

TOTAL	\$ 3,231
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GRAND TOTAL \$ **98,154**

Compiled by D. Wiger

Date 05/27/2014

SUMMARY OF CONSTRUCTION COST

SALE	SS Johnson Combo - Project #2	LENGTH improve	200.4 sta
ROAD	A to C	Surfaced, Ditched	

IMPROVEMENT

Shape surface	200.4 sta.	@	\$13.75 /sta	=	\$2,756
& pull ditches (with road grader)					
Manual brushing	8 hr.	@	\$80.00 /hr.	=	\$640
(Cut tree tops & log ends to large for brusher)					
Endhaul slough	150 cy.	@	\$2.54 /cy.	=	\$381
(Backhoe/truck @ Station 47+50, 119+20 to 122+00, & 137+30)					
Ditch cleaning	16 hr.	@	\$43.33 /hr.	=	\$693
(Backhoe)					
Develop 5 landings	5 hr.	@	\$121.25 /hr.	=	\$606

TOTAL IMPROVEMENT \$5,076

SURFACING

		Size	Cost/yd		
Spot (0+00-97+20)	180 cy of	3-0"	\$17.87	=	\$3,217
(100 CY/Mile)					
A-C (97+20-182+30)	1872 cy of	3-0"	\$19.37	=	\$36,261
(4" lift, 22 CY/Sta, 18 CY truck)					
A-C (182+30-200+40)	398 cy of	3-0"	\$23.37	=	\$9,301
(4" lift, 22 CY/Sta, 9 CY truck)					
Turnouts (10)	90 cy of	3-0"	\$23.37	=	\$2,103
Curve Widening	115 cy of	3-0"	\$19.37	=	\$2,228
Landing rock	135 cy of	Jaw run	\$22.02	=	\$2,973

TOTAL ROCK COST = \$56,083

SPECIAL PROJECTS

Install x-drain	37 ft.	@	\$31.62 /ft.	=	\$1,170
0+45 (18" x 37")					
Disipator Rock	9 cy of	Pit run	\$29.51	=	\$266
150+40 (pit run placed with backhoe)					
Clean out culverts	16 culverts	@	\$26.67 ea.	=	\$427
(inlets and outlets)					
Culvert disposal				=	\$100

TOTAL SPECIAL PROJECTS COST = \$1,963

Compiled by: D. Wiger
 Date: May 27, 2014

GRAND TOTAL =====>

\$63,122

SUMMARY OF CONSTRUCTION COST

SALE	SS Johnson Combo - Project #2	LENGTH	improve	5.4 sta
ROAD	A1 to A2	Surfaced, Outsloped		

IMPROVEMENT

Shape surface (with road grader)	5.4 sta.	@	\$11.55 /sta	=	\$62
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TOTAL IMPROVEMENT	\$62
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Compiled by:	D. Wiger	GRAND TOTAL =====>	\$62
Date:	May 27, 2014		

SUMMARY OF CONSTRUCTION COST

SALE SS Johnson Combo - Project #4 LENGTH improve 3.3 sta
ROAD A3 to A4 Surfaced, Outsloped

IMPROVEMENT

Shape surface (road grader)	3.3 sta.	@	\$13.75 /sta	=	\$45
Clear & level site (D-7 or Equiv)	1.0 hr.	@	\$121.25 /hr	=	\$121
Spread & walk in Jawrun base	1.0 hr.	@	\$121.25 /hr	=	\$121
Process & shape pile	3 hr.	@	\$121.25 /hr	=	\$364

TOTAL IMPROVEMENT \$651

SURFACING

		Size	Cost/yd		
Stockpile	504 cy of	3-0"	\$18.21	=	\$9,178
Junction	18 cy of	3-0"	\$18.21	=	\$328
Base Rock (60' x 60' x 12")	135 cy of	Jawrun	\$20.52	=	\$2,770

TOTAL ROCK COST = \$12,276

Compiled by:
Date:

D. Wiger
May 27, 2014

GRAND TOTAL =====>

\$12,927

SUMMARY OF CONSTRUCTION COST

SALE	SS Johnson Combo - Project #2	LENGTH	improve	41.2 sta
ROAD	B to B1		Surfaced, ditched	

IMPROVEMENT

Shape surface (with road grader)	41.2 sta.	@	\$13.75 /sta	=	\$567
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TOTAL IMPROVEMENT	\$567
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SURFACING

		Size	Cost/yd		
Spot rock (200 CY/Mile)	162 cy of	3-0"	\$21.87	=	\$3,543
Turnaround at B1	18 cy of	3-0"	\$21.87	=	\$394

TOTAL ROCK COST =	\$3,937
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SPECIAL PROJECTS

Clean out culvert (inlet and outlet)	1 culvert	@	\$26.67 ea.	=	\$27
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TOTAL SPECIAL PROJECTS =	\$27
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Compiled by:
Date:

D. Wiger
May 27, 2014

GRAND TOTAL =====>

\$4,531

SUMMARY OF CONSTRUCTION COST

SALE SS Johnson Combc - Project #1 LENGTH improve 14.1 sta
ROAD B2 to B3 Unsurfaced, Outsloped, Vehicle assist, Optional (may use swing show instead)

CLEARING AND GRUBBING

Moderate to heavy cover

0.78 acres	@	\$1,173.00 /acre	=	\$915 road
0.10 acres	@	\$902.00 /acre	=	\$90 landing
Remove 4 stumps over 20" (Average 36")			=	\$600

TOTAL CLEARING AND GRUBBING = \$1,605

EXCAVATION

Construct road	1820 cy.	@	\$1.53 /cy.	=	\$2,785
Construct road	8.0 sta.	@	\$74.28 /sta	=	\$594
Endhaul (0+50 to 6+00)	750 cy.	@	\$1.38 /cy.	=	\$1,035
Construct landing	2 hr.	@	\$121.25 /hr.	=	\$243
Dozer (D-7 or equiv)	18 hr.	@	\$121.25 /hr.	=	\$2,183
Shape subgrade (with road grader)	14.1 sta.	@	\$11.55 /sta	=	\$163

TOTAL EXCAVATION = \$7,003

NOTE: Design available

Compiled by: D. Wiger
Date: May 27, 2014

GRAND TOTAL =====>

\$8,608

SUMMARY OF CONSTRUCTION COST

SALE SS Johnson Combo - Project #3 **Roadside Brushing**
ROAD

Road segment	Difficulty	Stations	Cost/sta.	Total
A to C (29+00 to 200+40)	Moderate	171.4	\$16.67	\$2,857
B to B1	Moderate	41.2	\$16.67	\$687
		212.6 sta		\$3,544

Note: rate used is \$880/mile, both sides

Compiled by:
Date:

D. Wiger
May 27, 2014

GRAND TOTAL =====> \$3,544

SUMMARY OF CONSTRUCTION COST

SALE SS Johnson Combo - Project #5 Post Harvest
ROAD

SURFACING

		Size	Cost/yd		
A to C (4 landing patch)	36 cy of	3-0"	\$17.87	=	\$643
A to C Sta. 199+50 (1 TAR)	36 cy of	3-0"	\$17.87	=	\$643
B to B1 (5 landing patch)	45 cy of	1½-0"	\$18.21	=	\$819

TOTAL ROCK COST = \$2,105

MISCELLANEOUS PROJECTS

Tank trap (1) at Pt. B2	0.5 hr.	@	\$48.35 /hr.	=	\$24
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TOTAL MISCELLANEOUS PROJECTS = \$24

Compiled by:
Date:

D. Wiger
May 27, 2014

GRAND TOTAL =====>

\$2,129

SUMMARY OF MAINTENANCE COST

SALE
ROAD

SS Johnson Combo

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

Grading Move-in \$ 304.00

Road Segment	Length	Cost/Sta	Cost	Mileage
A-C	200.4	\$13.75	\$2,755.50	3.80
B-B1	41.2	\$13.75	\$566.50	0.78
B2-B3	14.1	\$11.55	\$162.86	0.27

