OREGON DEPARTMENT OF FORESTRY

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wolf Den City
Sale 341-14-18

District: **Forest Grove**

Date: **April 24, 2014**

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cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$2,232,533.88	$0.00	$2,232,533.88
		Project Work:	$(287,820.00)
		Advertised Value:	$1,944,713.88

District: **Forest Grove** **Date:** **April 24, 2014**

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timber description

Location: Portions of Section 35, T4N, R6W, W.M., Clatsop County, Oregon, and portions of Section 1, T3N, R6W, W.M., Tillamook County, Oregon.

Stand Stocking: 20%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	16	0	98
Western Hemlock / Fir	12	0	98

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	2,043	2,401	261	4,705
Western Hemlock / Fir	65	105	38	208
Total	2,108	2,506	299	4,913

District: **Forest Grove** **Date:** **April 24, 2014**

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comments: Pond Values Used: 1st Quarter Calendar Year 2014.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$972.94/MBF = $1,175/MBF - $202.06/MBF

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus Logging Cost:
$402.94/MBF = $605/MBF - $202.06/MBF

SCALING COST ALLOWANCE = $5.00/MBF

FUEL COST ALLOWANCE = $4.00/Gallon

HAULING COST ALLOWANCE
Hauling costs equivalent to $780 daily truck cost.

Other Costs (with Profit & Risk to be added):
Brand and Paint: 4,913 MBF @ $1/MBF = $4,913
Intermediate Supports: 20 @ $200/support = $4,000
TOTAL Other Costs (with Profit & Risk to be added) = $8,913

Other Costs (No Profit & Risk added):
Machine time to block/waterbar roads,and skid trails:
20 Hours @ $150/Hr. = $3,000
Equipment Cleaning: 4 x $1,000/Machine = $4,000
TOTAL Other Costs (No Profit & Risk added) = $7,000

ROAD MAINTENANCE
Move-in: $2,000
General Road Maintenance: 3.6 miles x $1,000/mile = $3,600
TOTAL: $5,600/4,913 MBF = $1.14/MBF

logging conditions

combination#: 1 Douglas - Fir 70.07%
Western Hemlock / Fir 49.84%

yarding distance: Short (400 ft) **downhill yarding:** No
logging system: Cable: Small Tower <=40 **Process:** Stroke Delimber
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 6.0 **bd. ft / load:** 4,800
cost / mbf: $98.41

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

combination#: 2 Douglas - Fir 29.93%
Western Hemlock / Fir 50.16%

yarding distance: Short (400 ft) **downhill yarding:** No
logging system: Shovel **Process:** Stroke Delimber
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 6.0 **bd. ft / load:** 4,800
cost / mbf: $49.94

machines: Stroke Delimber (B)

logging costs

Operating Seasons:	1.00	**Profit Risk:**	15.00%
Project Costs:	$287,820.00	**Other Costs (P/R):**	$8,913.00
Slash Disposal:	$0.00	**Other Costs:**	$7,000.00

Miles of Road

Road Maintenance: $1.14

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	4.2
Western Hemlock / Fir	$0.00	2.0	4.0

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
$83.90	$1.16	$0.89	$82.36	$1.81	$25.52	$0.00	$5.00	$1.42	$202.06
Western Hemlock / Fir									
$74.10	$1.16	$0.89	$86.48	$1.81	$24.67	$0.00	$5.00	$1.42	$195.53

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$661.54	$459.48	$0.00
Western Hemlock / Fir	$0.00	$535.34	$339.81	$0.00

"STEWARDSHIP IN FORESTRY"

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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

Unamortized

Specie	**MBF**	**Value**	Total
Douglas - Fir	4,705	$459.48	$2,161,853.40
Western Hemlock / Fir	208	$339.81	$70,680.48

Gross Timber Sale Value

Recovery: $2,232,533.88

Prepared by: Eric Foucht **Phone:** 503-359-7473

TIMBER SALE SUMMARY
Wolf Den City
Contract No. 341-14-18

1. **Location:** Portions of Section 35, T4N, R6W, W.M., Clatsop County, Oregon and Portions of Section 1, T3N, R6W, W.M., Tillamook County, Oregon.

2. **Type of Sale:** This timber sale consists of 221 acres of Light Partial Cut and 4 acres of new construction Right-of-Way. The timber will be sold on a recovery basis at a sealed bid auction.

3. **Revenue Distribution:** 99% BOF, Clatsop County, Oregon, and 1% BOF, Tillamook County, Oregon.

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 March of 2014. For more information see Cruise Report.

