



Timber Sale Appraisal
Catch and Release
Sale FG-341-2016-45-

District: Forest Grove

Date: May 02, 2016

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,201,333.57	\$0.00	\$1,201,333.57
		Project Work:	(\$414,425.00)
		Advertised Value:	\$786,908.57



Timber Sale Appraisal Catch and Release Sale FG-341-2016-45-

District: Forest Grove

Date: May 02, 2016

Timber Description

Location: Portions of Sections 17, 18, 19, 20, 28, 29, and 30, T3N, R5W, W.M., Washington County, Oregon, and portions of Sections 13 and 24, T3N, R6W, W.M., Tillamook County, Oregon.

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	12	0	98

Volume by Grade	3S	4S	Total
Douglas - Fir	2,999	828	3,827
Total	2,999	828	3,827

Comments: Pond Values Used: 1st Quarter Calendar Year 2016.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
 $\$174.32/\text{MBF} = \$435/\text{MBF} - \$260.68/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$924.32/\text{MBF} = \$1,185/\text{MBF} - \$260.68/\text{MBF}$

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus Logging Cost:
 $\$344.32/\text{MBF} = \$605/\text{MBF} - \$260.68/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$780 daily truck cost.

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

Brand and Paint: $3,827 \text{ MBF} \times \$2/\text{MBF} = \$7,654$

Non Project Roads: $545' @ \$100/\text{sta.} = \545

TOTAL Other Costs (with Profit & Risk to be added) = \$8,199

Other Costs (No Profit & Risk added):

Block/Waterbar Roads/Skid Trails: $15 \text{ hrs} \times \$150/\text{hour} = \$2,250$

Pile Landing Slash/Sort Firewood: $20 \text{ hrs} \times \$150/\text{hour} = \$3,000$

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

TOTAL Other Costs (No Profit & Risk added) = \$8,250

ROAD MAINTENANCE

Move-in: \$4,000

General Road Maintenance: $21.4 \text{ miles} \times \$600/\text{mile} = \$12,840$

TOTAL Road Maintenance: $\$16,840/3,827 \text{ MBF} = \$4.40/\text{MBF}$



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Logging Conditions

Combination#: 1	Douglas - Fir	100.00%
Logging System:	Shovel	Process: Stroke Delimber
yarding distance:	Short (400 ft)	downhill yarding: No
tree size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF	
loads / day:	6	bd. ft / load: 3700
cost / mbf:	\$142.88	
machines:	Stroke Delimber (B)	



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Logging Costs

Operating Seasons: 1.00	Profit Risk: 15%
Project Costs: \$414,425.00	Other Costs (P/R): \$8,199.00
Slash Disposal: \$0.00	Other Costs: \$8,250.00

Miles of Road

Road Maintenance: \$4.40

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	3.8



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$142.88	\$4.49	\$1.15	\$69.79	\$2.14	\$33.07	\$0.00	\$5.00	\$2.16	\$260.68

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$574.59	\$313.91	\$0.00



Timber Sale Appraisal
Catch and Release
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Summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,827	\$313.91	\$1,201,333.57

Gross Timber Sale Value

Recovery: \$1,201,333.57

Prepared By: Eric Foucht

Phone: 503-359-7473

TIMBER SALE SUMMARY
Catch and Release
Contract No. 341-16-45

1. **Location:** Portions of Section Sections 17, 18, 19, 20, 28, 29, and 30, T3N, R5W, W.M, Washington County, Oregon, and Sections 13 and 24, T3N, R6W, W.M., Tillamook County, Oregon.
2. **Type of Sale:** This timber sale is 414 acres of Partial Cut, and 4 acres of right-of-way. The timber will be sold on a recovery basis at a sealed bid auction.
3. **Revenue Distribution:** 100% BOF, 13% Tillamook County, Tax Code 56-1 and 87% Washington County.
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 OSDF Cruisers Savage and Burns in February of 2016. For more information see Cruise Report.
6. **Timber Description:** The Timber Sale Area consists of seven well stocked Douglas-fir plantations that range in age from 35 to 42 years. Also included are three rights of way. The following table summarizes the ODF cruise estimates for trees to be harvested.

Sale Area	Net Acres	Average DBH	Trees/Acre	Net MBF/Acre
Area 1 (PCM)	44	13	103	11.3
Area 2 (PCM)	13	13	97	16.0
Area 3 (PCM)	16	12	118	11.3
Area 4 (PCM)	105	11	130	9.2
Area 5 (PCM)	166	12	85	8.0
Area 6 (PCM)	6	14	168	31.7
Area 7 (PCM)	64	13	73	8.3
Area 8 (R/W)	4	14	199	31.5

7. **Topography and Logging Method:**

Slopes within the sale areas range from 10% to 35% with some short pitches up to approximately 50%. Aspects are variable. The entire Timber Sale Area is well-roaded with abundant opportunities for landing placement. In addition, to facilitate ground based yarding, the planned harvest design calls for the addition of three Project Roads and one Non Project Road. As a result, 100% of the Timber Sale area may be yarded with ground-based equipment. Yarding distances will generally be short to moderate and should not exceed 850'.

8. **Access:** To access the southern portion of the Timber Sale Area, travel north from Forest Grove on Highway 8 to its junction with Highway 6. Turn left and travel west approximately 3.5 miles to Timber Road. Turn right, proceed north on Timber Road approximately 6.5 miles and turn onto Cochran Road. Continue west on Cochran Road for 2.7 miles to Wheeler Road. Turn right onto Wheeler Road and continue northwest for 3.5 miles to the South Lousignont Road. Turn right and proceed 750' to the southwest portion of Area 1. Access to the northern portion of the Timber sale area may be obtained by traveling north from Forest Grove on Highway 47 through Banks then merging onto Highway 26 westbound and continuing for approximately 11 ½ miles to the Timber Road. Turn left and proceed south on the Timber Road .7 miles to the Lousignont Road. Turn right and continue west on Lousignont Road for 1 mile to the east side of Area 2.

9. **Projects:**

Project No. 1: Road Construction and Improvement	\$91,865.78
Project No. 2: Surfacing	\$277,936.66
Project No. 3: Grass Seed, Fertilize and Mulch	\$3,545.02
Project No. 4: Bridge Deck Replacement	\$9,600.00
Project No. 5: Install Culvert No. 15	\$19,392.18
Project No. 6: Block and Vacate Road Segments	\$5,451.58
Move in and Equipment Cleaning	\$6,633.78

Total Credit for all Projects	\$414,425.00
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PROJECT COST SUMMARY SHEET

Timber Sale: Catch and Release
 Sale Number: 341-16-45

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

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
E to F	26+55	\$9,511.04
P to Q	9+50	\$6,269.56
S to T	20+30	\$4,913.28
U to V	14+80	\$5,016.36
	71+15 stations	
	1.35 miles	

SUBTOTAL CONSTRUCTION = \$25,710.24

IMPROVEMENTS

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	33+75	\$9,001.88
B to C	134+05	\$21,197.80
C to D	56+00	\$2,176.00
H to I	24+60	\$5,234.38
J to K	4+50	\$382.00
M to N	35+00	\$5,420.00
O to P	38+15	\$8,401.92
Q to R	82+15	\$14,341.56
	408+20 stations	
	7.73 miles	

