



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Big Louie  
Sale FG-341-2019-W00553-01

District: Forest Grove

Date: October 31, 2018

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**Cost Summary**

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,413,991.88	\$5,784.96	\$2,419,776.84
		Project Work:	(\$128,940.00)
		Advertised Value:	\$2,290,836.84



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**Timber Description**

**Location:** Portions of sections 13 & 24, T3N, R6W, and portions of sections 18 & 19, T3N, R5W W.M.  
Tillamook County, OREGON

**Stand Stocking:** 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	26	0	98
Western Hemlock / Fir	21	0	98
Alder (Red)	11	0	95

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	4,280	791	117	0	5,188
Western Hemlock / Fir	101	53	22	0	176
Alder (Red)	0	0	0	16	16
<b>Total</b>	4,381	844	139	16	5,380

**Comments:** Pond Values Used: Local Pond Values, October 2018.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:  
 $\$1,057.49/\text{MBF} = \$1,302/\text{MBF} - \$244.51/\text{MBF}$

BRANDING AND PAINTING COST ALLOWANCE =  $\$2.00/\text{MBF}$

FUEL COST ALLOWANCE =  $\$3.00/\text{Gallon}$

HAULING COST ALLOWANCE  
Hauling costs equivalent to  $\$950$  daily truck cost.

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

Other Costs (No Profit & Risk added):  
Machine Time to Block/Waterbar Roads, and Skid Trails:  
 $15 \text{ hours} \times \$150/\text{hour} = \$2,250$   
Machine Time to Pile Landing Slash:  
 $20 \text{ hours} \times \$150/\text{hour} = \$3,000$   
Equipment Cleaning:  $3 \text{ pieces} \times \$1,000/\text{Piece} = \$3,000$   
Slash Treatment:  $20 \text{ acres} \times \$200/\text{acre} = \$4,000$   
TOTAL Other Costs (No Profit & Risk added) =  $\$12,250$

ROAD MAINTENANCE  
Move-in:  $\$4,000$   
General Road Maintenance (Combined):  $\$8,040$   
[Spurs x3 -  $1.3 \text{ miles} \times \$1,200/\text{mile} = \$1,560$ ]  
[So. Lousignont Road -  $1.4 \text{ miles} \times \$1,200/\text{mile} = \$1,680$ ]  
[Wheeler Road] -  $3.6 \text{ miles} \times \$1,200/\text{mile} = \$4,320$   
[Cochran Rd] -  $.4 \text{ miles} \times \$1,200/\text{mile} = \$480$   
TOTAL Road Maintenance:  $\$12,040/5,450 \text{ MBF} = \$2.21/\text{MBF}$



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**Logging Conditions**

**Combination#: 1**                      Douglas - Fir                      64.00%  
   Western Hemlock / Fir                      64.00%  
   Alder (Red)                      64.00%

**Logging System:** Cable: Large Tower >=70                      **Process:** Stroke Delimber

**yarding distance:** Long (1,500 ft)                      **downhill yarding:** No

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

**loads / day:** 7                      **bd. ft / load:** 4600

**cost / mbf:** \$192.55

**machines:** Log Loader (A)  
Stroke Delimber (A)  
Tower Yarder (Large)

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**Combination#: 2**                      Douglas - Fir                      36.00%  
   Western Hemlock / Fir                      36.00%  
   Alder (Red)                      36.00%

**Logging System:** Shovel                      **Process:** Stroke Delimber

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

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

**loads / day:** 10                      **bd. ft / load:** 4600

**cost / mbf:** \$68.96

**machines:** Stroke Delimber (B)

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**District: Forest Grove**

**Date: October 31, 2018**

## Logging Costs

<b>Operating Seasons:</b> 1.00	<b>Profit Risk:</b> 10%
<b>Project Costs:</b> \$128,940.00	<b>Other Costs (P/R):</b> \$0.00
<b>Slash Disposal:</b> \$0.00	<b>Other Costs:</b> \$12,250.00

**Miles of Road**

**Road Maintenance:** \$2.18

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	4.8
Western Hemlock / Fir	\$0.00	2.0	3.8
Alder (Red)	\$0.00	2.0	3.0



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Big Louie Sale FG-341-2019-W00553-01

District: Forest Grove

Date: October 31, 2018

## Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
<b>Douglas - Fir</b>									
\$148.06	\$2.22	\$0.82	\$67.29	\$0.00	\$21.84	\$0.00	\$2.00	\$2.28	\$244.51
<b>Western Hemlock / Fir</b>									
\$148.06	\$2.22	\$0.82	\$127.50	\$0.00	\$27.86	\$0.00	\$2.00	\$2.28	\$310.74
<b>Alder (Red)</b>									
\$148.06	\$2.29	\$0.82	\$166.25	\$0.00	\$31.74	\$0.00	\$2.00	\$2.28	\$353.44

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$700.00	\$455.49	\$0.00
Western Hemlock / Fir	\$0.00	\$600.00	\$289.26	\$0.00
Alder (Red)	\$0.00	\$715.00	\$361.56	\$0.00



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**Summary**

**Amortized**

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	5,188	\$455.49	\$2,363,082.12
Western Hemlock / Fir	176	\$289.26	\$50,909.76
Alder (Red)	16	\$361.56	\$5,784.96

