



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rock Rabbit
Sale FG-341-2018-21-

District: Forest Grove

Date: March 20, 2018

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,090,177.38	\$46,555.20	\$2,136,732.58
		Project Work:	(\$47,800.00)
		Advertised Value:	\$2,088,932.58



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Date: March 20, 2018

Timber Description

Location: Portions of Section 12, T4N, R6W, W.M., Clatsop County, Oregon.

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	22	0	98
Western Hemlock / Fir	37	0	95
Alder (Red)	14	0	95

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	2,554	1,180	0	3,734
Western Hemlock / Fir	0	29	0	29
Alder (Red)	0	0	144	144
Total	2,554	1,209	144	3,907

Comments: Pond Values Used: Local Pond Values, January 2018.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$1,180/\text{MBF} = \$1,450/\text{MBF} - \$270/\text{MBF}$

SCALING COST ALLOWANCE = $\$5.00/\text{MBF}$

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

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

HAULING COST ALLOWANCE

Hauling costs equivalent to $\$780$ daily truck cost.

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

Intermediate Supports: 10 @ $\$200$ ea. = $\$2,000$

TOTAL Other Costs (with Profit & Risk to be added) = $\$2,000$

Other Costs (No Profit & Risk added):

Machine Time to Block/Waterbar Roads, and Skid Trails:

20 hours x $\$150/\text{hour}$ = $\$3,000$

Machine Time to Pile Landing Slash and Sort Firewood:

20 hours x $\$150/\text{hour}$ = $\$3,000$

Equipment Cleaning: 3 pieces x $\$1,000/\text{Piece}$ = $\$3,000$

Slash Treatment: 10 acres x $\$200/\text{acre}$ = $\$2,000$

TOTAL Other Costs (No Profit & Risk added) = $\$11,000$

ROAD MAINTENANCE

Move-in: $\$4,000$

General Road Maintenance: 10.4 miles x $\$1,200/\text{mile}$ = $\$12,480$

TOTAL Road Maintenance: $\$16,480/3,907 \text{ MBF} = \$4.22/\text{MBF}$



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Logging Conditions

Combination#: 1 Douglas - Fir 64.77%
 Western Hemlock / Fir 65.00%
 Alder (Red) 65.00%

Logging System: Cable: Medium Tower >40 - <70 **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: 7 **bd. ft / load:** 4600

cost / mbf: \$186.34

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

Combination#: 2 Douglas - Fir 35.23%
 Western Hemlock / Fir 35.00%
 Alder (Red) 35.00%

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

yarding distance: Short (400 ft) **downhill yarding:** No

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

loads / day: 12 **bd. ft / load:** 4600

cost / mbf: \$57.46

machines: Stroke Delimber (B)



Timber Sale Appraisal
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Logging Costs

Operating Seasons: 1.00	Profit Risk: 15%
Project Costs: \$47,800.00	Other Costs (P/R): \$2,000.00
Slash Disposal: \$0.00	Other Costs: \$11,000.00

Miles of Road

Road Maintenance: \$4.22

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	4.5
Western Hemlock / Fir	\$0.00	2.0	4.0
Alder (Red)	\$0.00	1.0	3.9



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Rock Rabbit Sale FG-341-2018-21-

District: Forest Grove

Date: March 20, 2018

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
\$140.94	\$4.30	\$1.12	\$88.40	\$0.51	\$35.29	\$0.00	\$7.00	\$2.82	\$280.38
Western Hemlock / Fir									
\$141.23	\$4.43	\$1.12	\$102.38	\$0.51	\$37.45	\$0.00	\$7.00	\$2.82	\$296.94
Alder (Red)									
\$141.23	\$4.43	\$1.12	\$210.00	\$0.51	\$53.59	\$0.00	\$7.00	\$2.82	\$420.70

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$836.84	\$556.46	\$0.00
Western Hemlock / Fir	\$0.00	\$723.00	\$426.06	\$0.00
Alder (Red)	\$0.00	\$744.00	\$323.30	\$0.00



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Rock Rabbit
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District: Forest Grove

Date: March 20, 2018

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	3,734	\$556.46	\$2,077,821.64
Western Hemlock / Fir	29	\$426.06	\$12,355.74
Alder (Red)	144	\$323.30	\$46,555.20