SUBTOTAL IMPROVEMENTS = \$66,155.54

TOTAL PROJECT NO. 1 COST = \$91,865.78

PROJECT NO. 2: SURFACING

<u>Road Segment</u>	<u>Rock Amount</u>	<u>Rock Type</u>	<u>Cost</u>
A to B	1,554 cy	1 1/2" - 0	\$35,963.20
	20 cy	36" - 24"	\$859.43
B to C	4,626 cy	1 1/2" - 0	\$106,734.06
C to D	1,894 cy	1 1/2" - 0	\$46,213.60
H to I	358 cy	1 1/2" - 0	\$9,547.62
Point L	48 cy	36" - 24"	\$684.48
M to N	119 cy	1 1/2" - 0	\$3,221.42
O to P	1,816 cy	1 1/2" - 0	\$42,405.68
	61 cy	Jaw-run	\$1,349.93
	48 cy	36" - 24"	\$458.40
P to Q	345 cy	1 1/2" - 0	\$7,754.10
	375 cy	Jaw-run	\$8,422.50
	48 cy	36" - 24"	\$474.24
Q to R	600 cy	1 1/2" - 0	\$13,848.00
Total	11,312 cy	1 1/2" - 0	
	436 cy	Jaw-run	
	164 cy	36" - 24"	

TOTAL PROJECT NO. 2 COST = \$277,936.66

PROJECT NO. 3 GRASS SEED, FERTILIZE, & MULCH

TOTAL PROJECT NO. 3 COST = \$3,545.02

PROJECT NO. 4 BRIDGE DECK REPLACEMENT

TOTAL PROJECT NO. 4 COST = \$9,600.00

PROJECT NO. 5 INSTALL CULVERT NO. 15

B to C 122+40	<u>Rock Amount</u>	<u>Rock Type</u>
	86	1 1/2" - 0
	36	Jaw-run
	24	18" Select
	72	36" - 24"

TOTAL PROJECT NO. 5 COST = \$19,392.18

PROJECT NO. 6 BLOCK & VACATE ROAD SEGMENTS

TOTAL PROJECT NO. 6 COST = \$5,451.58

MOVE-IN, WITHIN AREA MOVE, & EQUIPMENT CLEANING

Grader	\$850.89
Roller (smooth/grid) & Compactor	\$562.86
Excavator - Equipment Cleaning	\$2,073.43
Dozer - Equipment Cleaning	\$2,074.96
Dump Trucks	\$875.12
Water Truck	\$196.52

TOTAL MOVE-IN & EQUIPMENT CLEANING COST = \$6,633.78

TOTAL PROJECT CREDITS \$414,425.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release
Road Segment: A to B (Lousignont Road)

Sale Number: 341-16-45
Improvement: 33+75 stations
0.64 miles

PROJECT NO. 1

EXCAVATION

Clean ditch & end-haul waste material	67.50	sta @	\$80.00	per sta =	\$5,400.00
Clean culvert inlet & outlet, end-haul material	7	ea @	\$25.00	per ea =	\$175.00
Construct settling ponds & end-haul material	14	ea @	\$25.00	per ea =	\$350.00
Construct ditchouts & end-haul material	2	ea @	\$35.00	per ea =	\$70.00
Block open areas	2	ea @	\$100.00	per ea =	\$200.00
Grade, ditch, & roll	33.75	sta @	\$40.50	per sta =	\$1,366.88
TOTAL EXCAVATION COSTS =					\$7,561.88

CULVERTS - MATERIALS & INSTALLATION

Culverts
70 LF of 18" \$1,400.00
Culvert Markers
4 markers \$40.00

TOTAL CULVERT COSTS = \$1,440.00

PROJECT NO. 1 TOTAL COST = \$9,001.88

PROJECT NO. 2:

SURFACING		8 " deep =	42 cy/sta			
A to B (Lousignont Road)	1,418	cy of	1 1/2" - 0	@	\$23.20	per cy = \$32,886.00
Turnouts (2)	48	cy of	1 1/2" - 0	@	\$23.20	per cy = \$1,113.60
Junctions	48	cy of	1 1/2" - 0	@	\$23.20	per cy = \$1,113.60
Culvert bedding & Backfill	40	cy of	1 1/2" - 0	@	\$21.25	per cy = \$850.00
Blockage material at 28+40	4	loads of	36" - 24"	@	\$214.86	per cy = \$859.43
Rock Total =	1,574					
	1,554	cy of	1 1/2" - 0			per cy = \$35,963.20
	20	cy of	36" - 24"			per cy = \$859.43

PROJECT NO. 2 TOTAL COST = \$36,822.63

PROJECT NO. 3:

Grass seed & fertilizer	0.46	acres	@	\$425.00	per acre =	\$197.58
Mulch	60	bales	@	\$8.00	per bale =	\$480.00

PROJECT NO. 3 TOTAL COST = \$677.58

TOTAL COST = \$46,502.09

SUMMARY OF CONSTRUCTION COST

Timber Sale: <u>Catch and Release</u>	Sale Number: <u>341-16-45</u>
Road Segment: <u>B to C (South Lousignont Rd)</u>	Improvement: <u>134+05</u> stations
	<u>2.54</u> miles

PROJECT NO. 1

EXCAVATION

Stump Removal and Road widening	1.50	sta @	\$110.00	per sta =	\$165.00
Clean ditch & end-haul waste material	67.03	sta @	\$80.00	per sta =	\$5,362.00
Clean culvert inlet & outlet	23	ea @	\$25.00	per ea =	\$575.00
Construct ditchouts & end-haul material	6	ea @	\$35.00	per ea =	\$210.00
Improve Turnout	1	ea @	\$66.00	per ea =	\$66.00
Grade, ditch, & roll	134.05	sta @	\$36.00	per sta =	\$4,825.80
TOTAL EXCAVATION COSTS =					\$11,203.80

CULVERTS - MATERIALS & INSTALLATION

Culverts	Bands	
350 LF of 18" \$7,000.00	1 ea of 30" \$44.00	
40 LF of 24" \$1,160.00		
40 LF of 30" \$1,560.00	Culvert Markers	
	23 markers \$230.00	
TOTAL CULVERT COSTS =		\$9,994.00

PROJECT NO. 1 TOTAL COST = \$21,197.80

PROJECT NO. 2:

SURFACING

	6" deep =	31 cy/sta			
B to C (South Lousignont Rd)	4,156	cy of	1 1/2" - 0	@	\$23.11 per cy = \$96,045.16
Turnouts (10)	140	cy of	1 1/2" - 0	@	\$23.11 per cy = \$3,235.40
Junctions	60	cy of	1 1/2" - 0	@	\$23.11 per cy = \$1,386.60
Culvert bedding & Backfill	240	cy of	1 1/2" - 0	@	\$22.39 per cy = \$5,373.60
Curve widening	30	cy of	1 1/2" - 0	@	\$23.11 per cy = \$693.30
Rock Total =	4,626				
	4,626	cy of	1 1/2" - 0		per cy = \$106,734.06

PROJECT NO. 2 TOTAL COST = \$106,734.06

PROJECT NO. 3:

Grass seed & fertilizer	0.46	acres	@	\$425.00	per acre = \$196.19
Mulch	20	bales	@	\$8.00	per bale = \$160.00
Culvert No. 15 - Grass seed & fertilizer	0.15	acres	@	\$425.00	per acre = \$63.75
Culvert No. 15 - Mulch	10	bales	@	\$8.00	per bale = \$80.00

PROJECT NO. 3 TOTAL COST = \$499.94

PROJECT NO. 4:

Wood and Hardware	=	\$2,200.00
Labor and Equipment	=	\$1,500.00

PROJECT NO. 4 TOTAL COST = \$3,700.00

PROJECT NO. 5

Culvert No. 15

Culvert	Bands
75 LF of 73" x 55" \$7,575.00	3 ea of 73" x 55" \$606.00

Additional Installation Cost

Equipment, pump and labor	=	\$6,765.64
Endhaul unsuitable material	=	\$102.08
2 Lifting Lugs	=	\$70.00
Freight	=	\$495.00

Rock

Base Rock	36	cy of	Jaw-run	@	\$22.99	per cy =	\$827.64
Surfacing Rock	36	cy of	1 1/2" - 0	@	\$23.11	per cy =	\$831.96
Culvert Bedding	50	cy of	1 1/2" - 0	@	\$22.39	per cy =	\$1,119.50
Culvert Seeding	24	cy of	18" Select	@	\$10.41	per cy =	\$249.84
Fill Armor	72	cy of	36" - 24"	@	\$10.41	per cy =	\$749.52
Total =	218						
	86	cy of	1 1/2" - 0				
	36	cy of	Jaw-run				
	24	cy of	18" Select				
	72	cy of	36" - 24"				