**Gross Timber Sale Value**

**Recovery:** \$2,419,776.84

**Prepared By:** Adrian Torres

**Phone:** 503-359-7460

### PROJECT COST SUMMARY SHEET

Timber Sale: Big Louie  
Sale Number: 341-19-14

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#### PROJECT NO. 1: ROCKED ROAD CONSTRUCTION & RECONSTRUCTION

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<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
F to G	26+50	\$28,095.54
G to H	2+85	\$8,888.60
29+35 stations		
0.56 miles		

Total Rock =

1260 cy	4" - 0
53 cy	Pit-run
120 cy	Riprap

Move-in Costs = \$3,137.51  
\$40,121.65

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#### PROJECT NO. 2: ROAD IMPROVEMENT

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<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	19+80	\$3,668.04
C to D	22+45	\$20,024.14
E to F	18+80	\$13,756.32
I to J	52+80	\$12,386.25
113+85 stations		
2.16 miles		

Total Rock =

1239 cy	1½" - 0
1722 cy	4" - 0
106 cy	Pit-run

Move-in Costs = \$4,227.68  
\$54,062.43

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#### PROJECT NO. 3: STOCKPILE CONSTRUCTION

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Total Rock =

2320 cy	4" - 0
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\$34,755.92

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**TOTAL CREDITS = \$128,940.00**



# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie Sale Number: 341-19-14  
 Road Segment: A to B Improvement: 19+80 stations  
0.38 miles

## PROJECT NO. 2

### Improvement

Clearing & grubbing (scatter)	0.23	ac @	\$1,078.00	per acre =	\$247.94
Roadside brushing (light)	0.38	mi @	\$700.00	per mi =	\$266.00
Improve 70' Landing	1	ea @	\$157.00	per ea =	\$157.00
Grade, ditch, & roll	19.80	sta @	\$36.00	per sta =	\$712.80

**TOTAL IMPROVEMENT COSTS = \$1,383.74**

### ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
<b>Surfacing rock</b>						
Landings	4" - 0	\$13.12	\$0.81	\$1.22	90	\$1,363.50
				Subtotal =	90	\$1,363.50

Totals

All Rock =	90
4" - 0 =	90

**TOTAL ROCK COSTS = \$1,363.50**

### EROSION CONTROL

Grass seed & fertilizer	0.12	ac @	\$425.00	per ac =	\$51.00
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**TOTAL EROSION CONTROL COSTS = \$51.00**

**PROJECT NO. 2 TOTAL COST = \$3,668.04**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie Sale Number: 341-19-14  
Road Segment: C to D Improvement: 22+45 stations  
0.43 miles

## PROJECT NO. 2

### Improvement

Clearing & grubbing (scatter)	0.26	ac @	\$1,078.00	per acre =	\$280.28
Roadside brushing (medium)	0.43	mi @	\$1,000.00	per mi =	\$430.00
Construct turnaround	1	ea @	\$82.50	per ea =	\$82.50
Improve roadside 50' landing	1	ea @	\$82.50	per ea =	\$82.50
Improve 70' landing	1	ea @	\$157.00	per ea =	\$157.00
Grade, ditch, & roll	22.45	sta @	\$36.00	per sta =	\$808.20

**TOTAL IMPROVEMENT COSTS = \$1,840.48**

### ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
<b>Subgrade rock</b>						
Subgrade reinforcement	Pit-run	\$2.90	\$4.62	\$0.75	106	\$876.62
Subtotal =					106	\$876.62
<b>Surfacing rock</b>						
Surfacing rock	4" - 0	\$13.12	\$1.45	\$1.22	696	\$10,989.84
Junctions	4" - 0	\$13.12	\$1.45	\$1.22	12	\$189.48
Turnouts	4" - 0	\$13.12	\$1.45	\$1.22	28	\$442.12
Turnarounds	4" - 0	\$13.12	\$1.45	\$1.22	10	\$157.90
Roadside landings	4" - 0	\$13.12	\$1.45	\$1.22	95	\$1,500.05
Landings	4" - 0	\$13.12	\$1.45	\$1.22	180	\$2,842.20
Subtotal =					1,021	\$16,121.59

Totals

All Rock =	1,127
4" - 0 =	1,021
Pit-run =	106

**TOTAL ROCK COSTS = \$16,998.21**

### EROSION CONTROL

Grass seed & fertilizer	0.13	ac @	\$425.00	per ac =	\$55.25
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**TOTAL EROSION CONTROL COSTS = \$55.25**

**PROJECT NO. 2 TOTAL COST = \$20,024.14**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie  
 Road Segment: E to F

Sale Number: 341-19-14  
 Improvement: 18+80 stations  
0.36 miles

## PROJECT NO. 2

### Improvement

Clearing & grubbing (scatter)	0.22	ac @	\$1,078.00	per acre =	\$237.16
Roadside brushing (medium)	0.36	mi @	\$1,000.00	per mi =	\$360.00
Clean ditch & scatter waste material	18.80	sta @	\$60.00	per sta =	\$1,128.00
Grade, ditch, & roll	18.80	sta @	\$36.00	per sta =	\$676.80