Gross Timber Sale Value

Recovery: \$2,136,732.58

Prepared By: Eric Foucht

Phone: 503-359-7473

PROJECT COST SUMMARY SHEET

Timber Sale: Rock Rabbit
 Sale Number: 341-18-21

PROJECT NO. 1: ROAD CONSTRUCTION AND IMPROVEMENT**CONSTRUCTION**

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	9+85	\$2,881.42
C to D	17+00	\$11,450.78
I to J	1+65	\$790.32
	28+50 stations	
	0.54 miles	

SUBTOTAL CONSTRUCTION = \$15,122.52**IMPROVEMENTS**

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
E to F	23+50	\$3,627.20
E to C	9+75	\$267.20
G to H	42+30	\$5,645.16
	75+55 stations	
	1.43 miles	

SUBTOTAL IMPROVEMENTS = \$9,539.56**TOTAL PROJECT NO. 1 COST = \$24,662.08****PROJECT NO. 2: SURFACING**

<u>Road Segment</u>	<u>Rock Amount</u>	<u>Rock Type</u>	<u>Cost</u>
A to B	773 cy	Jaw-run	\$5,650.63
C to D	991 cy	3" - 0	\$2,745.07
C to D	20 cy	1 1/2" - 0	\$41.00
C to D	210 cy	Jaw-run	\$1,646.40
E to F	632 cy	3" - 0	\$1,681.12
E to F	70 cy	1 1/2" - 0	\$135.80
E to F	180 cy	Jaw-run	\$1,377.00
E to C	256 cy	3" - 0	\$637.44
G to H	100 cy	3" - 0	\$274.00
G to H	95 cy	Jaw-run	\$734.35
G to H	150 cy	1 1/2" - 0	\$303.00
Total	240 cy	1 1/2" - 0	
	1,979 cy	3" - 0	
	1,258 cy	Jaw-run	

TOTAL PROJECT NO. 2 COST = \$15,225.81**PROJECT NO. 3 GRASS SEED, FERTILIZE, & MULCH****TOTAL PROJECT NO. 3 COST = \$976.13****MOVE-IN & EQUIPMENT CLEANING**

Grader	\$901.42
Loader (Med. & Large)	\$802.03
Roller (smooth/grid) & Compactor	\$613.51
Excavator (Large) - Equipment Cleaning	\$1,901.42
Dozer (Large) - Equipment Cleaning	\$1,946.00
Dump Truck (10cy +)	\$516.54
Water Truck	\$147.06

TOTAL MOVE-IN & EQUIPMENT CLEANING COST = \$6,935.98**TOTAL CREDITS \$47,800.00**

SUMMARY OF CONSTRUCTION COST

Timber Sale: Rock Rabbit Sale Number: 341-18-21
Road Segment: A to B Construction: 9+85 stations
0.19 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	1.14	ac @	\$1,078.00	per acre =	\$1,228.92
Balanced road construction	9.85	sta @	\$110.00	per sta =	\$1,083.50
Roadside landing	1	ea @	\$165.00	per ea =	\$165.00
Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	2.50	sta @	\$36.00	per sta =	\$90.00
					TOTAL EXCAVATION COSTS = \$2,881.42

PROJECT NO. 2:

SURFACING

10 " deep = 53 cy/sta

A to B	523	cy of	Jaw-run	@	\$7.31	per cy =	\$3,823.13
Roadside landing	80	cy of	Jaw-run	@	\$7.31	per cy =	\$584.80
Junction	20	cy of	Jaw-run	@	\$7.31	per cy =	\$146.20
Landing	150	cy of	Jaw-run	@	\$7.31	per cy =	\$1,096.50
Rock Total =	773						
	773	cy of	Jaw-run		\$7.31	per cy =	\$5,650.63

PROJECT NO. 2 TOTAL COST = \$5,650.63

PROJECT NO. 3:

Grass seed & fertilizer	0.57	acres	@	\$425.00	per acre =	\$242.25
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PROJECT NO. 3 TOTAL COST = \$242.25

TOTAL COST = \$8,774.30

SUMMARY OF CONSTRUCTION COST

Timber Sale: Rock Rabbit
Road Segment: C to D

Sale Number: 341-18-21
Construction: 17+00 stations
0.32 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	1.96	ac @	\$1,078.00	per acre =	\$2,112.88
Balanced road construction	12.50	sta @	\$110.00	per sta =	\$1,375.00
End-haul					
Excavate & load	713	cy @	\$1.64	per cy =	\$1,169.87
Haul	713	cy @	\$3.04	per cy =	\$2,168.53
Compact waste area	713	cy @	\$0.30	per cy =	\$214.00
Turnouts	2	ea @	\$66.00	per ea =	\$132.00
Turnarounds	1	ea @	\$82.50	per ea =	\$82.50
Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	17.00	sta @	\$36.00	per sta =	\$612.00