6. **Timber Description:** The Timber Sale Area consists of a medium to well stocked 74 year old Douglas-fir stand with a moderate amount of western hemlock. The prescription calls for a light partial cut to an average basal area of 180 ft^2 favoring Douglas-fir as the 'Take' tree species. Of those trees, the average DBH is 16 inches. The estimated average net Douglas-fir take volume in Area 1 is 21 Mbf per acre, and 65 Mbf per acre in Area 2.

7. **Topography and Logging Method:** Slopes within the sale areas range from 5% to 75% and are variable in aspect. Area 1 is 27% ground-based yarding, and 73% cable-based yarding. Area 2 is 100% ground-based yarding. The cable corridors, as shown on the Logging Plan have an average length of 458' and a maximum length of approximately 1360 feet. The maximum horizontal tractor yarding distance is approximately 650 feet

8. **Access:** From Forest Grove, travel north on Highway 47 through Banks then merge onto Highway 26 westbound and continue for approximately 18 miles. Between the 33 and the 34 mile markers, turn north onto an un-named spur Road and continue for approximately 1 mile to the south side of the Timber Sale Area.

9. **Projects:**

Project No. 1: Road Construction and Improvement	$45,694.73
Project No. 2: Surfacing	$219,436.97
Project No. 3: Improve and Surface Segment A to B	$14,876.23
Project No. 4: Grass Seed, Fertilize, and Mulch	$1,804.46
Move in and equipment cleaning:	$6,000.41
Total Credit for all Projects (rounded)	$287,820

PROJECT COST SUMMARY SHEET

Timber Sale: Wolf Den City

Sale Number: 341-14-18

PROJECT NO. 1: ROAD CONSTRUCTION AND IMPROVEMENT

CONSTRUCTION

Road Segment	Length	Cost
E to F	3+35	$1,134.48
D to H	6+85	$2,183.64
D to G	3+60	$1,192.28
K to L	9+90	$3,306.77
K to M	8+05	$2,281.07
N to O	16+25	$4,326.81
P to Q	14+50	$4,222.23
	62+50	stations
	1.18 miles	

SUBTOTAL CONSTRUCTION $18,647.28

IMPROVEMENTS

Road Segment	Length	Cost
B to C	49+38	$4,234.71
C to D	52+50	$17,240.10
C to E	16+00	$3,189.09
I to J	12+20	$2,383.56
	130+08	stations
	2.46 miles	

SUBTOTAL IMPROVEMENTS $27,047.45

TOTAL PROJECT NO. 1 COST = $45,694.73

PROJECT NO. 2: SURFACING

Road Segment	Amount	Type	Cost
B to C	2,192 cy	3" - 0	$33,997.92
C to D	3,674 cy	3" - 0	$58,673.78
C to E	1,084 cy	3" - 0	$17,170.56
E to F	418 cy	3" - 0	$6,658.74
D to H	667 cy	3" - 0	$10,872.10
D to G	434 cy	3" - 0	$7,056.84
I to J	1,127 cy	3" - 0	$18,584.23
K to L	866 cy	3" - 0	$13,994.56
K to M	745 cy	3" - 0	$12,039.20
N to O	1,330 cy	3" - 0	$19,215.44
P to Q	1,207 cy	3" - 0	$21,173.60
Total	13,744 cy	3" - 0	

TOTAL PROJECT NO. 2 COST = $219,436.97

PROJECT NO. 3: IMPROVE AND SURFACE A TO B

IMPROVEMENTS

Road Segment	Length	Cost
A to B	34+20	$5,898.38

SURFACING

Road Segment	Amount	Type	Cost
A to B	1,135 cy	3" - 0	$8,977.85

TOTAL PROJECT NO. 3 COST = $14,876.23

PROJECT NO. 4: GRASS SEED, FERTILIZE, & MULCH

Grass seed and fertilize areas of disturbed soil $1,804.46

TOTAL PROJECT NO. 4 COST = $1,804.46

MOVE IN & EQUIPMENT CLEANING $6,000.41

TOTAL ALL PROJECTS $287,812.81

TOTAL CREDITS $287,820.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **A to B**

Improvement : 34+20 stations

0.65 miles

PROJECT NO. 3

EXCAVATION

Clearing and Grubbing (Scatter)	1.57	acres @	$980.00	per acre =	$1,538.84	
Road Widening (Drift)	34.20	sta @	$90.00	per sta =	$3,078.00	
Construct Turnouts	5	ea @	$60.00	per ea =	$300.00	
Grade, Ditch, and Roll	34.20	sta @	$28.70	per sta =	$981.54	
					TOTAL EXCAVATION COSTS=	**$5,898.38**

SURFACING	6	" deep =	31 cy/sta					
A to B	1,060	cy of	3" - 0	@	$7.91	per cy =	$8,384.60	
Turnouts (5)	55	cy of	3" - 0	@	$7.91	per cy =	$435.05	
Junction (Point A)	20	cy of	3" - 0	@	$7.91	per cy =	$158.20	
Total =								
	1,135	cy of	3" - 0					
							TOTAL SURFACING COSTS=	**$8,977.85**