TOTAL IMPROVEMENT COSTS = \$2,401.96

### CULVERTS

#### Culverts and Bands

18" Diameter 30 LF @ \$20.00 per LF = \$600.00

#### Markers & Stakes

Culvert markers 4 ea @ \$10.00 per ea = \$40.00

TOTAL CULVERT COSTS = \$1,316.80

### ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
<b>Subgrade rock</b>						
Bedding and backfill	1½" - 0	\$0.80	\$4.85	\$0.50	24	\$147.60
Subtotal =					24	\$147.60
<b>Surfacing rock</b>						
Surfacing rock	4" - 0	\$13.12	\$1.77	\$1.22	583	\$9,392.13
Turnouts	4" - 0	\$13.12	\$1.77	\$1.22	28	\$451.08
Subtotal =					611	\$9,843.21

Totals

All Rock =	635
1½" - 0 =	24
4" - 0 =	611

TOTAL ROCK COSTS = \$9,990.81

### EROSION CONTROL

Grass seed & fertilizer 0.11 ac @ \$425.00 per ac = \$46.75

TOTAL EROSION CONTROL COSTS = \$46.75

**PROJECT NO. 2 TOTAL COST = \$13,756.32**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie Sale Number: 341-19-14  
Road Segment: F to G Reconstruction: 26+50 stations  
0.50 miles

## PROJECT NO. 1

### RECONSTRUCTION

Clearing & grubbing (scatter)	0.31	ac @	\$1,078.00	per ac =	\$334.18
Construct turnouts	3	ea @	\$66.00	per ea =	\$198.00
Construct turnarounds	1	ea @	\$82.50	per ea =	\$82.50
Construct 70' landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	26.50	sta @	\$36.00	per sta =	\$954.00

**TOTAL RECONSTRUCTION COSTS = \$1,882.68**

### CULVERTS

#### Culverts and Bands

18" Diameter	220	LF @	\$20.00	per LF =	\$4,400.00
24" Diameter	120	LF @	\$29.00	per LF =	\$3,480.00
30" Diameter	50	LF @	\$39.00	per LF =	\$1,950.00
30" Band	2	ea @	\$44.00	per ea =	\$88.00

#### Markers & Stakes

Culvert markers	11	ea @	\$10.00	per ea =	\$110.00
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#### Additional Installation Cost

Culvert No. 9	4	hrs @	\$175.00	per hr =	\$700.00
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**OUT COSTS = \$10,728.00**

### ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	0	Rock Cost
<b>Subgrade rock</b>						
Energy dissipator	Riprap	\$2.90	\$2.30	\$1.60	120	\$816.00
Subtotal =					120	\$816.00
<b>Surfacing rock</b>						
Surfacing rock	4" - 0	\$13.12	\$2.30	\$1.22	822	\$13,678.08
Turnouts	4" - 0	\$13.12	\$2.30	\$1.22	42	\$698.88
Turnarounds	4" - 0	\$13.12	\$2.30	\$1.22	10	\$166.40
Subtotal =					874	\$14,543.36

Totals

All Rock =	994
4" - 0 =	874
Riprap =	120

**TOTAL ROCK COSTS = \$15,359.36**

### EROSION CONTROL

Grass seed & fertilizer	0.16	ac @	\$500.00	per ac =	\$77.50
Straw mulch bale	6	ea @	\$8.00	per ea =	\$48.00

**TOTAL EROSION CONTROL COSTS = \$125.50**

**PROJECT NO. 1 TOTAL COST = \$28,095.54**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie  
Road Segment: G to H

Sale Number: 341-19-14  
Construction: 2+85 stations  
0.05 miles

## PROJECT NO. 1

### CONSTRUCTION

Clearing & grubbing (scatter)	0.33	ac @	\$1,078.00	per ac =	\$355.74
Balanced road construction	2.85	sta @	\$110.00	per sta =	\$313.50
Turnarounds	1	ea @	\$82.50	per ea =	\$82.50
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	2.85	sta @	\$36.00	per sta =	\$102.60

**TOTAL CONSTRUCTION COSTS = \$1,168.34**

### CULVERTS

#### Culverts and Bands

18" Diameter	30	LF @	\$20.00	per LF =	\$600.00
Markers & Stakes					
Culvert Markers	1	ea @	\$10.00	per ea =	\$10.00

**TOTAL CULVERT COSTS = \$610.00**

### ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
<b>Subgrade rock</b>						
Subgrade reinforcement	Pit-run	\$2.90	\$5.71	\$0.75	53	\$496.08
Subtotal =					53	\$496.08
<b>Surfacing rock</b>						
Surfacing rock	4" - 0	\$13.12	\$2.54	\$1.22	186	\$3,139.68
Turnarounds	4" - 0	\$13.12	\$2.54	\$1.22	20	\$337.60
Landings	4" - 0	\$13.12	\$2.54	\$1.22	180	\$3,038.40
Subtotal =					386	\$6,515.68

Totals

All Rock =	439
4" - 0 =	386
Pit-run =	53

**TOTAL ROCK COSTS = \$7,011.76**

### EROSION CONTROL

Grass seed & fertilizer	0.17	ac @	\$500.00	per ac =	\$82.50
Straw mulch bale	2	ea @	\$8.00	per ea =	\$16.00