TOTAL EXCAVATION COSTS = \$8,180.78

CULVERTS - MATERIALS & INSTALLATION

Culverts

60 LF of 18"	\$1,200.00
70 LF of 24"	\$2,030.00

Culvert Markers

4 markers	\$40.00
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TOTAL CULVERT COSTS = \$3,270.00

PROJECT NO. 1 TOTAL COST = \$11,450.78

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta				
C to D	901	cy of	3" - 0	@	\$2.77	per cy =	\$2,495.77
Turnout	60	cy of	3" - 0	@	\$2.77	per cy =	\$166.20
Turnaround	30	cy of	3" - 0	@	\$2.77	per cy =	\$83.10
Culvert bedding	20	cy of	1 1/2" - 0	@	\$2.05	per cy =	\$41.00
Subgrade reinforcement	130	cy of	Jaw-run	@	\$7.84	per cy =	\$1,019.20
Landing	80	cy of	Jaw-run	@	\$7.84	per cy =	\$627.20
Rock Total =	1,221						
	991	cy of	3" - 0		\$2.77	per cy =	\$2,745.07
	20	cy of	1 1/2" - 0		\$2.05	per cy =	\$41.00
	210	cy of	Jaw-run		\$7.84	per cy =	\$1,646.40

PROJECT NO. 2 TOTAL COST = \$4,432.47

PROJECT NO. 3:

Grass seed & fertilizer	0.98	acres	@	\$425.00	per acre =	\$416.50
Mulch	8	bales	@	\$8.00	per bale =	\$64.00

PROJECT NO. 3 TOTAL COST = \$480.50

TOTAL COST = \$16,363.75

SUMMARY OF CONSTRUCTION COST

Timber Sale: Rock Rabbit Sale Number: 341-18-21
Road Segment: E to F Improvement: 23+50 stations
0.45 miles

PROJECT NO. 1

EXCAVATION

Clean culvert inlet & outlet	3	ea @	\$25.00	per ea =	\$75.00
Improve Junction	1.00	sta @	\$55.00	per sta =	\$55.00
Improve Turnout	3	ea @	\$33.00	per ea =	\$99.00
Improve Landing	1	ea @	\$157.00	per ea =	\$157.00
Grade and ditch	23.50	sta @	\$19.20	per sta =	\$451.20

TOTAL EXCAVATION COSTS = \$837.20

CULVERTS - MATERIALS & INSTALLATION

Culverts

60 LF of 18" \$1,200.00

40 LF of 30" \$1,560.00

Culvert Markers

3 markers \$30.00

PROJECT NO. 1 TOTAL COST = \$3,627.20

PROJECT NO. 2:

SURFACING	5	" deep =	25 cy/sta			
E to F	588	cy of	3" - 0	@	\$2.66	per cy = \$1,564.08
Turnout	24	cy of	3" - 0	@	\$2.66	per cy = \$63.84
Junction	20	cy of	3" - 0	@	\$2.66	per cy = \$53.20
Landing	180	cy of	Jaw-run	@	\$7.65	per cy = \$1,377.00
Culvert bedding/Backfill	70	cy of	1 1/2" - 0	@	\$1.94	per cy = \$135.80
Rock Total =	882					
	70	cy of	1 1/2" - 0		\$1.94	per cy = \$135.80
	632	cy of	3" - 0		\$2.66	per cy = \$1,681.12
	180	cy of	Jaw-run		\$7.65	per cy = \$1,377.00

PROJECT NO. 2 TOTAL COST = \$3,193.92

PROJECT NO. 3:

Grass seed & fertilizer	0.10	acres	@	\$425.00	per acre = \$42.50
Mulch	4	bales	@	\$8.00	per bale = \$32.00

PROJECT NO. 3 TOTAL COST = \$74.50

TOTAL COST = \$6,895.62

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Rock Rabbit	Sale Number:	341-18-21
Road Segment:	E to C	Improvement:	9+75 stations
			0.18 miles

PROJECT NO. 1

EXCAVATION

Clean culvert inlet & outlet	1	ea @	\$25.00	per ea =	\$25.00
Improve Junction	1.00	sta @	\$55.00	per sta =	\$55.00
Grade and ditch	9.75	sta @	\$19.20	per sta =	\$187.20
					TOTAL EXCAVATION COSTS = \$267.20

PROJECT NO. 1 TOTAL COST = \$267.20

PROJECT NO. 2:

SURFACING	5	" deep =	25 cy/sta			
E to C	244	cy of	3" - 0	@	\$2.49	per cy = \$607.56
Turnout	12	cy of	3" - 0	@	\$2.49	per cy = \$29.88
Rock Total =	256					
	256	cy of	3" - 0		\$2.49	per cy = \$637.44

PROJECT NO. 2 TOTAL COST = \$637.44

TOTAL COST = \$904.64

SUMMARY OF CONSTRUCTION COST

Timber Sale: Rock Rabbit Sale Number: 341-18-21
Road Segment: G to H Improvement: 42+30 stations
0.80 miles

PROJECT NO. 1

EXCAVATION

Improve Turnout	6	ea @	\$33.00	per ea =	\$198.00
Fill Excavation (upstream of inlet at 21+45)					
Excavate existing culvert & fill					\$175.00
Grade and ditch	42.30	sta @	\$19.20	per sta =	\$812.16
					TOTAL EXCAVATION COSTS =
					\$1,185.16

CULVERTS - MATERIALS & INSTALLATION

Culverts

60 LF of 18"	\$1,200.00
60 LF of 24"	\$1,740.00
30 LF of 30"	\$1,170.00

Additional Installation Cost

2 hrs @	\$175.00	per hr =	<u>\$350.00</u>
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TOTAL CULVERT COSTS = \$4,460.00

PROJECT NO. 1 TOTAL COST = \$5,645.16

PROJECT NO. 2:

SURFACING

Culvert bedding/Backfill	150	cy of	1 1/2" - 0	@	\$2.02	per cy =	\$303.00
Landing	95	cy of	Jaw-run	@	\$7.73	per cy =	\$734.35
Spot Rock	100	cy of	3" - 0	@	\$2.74	per cy =	\$274.00
Rock Total =	345						
	150	cy of	1 1/2" - 0		\$2.02	per cy =	\$303.00
	100	cy of	3" - 0		\$2.74	per cy =	\$274.00
	95	cy of	Jaw-run		\$7.73	per cy =	\$734.35

PROJECT NO. 2 TOTAL COST = \$1,311.35

PROJECT NO. 3:

Grass seed & fertilizer	0.10	acres	@	\$425.00	per acre =	\$42.50
Mulch	12	bales	@	\$8.00	per bale =	<u>\$96.00</u>

PROJECT NO. 3 TOTAL COST = \$138.50

TOTAL COST = \$7,095.01

SUMMARY OF CONSTRUCTION COST

Timber Sale: Rock Rabbit
Road Segment: I to J

Sale Number: 341-18-21
Construction: 1+65 stations
0.03 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	0.19	ac @	\$1,078.00	per acre =	\$204.82
Balanced road construction	1.65	sta @	\$110.00	per sta =	\$181.50
Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	2.50	sta @	\$36.00	per sta =	\$90.00

OTAL EXCAVATION COSTS = \$790.32

PROJECT NO. 3:

Grass seed & fertilizer	0.10	acres	@	\$425.00	per acre =	\$40.38
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PROJECT NO. 3 TOTAL COST = \$40.38

TOTAL COST = \$830.70

ROCK PIT DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Rock Rabbit
Sale Number: 341-18-21
Pit Name: Lower Rock Creek Stockpile

Jaw-run: 1150 cy (Stockpile measure)
Total truck yardage: 1334 cy

Shrinkage: 116%

Load jaw	<u>\$0.80</u>	/ cy x	<u>1,334</u>	cy =	\$1,067.20
Crush (Jaw-run)	<u>\$2.10</u>	/ cy x	<u>1,334</u>	cy =	\$2,801.40
Load dump truck	<u>\$0.80</u>	/ cy x	<u>1,334</u>	cy =	<u>\$1,067.20</u>
				Subtotal:	\$4,935.80

Move in loader	\$575.26
Move in jaw	\$1,408.00
Setup jaw	<u>\$968.00</u>
	Subtotal: \$2,951.26