PROJECT NO. 3 TOTAL COST = $14,876.23

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	1.57 acres @	$220.00	per acre =	$345.45	

PROJECT NO. 4 TOTAL COST = $345.45

TOTAL COST = $15,221.69

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **B to C**

Improvement : 49+38 stations

0.94 miles

PROJECT NO. 1

EXCAVATION

Brush Road	0.94	mile @	$800.00	per mile=	$752.00
Improve Turnouts	7	ea @	$60.00	per ea =	$420.00
Grade, Ditch, and Roll	46.38	sta @	$28.70	per sta =	$1,331.11
Grade and Roll (Outslope)	3.00	sta @	$27.20	per sta =	$81.60

TOTAL EXCAVATION COSTS= **$2,584.71**

CULVERTS - MATERIALS & INSTALLATION

Culverts

90 LF of 18" $1,620.00

Culvert Markers

3 markers $30.00

TOTAL CULVERT COSTS = **$1,650.00**

PROJECT NO. 1 TOTAL COST = $4,234.71

PROJECT NO. 2:

SURFACING 8 " deep = 42 cy/sta

B to C	2,074	cy of	3" - 0	@	$15.51	per cy =	$32,167.74
Turnouts (7)	98	cy of	3" - 0	@	$15.51	per cy =	$1,519.98
Junction (Point C)	20	cy of	3" - 0	@	$15.51	per cy =	$310.20
Total =	2,192	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $33,997.92

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.00 acres @	$220.00	per acre =	$0.00
Mulch	3.00 bales @	$4.50	per bale =	$13.50

PROJECT NO. 4 TOTAL COST = $13.50

TOTAL COST = $38,246.13

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **C to D**

Improvement : 52+50 stations

0.99 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	3.62	acres @	$980.00	per acre =	$3,543.39	
Drift (0+00 to 3+00)	3.00	sta @	$150.00	per sta =	$450.00	
Road Widening (5+30 to 9+60)						
Excavate & Drift	800	cy @	$1.62	per cy =	$1,296.00	
Compact Fill	800	cy @	$0.45	per cy =	$360.00	
FILL EXCAVATION						
Excavate fills	554	cy @	$0.87	per cy =	$481.98	
Endhaul unsuitable fill material	132	cy @	$2.60	per cy =	$343.20	
Place fill	554	cy @	$2.12	per cy =	$1,174.48	
Compact fill with plate compactor	554	cy @	$0.45	per cy =	$249.30	
Compact waste area	132.00	cy @	$0.25	per cy =	$33.00	
Improve Turnouts	8	ea @	$60.00	per ea =	$480.00	
Grade, Ditch, and Roll	52.50	sta @	$28.70	per sta =	$1,506.75	
				TOTAL EXCAVATION COSTS=		**$9,918.10**

CULVERTS - MATERIALS & INSTALLATION

Culverts

384	LF of 18"	$6,912.00
Additional Culvert Installation Cost		$300.00

Culvert Markers

11	markers	$110.00

TOTAL CULVERT COSTS = **$7,322.00**

PROJECT NO. 1 TOTAL COST = $17,240.10

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
C to D	3,413	cy of	3" - 0	@	$15.97	per cy =	$54,505.61
Turnouts (8)	176	cy of	3" - 0	@	$15.97	per cy =	$2,810.72
Junction (Point D)	20	cy of	3" - 0	@	$15.97	per cy =	$319.40
Subgrade Reinforcement	65	cy of	3" - 0	@	$15.97	per cy =	$1,038.05
Total =							
	3,674	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $58,673.78

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	1.81	acres @	$220.00	per acre =	$397.73
Mulch	10.00	bales @	$4.50	per bale =	$45.00

PROJECT NO. 4 TOTAL COST = $442.73

TOTAL COST = $76,356.61

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **C to E**

Improvement : 16+00 stations

0.30 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.10	acres @	$980.00	per acre =	$1,079.89		
Grade, Ditch, and Roll	16.00	sta @	$28.70	per sta =	$459.20		
					TOTAL EXCAVATION COSTS=		**$1,539.09**

CULVERTS - MATERIALS & INSTALLATION

Culverts

90	LF of 18"	$1,620.00

Culvert Markers

3 markers	$30.00

TOTAL CULVERT COSTS = **$1,650.00**

PROJECT NO. 1 TOTAL COST = $3,189.09

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta					
C to E	1,040	cy of	3" - 0	@	$15.84	per cy =	$16,473.60	
Turnouts (2)	44	cy of	3" - 0	@	$15.84	per cy =	$696.96	
Total =								
	1,084	cy of	3" - 0					