**TOTAL EROSION CONTROL COSTS = \$98.50**

**PROJECT NO. 1 TOTAL COST = \$8,888.60**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie Sale Number: 341-19-14  
 Road Segment: I to J Improvement: 52+80 stations  
1.00 miles

## PROJECT NO. 2

### Improvement

Grade, ditch, & roll 52.80 sta @ \$36.00 per sta = \$1,900.80

**TOTAL IMPROVEMENT COSTS = \$1,900.80**

### ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
<b>Surfacing rock</b>						
Surfacing rock	1½"- 0	\$0.80	\$6.61	\$1.22	1,215	\$10,485.45
Subtotal =					1,215	\$10,485.45

Totals

All Rock =	1,215
1½"- 0 =	1,215

**TOTAL ROCK COSTS = \$10,485.45**

**PROJECT NO. 2 TOTAL COST = \$12,386.25**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie

Sale Number: 341-19-14

## PROJECT NO. 3: 2,000cy of 4"- 0 STOCKPILE

	Rock Size	Base Cost \$/cy	Move Cost \$/cy	Build and Shape Cost \$/cy	Total CY (Truck Measure)	Rock Cost
<b>Surfacing rock</b>						
Stockpile	4" - 0	\$13.12	\$0.76	\$1.10	2,320	\$34,753.60
				Subtotal =	2,320	\$34,753.60

Totals

All Rock =	2,320
4" - 0 =	2,320

**PROJECT NO. 3 TOTAL COST = \$34,753.60**

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SUMMARY OF CONSTRUCTION COST

Timber Sale: Big Louie

Sale Number: 341-19-14

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**MOVE-IN, WITHIN AREA MOVE, & EQUIPMENT CLEANING COSTS**

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Equipment

Brush Cutter	\$512.00
Grader	\$874.04
Loader (Med. & Large)	\$818.39
Roller (smooth/grid) & Compactor	\$512.00
Excavator (Large) - Equipment Cleaning	\$1,960.14
Dozer (Large) - Equipment Cleaning	\$1,918.62
Dump Truck (10cy +)	\$616.00
Water Truck (2,500 Gal)	\$154.00

**TOTAL MOVE-IN COSTS = \$7,365.19**



## QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Big Louie  
 Sale Number: 341-19-14  
 Quarry Name: Straight Arrow Quarry

4" - 0: 2,982 cy (truck measure)  
 Stockpile: 2,000 cy (stockpile measure)  
 Total truck yardage: 5,302 cy  
 Total in place yardage: 4,079 cy  
 Oversize - Reduction: 80%  
 Swell: 130%  
 Compaction: 116%

### Move-in, Within Area Move, & Other Base Cost

Equipment cleaning & move in excavator				\$1,874.04
Move in & setup drill				\$496.99
Move in loader				\$768.52
Move in & setup crusher				\$3,001.30
Gradation tests	\$71.50 / 2,000cy x	<u>3</u>	tests =	\$214.50
Clean up quarry and access road construction				\$610.00
			Subtotal =	<u>\$6,965.35</u>
			Per CY =	<u>\$1.32</u>

### 4"-0 Base Cost

Drill & shoot	<u>\$2.80</u>	/ cy x	<u>4,079</u>	cy =	\$11,421.20
Push rock	<u>\$0.80</u>	/ cy x	<u>5,303</u>	cy =	\$4,242.40
Oversize - Reduce	<u>\$5.80</u>	/ cy x	<u>4,243</u>	cy =	\$24,609.40
Load crusher	<u>\$0.80</u>	/ cy x	<u>5,303</u>	cy =	\$4,242.40
Crush (4" - 0)	<u>\$2.60</u>	/ cy x	<u>2,982</u>	cy =	\$7,753.20
Crush (Stockpile)	<u>\$2.60</u>	/ cy x	<u>2,320</u>	cy =	\$6,032.00
Load dump truck	<u>\$0.80</u>	/ cy x	<u>5,302</u>	cy =	\$4,241.60
				Subtotal =	<u>\$62,542.20</u>
				Per CY =	<u>\$11.80</u>
				Total =	<u><u>\$69,507.55</u></u>

4"-0 Base Cost = \$13.12/cy

**TIMBER SALE SUMMARY**  
**Big Louie**  
**Contract No. FG-341-2019-W00553-01**

1. **Location:** Portions of Sections 13 & 24, T3N, R6W, W.M., Tillamook County, Oregon. Portions of Sections 18 & 19, T3N, R5W, W.M., Washington County, Oregon.
2. **Type of Sale:** This timber sale is 83 net acres of Modified Clearcut. The timber will be sold on a recovery basis at a sealed bid auction.
3. **Revenue Distribution:** 100% BOF; 68% Washington County, 32% Tillamook County, (Tax Code 56-1).
4. **Sale Acreage:** Acres are net of stream buffers and road prisms. Acreage was determined using ESRI ArcMap GIS software.
5. **Cruise:** The Timber Sale was cruised by ODF Cruisers in June of 2018. For more information see Cruise Report.
6. **Timber Description:** The Timber Sale Area consists of a well-stocked 90 year old Douglas-fir stand with minor amounts of western hemlock, noble fir and red alder. The stand has an average of 241 ft<sup>2</sup> of basal area (all species), an average Douglas-fir DBH of 25.5 inches, and an estimated average gross Douglas-fir volume of approximately 62.5 MBF per acre.
7. **Topography and Logging Method:** Slopes within the sale areas range from 5% to 80% and North in aspect. The timber sale is 64% cable-based yarding. The maximum cable corridor length is approximately 1,350 feet and the average length is 700 feet. The timber sale is 31% ground-based yarding. The average horizontal skid trail length is approximately 400 feet and the maximum is approximately 850 feet.
8. **Access:** From the Forest Grove office proceed west on Gales Creek Road for approximately 8.5 miles. Turn left, continue west on Highway 6 for approximately 3.5 miles. Turn right onto Timber Road and continue north for approximately 6 miles. Turn left onto Cochran Road and continue west for approximately 3 miles. Turn right onto Wheeler road and continue north for approximately 3.5 miles. Turn right onto South Lousignont Road and continue for approximately 1 mile. Turn left onto a spur road and continue 0.2 miles to access the southern portion of the Timber Sale Area.
9. **Projects:**