TOTAL PRODUCTION COST = \$7,887.06

ROCK DEVELOPMENT COST = \$5.91/cy

TIMBER SALE SUMMARY
Rock Rabbit
Contract No. 341-18-21

1. **Location:** Portions of Section 12, T4N, R6W, W.M., Clatsop County, Oregon.
2. **Type of Sale:** This timber sale is 69 net acres of Modified Clearcut, and a right of way of less than 1 acre. The timber will be sold on a recovery basis at a sealed bid auction.
3. **Revenue Distribution:** 100% BOF, Clatsop County, Tax Code 8-01.
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 February of 2018. For more information see Cruise Report.
6. **Timber Description:** The Timber Sale Area consists of a 78 year old Douglas-fir stand with minor amounts of western hemlock, and red alder. Each acre carries an average of 87 Douglas-fir trees on 222 ft² of basal area. The average DBH is 22 inches and the estimated net Douglas-fir volume is approximately 54 MBF per acre.
7. **Topography and Logging Method:** Slopes are generally northern in aspect and range from relatively gentle on upland benches to very steep on the lower portion of some hillsides. The timber sale is 35% ground-based yarding and 65% cable yarding. The average cable corridor length is 520 feet and the maximum is 1210 feet. Intermediate supports may be necessary to get sufficient lift on some cable roads. The average horizontal skid trail length is approximately 450 feet and the maximum is approximately 650 feet.
8. **Access:** Access to the Timber Sale Area is on surfaced all-weather roads. From Forest Grove, travel north on Highway 47 through Banks then merge onto Highway 26 westbound and continue for approximately 14.5 miles to the North Fork Wolf Creek Road which is just before the 35 mile marker. Turn right and continue north for approximately 4.5 miles and turn right onto the McGregor Road. Proceed another 3.5 miles and turn onto the spur on the left. Continue north about ¼ mile to the southwest corner of the Timber Sale Area.
9. **Projects:**

Project No. 1: Road Construction and Improvement	\$24,662.08
Project No. 2: Road Surfacing	\$15,225.81
Project No. 3: Grass Seed, Fertilize, and Mulch	\$976.13
Move in and equipment cleaning:	\$6,935.98
Total Credit for all Projects	\$47,800

CRUISE REPORT
Rock Rabbit
341-18-21

1. LOCATION: Portions of Section 12, T4N, R6W, W.M., Clatsop County, Oregon.

2. CRUISE DESIGN:

Pre-cruise evaluation indicated that the stand's average DBH is approximately 18 inches and the Coefficient of Variation is about 50%. 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 and employing a combination of count and measure plots at a ratio of 1 measured plot to 1 count plot.

3. SAMPLING METHOD:

The Timber Sale Area was cruised in January of 2018. Sale Area 1 was sampled with 17 variable radius grade plots and 15 variable radius count plots. The cruiser determined that a combination of basal area factors would best optimize the number of trees counted in each sample plot so several were used for this cruise. Plots were laid out on a 5 chain x 4 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain

4. CRUISE RESULTS

115 trees were measured and graded producing a cumulative Sampling Error of 9.2% on the Basal Area and 9.1% on the 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 six inch top.

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.

5. 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.

6. Cruisers: The sale was cruised by ODF cruiser Kenton Burns.

Prepared by:



ODF Forester

2-7-18

Date

Reviewed by:



Eric Foucht

02/07/2018

Date

TC PSTATS			PROJECT STATISTICS						PAGE	1		
			PROJECT			ROCKRAB			DATE	1/26/2018		
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
04N	06	12	00A1	00MC		69.00		32	228	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL			32	228	7.1							
CRUISE			17	115	6.8	6,937		1.7				
DBH COUNT												
REFOREST												
COUNT			15	113	7.5							
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			108	86.7	21.7	135	47.7	222.1	55,880	55,030	11,198	11,198
R ALDER			6	13.6	12.7	94	3.3	11.9	2,124	2,124	428	428
WHEMLOCK			1	.3	37.0	139	0.3	1.9	437	437	95	95
TOTAL			115	100.5	20.7	130	51.8	235.9	58,440	57,590	11,721	11,721
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			61.6	5.9	895	951	1,007					
R ALDER			58.7	26.1	128	173	219					
WHEMLOCK												
TOTAL			65.3	6.1	861	917	973	170	43	19		
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			55.2	5.3	179	189	199					
R ALDER			57.1	25.4	26	35	44					
WHEMLOCK												
TOTAL			59.4	5.5	173	183	193	141	35	16		
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			70.8	12.5	76	87	98					
R ALDER			274.5	48.5	7	14	20					
WHEMLOCK			416.2	73.5	0	0	0					
TOTAL			63.2	11.2	89	101	112	159	40	18		
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			51.9	9.2	202	222	243					
R ALDER			259.8	45.9	6	12	17					
WHEMLOCK			416.2	73.5	0	2	3					
TOTAL			47.4	8.4	216	236	256	90	22	10		
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			51.3	9.1	50,040	55,030	60,020					
R ALDER			252.3	44.6	1,177	2,124	3,070					
WHEMLOCK			416.2	73.5	116	437	758					
TOTAL			48.0	8.5	52,703	57,590	62,477	92	23	10		
CL	68.1	COEFF	NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15		
DOUG FIR			51.5	9.1	10,179	11,198	12,217					
R ALDER			252.6	44.6	237	428	620					