Totals	255.7		\$ 3,788.86	4.84
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Maintenance Rock: 1½-0"

	Volume	Cost/CY	Cost
	369	\$18.21	\$6,719.49

Grand Total \$10,508.35

TS Volume 3,062 MBF
Rock Volume 4,032 CY

Cost / MBF = \$3.43

NOTE:

B2-B3 waterbar & tank trap

Rock Haul Cost Computation

SALE NAME: SS Johnson Combo DATE: May 27, 2014
ROAD NAME: Goat Ridge CLASS: Medium
ROCK SOURCE: Wild Rose 9 CY truck
Route: Hwy 223, Hwy 20, Harlan-Burntwoods, Goat Ridge

TIME Computation:

Road speed time factors:

1.	55 MPH	26.1	MRT	28.5 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	4.2	MRT	7.2 minutes
6.	30 MPH		MRT	0.0 minutes
7.	25 MPH		MRT	0.0 minutes
8.	20 MPH		MRT	0.0 minutes
9.	15 MPH	7.6	MRT	30.4 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) 66.60 minutes

Operator efficiency correction 0.85 78.35 minutes

Job efficiency correction 0.90 87.06 minutes

Truck capacity (CY) 9.00 9.67 min/CY

Loading time, delay time per CY 0.25 min/CY

TIME (minutes) per cubic yard 9.92 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 \$11.41 /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	\$22.21	\$23.71
3 - 0"	\$ 10.46	\$21.87	\$23.37
Jaw Run	\$ 9.11	\$20.52	\$22.02
Pitrun	8.10	\$19.51	

Note: Pit costs November 2012

Rock Haul Cost Computation

SALE NAME: SS Johnson Combo DATE: May 27, 2014
ROAD NAME: Goat Ridge CLASS: Medium
ROCK SOURCE: Wild Rose 18 CY truck
Route: Hwy 223, Hwy 20, Harlan-Burntwoods, Goat Ridge

TIME Computation:

Road speed time factors:

1.	55 MPH	24.1	MRT	26.3	minutes
2.	50 MPH		MRT	0.0	minutes
3.	45 MPH		MRT	0.0	minutes
4.	40 MPH	2.0	MRT	3.0	minutes
5.	35 MPH		MRT	0.0	minutes
6.	30 MPH	4.2	MRT	8.4	minutes
7.	25 MPH		MRT	0.0	minutes
8.	20 MPH		MRT	0.0	minutes
9.	15 MPH	7.6	MRT	30.4	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) 68.60 minutes

Operator efficiency correction 0.85 80.71 minutes

Job efficiency correction 0.85 94.95 minutes

Truck capacity (CY) 18.00 5.28 min/CY

Loading time, delay time per CY 0.25 min/CY

TIME (minutes) per cubic yard 5.53 min/CY

COST per CY computation

Cost of truck and operator per hour \$80.64 /hr.

Cost of truck and operator per minute \$1.34 /min

Cost per CY \$7.41 /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	\$18.21	\$19.71
3 - 0"	\$ 10.46	\$17.87	\$19.37
Jaw Run	\$ 9.11	\$16.52	\$18.02

Note: Pit costs November 2012 Hardrock Quarry

Excavator Endhaul Production computation - CAT 320 series or equivalent

Sale Name SS Johnson Combo

Date

May 27, 2014

BUCKET PAYLOAD COMPUTATION

Average Bucket Payload = (heaped bucket capacity) X (bucket fill factor)

Heaped bucket capacity for a 48" cutting width = 1.5 cy. for rock and

1.88 cy for soil

(1)

1.00 cy

Bucket fill factor:

Material

Fill Factor Range

Moist Loam or Sandy Clay

1.0 to 1.1

Sand and Gravel

.95 to 1.0

Hard, Tough Clay

.80 to .90

Rock - Well Blasted

.60 to .70

Rock - Poorly Blasted

.40 to .50

(2)

0.90

Average Bucket Payload =

(3)

0.90 cy

CYCLE TIME COMPUTATIONS

Cycle time Estimate from Chart (Seconds)

(4)

13.80 sec

CYCLE TIME (100% EFFICIENCY in Minutes)

(5)

0.23 min

Operator Efficiency Corr.