PROJECT NO. 5 TOTAL COST = \$19,392.18

TOTAL COST = \$151,523.98

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
 Road Segment: C to D (Xover Road) Improvement: 56+00 stations
1.06 miles

PROJECT NO. 1

EXCAVATION

Grade, ditch, & roll 56.00 sta @ \$36.00 per sta = \$2,016.00
TOTAL EXCAVATION COSTS = \$2,166.00

CULVERTS - MATERIALS & INSTALLATION

Culvert Markers

1 markers \$10.00

TOTAL CULVERT COSTS = \$10.00

PROJECT NO. 1 TOTAL COST = \$2,176.00

PROJECT NO. 2:

SURFACING

6 " deep = 31 cy/sta

C to D (Xover Road) 1,736 cy of 1 1/2" - 0 @ \$24.40 per cy = \$42,358.40
 Turnouts (7) 98 cy of 1 1/2" - 0 @ \$24.40 per cy = \$2,391.20
 Junctions 60 cy of 1 1/2" - 0 @ \$24.40 per cy = \$1,464.00

Rock Total = 1,894

1,894 cy of 1 1/2" - 0 per cy = \$46,213.60

PROJECT NO. 2 TOTAL COST = \$46,213.60

TOTAL COST = \$48,389.60

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: E to F Construction: 26+55 stations
0.50 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	1.83	ac @	\$1,078.00	per acre =	\$1,972.74
Balanced road construction	26.55	sta @	\$110.00	per sta =	\$2,920.50
Turnouts	3	ea @	\$66.00	per ea =	\$198.00
Turnarounds	1	ea @	\$30.00	per ea =	\$30.00
Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	26.55	sta @	\$36.00	per sta =	\$955.80
Grade & roll (outslope)	0.00	sta @	\$32.20	per sta =	\$0.00
Winterization blocking	1	ea @	\$50.00	per ea =	\$50.00
Winterization waterbarring	4	ea @	\$27.50	per ea =	\$110.00

TOTAL EXCAVATION COSTS = \$6,551.04

CULVERTS - MATERIALS & INSTALLATION

Culverts

90 LF of 18" \$1,800.00
40 LF of 24" \$1,160.00

TOTAL CULVERT COSTS = \$2,960.00

PROJECT NO. 1 TOTAL COST = \$9,511.04

PROJECT NO. 3:

Grass seed & fertilizer	1.37	acres	@	\$425.00	per acre =	\$582.25
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PROJECT NO. 3 TOTAL COST = \$582.25

PROJECT NO. 6:

Remove existing culverts	4	each	@	\$150.00	per acre =	\$600.00
Construct Tank Trap	1	each	@	\$55.00	per acre =	\$55.00
Construct Waterbars	4	each	@	\$27.50	per bale =	\$110.00
Grass seed & fertilizer	26.55	station	@	\$15.61	per sta. =	\$414.45

PROJECT NO. 6 TOTAL COST = \$1,179.45

TOTAL COST = \$11,272.74

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: Point G

PROJECT NO. 4:

Wood and Hardware	\$4,400.00
Labor and Equipment	\$1,500.00

PROJECT NO. 4 TOTAL COST = \$5,900.00

TOTAL COST = \$5,900.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release
 Road Segment: H to I (South Lousignont Road)

Sale Number: 341-16-45
 Improvement: 24+60 stations
0.47 miles

PROJECT NO. 1

EXCAVATION

Clean ditch & end-haul waste material	12.30	sta @	\$60.00	per sta =	\$748.78
Clean culvert inlet & outlet	4	ea @	\$25.00	per ea =	\$100.00
Improve Turnaround	1	ea @	\$30.00	per ea =	\$30.00
Grade, ditch, & roll	24.60	sta @	\$36.00	per sta =	\$885.60
TOTAL EXCAVATION COSTS =					\$1,764.38

CULVERTS - MATERIALS & INSTALLATION

Culverts

70 LF of 18" \$1,400.00

70 LF of 24" \$2,030.00

Culvert Markers

4 markers \$40.00

TOTAL CULVERT COSTS = \$3,470.00

PROJECT NO. 1 TOTAL COST = \$5,234.38

PROJECT NO. 2:

SURFACING

Spot Rock	250	cy of	1 1/2" - 0	@	\$26.79	per cy =	\$6,697.50
Turnaround	24	cy of	1 1/2" - 0	@	\$26.79	per cy =	\$642.96
Junction	24	cy of	1 1/2" - 0	@	\$26.79	per cy =	\$642.96
Culvert bedding & Backfill	60	cy of	1 1/2" - 0	@	\$26.07	per cy =	\$1,564.20
Rock Total =	358						
	358	cy of	1 1/2" - 0			per cy =	\$9,547.62

PROJECT NO. 2 TOTAL COST = \$9,547.62

PROJECT NO. 3:

Grass seed & fertilizer	0.08	acres	@	\$425.00	per acre =	\$34.00
Mulch	2	bales	@	\$8.00	per bale =	\$16.00

PROJECT NO. 3 TOTAL COST = \$50.00

TOTAL COST = \$14,832.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
 Road Segment: J to K Improvement: 4+50 stations
0.09 miles

PROJECT NO. 1

EXCAVATION

Improve Landing	1	ea @	\$220.00	per ea =	\$220.00
Grade, ditch, & roll	4.50	sta @	\$36.00	per sta =	\$162.00
Winterization blocking	1	ea @	\$50.00	per ea =	\$50.00
Winterization waterbarring	2	ea @	\$27.50	per ea =	\$55.00
TOTAL EXCAVATION COSTS =					\$382.00

PROJECT NO. 1 TOTAL COST = \$382.00

PROJECT NO. 3:

Grass seed & fertilizer	0.03	acres	@	\$425.00	per acre =	\$12.75
PROJECT NO. 3 TOTAL COST =					\$12.75	

PROJECT NO. 6:

Construct Tank Trap	1	each	@	\$55.00	per acre =	\$55.00
Construct Waterbars	2	each	@	\$27.50	per bale =	\$55.00
Grass seed & fertilizer	4.50	station	@	\$15.61	per sta.=	\$70.25
PROJECT NO. 6 TOTAL COST =					\$180.25	

TOTAL COST = \$394.75

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: Point L

PROJECT NO. 2:

SURFACING

Riprap	<u>48</u>	cy of	36" - 24"	@	\$14.26	per cy =	\$684.48
Rock Total =	<u>48</u>						
	48	cy of	36" - 24"			per cy =	\$684.48

PROJECT NO. 2 TOTAL COST = \$684.48

TOTAL COST = \$684.48

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Catch and Release	Sale Number:	341-16-45
Road Segment:	M to N	Improvement:	35+00 stations
			0.66 miles

PROJECT NO. 1

EXCAVATION

Clean ditch & end-haul waste material	17.50	sta @	\$60.00	per sta =	\$1,050.00
Clean culvert inlet & outlet	4	ea @	\$25.00	per ea =	\$100.00
Grade, ditch, & roll	35.00	sta @	\$36.00	per sta =	\$1,260.00
					TOTAL EXCAVATION COSTS = \$2,410.00

CULVERTS - MATERIALS & INSTALLATION

Culverts

90 LF of 18"	\$1,800.00
30 LF of 30"	\$1,170.00

Culvert Markers

4 markers	\$40.00
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TOTAL CULVERT COSTS = \$3,010.00

PROJECT NO. 1 TOTAL COST = \$5,420.00

PROJECT NO. 2:

SURFACING

6 " deep = 31 cy/sta

20+75 to 22+00	39	cy of	1 1/2" - 0	@	\$28.98	per cy =	\$1,130.22
Culvert bedding and Backfill	80	cy of	1 1/2" - 0	@	\$26.14	per cy =	\$2,091.20
Rock Total =	119						
	119	cy of	1 1/2" - 0			per cy =	\$3,221.42

PROJECT NO. 2 TOTAL COST = \$3,221.42

PROJECT NO. 3:

Grass seed & fertilizer	0.12	acres	@	\$425.00	per acre =	\$51.00
Mulch	12	bales	@	\$8.00	per bale =	\$96.00

PROJECT NO. 3 TOTAL COST = \$147.00

TOTAL COST = \$8,788.42

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: O to P (Ingersoll Road) Improvement: 38+15 stations
0.72 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	0.07	ac @	\$1,078.00	per acre =	\$75.46
Clean ditch & scatter waste material	76.3	sta @	\$12.41	per sta =	\$946.88
Balanced road construction	1.45	sta @	\$110.00	per sta =	\$159.50
Construct settling ponds	6	ea @	\$25.00	per ea =	\$150.00
Construct ditchouts	1	ea @	\$35.00	per ea =	\$35.00
Remove existing culvert	1	ea @	\$50.00	per ea =	\$50.00
Grade, ditch, & roll	38.15	sta @	\$40.50	per sta =	\$1,545.08

TOTAL EXCAVATION COSTS = \$2,961.92

CULVERTS - MATERIALS & INSTALLATION

Culverts

90 LF of 18"	\$1,800.00
50 LF of 30"	\$1,950.00
30 LF of 36"	\$1,500.00

Bands

2 ea of 30"	\$88.00
1 ea of 36"	\$52.00

Culvert Markers

5 markers	\$50.00
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TOTAL CULVERT COSTS = \$5,440.00

PROJECT NO. 1 TOTAL COST = \$8,401.92

PROJECT NO. 2:

SURFACING

8 " deep = 42 cy/sta

O to P (Ingersoll Road)	1,602	cy of	1 1/2" - 0	@	\$23.48	per cy =	\$37,614.96
Base Rock	61	cy of	Jaw-run	@	\$22.13	per cy =	\$1,349.93
Turnouts (5)	70	cy of	1 1/2" - 0	@	\$23.48	per cy =	\$1,643.60
Junction	24	cy of	1 1/2" - 0	@	\$23.48	per cy =	\$563.52
Culvert bedding & Backfill	120	cy of	1 1/2" - 0	@	\$21.53	per cy =	\$2,583.60
Fill armor	48	cy of	36" - 24"	@	\$9.55	per cy =	\$458.40
Rock Total =	1,925						
	1,816	cy of	1 1/2" - 0			per cy =	\$42,405.68
	61	cy of	Jaw-run			per cy =	\$1,349.93
	48	cy of	36" - 24"			per cy =	\$458.40

PROJECT NO. 2 TOTAL COST = \$44,214.01

PROJECT NO. 3:

Grass seed & fertilizer	0.53	acres	@	\$425.00	per acre =	\$225.25
Mulch	20	bales	@	\$8.00	per bale =	\$160.00

PROJECT NO. 3 TOTAL COST = \$385.25

TOTAL COST = \$53,001.18

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: P to Q Construction: 9+50 stations
0.18 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	0.52	ac @	\$1,078.00	per acre =	\$560.56
Balanced road construction	9.50	sta @	\$110.00	per sta =	\$825.00
Place fill	490	cy @	\$2.40	per cy =	\$1,176.00
Compact fill	490	cy @	\$0.50	per cy =	\$245.00
Grade, ditch, & roll	9.50	sta @	\$36.00	per sta =	\$342.00

TOTAL EXCAVATION COSTS = \$3,148.56

CULVERTS - MATERIALS & INSTALLATION

Culverts					
30 LF of 18"	\$600.00	Bands			
40 LF of 42"	\$2,440.00	1 ea of 42"	\$61.00		
Culvert Markers					
2 markers	\$20.00				

TOTAL CULVERT COSTS = \$3,121.00

PROJECT NO. 1 TOTAL COST = \$6,269.56

PROJECT NO. 2:

SURFACING

	6" deep =	31 cy/sta					
Surfacing	295	cy of	1 1/2" - 0	@	\$22.58	per cy =	\$6,661.10
Base Rock	295	cy of	Jaw-run	@	\$22.46	per cy =	\$6,625.70
Culvert bedding	50	cy of	1 1/2" - 0	@	\$21.86	per cy =	\$1,093.00
Subgrade reinforcement	80	cy of	Jaw-run	@	\$22.46	per cy =	\$1,796.80
Fill armor	48	cy of	36" - 24"	@	\$9.88	per cy =	\$474.24
Rock Total =	768						
	345	cy of	1 1/2" - 0			per cy =	\$7,754.10
	375	cy of	Jaw-run			per cy =	\$8,422.50
	48	cy of	36" - 24"			per cy =	\$474.24

PROJECT NO. 2 TOTAL COST = \$16,650.84

PROJECT NO. 3:

Grass seed & fertilizer	0.26	acres	@	\$425.00	per acre =	\$110.50
Mulch	6	bales	@	\$8.00	per bale =	\$48.00

PROJECT NO. 3 TOTAL COST = \$158.50

TOTAL COST = \$23,078.90

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release
 Road Segment: Q to R (Ingersoll Road)

Sale Number: 341-16-45
 Improvement: 82+15 stations
1.56 miles

PROJECT NO. 1

EXCAVATION

Clean ditch & scatter waste material	82.15	sta @	\$12.41	per sta =	\$1,019.48
Clean culvert inlet & outlet	4	ea @	\$25.00	per ea =	\$100.00
Construct settling ponds	10	ea @	\$25.00	per ea =	\$250.00
Construct ditchouts	6	ea @	\$35.00	per ea =	\$210.00
Grade, ditch, & roll	82.15	sta @	\$40.50	per sta =	\$3,327.08
TOTAL EXCAVATION COSTS =					\$10,991.56

CULVERTS - MATERIALS & INSTALLATION

Culverts

120 LF of 18"	\$2,400.00
30 LF of 24"	\$870.00

Culvert Markers

8 markers	\$80.00
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TOTAL CULVERT COSTS = \$3,350.00

PROJECT NO. 1 TOTAL COST = \$14,341.56

PROJECT NO. 2:

SURFACING

Spot Rock	500	cy of	1 1/2" - 0	@	\$23.20	per cy =	\$11,600.00
Culvert bedding & Backfill	100	cy of	1 1/2" - 0	@	\$22.48	per cy =	\$2,248.00
Rock Total =	600						
	600	cy of	1 1/2" - 0			per cy =	\$13,848.00

PROJECT NO. 2 TOTAL COST = \$13,848.00

PROJECT NO. 3:

Grass seed & fertilizer	0.57	acres	@	\$425.00	per acre =	\$242.25
Mulch	2	bales	@	\$8.00	per bale =	\$16.00

PROJECT NO. 3 TOTAL COST = \$258.25

TOTAL COST = \$28,447.81

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: S to T Construction: 20+30 stations
0.38 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	1.40	ac @	\$1,078.00	per acre =	\$1,507.12
Balanced road construction	20.30	sta @	\$110.00	per sta =	\$2,233.00
Turnouts	2	ea @	\$66.00	per ea =	\$132.00
Turnarounds	1	ea @	\$30.00	per ea =	\$30.00
Small landing	1	ea @	\$220.00	per ea =	\$220.00
Grade & roll (outslope)	20.30	sta @	\$32.20	per sta =	\$653.66
Winterization waterbarring	5	ea @	\$27.50	per ea =	\$137.50

TOTAL EXCAVATION COSTS = \$4,913.28

PROJECT NO. 1 TOTAL COST = \$4,913.28

PROJECT NO. 3:

Grass seed & fertilizer	1.05	acres	@	\$425.00	per acre = \$446.25
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PROJECT NO. 3 TOTAL COST = \$446.25