Project No. 1: Rocked road Construction and Reconstruction	\$40,121.65
Project No. 2: Road Improvement	\$54,062.43
Project No. 3: Stockpile Construction	\$34,755.92
Total Credit for all Projects	\$128,940.00

**CRUISE REPORT**  
**Big Louie**  
**FG-341-2019-W00553-01**

**1. LOCATION:** Portions of Sections 13 & 24, T3N, R6W, W.M., Tillamook Country, Oregon.  
Portions of Sections 18 & 19, T3N, R5W, W.M., Washington Country, Oregon.

**2. CRUISE DESIGN:**

Pre-cruise evaluation indicated that the stand's average DBH is approximately 24 inches and the coefficient of variation is about 57%. For sales of this size and approximate value, ODF cruise standards require a sampling error of 9% at a 68% confidence level, and a minimum sample size of 100 graded trees. The cruise design chosen for this sale is a variable radius sample plot using a 40 BAF prism.

**3. SAMPLING METHOD:**

The Timber Sale Area was sampled in July, 2018 with 39 variable radius grade plots using a 40 BAF prism. Plots were laid out on a 5 chain x 4 chain grid for Timber Sale Area. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

**4. CRUISE RESULTS:**

235 trees were measured and graded producing a cumulative Sampling Error of 6.9% on the Douglas-fir basal area and 7.1% for the Douglas-fir board foot volume.

**5. TREE MEASUREMENT AND GRADING:**


All sample trees were measured and graded following Columbia River Log Scale grade rules and favored 40 foot segments.

- a) **Height Standards:** Total tree heights were measured to the nearest foot. Bole heights were calculated to a top DIB of six inches or 25% of DBH, whichever is larger.
- b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.
- c) **Form Factors** were measured for each grade tree using a form point of 16 feet.

**6. DATA PROCESSING**

- a) **Volumes and Statistics:** Cruise estimates and sampling statistics, were derived from Super Ace 2008 cruise software.
- b) **Deductions:** Two percent of the volume was subtracted from the computed volumes to account for hidden defect and breakage.

**7. Cruisers:** The sale was cruised by ODF cruisers Adrian Torres and Kenton Burns.

Prepared by:	<u>Adrian Torres</u>	<u>10/16/2018</u>
		Date
Reviewed by:	<u></u>	<u>10/16/2018</u>
	Mark Savage	Date

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T03N R06W S13 Ty00MC 83.00				Project: BIGLOUIE										Page 1							
				Acres 83.00										Date 10/22/2018							
														Time 10:20:46AM							
Spp	S So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre		
							Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
			4-5	6-11	12-16		17+	12-20	21-30	31-35	36-99										
DF	2M	82	.7	52,971	52,611	4,367			28	72				100	40	17	506	2.30	104.0		
DF	3M	15	.1	9,729	9,721	807			71	28	1		1	1	99	39	10	139	0.88	70.2	
DF	4M	3		1,438	1,438	119			100				29	35	16	20	23	7	33	0.43	43.2
DF Totals		95	.6	64,139	63,771	5,293			13	27	60		1	1	0	98	36	13	293	1.57	217.4
WH	2M	57		1,244	1,244	103			37	63				100	40	16	444	2.06	2.8		
WH	3M	30	1.5	661	652	54			77	23				100	40	9	126	0.78	5.2		
WH	4M	13		271	271	22			100				7	86	7	27	6	35	0.34	7.6	
WH Totals		3	.4	2,176	2,166	180			36	28	36		1	11		88	34	9	139	0.88	15.6
RA		R	100		208	208	17		100				22	14		64	12	7	34	0.61	6.1
RA Totals		0		208	208	17			100				22	14		64	12	7	34	0.61	6.1
NF	2M	72		631	631	52			24	76				100	40	20	740	3.16	.9		
NF	3M	24		210	210	17			43	33	23			7	93	38	11	210	1.25	1.0	
NF	4M	4		30	30	2			100					28	72	32	7	57	0.53	.5	
NF Totals		1		870	870	72			14	26	60			1	4	95	37	13	367	1.85	2.4
Totals			0.6	67,393	67,015	5,562			14	27	59		1	1	1	98	36	12	278	1.52	241.5