75%

(6)

0.31 min

Job Efficiency Corr.

75%

(7)

0.41 min

Swell Factor (Banked yards)

75%

(8)

0.55 min

Time per cubic yard (Min)

(9)

0.61 min

COST PER CUBIC YARD COMPUTATION

Cost of Excavator and Operator per Hr.

\$150.00

(10)

\$2.50 /min

Cost per Cubic Yard

(11)

\$1.53 /cy

End Haul Cost Computation

SALE NAME: Back Eddy
ROAD NAME: B to B1 Landing

DATE: May 27, 2014
CLASS: Medium
10 CY truck

Route: B to B1 Station 4+50 to W1

TIME Computation:

Road speed time factors:

1.	55 MPH	MRT	0.0 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	MRT	0.0 minutes
7.	25 MPH	MRT	0.0 minutes
8.	20 MPH	MRT	0.0 minutes
9.	15 MPH	MRT	0.0 minutes
10.	10 MPH	MRT	0.0 minutes
11.	05 MPH	0.3 MRT	3.6 minutes

Dump or spread time per RT

0.50 minutes

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

4.10 minutes

Operator efficiency correction

0.75

5.47 minutes

Job efficiency correction

0.75

7.29 minutes

Truck capacity (CY)

10.00

0.73 min/CY

Loading time, delay time per CY

0.61 min/CY

TIME (minutes) per cubic yard

1.34 min/CY

COST per CY computation

Cost of truck and operator per hour

\$61.50 /hr

Cost of truck and operator per minute

\$1.03 /min

Cost per CY

\$1.38 /CY

TIMBER CRUISE REPORT

1. **Sale Area Location:** Portions of Sections 22, 27, and 34, T11S, R8W and Section 3, T12S, R8W, W.M., Lincoln County, Oregon.
2. **Fund Distribution:**
 - a. **Fund** BOF 84.95%; CSL 15.05% (by volume)
 - b. **Tax Code** N/A
3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Acreage Adjustment	Net Acres	Acreage Comp. Method	Closure
1	Modified Clearcut	19.1	Gross Acre	15.1	Ortho photo, GIS, GPS	n/a
2	Partial Cut	17.0	Gross Acre	16.7	Ortho photo, GIS, GPS	n/a
3	Partial Cut	15	Cruise	7.2	Ortho photo, GIS, GPS	n/a
4	Modified Clearcut	28.3	Gross Acre	24.4	Ortho photo, GIS, GPS	n/a

4. **Cruisers and Cruise Dates:** The sale area was cruised by Joe Goldsby and Dave Wiger in April of 2014.
5. **Cruise Method and Computation:** Areas 1 and 4 are a modified clearcut and were variable plot cruised using a 40 BAF. Plots were located on a 98' by 295' grid with lines running north-south. Every third plot was measured and graded. 24 plots were sampled, with 8 measured and graded plots and 16 count plots in Area 1. 40 plots were sampled, with 14 measured and graded plots and 26 count plots in Area 4. Douglas-fir on measure plots were graded and defect was assessed, other minor species were measured and graded on every plot. These sale areas consist of 1 SLI Type polygon each. The cruise data for the 2 polygons were processed separately for volume computation. This is a net acre cruise.

Areas 2 and 3 are partial cuts. The total volume for the areas was variable plot cruised using a 40 BAF with every other plot measured. Cruise line were run north-south with a plot spacing of 169 feet on lines 339 feet apart for Area 2 and 98 feet on lines 295 feet apart on Area 3. 15 plots were sampled, with 7 measured and graded plots and 8 count plots in Area 2. 14 plots were sampled, with 7 measured and graded plots and 7 count plots in Area 3. Douglas-fir on measure plots were graded and defect was assessed, other minor species were measured and graded on every plot. Area 2 consists of 1 SLI polygon and Area 3 consists of 3 SLI polygons with varying ages, species composition, and stand densities.