PROJECT NO. 2 TOTAL COST = $17,170.56

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.55	acres @	$220.00	per acre =	$121.21

PROJECT NO. 4 TOTAL COST = $121.21

TOTAL COST = $20,480.86

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: E to F

Construction: 3+35 stations

0.06 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.38	acres @	$980.00	per acre =	$376.84
Balanced Road Construction	3.35	sta @	$90.00	per sta =	$301.50
Construct Turnaround	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	3.35	sta @	$28.70	per sta =	$96.15

PROJECT NO. 1 TOTAL COST = $1,134.48

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
E to F	218	cy of	3" - 0	@	$15.93	per cy =	$3,472.74
Turnaround (1)	20	cy of	3" - 0	@	$15.93	per cy =	$318.60
Landing (1)	180	cy of	3" - 0	@	$15.93	per cy =	$2,867.40
Total =							
	418	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $6,658.74

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.19	acres @	$220.00	per acre =	$42.30

PROJECT NO. 4 TOTAL COST = $42.30

TOTAL COST = $7,835.52

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **D to G**

Construction: 3+60 stations

0.07 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.41	acres @	$980.00	per acre =	$404.96
Balanced Road Construction	3.60	sta @	$90.00	per sta =	$324.00
Construct Turnaround	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	3.60	sta @	$28.70	per sta =	$103.32

PROJECT NO. 1 TOTAL COST = $1,192.28

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
D to G	234	cy of	3" - 0	@	$16.26	per cy =	$3,804.84
Turnaround (1)	20	cy of	3" - 0	@	$16.26	per cy =	$325.20
Landing (1)	180	cy of	3" - 0	@	$16.26	per cy =	$2,926.80
Total =							
	434	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $7,056.84

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.21	acres @	$220.00	per acre =	$45.45

PROJECT NO. 4 TOTAL COST = $45.45

TOTAL COST = $8,294.57

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **D to H**

Construction : 6+85 stations

0.13 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.79	acres @	$980.00	per acre =	$770.55
Balanced Road Construction	3.85	sta @	$90.00	per sta =	$346.50
Drift	3.00	sta @	$150.00	per sta =	$450.00
Construct Turnouts	1	ea @	$60.00	per ea =	$60.00
Construct Turnaround	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	6.85	sta @	$28.70	per sta =	$196.60

PROJECT NO. 1 TOTAL COST = $2,183.64

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
D to H	445	cy of	3" - 0	@	$16.30	per cy =	$7,253.50
Turnouts (1)	22	cy of	3" - 0	@	$16.30	per cy =	$358.60
Turnaround (1)	20	cy of	3" - 0	@	$16.30	per cy =	$326.00
Landing (1)	180	cy of	3" - 0	@	$16.30	per cy =	$2,934.00
Total =							
	667	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $10,872.10

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.39 acres @	$220.00	per acre =	$86.49

PROJECT NO. 4 TOTAL COST = $86.49

TOTAL COST = $13,142.23

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **I to J**

Improvement : 12+20 stations
0.23 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.84	acres @	$980.00	per acre =	$823.42
Corner Improvement	1.00	sta @	$90.00	per sta =	$90.00
Improve Turnouts	2	ea @	$60.00	per ea =	$120.00
Improve Junction	1	sta @	$90.00	per sta =	$90.00
Construct Turnaround	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	12.20	sta @	$28.70	per sta =	$350.14

TOTAL EXCAVATION COSTS= **$1,833.56**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30 LF of 18" $540.00

Culvert Markers

1 markers $10.00

TOTAL CULVERT COSTS = **$550.00**

PROJECT NO. 1 TOTAL COST = $2,383.56

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta			
I to J	793	cy of	3" - 0	@	$16.49 per cy =	$13,076.57
Curve Widening	30	cy of	3" - 0	@	$16.49 per cy =	$494.70
Turnouts (2)	44	cy of	3" - 0	@	$16.49 per cy =	$725.56
Turnaround (1)	20	cy of	3" - 0	@	$16.49 per cy =	$329.80
Junction (Point I and K)	60	cy of	3" - 0	@	$16.49 per cy =	$989.40
Landing (1)	180	cy of	3" - 0	@	$16.49 per cy =	$2,968.20
Total =	1,127	cy of	3" - 0			

PROJECT NO. 2 TOTAL COST = $18,584.23

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.42 acres @	$220.00	per acre =	$92.42