PROJECT NO. 6:

Remove existing culvert	1	each	@	\$150.00	per acre = \$150.00
Construct Tank Trap	1	each	@	\$55.00	per acre = \$55.00
Construct Waterbars	5	each	@	\$27.50	per bale = \$137.50
Grass seed & fertilizer	20.30	station	@	\$15.61	per sta. = \$316.88

PROJECT NO. 6 TOTAL COST = \$659.38

TOTAL COST = \$6,018.91

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release
Road Segment: U to V

Sale Number: 341-16-45
Construction: 14+80 stations
0.28 miles

PROJECT NO. 1

EXCAVATION

Clearing & grubbing (scatter)	1.02	ac @	\$1,078.00	per acre =	\$1,099.56
Balanced road construction	14.80	sta @	\$110.00	per sta =	\$1,628.00
Turnouts	1	ea @	\$66.00	per ea =	\$66.00
Turnarounds	1	ea @	\$30.00	per ea =	\$30.00
Small landing	1	ea @	\$220.00	per ea =	\$220.00
Grade, ditch, & roll	14.80	sta @	\$36.00	per sta =	\$532.80
Winterization blocking	1	ea @	\$50.00	per ea =	\$50.00
Winterization waterbarring	8	ea @	\$27.50	per ea =	\$220.00

TOTAL EXCAVATION COSTS = \$3,846.36

CULVERTS - MATERIALS & INSTALLATION

Culverts

30 LF of 30" \$1,170.00

TOTAL CULVERT COSTS = \$1,170.00

PROJECT NO. 1 TOTAL COST = \$5,016.36

PROJECT NO. 3:

Grass seed & fertilizer	0.77	acres	@	\$425.00	per acre =	\$327.25
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PROJECT NO. 3 TOTAL COST = \$327.25

PROJECT NO. 6:

Remove existing culvert	1	each	@	\$150.00	per acre =	\$150.00
Construct Tank Trap	1	each	@	\$55.00	per acre =	\$55.00
Construct Waterbars	8	each	@	\$27.50	per bale =	\$220.00
Grass seed & fertilizer	14.80	station	@	\$15.61	per sta.=	\$231.03

PROJECT NO. 6 TOTAL COST = \$656.03

TOTAL COST = \$5,999.64

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release Sale Number: 341-16-45
Road Segment: V1 to V2 Vacating: 1+00 stations
0.02 miles

PROJECT NO. 6

Construct tank traps	1	ea @	\$55.00	per ea =	\$55.00
Construct waterbars	3	ea @	\$27.50	per ea =	\$82.50
Rip dirt road surface	1.00	sta @	\$25.00	per sta =	\$25.00
Remove existing culverts	1	ea @	\$150.00	per ea =	\$150.00
Grass seed & fertilizer	1.00	sta @	\$13.66	per sta =	\$13.66
Mulch	1.00	sta @	\$19.28	per sta =	\$19.28

PROJECT NO. 6 TOTAL COST = \$345.44

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release
 Road Segment: V3 to V4

Sale Number: 341-16-45
 Vacating: 1+50 stations
0.03 miles

PROJECT NO. 6

Construct tank traps	1	ea @	\$55.00	per ea =	\$55.00
Block Road	1	ea @	\$50.00	per ea =	\$50.00
Construct Ditchout	1	ea @	\$27.50	per ea =	\$27.50
Rip rocked road surface	1.50	sta @	\$50.00	per sta =	\$75.00
Grass seed & fertilizer	1.50	sta @	\$13.66	per ac =	\$20.49
Mulch	1.50	sta @	\$19.28	per ac =	\$28.92

PROJECT NO. 6 TOTAL COST = \$256.91

SUMMARY OF CONSTRUCTION COST

Timber Sale: Catch and Release
 Road Segment: V5 to V6

Sale Number: 341-16-45
 Vacating: 7+25 stations
0.14 miles

PROJECT NO. 6

Block Road	3	ea @	\$50.00	per ea =	\$150.00
Remove fill material and haul	490	cy @	\$2.52	per cy =	\$1,234.80
Rip rocked road surface	7.25	sta @	\$50.00	per sta =	\$362.50
Remove existing culverts	2	ea @	\$150.00	per ea =	\$300.00
Grass seed & fertilizer	7.25	sta @	\$17.56	per sta =	\$127.32
Mulch	7.25	sta @	\$24.79	per sta =	\$179.75

PROJECT NO. 6 TOTAL COST = \$2,354.37

ROCK PIT DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale:	<u>Catch and Release</u>
Sale Number:	<u>341-16-45</u>
Pit Name:	<u>Wildcat Mtn.</u>

1 1/2" - 0:	<u>11,398 cy</u>	(truck measure)
Jaw-run:	<u>472 cy</u>	(truck measure)
Total truck yardage:	<u>11,870 cy</u>	
Total in place yardage:	<u>9,130 cy</u>	

Swell:	<u>130%</u>
Shrinkage:	<u>116%</u>
Drill %:	<u>85%</u>
Screening Loss:	<u>15%</u>

Pit development, including clearing & grubbing of waste area, place overburden in waste area, spread & compact.

					\$8,758.75
Drill & shoot	<u>\$2.80</u>	/ cy x	<u>10,742</u>	cy =	\$30,076.56
Push rock	<u>\$0.80</u>	/ cy x	<u>13,964</u>	cy =	\$11,171.29
Load crusher	<u>\$0.80</u>	/ cy x	<u>13,964</u>	cy =	\$11,171.29
Screen rock	<u>\$2.90</u>	/ cy x	<u>13,964</u>	cy =	\$40,495.94
Waste reject	<u>\$0.80</u>	/ cy x	<u>2,095</u>	cy =	\$1,675.69
Crush (1 1/2" - 0)	<u>\$3.30</u>	/ cy x	<u>11,398</u>	cy =	\$37,611.75
Crush (Jaw-run)	<u>\$2.10</u>	/ cy x	<u>472</u>	cy =	\$991.20
Load dump truck	<u>\$0.80</u>	/ cy x	<u>11,870</u>	cy =	\$9,495.60
				Subtotal:	\$151,448.08

Move in & setup drill		\$502.74
Equipment cleaning & move in excavator		\$1,881.22
Equipment cleaning & move in dozer		\$1,862.42
Move in & setup screening plant		\$435.00
Move in loader		\$774.62
Move in crusher		\$3,286.00
Setup crusher		\$3,327.00
Gradation tests	\$71.50 /2,000cy x <u>6</u> tests	\$429.00
Change gradation		\$275.00
Clean up pit		\$500.00
	Subtotal:	\$13,273.00

TOTAL PRODUCTION COST = \$164,721.08

ROCK DEVELOPMENT COST = \$13.88/cy

**CRUISE REPORT
CATCH AND RELEASE
341-16-45**

1. LOCATION: Portions of Section Sections 17, 18, 19, 20, 28, 29, and 30, T3N, R5W, W.M., Washington County, Oregon, and Sections 13 and 24, T3N, R6W, W.M., Tillamook County, Oregon.

2. CRUISE DESIGN:

The cruise design assumed a Coefficient of Variation of 50%, an average stand diameter of 15 inches, a desired sampling error of 10% at a 68% confidence level, and a minimum sample size of 100 grade trees. Pre-cruise plots indicated that 5 or 6 grade trees per plot could be realized with a 20 BAF prism.

3. Thinning: The Sale Areas were cruised in February of 2016 with 40 variable radius grade plots and 80 variable radius count plots using a 20 BAF prism. Plots were laid out on a 6 chain x 5 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain. Cruisers 'thinned' plots from below to 140 ft² of basal area by assigning a 'Take' or 'Leave' status to each tree in every plot.

4. CRUISE RESULTS

415 trees, or .5% sample, were measured and graded producing a cumulative Basal Area sampling error of 5.4% and 3.8% on the Board Foot Volume.