TC PSTATS			PROJECT STATISTICS					PAGE 1			
			PROJECT BIGLOUIE					DATE 10/22/2018			
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
03N	06	13	00A1	00MC		83.00	39	235	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			39	235	6.0						
CRUISE			39	235	6.0	6,352	3.7				
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
STAND SUMMARY											
SAMPLE TREES			TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			219	63.4	25.5	158	44.5	224.6	64,139	63,771	12,406
WHEMLOCK			11	9.4	14.9	84	2.9	11.3	2,176	2,166	463
NOB FIR			3	.8	27.3	147	0.6	3.1	870	870	164
R ALDER			2	3.1	11.1	52	0.6	2.1	208	208	45
TOTAL			235	76.5	24.0	145	49.2	241.0	67,393	67,015	13,078
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR			46.0	3.1	1,178	1,216	1,254				
WHEMLOCK			100.4	31.7	365	535	704				
NOB FIR			97.8	67.6	603	1,863	3,124				
R ALDER			117.9	110.4		120	252				
TOTAL			51.4	3.3	1,143	1,183	1,223	105	26	12	
CL	68.1	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR			40.7	2.8	226	232	239				
WHEMLOCK			92.0	29.1	77	109	141				
NOB FIR			88.5	61.2	129	333	537				
R ALDER			118.4	110.8		26	55				
TOTAL			45.7	3.0	219	226	233	84	21	9	
CL	68.1	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR			54.4	8.7	58	63	69				
WHEMLOCK			257.5	41.2	6	9	13				
NOB FIR			402.5	64.4	0	1	1				
R ALDER			493.8	79.0	1	3	5				
TOTAL			53.1	8.5	70	77	83	113	28	13	
CL	68.1	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR			43.0	6.9	209	225	240				
WHEMLOCK			198.4	31.7	8	11	15				
NOB FIR			350.9	56.1	1	3	5				
R ALDER			435.7	69.7	1	2	3				
TOTAL			40.4	6.5	225	241	257	65	16	7	
CL	68.1	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR			44.2	7.1	59,259	63,771	68,282				
WHEMLOCK			212.6	34.0	1,429	2,166	2,903				
NOB FIR			357.5	57.2	372	870	1,368				
R ALDER			501.2	80.2	41	208	375				

PROJECT STATISTICS							PAGE	2	
PROJECT BIGLOUIE							DATE	10/22/2018	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
03N	06	13	00A1	00MC	83.00	39	235	S	W
CL	68.1		COEFF		NET BF/ACRE			# OF PLOTS REQ.	
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10
TOTAL			42.2	6.7	62,494	67,015	71,536	71	18
CL	68.1		COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10
DOUG FIR			44.0	7.0	11,534	12,406	13,279		
WHEMLOCK			209.0	33.4	307	461	615		
NOB FIR			352.8	56.4	71	164	256		
R ALDER			503.1	80.5	9	45	81		
TOTAL			41.8	6.7	12,202	13,076	13,950	70	17



## Log Stock Table - MBF

T03N R06W S13 Ty00MC 83.00

Project: BIGLOUIE  
Acres 83.00Page 2  
Date 10/22/2018  
Time 10:20:45AM

Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		R	12	4		4	22.3			4									
RA		R	22	2		2	14.1			2									
RA		R	40	11		11	63.6					11							
RA		Totals		17		17	.3			6		11							
NF		2M	40	52		52	72.5							13		14	11		15
NF		3M	32	1		1	1.7			1									
NF		3M	40	16		16	22.5					6		6	4				
NF		4M	22	1		1	1.0					1							
NF		4M	34	2		2	2.4			2									
NF		Totals		72		72	1.3			3		7		19	4	14	11		15
Total		All Species		5,594		5,562	100.0			212	214	354	513	571	1714	1443	511		31



TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		10/22/2018	
T03N R06W S13 Ty00MC 83.00				Project						BIGLOUIE				Time:		10:20:47AM	
				Acres						83.00				Grown Year:			
S Spec T			Tot					Average Log		Net		Net		Totals			
	DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF		
DF	16	2	89	121	1.469	2.05	3.67	22.3	100.0	2.34	82	367	194	68	30		
DF	17	7	89	145	4.555	7.18	13.66	25.4	116.7	9.87	346	1,594	820	288	132		
DF	18	6	90	140	3.482	6.15	10.45	28.4	129.4	8.45	296	1,352	701	246	112		
DF	19	2	89	155	1.042	2.05	3.13	34.4	166.7	3.06	107	521	254	89	43		
DF	20	8	89	140	3.761	8.21	10.81	36.4	168.3	11.21	393	1,819	930	326	151		
DF	21	8	89	144	3.411	8.21	10.23	39.8	194.2	11.61	407	1,987	964	338	165		
DF	22	12	89	159	4.662	12.31	15.54	42.8	205.0	18.97	666	3,186	1,575	553	264		
DF	23	12	89	153	4.266	12.31	13.51	48.3	230.8	18.59	652	3,118	1,543	541	259		
DF	24	12	89	156	3.918	12.31	13.39	49.7	240.5	18.97	666	3,219	1,574	552	267		
DF	25	9	88	166	2.708	9.23	10.23	50.4	252.6	14.68	515	2,585	1,219	428	215		
DF	26	16	89	159	4.451	16.41	15.30	58.4	295.3	25.47	894	4,518	2,114	742	375		
DF	27	12	88	173	3.095	12.31	11.87	60.5	321.3	20.47	718	3,813	1,699	596	316		
DF	28	22	89	169	5.277	22.56	20.15	65.2	347.4	37.43	1,313	6,999	3,107	1,090	581		
DF	29	22	89	169	4.919	22.56	19.01	68.1	362.1	36.90	1,295	6,882	3,062	1,075	571		
DF	30	14	88	169	2.925	14.36	10.86	75.7	401.3	23.45	823	4,361	1,946	683	362		
DF	31	12	87	163	2.348	12.31	8.61	79.0	414.8	19.39	680	3,571	1,609	565	296		
DF	32	12	88	172	2.204	12.31	8.45	84.9	457.6	20.44	717	3,866	1,697	595	321		
DF	33	11	88	166	1.899	11.28	7.08	91.0	485.9	18.37	644	3,440	1,524	535	286		
DF	34	7	88	172	1.139	7.18	4.39	95.4	532.2	11.95	419	2,338	991	348	194		
DF	35	7	87	167	1.075	7.18	4.14	98.6	530.0	11.64	409	2,197	966	339	182		
DF	36	1	88	177	.145	1.03	.58	107.1	620.0	1.77	62	360	147	52	30		
DF	38	3	86	168	.391	3.08	1.43	121.9	665.5	4.97	175	953	413	145	79		
DF	39	1	87	182	.124	1.03	.49	126.4	722.5	1.78	63	357	148	52	30		
DF	43	1	90	174	.102	1.03	.41	154.5	907.5	1.79	63	369	149	52	31		
DF	Totals	219	89	158	63.367	224.62	217.39	57.1	293.3	353.58	12,406	63,771	29,347	10,297	5,293		
WH	9	1	88	62	2.322	1.03	2.32	8.2	40.0	.61	19	93	50	16	8		
WH	10	1	86	54	1.880	1.03	1.88	9.6	40.0	.58	18	75	48	15	6		
WH	11	1	86	72	1.554	1.03	1.55	17.1	60.0	.85	27	93	71	22	8		
WH	14	1	91	84	.959	1.03	1.92	16.8	65.0	1.03	32	125	86	27	10		
WH	19	2	91	132	1.042	2.05	3.13	32.7	156.7	3.32	102	490	275	85	41		
WH	22	2	92	129	.777	2.05	2.33	43.9	211.7	3.28	102	493	272	85	41		
WH	23	1	93	123	.355	1.03	1.07	46.2	223.3	1.58	49	238	131	41	20		
WH	25	1	88	145	.301	1.03	.90	59.9	276.7	1.73	54	250	144	45	21		
WH	34	1	87	154	.163	1.03	.49	117.4	633.3	1.83	57	309	152	48	26		
WH	Totals	11	88	84	9.353	11.28	15.59	29.6	139.0	14.80	461	2,166	1,229	383	180		
NF	21	1	90	145	.426	1.03	1.28	40.2	196.7	1.23	51	252	102	43	21		
NF	28	1	90	138	.240	1.03	.72	69.8	350.0	1.21	50	252	100	42	21		
NF	45	1	88	176	.093	1.03	.37	167.5	987.5	1.49	62	367	124	52	30		
NF	Totals	3	90	147	.759	3.08	2.37	69.1	367.2	3.93	164	870	326	136	72		
RA	9	1	77	40	2.322	1.03	4.64	2.1	10.0	.27	10	46	23	8	4		
RA	16	1	92	88	.735	1.03	1.47	24.0	110.0	.97	35	162	80	29	13		
RA	Totals	2	81	52	3.056	2.05	6.11	7.4	34.0	1.24	45	208	103	37	17		
Totals		235	88	145	76.536	241.03	241.46	54.2	277.5	373.56	13,076	67,015	31,005	10,853	5,562		