PROJECT NO. 4 TOTAL COST = $92.42

TOTAL COST = $21,060.21

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**
Timber Sale No. : 341-14-18
Road Segment: **K to L**
Construction : 9+90 stations
0.19 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.14	acres @	$980.00	per acre =	$1,113.64	
Balanced Road Construction	9.10	sta @	$90.00	per sta =	$819.00	
Drift	0.80	sta @	$150.00	per sta =	$120.00	
Construct Turnouts (1)	1	ea @	$60.00	per ea =	$60.00	
Construct Turnaround (1)	1	ea @	$75.00	per ea =	$75.00	
Landing	1	ea @	$285.00	per ea =	$285.00	
Grade, Ditch, and Roll	9.90	sta @	$28.70	per sta =	$284.13	
				TOTAL EXCAVATION COSTS=		**$2,756.77**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	$540.00

Culvert Markers

1 markers	$10.00

TOTAL CULVERT COSTS = **$550.00**

PROJECT NO. 1 TOTAL COST = $3,306.77

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
K to L	644	cy of	3" - 0	@	$16.16	per cy =	$10,407.04
Turnouts (1)	22	cy of	3" - 0	@	$16.16	per cy =	$355.52
Turnaround (1)	20	cy of	3" - 0	@	$16.16	per cy =	$323.20
Landing (1)	180	cy of	3" - 0	@	$16.16	per cy =	$2,908.80
Total =	866	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $13,994.56

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.57	acres @	$220.00	per acre =	$125.00

PROJECT NO. 4 TOTAL COST = $125.00

TOTAL COST = $17,426.33

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **K to M**

Construction : 8+05 stations

0.15 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.92	acres @	$980.00	per acre =	$905.53
Balanced Road Construction	8.05	sta @	$90.00	per sta =	$724.50
Construct Turnouts (1)	1	ea @	$60.00	per ea =	$60.00
Construct Turnaround (1)	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	8.05	sta @	$28.70	per sta =	$231.04

PROJECT NO. 1 TOTAL COST = $2,281.07

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
K to M	523	cy of	3" - 0	@	$16.16	per cy =	$8,451.68
Turnouts (1)	22	cy of	3" - 0	@	$16.16	per cy =	$355.52
Turnaround (1)	20	cy of	3" - 0	@	$16.16	per cy =	$323.20
Landing (1)	180	cy of	3" - 0	@	$16.16	per cy =	$2,908.80
Total =							
	745	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $12,039.20

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.46	acres @	$220.00	per acre =	$101.64

PROJECT NO. 4 TOTAL COST = $101.64

TOTAL COST = $14,421.91

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **N to O**

Construction: 16+25 stations

0.31 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.87	acres @	$980.00	per acre =	$1,827.94
Balanced Road Construction	16.25	sta @	$90.00	per sta =	$1,462.50
Road Widening (Drift)	1.00	sta @	$90.00	per sta =	$90.00
Construct Turnouts (2)	2	ea @	$60.00	per ea =	$120.00
Construct Turnaround (1)	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	16.25	sta @	$28.70	per sta =	$466.38

PROJECT NO. 1 TOTAL COST = $4,326.81

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
N to O	1,056	cy of	3" - 0	@	$15.92	per cy =	$16,811.52
Turnouts (2)	44	cy of	3" - 0	@	$15.92	per cy =	$700.48
Turnaround (1)	20	cy of	3" - 0	@	$15.92	per cy =	$318.40
Junction (Point N)	30	cy of	3" - 0	@	$15.92	per cy =	$477.60
Landing (1)	180	cy of	3" - 0	@	$15.92	per cy =	$2,865.60
Total =							
	1,330	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $21,173.60

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.93 acres @	$220.00	per acre =	$205.18

PROJECT NO. 4 TOTAL COST = $205.18

TOTAL COST = $25,705.59

SUMMARY OF CONSTRUCTION COST

Timber Sale: **Wolf Den City**

Timber Sale No. : 341-14-18

Road Segment: **P to Q**

Construction: 14+50 stations
0.27 miles

PROJECT NO. 1

EXCAVATION					
Clearing and Grubbing (Scatter)	1.66	acres @	$980.00	per acre =	$1,631.08
Balanced Road Construction	12.50	sta @	$90.00	per sta =	$1,125.00
Drift	2.00	sta @	$285.00	per sta =	$570.00
Construct Turnouts (2)	2	ea @	$60.00	per ea =	$120.00
Construct Turnaround (1)	1	ea @	$75.00	per ea =	$75.00
Landing	1	ea @	$285.00	per ea =	$285.00
Grade, Ditch, and Roll	14.50	sta @	$28.70	per sta =	$416.15

PROJECT NO. 1 TOTAL COST = $4,222.23

PROJECT NO. 2:

SURFACING	12	" deep =	65 cy/sta				
P to Q	943	cy of	3" - 0	@	$15.92	per cy =	$15,012.56
Turnouts (2)	44	cy of	3" - 0	@	$15.92	per cy =	$700.48
Turnaround (1)	20	cy of	3" - 0	@	$15.92	per cy =	$318.40
Junction (Point P)	20	cy of	3" - 0	@	$15.92	per cy =	$318.40
Landing (1)	180	cy of	3" - 0	@	$15.92	per cy =	$2,865.60
Total =							
	1,207	cy of	3" - 0				

PROJECT NO. 2 TOTAL COST = $19,215.44

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.83	acres @	$220.00	per acre =	$183.08

PROJECT NO. 4 TOTAL COST = $183.08

TOTAL COST = $23,620.75

Move-In & Equipment Cleaning

Timber Sale: Wolf Den City
Sale Number: 341-14-18

LOWBOY HAUL (One-way)		
DIST. (mi)	ROAD	AVE SPEED (mph)
3.0	Main Lines	**7**
0.0	Steep Grades	**2**

No.	EQUIPMENT DESCRIPTION	Equipment Cleaning	Base Cost	Woods Cost	Pilot Cars	Within Area Move	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Brush Cutter		$268.34	$69.00		$4.00	0.0	0.0	0.0	$0.00	$337.34
1	Graders		$300.00	$77.15		$3.65	0.0	0.0	0.0	$0.00	$377.15
1	Loader (Med. & Large)		$414.39	$158.21	1	$9.00	0.0	0.0	0.0	$0.00	$572.60
1	Rollers (smooth/grid) & Compactors		$308.59	$109.25		$5.00	0.0	0.0	0.0	$0.00	$417.84
1	Excavators (Large)	$1,000	$466.14	$171.52	1	$44.80	0.0	0.0	0.0	$0.00	$1,637.66
1	Tractor (D8)	$1,000	$473.80	$163.63	2	$15.10	0.0	0.0	0.0	$0.00	$1,637.43
6	Dump Truck (10 cy +)		$700.00	$180.00		$2.85	0.0	0.0	0.0	$0.00	$880.00
1	Water Truck (2500 Gal)		$111.67	$28.72		$2.85	0.0	0.0	0.0	$0.00	$140.39
							TOTAL MOVE-IN COSTS:				$6,000.41

RESIDUAL STAND SPECIFICATIONS

Wolf Den City
341-14-18

AREA 1

Residual QMD assumption (from leave tree cruise information)	=	20
Target Relative Density	=	40

	Minimum	Target	Maximum
Relative Density	36	40	45
Basal Area	160	180	200
Trees per Acre	73	83	92

RD = BA / √ DBH
BA = √DBH (RD)
TPA = (BA/acre) / (BA/tree)
BA / tree = (π r^2) / (144)

CRUISE REPORT
Wolf Den City
341-14-18

1. LOCATION: Portions of Section 35, T4N, R6W, W.M., Clatsop County, Oregon, and Portions of Section 1, T3N, R6W, W.M., Tillamook County, Oregon.

2. CRUISE DESIGN:
The cruise design assumed a Coefficient of Variation (CV%) of 75%, an average stand diameter of 20 inches, a desired sampling error (SE%) of 11%, a minimum sample size of 100 grade trees and an average stand Basal Area of 270 ft2. Pre-cruise plots indicated that 13 or 14 trees per plot could be counted with a 20 BAF prism. Reducing the Basal Area to 180 square feet would yield 4 or 5 'Take' trees per plot.

3. SAMPLING METHOD:
The Timber Sale Area was cruised in March of 2014 with 30 variable radius grade plots and 91 variable radius count plots using a 20 BAF prism. Plots were laid out on a 3 chain x 5 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 33 feet. Cruisers 'thinned' plots from below to 180 ft^2 of basal area by assigning a 'Take' or 'Leave' status to each tree in every plot. 'Take' trees were measured and graded. Diameters and heights were estimated for each 'Leave tree.'

4. CRUISE RESULTS
148 trees were measured and graded producing a cumulative sampling error for Douglas-fir of 7.0% on the Basal Area and 6.9% 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:** Volume 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, Joe Koch, and Nate Hunter.