5. TREE MEASUREMENT AND GRADING:

All grade plot 'Take' trees were measured and graded following Columbia River Log Scale grade rules and favoring 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 cruisers Mark Savage and Kenton Burns.

Prepared by:

ODF Forester

Date

Reviewed by:

Eric Foucht

Date

RESIDUAL STAND SPECIFICATIONS

CATCH AND RELEASE

341-16-45

AREA 1

Residual QMD assumption (from leave tree cruise information) =

16.4

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	32	35	37
Basal Area	130	140	150
Trees per Acre	89	95	102

AREA 2

Residual QMD assumption (from leave tree cruise information) =

16.3

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	32	35	37
Basal Area	130	140	150
Trees per Acre	90	97	104

AREA 3

Residual QMD assumption (from leave tree cruise information) =

18.2

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	30	33	35
Basal Area	130	140	150
Trees per Acre	72	77	83

$RD = BA / \sqrt{DBH}$
 $BA = \sqrt{DBH} (RD)$
 $TPA = (BA/acre) / (BA/tree)$
 $BA / tree = (\pi r^2) / (144)$

AREA 4

Residual QMD assumption (from leave tree cruise information) =

14.7

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	34	37	39
Basal Area	130	140	150
Trees per Acre	110	119	127

AREA 5

Residual QMD assumption (from leave tree cruise information) =

16.5

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	32	34	37
Basal Area	130	140	150
Trees per Acre	88	94	101

AREA 6

Residual QMD assumption (from leave tree cruise information) =

18.9

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	30	32	35
Basal Area	130	140	150
Trees per Acre	67	72	77

AREA 7

Residual QMD assumption (from leave tree cruise information) =

16

Target Relative Density =

34

	Minimum	Target	Maximum
Relative Density	33	35	38
Basal Area	130	140	150
Trees per Acre	93	100	107

VOLUME SUMMARY

(Shown in MBF)

Catch and Release**Sale No. 341-16-45****February, 2016****AREA 1: PC-M (44 ACRES)**

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	427	73	500
	Hidden D&B (2%)	()	(9)	(1)	(10)
	NET TOTAL	0	418	72	490
	% of Total	0	85	15	

AREA 2: PC M (13 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	170	38	208
	Hidden D&B (2%)	()	(3)	(1)	(4)
	NET TOTAL	0	167	37	204
	% of Total	0	82	18	

AREA 3: PC M (16 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	152	29	181
	Hidden D&B (2%)	()	(3)	(1)	(4)
	NET TOTAL	0	149	28	177
	% of Total	0	84	16	

AREA 4: PC M (105 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	700	261	961
	Hidden D&B (2%)	()	(14)	(5)	(19)
	NET TOTAL	0	686	256	942
	% of Total	0	73	27	

AREA 5: PC M (166 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	945	375	1,320
	Hidden D&B (2%)	()	(19)	(8)	(26)
	NET TOTAL	0	926	367	1,294
	% of Total	0	72	28	

AREA 6: PC M (6 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	167	2	169
	Hidden D&B (2%)	()	(3)	()	(3)
	NET TOTAL	0	164	2	166
	% of Total	0	99	1	

AREA 7: PC M (64 ACRES)

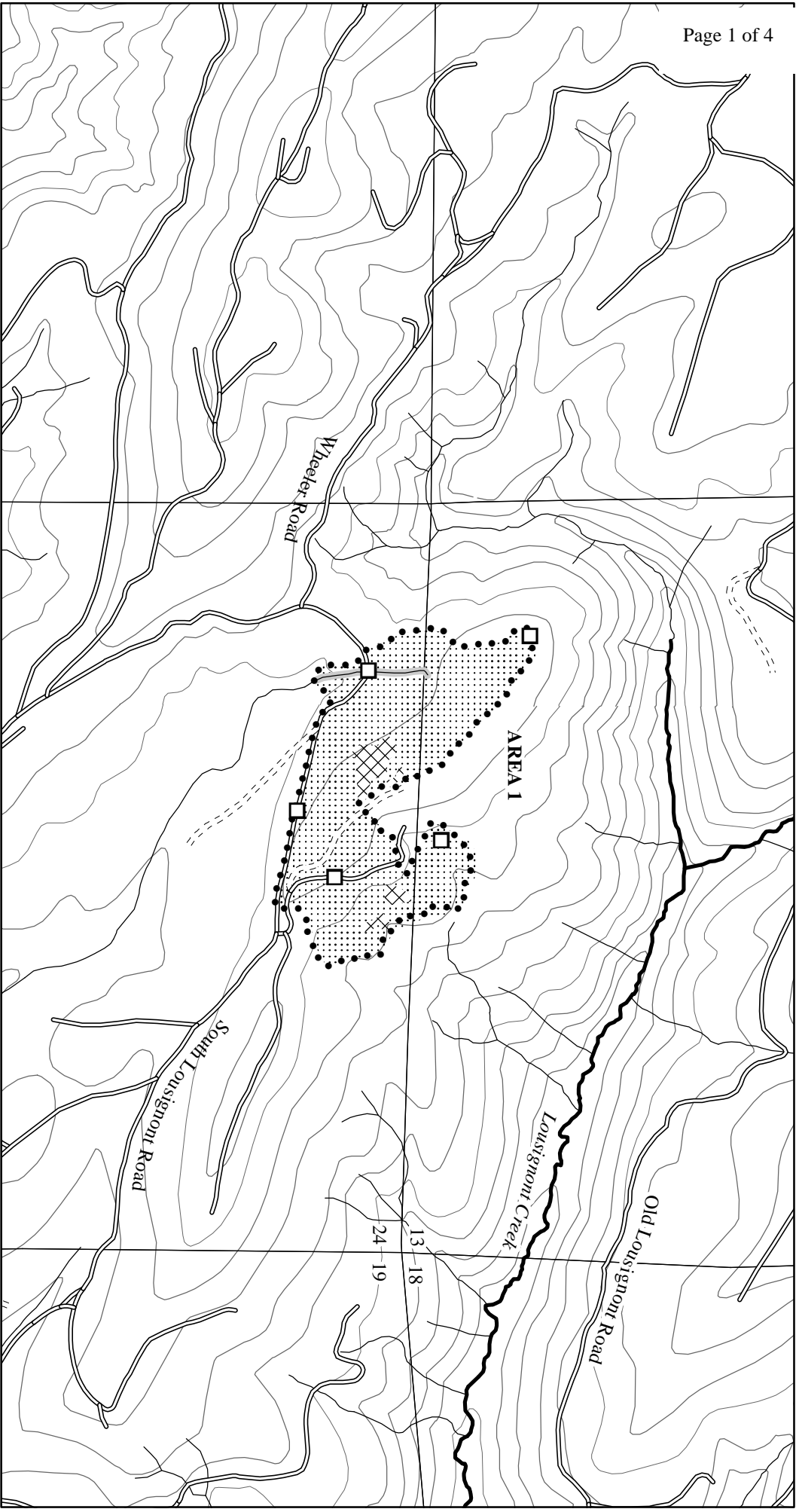
SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	474	60	534
	Hidden D&B (2%)	()	(9)	(1)	(11)
	NET TOTAL	0	465	59	523
	% of Total	0	89	11	

AREA 8: R/W (4 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	0	25	7	32
	Hidden D&B (2%)	()	(1)	()	(1)
	NET TOTAL	0	24	7	31
	% of Total	0	77	23	

SALE TOTAL

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir		0	2,999	828	3,827



Legend

- Timber Sale Boundary
- Surfaced Road
- - - - - Unsurfaced Road
- - - - - New Road Construction
- - - - - Posted R/W Boundary
- Non Project Road
- Type F Stream
- Type N Stream
- Unposted Stream Buffer
- ▤ Thinning Optional Area
- Tractor Yarding Area
- ▤ ODF Property Boundary
- Section Line
- 400 Foot Contour Band
- 80 Foot Contour Band
- AREA 8

Forest Grove District GIS

March, 2016

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

LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-16-45

CATCH AND RELEASE

PORTIONS OF SECTIONS 17, 18, 19, 20, 28, 29, & 30, T3N, R5W

WASHINGTON COUNTY, OREGON.