TC PSTATS				PROJECT STATISTICS				PAGE	2	
				PROJECT ROCKRAB				DATE	1/26/2018	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
04N	06	12	00A1	00MC		69.00	32	228	S	W
CL	68.1		COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK			416.2	73.5	25	95	164			
TOTAL			48.1	8.5	10,725	11,721	12,717	92	23	10

TC		Species, Sort Grade - Board Foot Volumes (Project)																			
<div>T04N R06W S12 Ty00MC69.00</div>						Project: ROCKRAB Acres69.00								Page 1 Date 1/26/2018 Time 1:10:50PM							
S Spp	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	CU														17	13		0.00	2.2		
DF	2M	68	1.7	38,413	37,770	2,606			33	67				100	40	17	496	2.31	76.1		
DF	3M	30	1.1	16,333	16,158	1,115			63	33	4		1	8	92	38	9	129	0.80	125.0	
DF	4M	2	2.8	1,134	1,102	76			100				63	35		1	18	6	20	0.33	55.6
DF Totals		96	1.5	55,880	55,030	3,797			21	32	47		1	1	2	96	34	11	213	1.26	258.9
WH	2M	96		422	422	29				100				100	40	22	840	4.22	.5		
WH	3M	4		15	15	1			100					100	40	6	60	0.98	.3		
WH Totals		1		437	437	30			3	97				100	40	16	580	3.14	.8		
RA	R	100		2,124	2,124	147			85	15			6	47	37	10	29	9	82	0.56	26.0
RA Totals		4		2,124	2,124	147			85	15			6	47	37	10	29	9	82	0.56	26.0
Totals			1.5	58,440	57,590	3,974			23	31	46		1	3	4	92	34	11	202	1.21	285.7