Volumes for Areas 1 and 2 are taken from the cruise. The volume for Area 2 and 3 were estimated in the office using the stand tables from the respective areas to calculate a V-BAR for the area, then estimating the strip cut acres and thinning basal area reductions to estimate the volume that will be removed. In Area 2 approximately 1/3 of the area will be removed as strip cuts and the remaining 2/3 of the area will be thinned to 180 ft² BA per acre. In Area 3, the southern portion approximately 9.4 gross acres will have 1/3 of the area removed in strip cuts with no thinning between the strips and approximately 2.5 acres in the northern part of the unit will be thinned to 200 ft² BA per acre. The timber removed in both areas will come from the middle of the diameter range in each area.

Data was recorded on cruise cards in field notebooks and manually entered into Atterbury Super A.C.E. -Version 2.40. Stereo photos, digital ortho photos, LiDar data, and GPS data from a Garmin GPSMap 60CSx was used to map the boundaries for the sale and ArcMap 10.1 was used to determine gross acreage.

6. **Timber Description:** The sale is a naturally seeded 70 to 150 year-old stand of Douglas-fir with some bigleaf maple and red alder. Area 1 has a few western redcedar and introduced Port Orford cedar. The Douglas-fir is an average of 23 inches DBH for Areas 1, 2, & 3 and 34 inches for Area 4. The red alder and bigleaf maple average 15 inches DBH. The reserved conifer detected in the units was western redcedar in Area 1 and some western hemlock in Area 4.

7. Statistical analysis and stand summary:

Area	Target CV	Target SE%	Actual CV	Actual SE%
1	55%	8%	47%	9.7%
2	35%	7%	28%	7.4%
3	35%	7%	37%	10.4%
4	55%	8%	54%	8.5%
1 & 4 combined	55%	8%	57%	7.2%
2 & 3 combined	35%	7%	41%	7.8%

NOTE: Statistics shown are for Douglas-fir only. Percentages are for Net BF volume.