AND PORTIONS OF SECTIONS 13 & 24, T3N, R6W, W.M.

TILLAMOOK COUNTY, OREGON.

1:12,000

1 inch = 1,000 feet

0 500 1,000 2,000



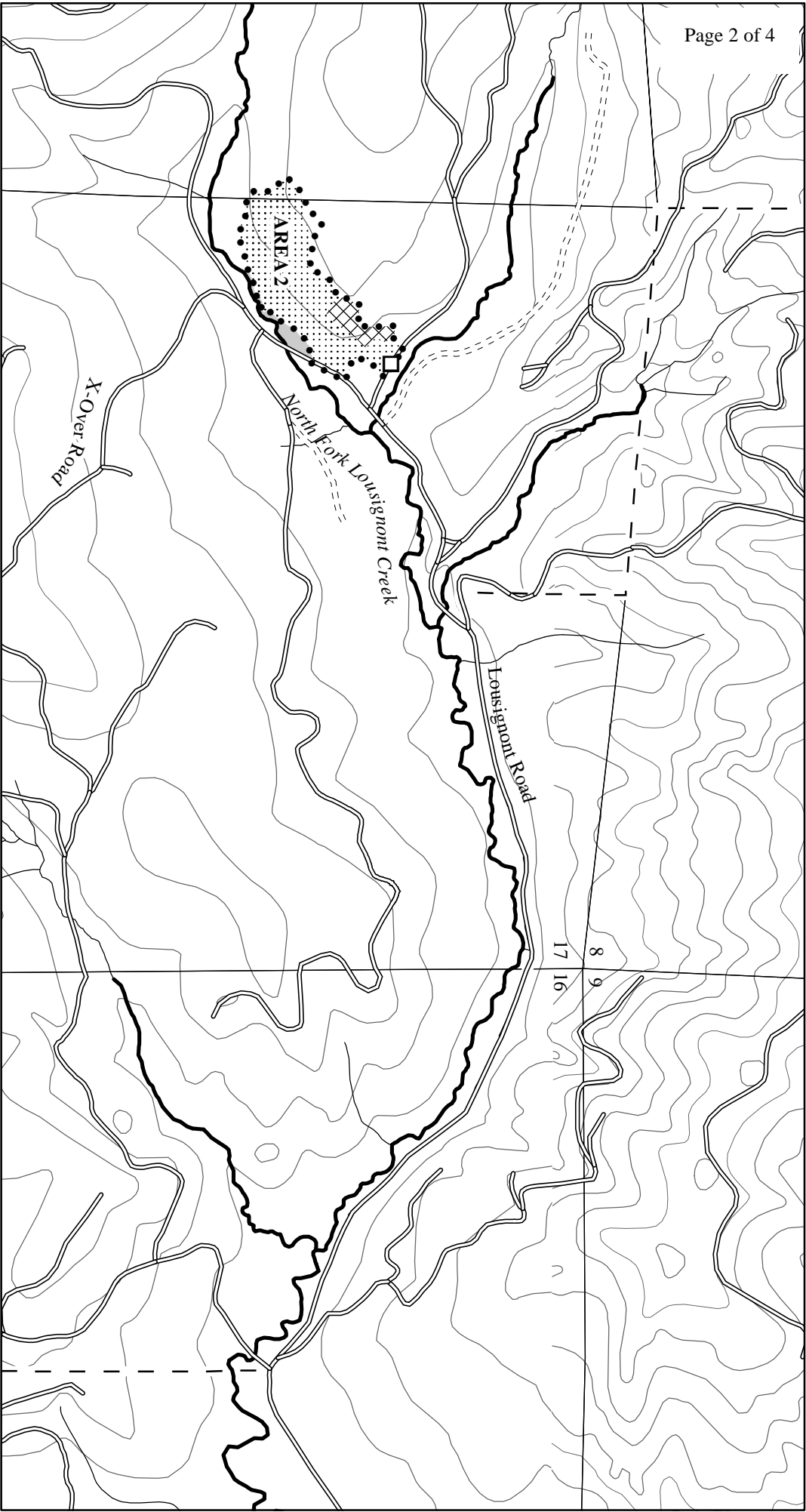
Feet



APPROXIMATE NET ACRES
TRACTOR CABLE

AREA 1	44	0
AREA 2	13	0
AREA 3	16	0
AREA 4	105	0
AREA 5	166	0
AREA 6	6	0
AREA 7	64	0
AREA 8 R/W	4	0

TOTAL 418 0



Legend

- Timber Sale Boundary
- Surfaced Road
- Unsurfaced Road
- New Road Construction
- Posted R/W Boundary
- Non Project Road
- Type F Stream
- Type N Stream
- Unposted Stream Buffer
- Thinning Optional Area
- Tractor Yarding Area
- Tractor Landings
- ODF Property Boundary
- Section Line
- 400 Foot Contour Band
- 80 Foot Contour Band
- AREA 8

Forest Grove District GIS

March, 2016

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LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-16-45

CATCH AND RELEASE

PORTIONS OF SECTIONS 17, 18, 19, 20, 28, 29, & 30, T3N, R5W

WASHINGTON COUNTY, OREGON.

AND PORTIONS OF SECTIONS 13 & 24, T3N, R6W, W.M.

TILLAMOOK COUNTY, OREGON.