TC		PSTNDSUM										Stand Table Summary										Page		1				
																						Date:		1/26/2018				
T04N R06W S12 Ty00MC 69.00					Project										ROCKRAB										Time:		1:10:48PM	
					Acres										69.00										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	10	2	87	104	9.250	5.04	18.50	7.3	35.0	3.84	135	647	265	93	45													
DF	11	1	87	107	3.822	2.52	7.64	10.3	45.0	2.25	79	344	155	54	24													
DF	12	1	89	95	3.212	2.52	6.42	12.5	55.0	2.30	81	353	158	56	24													
DF	14	2	87	105	3.539	3.78	7.08	18.7	81.7	3.78	133	578	261	92	40													
DF	15	2	86	109	3.083	3.78	8.22	16.5	71.3	3.87	136	586	267	94	40													
DF	16	3	88	125	5.420	7.57	16.26	19.8	88.9	9.17	322	1,445	633	222	100													
DF	18	1	90	154	1.427	2.52	4.28	30.9	150.0	3.77	132	642	260	91	44													
DF	19	2	89	143	2.562	5.04	7.69	32.5	153.3	7.12	250	1,179	492	172	81													
DF	20	6	89	134	5.203	11.35	15.03	34.5	155.0	14.76	518	2,330	1,019	357	161													
DF	21	8	89	142	6.292	15.13	20.45	36.4	174.9	21.21	744	3,576	1,464	514	247													
DF	22	4	89	154	3.822	10.09	12.42	43.4	206.9	15.38	540	2,570	1,061	372	177													
DF	23	9	89	139	6.345	18.31	20.02	45.0	206.6	25.67	901	4,138	1,771	622	285													
DF	24	10	89	141	6.734	21.15	20.91	48.7	226.7	29.05	1,019	4,741	2,004	703	327													
DF	25	9	89	158	5.000	17.05	17.69	52.5	258.7	26.47	929	4,576	1,826	641	316													
DF	26	6	90	156	4.105	15.13	15.05	55.3	280.0	23.72	832	4,214	1,637	574	291													
DF	27	7	89	156	3.888	15.46	14.28	59.7	308.4	24.30	853	4,405	1,677	588	304													
DF	28	9	89	156	4.357	18.63	14.62	70.3	366.7	29.30	1,028	5,361	2,022	709	370													
DF	29	6	89	153	2.545	11.68	8.74	72.7	377.2	18.10	635	3,295	1,249	438	227													
DF	30	4	89	154	1.674	8.22	5.54	77.6	389.7	12.24	429	2,157	844	296	149													
DF	31	5	89	152	1.684	8.83	6.02	80.0	400.0	13.71	481	2,406	946	332	166													
DF	32	3	88	162	1.129	6.31	4.29	83.0	438.9	10.15	356	1,883	701	246	130													
DF	33	2	87	145	.425	2.52	1.27	101.1	513.3	3.67	129	654	253	89	45													
DF	34	1	87	142	.200	1.26	.60	106.8	536.7	1.83	64	322	126	44	22													
DF	35	1	88	168	.378	2.52	1.51	100.2	572.5	4.31	151	865	298	104	60													
DF	37	1	90	145	.169	1.26	.51	132.2	713.3	1.91	67	361	132	46	25													
DF	40	1	88	150	.145	1.26	.43	156.1	823.3	1.93	68	357	133	47	25													
DF	43	1	87	162	.157	1.59	.63	145.0	830.0	2.60	91	522	179	63	36													
DF	44	1	90	168	.150	1.59	.60	159.6	865.0	2.73	96	520	189	66	36													
DF	Totals	108	88	135	86.719	222.13	256.71	43.6	214.4	319.15	11,198	55,030	22,021	7,727	3,797													
RA	10	2	92	84	6.074	3.31	9.11	9.2	46.7	2.30	84	425	158	58	29													
RA	13	1	93	92	1.797	1.66	3.59	15.7	75.0	1.56	57	270	107	39	19													
RA	14	1	94	103	2.464	2.63	4.93	21.6	105.0	2.92	106	517	202	73	36													
RA	15	1	92	92	1.350	1.66	2.70	21.2	100.0	1.58	57	270	109	40	19													
RA	16	1	94	120	1.887	2.63	5.66	22.0	113.3	3.43	125	641	237	86	44													
RA	Totals	6	93	94	13.571	11.89	25.99	16.5	81.7	11.78	428	2,124	813	296	147													
WH	37	1	81	139	.251	1.88	.75	125.6	580.0	3.03	95	437	209	65	30													
WH	Totals	1	81	139	.251	1.88	.75	125.6	580.0	3.03	95	437	209	65	30													
Totals		115	89	130	100.541	235.90	283.46	41.4	203.2	333.96	11,721	57,590	23,043	8,088	3,974													

TC PLOGSTVB				Log Stock Table - MBF															
<div>T04N R06W S12 Ty00MC69.00</div>				Project: ROCKRAB												Page 2			
				Acres 69.00												Date 1/26/2018			
																Time 1:10:51PM			
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	Totals		147		147	3.7			49	8	67	22							
Total	All Species		4,032	1.5	3,974	100.0			275	244	389	311	588	1182	810	137	37		

VOLUME SUMMARY

(Shown in MBF)