Prepared by: ______________________________________
ODF Forester Date

Reviewed by: ______________________________________
Eric Foucht Date

TC PSTATS

PROJECT STATISTICS

PROJECT **WLFDN AL**

PAGE **1**
DATE 3/21/2014

TWP	**RGE**	**SC**	**TRACT**	**TYPE**	**ACRES**	**PLOTS**	**TREES**	**CuFt**	**BdFt**
04N	06	35	0001	00PC	221.00	120	1,694	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	120	1694	14.1		
CRUISE	29	399	13.8	35,320	1.1
DBH COUNT					
REFOREST					
COUNT	91	1283	14.1		
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-L	205	58.9	21.5	141	31.9	147.9	37,420	37,420	7,162	7,162
DOUG FIR-T	148	75.2	15.9	124	26.0	103.9	20,973	20,849	4,530	4,530
WHEMLOCK-L	34	20.1	15.7	112	6.9	27.2	6,079	6,079	1,234	1,234
WHEMLOCK-T	5	4.3	11.9	99	1.0	3.3	659	659	134	134
WR CEDAR-L	6	1.3	17.0	121	0.5	2.0	353	353	86	86
NOB FIR-L	1	.0	31.0	173	0.0	.2	58	56	10	10
TOTAL	*399*	*159.8*	*18.1*	*128*	*66.9*	*284.5*	*65,542*	*65,416*	*13,156*	*13,156*

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-L	41.1	3.0	863	890	917			
DOUG FIR-T	59.4	4.9	367	386	405			
WHEMLOCK-L	56.4	9.7	366	405	444			
WHEMLOCK-T	77.4	38.5	140	228	316			
WR CEDAR-L	138.8	69.0	235	758	1,281			
NOB FIR-L								
TOTAL	*64.0*	*3.3*	*622*	*644*	*665*	*164*	*41*	*18*

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-L	35.2	2.6	163	167	172			
DOUG FIR-T	56.4	4.7	80	83	87			
WHEMLOCK-L	52.4	9.0	74	81	89			
WHEMLOCK-T	77.7	38.6	29	47	65			
WR CEDAR-L	119.2	59.2	65	160	255			
NOB FIR-L								
TOTAL	*56.5*	*2.9*	*122*	*126*	*130*	*127*	*32*	*14*

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-L	28.8	2.6	57	59	60			
DOUG FIR-T	80.2	7.3	70	75	81			
WHEMLOCK-L	130.0	11.9	18	20	23			
WHEMLOCK-T	534.5	48.7	2	4	6			
WR CEDAR-L	411.2	37.5	1	1	2			
NOB FIR-L	1095.4	99.9	0	0	0			
TOTAL	*43.2*	*3.9*	*154*	*160*	*166*	*74*	*19*	*8*

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-L	25.5	2.3	144	148	151			
DOUG FIR-T	77.0	7.0	97	104	111			
WHEMLOCK-L	128.8	11.7	24	27	30			
WHEMLOCK-T	535.2	48.8	2	3	5			

TC PSTATS

PROJECT STATISTICS

PROJECT **WLFDN AL**

PAGE **2**

DATE 3/21/2014

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	06	35	0001	00PC	221.00	120	1,694	S	W

CL 68.1	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR-L	375.7	34.3	1	2	3			
NOB FIR-L	1095.4	99.9	0	0	0			
TOTAL	*30.7*	*2.8*	*277*	*284*	*292*	*38*	*9*	*4*

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-L	26.7	2.4	36,508	37,420	38,332			
DOUG FIR-T	76.1	6.9	19,401	20,849	22,297			
WHEMLOCK-L	128.9	11.8	5,365	6,079	6,794			
WHEMLOCK-T	539.7	49.2	334	659	983			
WR CEDAR-L	368.5	33.6	234	353	472			
NOB FIR-L	1095.4	99.9	0	56	111			
TOTAL	*27.3*	*2.5*	*63,785*	*65,416*	*67,046*	*30*	*7*	*3*

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-L	26.4	2.4	6,990	7,162	7,335			
DOUG FIR-T	76.3	7.0	4,214	4,530	4,845			
WHEMLOCK-L	128.8	11.7	1,089	1,234	1,378			
WHEMLOCK-T	540.3	49.3	68	134	200			
WR CEDAR-L	371.8	33.9	57	86	115			
NOB FIR-L	1095.4	99.9	0	10	21			
TOTAL	*29.0*	*2.6*	*12,807*	*13,156*	*13,504*	*34*	*8*	*4*