1:12,000

1 inch = 1,000 feet

0 500 1,000 2,000



Feet

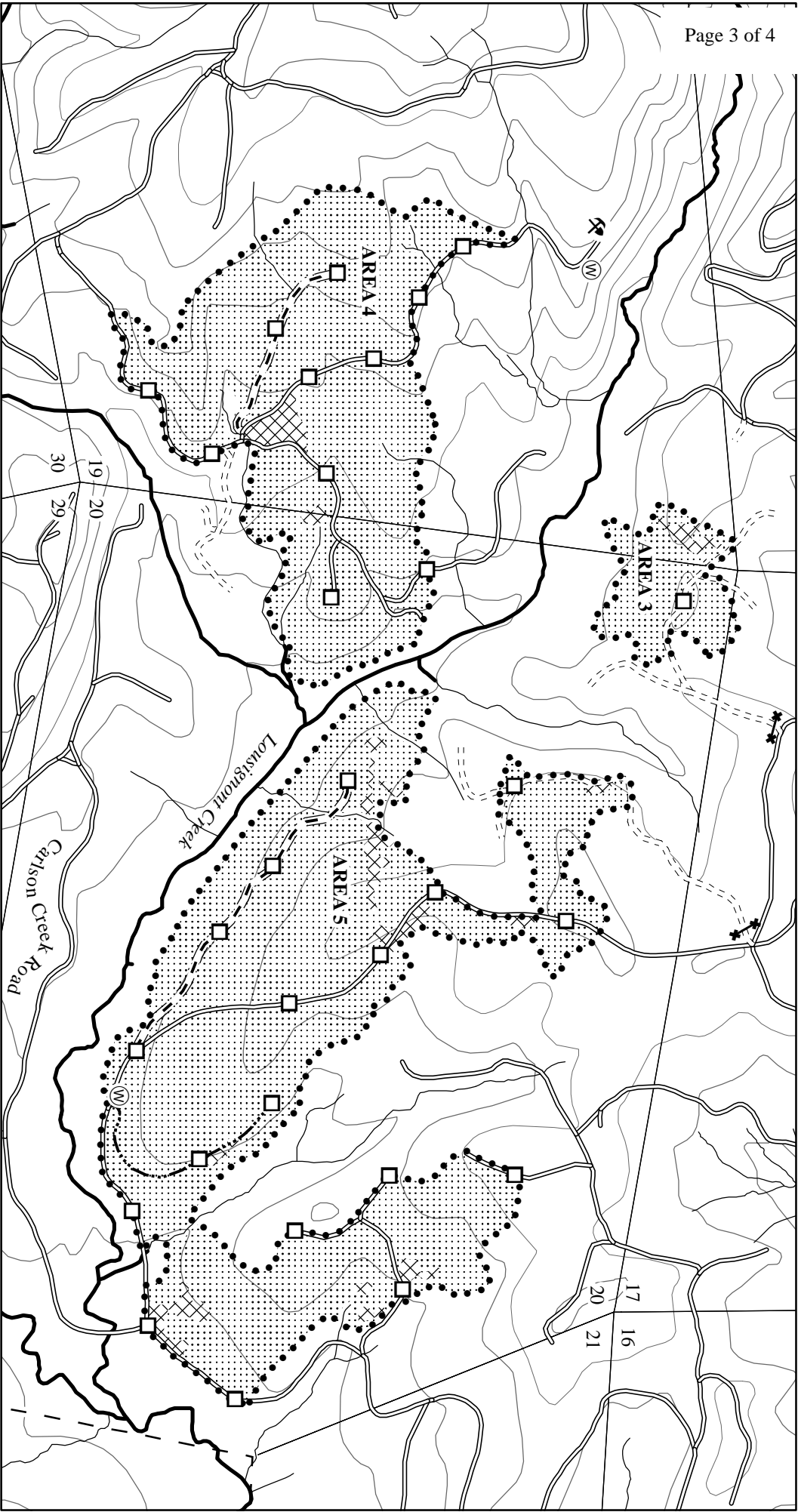


APPROXIMATE NET ACRES

TRACTOR CABLE

AREA 1	44	0
AREA 2	13	0
AREA 3	16	0
AREA 4	105	0
AREA 5	166	0
AREA 6	6	0
AREA 7	64	0
AREA 8 R/W	4	0

TOTAL 418 0



Legend

- Timber Sale Boundary
- Surfaced Road
- Unsurfaced Road
- New Road Construction
- Posted R/W Boundary
- Non Project Road
- Type F Stream
- Type N Stream
- Rock Pit
- Waste Area
- Thinning Optional Area
- Tractor Yarding Area
- Tractor Landings
- ODF Property Boundary
- Section Line
- 400 Foot Contour Band
- 80 Foot Contour Band
- AREA 8
- Blockage

LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-16-45

CATCH AND RELEASE

PORTIONS OF SECTIONS 17, 18, 19, 20, 28, 29, & 30, T3N, R5W

WASHINGTON COUNTY, OREGON.

AND PORTIONS OF SECTIONS 13 & 24, T3N, R6W, W.M.

TILLAMOOK COUNTY, OREGON.

Forest Grove District GIS

March, 2016

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

1:12,000

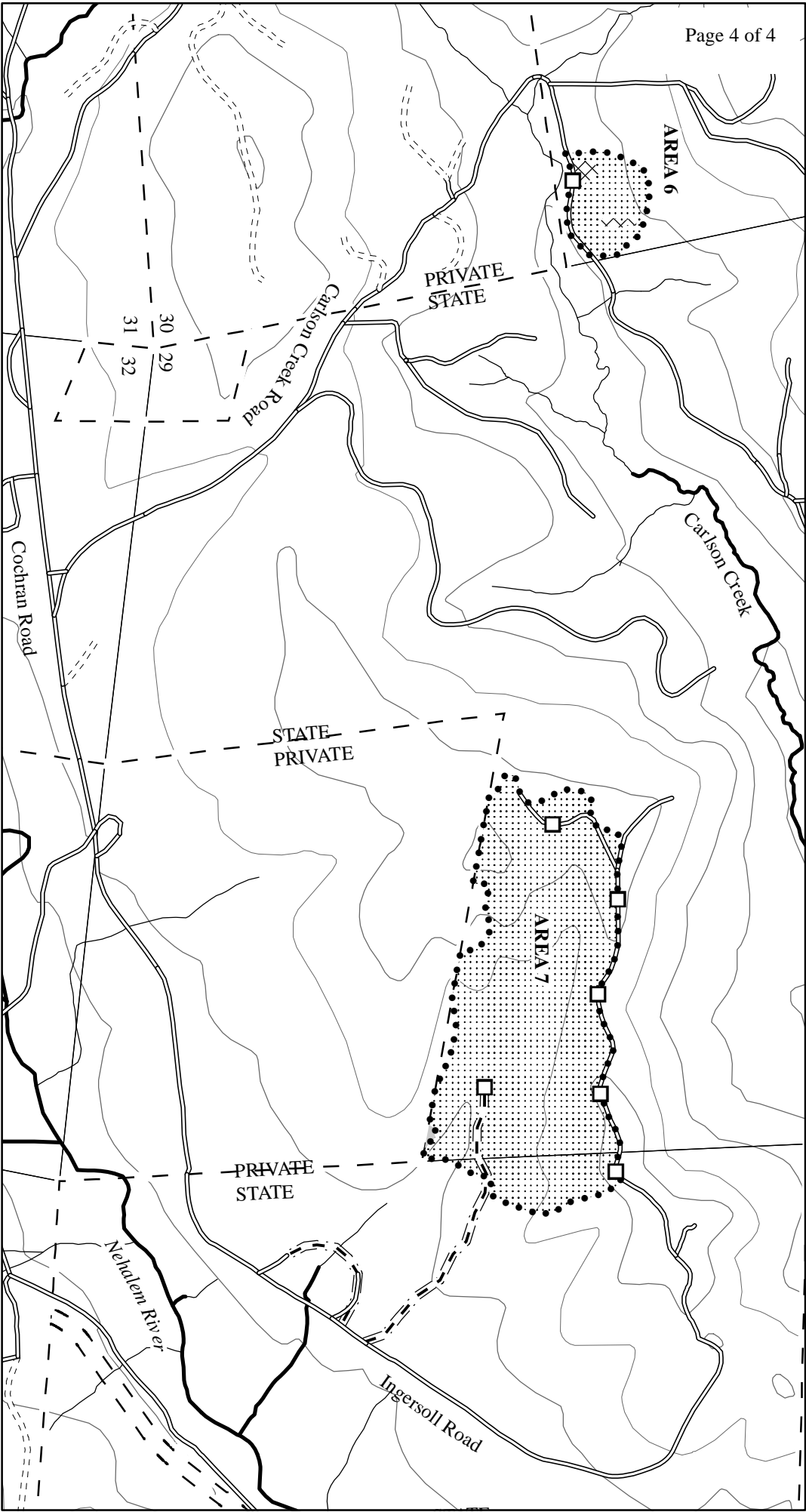
1 inch = 1,000 feet



APPROXIMATE NET ACRES
TRACTOR CABLE

AREA 1	44	0
AREA 2	13	0
AREA 3	16	0
AREA 4	105	0
AREA 5	166	0
AREA 6	6	0
AREA 7	64	0
AREA 8 R/W	4	0

TOTAL 418 0



Legend

- Timber Sale Boundary
- Unposted Stream Buffer
- Surfaced Road
- Thinning Optional Area
- Unsurfaced Road
- Tractor Yarding Area
- New Road Construction
- Tractor Landings
- Posted R/W Boundary
- ODF Property Boundary
- Non Project Road
- Section Line
- Type F Stream
- 400 Foot Contour Band
- Type N Stream
- 80 Foot Contour Band
- AREA 8

Forest Grove District GIS

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1:12,000

1 inch = 1,000 feet

0 500 1,000 2,000



Feet

APPROXIMATE NET ACRES

TRACTOR CABLE

AREA 1	44	0
AREA 2	13	0
AREA 3	16	0
AREA 4	105	0
AREA 5	166	0
AREA 6	6	0
AREA 7	64	0
AREA 8 R/W	4	0

TOTAL 418 0