Rock Rabbit**Sale No. 31-18-21****January 2018****AREA 1: MC (69 ACRES)**

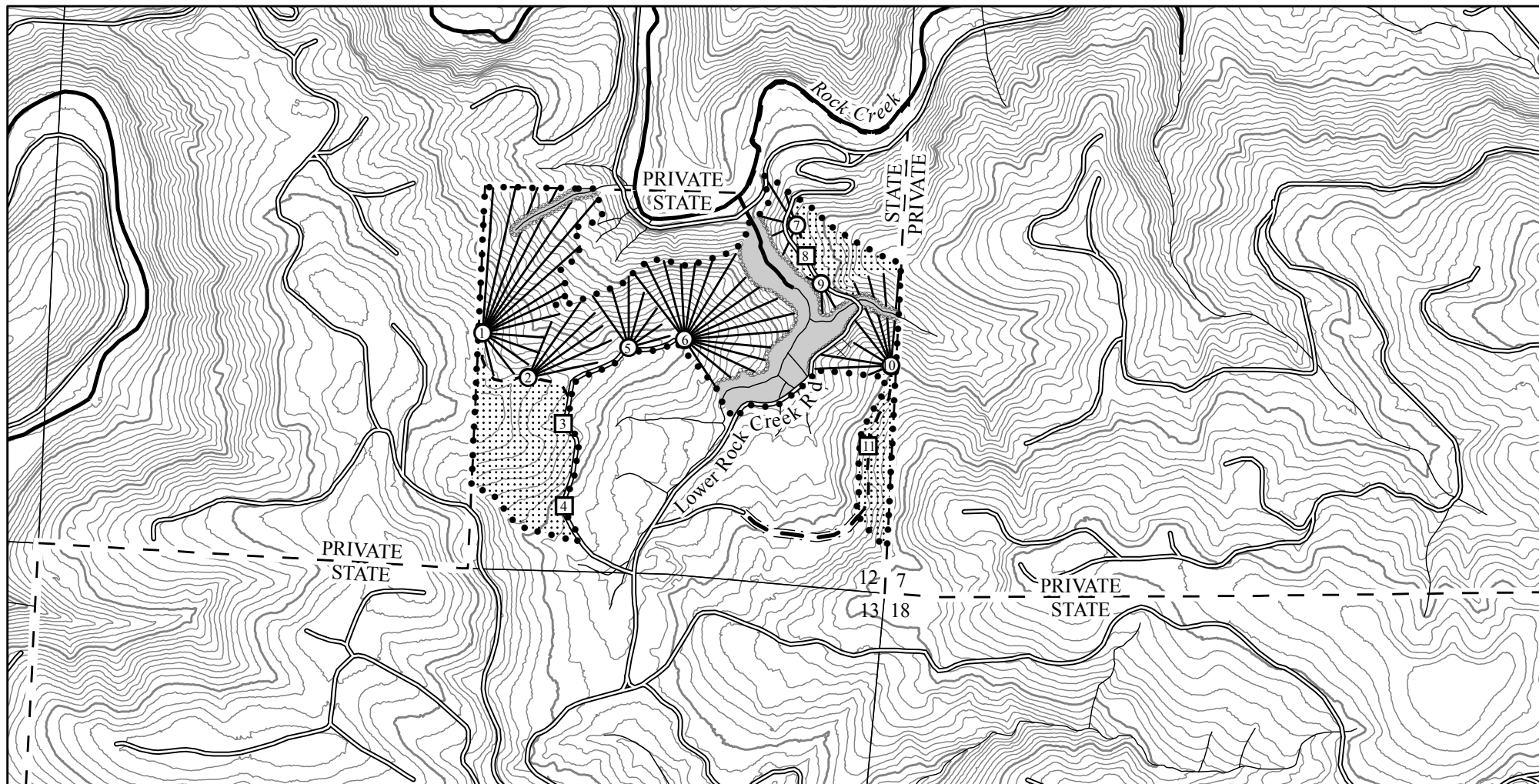
SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	2,606	1,115	76		3,797
	Hidden D&B (2%)	(52)	(22)	(2)		(76)
	NET TOTAL	2,554	1,093	74		3,721
	% of Total	69	29	2		
Western hemlock	Cruise Volume	0	29	1		30
	Hidden D&B (2%)	()	(1)	()		(1)
	NET TOTAL	0	28	1		29
	% of Total	0	97	3		
Red alder	Cruise Volume	0	0	0	147	147
	Hidden D&B (2%)	()	()	()	(3)	(3)
	NET TOTAL	0	0	0	144	144
	% of Total	0	0	0		

AREA 2: R/W (<1 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW		TOTAL
Douglas-fir	Cruise Volume	0	7	6		13
	Hidden D&B (2%)	()	()	()		()
	NET TOTAL	0	7	6		13
	% of Total	0	54	46		

SALE TOTAL

SPECIES	2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	2,554	1,100	80		3,734
Western hemlock	0	28	1		29
Red alder				144	144
TOTAL	2,554	1,128	81	144	3,907



Legend

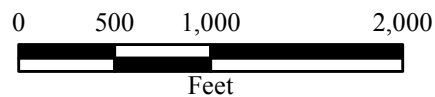
- Timber Sale Boundary
- Surfaced Roads
- Posted New Road Construction
- - Unposted New Road Construction
- Type F Stream
- Type N Stream
- Posted Stream Buffer Boundary
- Stream Buffer
- ××× No Harvest Area
- Cable Landing
- Tractor Landing
- ▤ Cable Yarding Area
- ▦ Tractor Yarding Area
- ▧ ODF Ownership Boundary
- Section Line
- 20 Foot Contour
- 200 Foot Contours

LOGGING PLAN

FOR TIMBER SALE CONTRACT 341-18-21
 ROCK RABBIT
 PORTIONS OF SECTION 12,
 T4N, R6W, W.M.,
 CLATSOP COUNTY, OREGON

1:12,000

1 inch = 1,000 feet



APPROXIMATE NET ACRES	
TRACTOR	CABLE
24	45

Forest Grove District GIS
 January, 2018

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