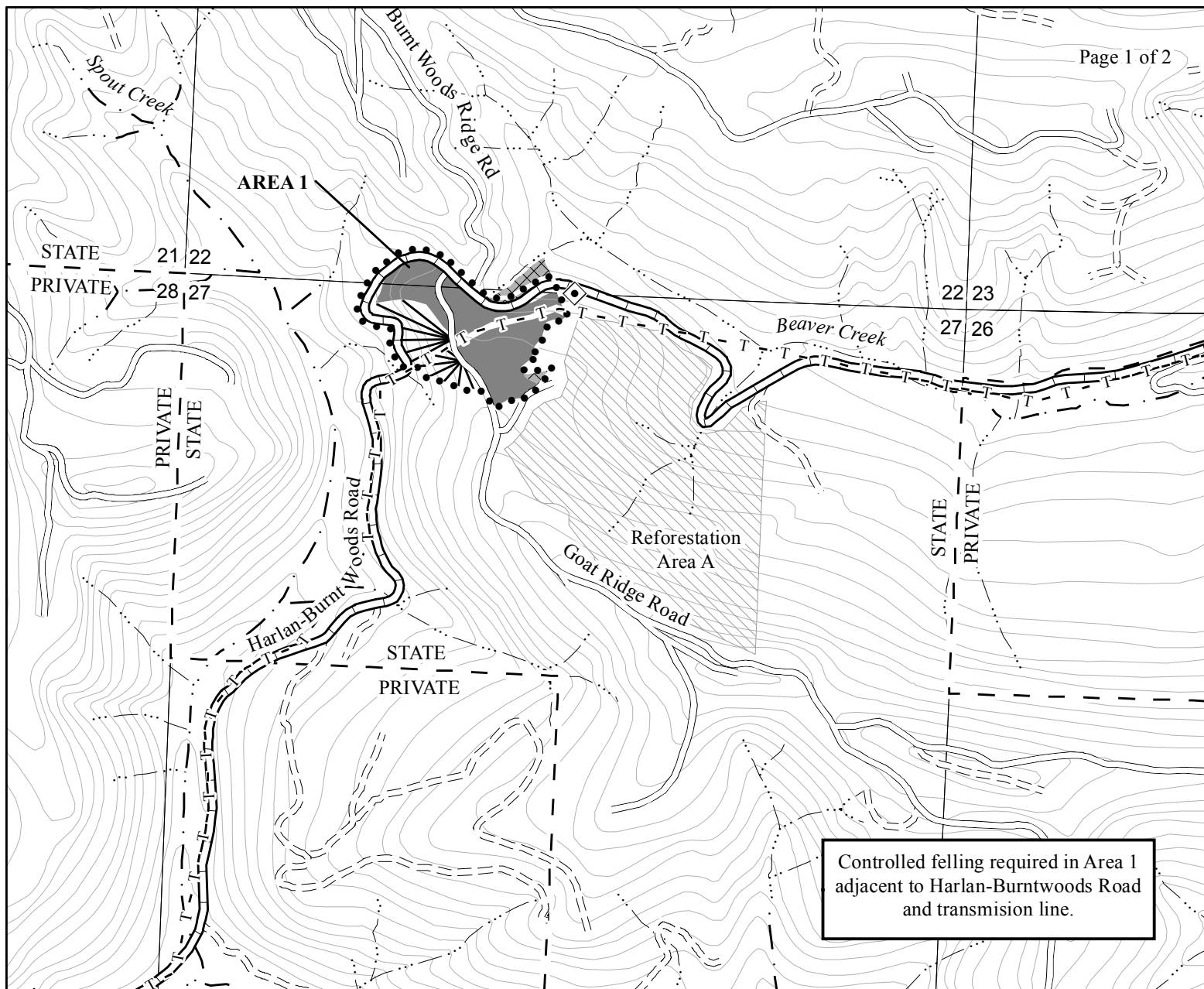
8. Total Volume (MBF) by Species and Log Size: Net volume include no Hidden D&B (captured in field during the cruise) and does not include ingrowth.

Species	DBH	Net Vol.	2-Saw	3-Saw	4-Saw	Utility	Camprun	Recovery %
Douglas-fir	27"	3,021	2,412	557	52	212	--	95%
Red alder	14"	14	--	--	--		14	90%
Bigleaf maple	16"	27	--	--	--		27	90%

Note: Douglas-fir utility grade removal is not required in the contract.

Signatures:

Unit Forester: _____ Date: _____
Chris Humcke



Legend

Boundaries

- Timber Sale Boundary
- - - Area Boundary (Posted)
- - - State Forest Property Boundary

Roads

- ==== County Road
- ==== Surfaced Road
- == == Unsurfaced Road

Streams

- — · Type F Stream
- Type N Stream

Yarding Method

- Tractor Yarding Area
- Cable Corridors
- ▨ Reforestation Area
- ▩ Green Tree Retention Area
- T - T - Overhead Transmission Lines
- ◆ Land Survey Monument

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-15-49
 SS JOHNSON COMBO
 PORTIONS OF SECTIONS 22, 27 & 34, T11S, R8W,
 & SECTION 3, T12S, R8W, 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