**VOLUME SUMMARY**

Big Louie  
 FG-341-2019-W00553-01  
 10/22/2019

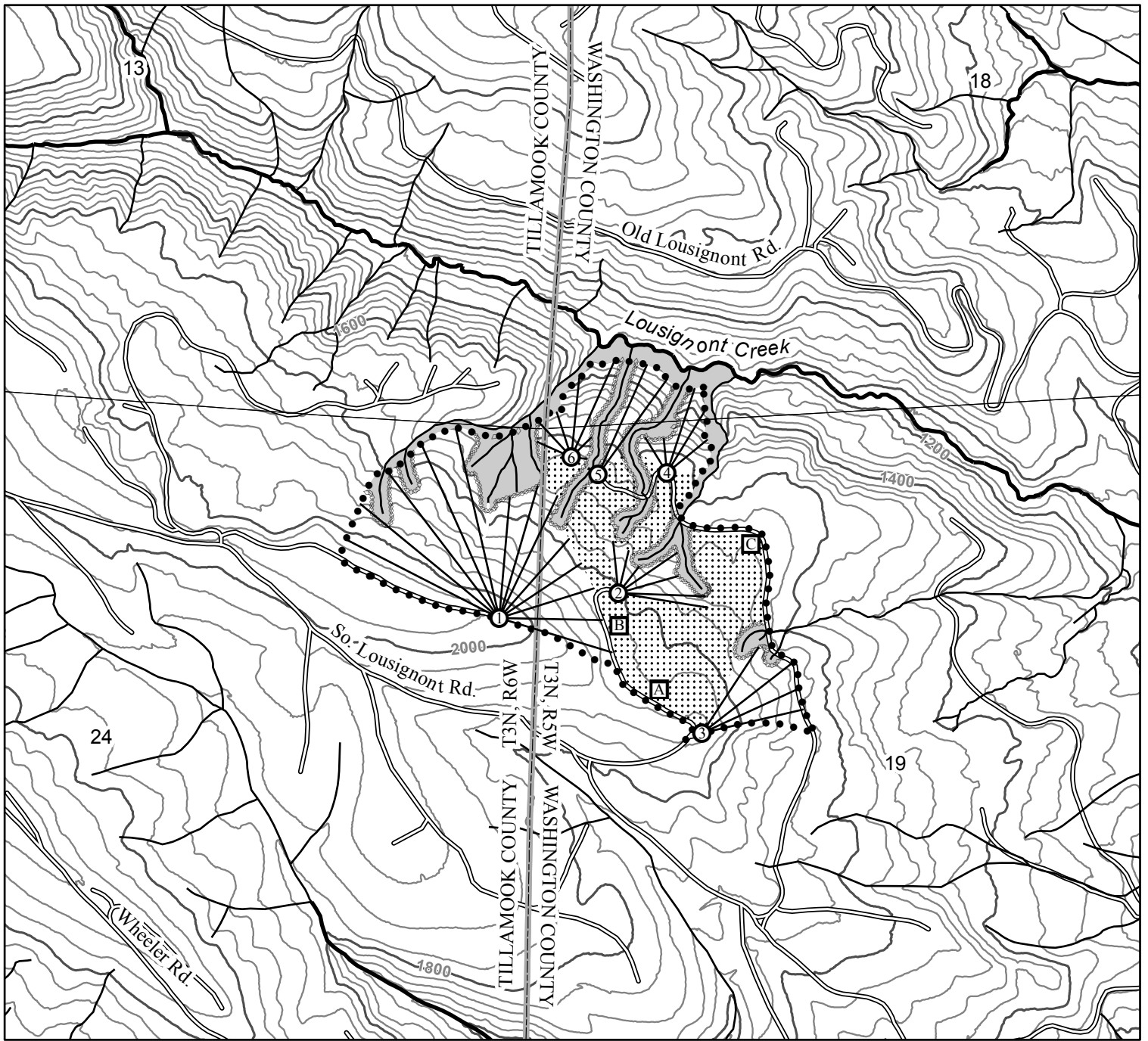
VOLUMES IN MBF

**AREA 1: MC (83 ACRES)**

<b>SPECIES</b>		<b>2 SAW</b>	<b>3 SAW</b>	<b>4 SAW</b>	<b>CR</b>	<b>TOTAL</b>
Douglas-fir	Cruise Volume	4,367	807	119	0	5,293
	Hidden D&B (2%)	(87)	(16)	(2)	(0)	(105)
	<b>NET TOTAL</b>	4,280	791	117	0	5,188
	% of Total	82	15	3	0	
Western hemlock	Cruise Volume	103	54	22	0	179
	Hidden D&B (2%)	(2)	(1)	(0)	(0)	(3)
	<b>NET TOTAL</b>	101	53	22	0	176
	% of Total	57	30	13	0	
Noble Fir	Cruise Volume	52	17	2	0	71
	Hidden D&B (2%)	(1)	(0)	(0)	(0)	(1)
	<b>NET TOTAL</b>	51	17	2	0	70
	% of Total	73	24	3	0	
Red Alder	Cruise Volume	0	0	0	17	17
	Hidden D&B (5%)	(0)	(0)	(0)	(1)	(1)
	<b>NET TOTAL</b>	0	0	0	16	16
	% of Total	0	0	0	100	

**SALE TOTAL**

<b>SPECIES</b>	<b>2 SAW</b>	<b>3 SAW</b>	<b>4 SAW</b>	<b>CR</b>	<b>TOTAL</b>
Douglas-fir	4,280	791	117	0	5,188
Western hemlock	101	53	22	0	176
Noble Fir	51	17	2	0	70
Red Alder	0	0	0	16	16
Total	4,432	861	141	16	5,450



### Legend

- Timber Sale Boundary
- Surface Roads
- - - New Road Construction
- Type F Stream
- Type N Stream
- Stream Buffer Boundary
- Stream Buffer
- Cable Yarding Area
- Tractor Yarding Area
- Cable Landing
- Tractor Landing
- 40 ft contours
- 200 ft contours
- County Line
- Section Line

## LOGGING PLAN

FOR TIMBER SALE CONTRACT # FG-341-2019-W00553-01  
BIG LOUIE

PORTIONS OF SECTIONS 13 & 24, T3N, R6W, W.M.,  
TILLAMOOK COUNTY, OREGON &  
PORTIONS OF SECTIONS 18 & 19, T3N, R5W, W.M.,  
WASHINGTON COUNTY, OREGON

Forest Grove District GIS  
October, 2018

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

1:12,000

1 inch = 1,000 feet



APPROXIMATE NET ACRES

TRACTOR	CABLE
30	53