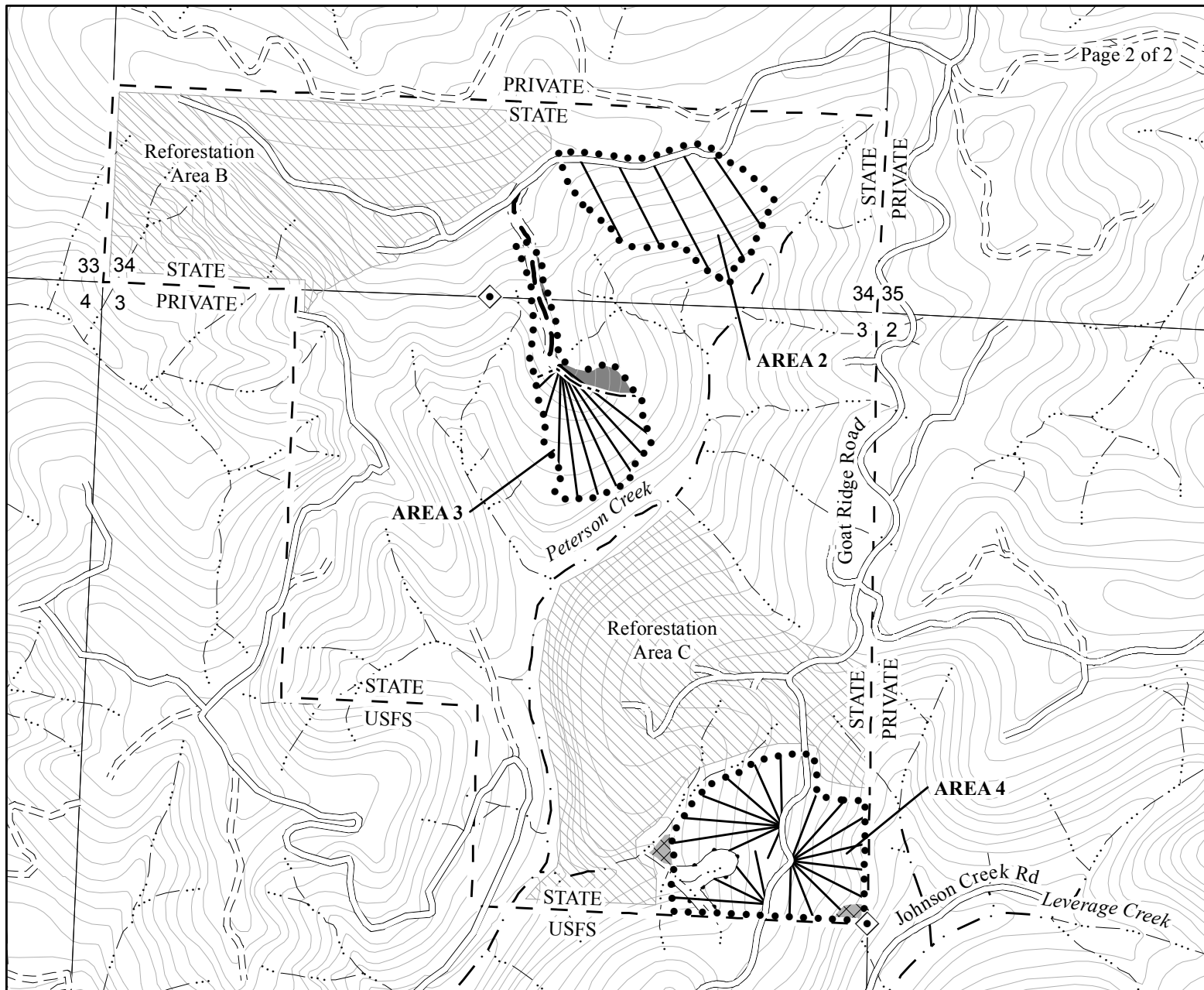
1:12,000



	NET ACRES	NET ACRES
AREA	TRACTOR	CABLE
1 (MC)	10	5
2 (PC)	0	17
3 (PC)	0	7
4 (MC)	0	24
TOTAL	10	53



Created By: Blake McKinley
 bmcKinley@odf.state.or.us
 Date: 05/22/2014



Legend

Boundaries

- Timber Sale Boundary
- - - - Area Boundary (Posted)
- - - 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
- T - T - Overhead Transmission Lines
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Scale

1:12,000



AREA	NET ACRES	
	TRACTOR	CABLE
1 (MC)	10	5
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3 (PC)	0	7
4 (MC)	0	24
TOTAL	10	53



Created By: Blake McKinley
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 Date: 05/28/2014