TC PLOGSTVB

Log Stock Table - MBF

T04N R06W S35 Ty00PC 221.00

Project: WLFDN_AL
Acres 221.00

Page 1
Date 3/21/2014
Time 11:41:00AM

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+
DF	L	2M	40	18		18	.2						18						
DF	L	3M	25	12		12	.1				12								
DF	L	3M	26	36		36	.4			7		29							
DF	L	3M	27	30		30	.4			12	19								
DF	L	3M	28	57		57	.7			24	17	15							
DF	L	3M	29	8		8	.1			8									
DF	L	3M	30	1,175		1,175	14.2			10	9	76	18	289	661	112			
DF	L	3M	31	384		384	4.6			5			123	20	125	110			
DF	L	3M	32	1,748		1,748	21.1			123	20	168	239	292	523	334	49		
DF	L	3M	33	306		306	3.7			33	17	23	28		147	58			
DF	L	3M	34	1,620		1,620	19.6			104		101	189	201	397	527	101		
DF	L	3M	35	223		223	2.7			11		8	123	16	16	49			
DF	L	3M	36	1,143		1,143	13.8			88		247	114	393	183	93	26		
DF	L	3M	37	221		221	2.7			34			20	12	155				
DF	L	3M	38	863		863	10.4			90		27	249	103	375	19			
DF	L	3M	39	97		97	1.2			26		14	56						
DF	L	3M	40	317		317	3.8			64		77	37	66	74				
DF	L	3M	41	10		10	.1			10									
DF		Totals		8,270		8,270	57.2			649	94	785	1214	1393	2656	1302	176		
DF	T	2M	14	9		9	.2							9					
DF	T	2M	16	21		21	.5						10		11				
DF	T	2M	18	12		12	.3						12						
DF	T	2M	24	31		31	.7						31						
DF	T	2M	36	20		20	.4						20						
DF	T	2M	40	1,930	1.1	1,909	41.4						899	506	453	50			
DF	T	3M	32	97		97	2.1			84	13								
DF	T	3M	34	149		149	3.2			103	47								
DF	T	3M	36	57		57	1.2			45	12								
DF	T	3M	38	45		45	1.0			41	3								
DF	T	3M	40	2,010		2,004	43.5			284	850	870							
DF	T	4M	12	20		20	.4			14	6								
DF	T	4M	14	21		21	.5			21									
DF	T	4M	16	48		48	1.0			48									
DF	T	4M	18	14		14	.3			14									
DF	T	4M	20	23		23	.5			23									
DF	T	4M	22	21		21	.5			21									

TC PLOGSTVB

Log Stock Table - MBF

T04N R06W S35 Ty00PC 221.00

Project: WLFDN_AL
Acres 221.00

Date 3/21/2014
Time 11:41:00AM

Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
								Net Volume by Scaling Diameter in Inches											
DF	T	4M	24	31		31	.7			31									
DF	T	4M	26	16		16	.4			16									
DF	T	4M	28	11		11	.2			11									
DF	T	4M	30	48		48	1.0			48									
DF		Totals		4,635		4,608	31.9			805	931	870	972	516	464	50			
WH	L	3M	21	13		13	.9				13								
WH	L	3M	22	6		6	.5		6										
WH	L	3M	26	17		17	1.3					17							
WH	L	3M	27	6		6	.4		6										
WH	L	3M	29	20		20	1.5						20						
WH	L	3M	30	98		98	7.3		4		10	35	22		27				
WH	L	3M	31	54		54	4.0		4		11	21			19				
WH	L	3M	32	198		198	14.7		21		38	13	101	25					
WH	L	3M	33	104		104	7.8				22	16	66						
WH	L	3M	34	258		258	19.2		36			102	26	94					
WH	L	3M	35	96		96	7.2		16					55	25				
WH	L	3M	36	223		223	16.6		19			46	72	28	29	30			
WH	L	3M	37	18		18	1.3		2					16					
WH	L	3M	38	153		153	11.4		13		21	30	30		59				
WH	L	3M	39	8		8	.6		8										
WH	L	3M	40	50		50	3.7		3				16		32				
WH	L	3M	41	6		6	.4		6										
WH	L	4M	22	15		15	1.1			15									
WH		Totals		1,343		1,343	9.3		143	15	115	279	353	218	191	30			
WH	T	2M	40	45		45	31.1						21	24					
WH	T	3M	30	8		8	5.5			8									
WH	T	3M	40	65		65	44.6			19	9	36							
WH	T	4M	16	9		9	5.9			9									
WH	T	4M	20	2		2	1.4			2									
WH	T	4M	30	17		17	11.5			17									
WH		Totals		146		146	1.0			54	9	36	21	24					
RC	L	3M	28	6		6	8.2						6						
RC	L	3M	29	4		4	4.8					4							
RC	L	3M	30	10		10	13.3		1									9	
RC	L	3M	32	9		9	11.8		0						3		6		

TC PLOGSTVB

Log Stock Table - MBF

T04N R06W S35 Ty00PC 221.00

Project: WLFDN_AL
Acres 221.00

Page 3
Date 3/21/2014
Time 11:41:00AM

	S	So Gr	Log	Gross	Def	Net	%	Net Volume by Scaling Diameter in Inches											
Spp	T	rt de	Len	MBF	%	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RC	L	3M	36	14		14	18.0		2		5	7							
RC	L	3M	38	9		9	12.2		2			7							
RC	L	3M	40	25		25	31.8			8	17								
RC		Totals		78		78	.5		5	8	21	19	6		3		6	9	
NF	L	2M	40	13	3.9	12	97.7						2		4	6			
NF	L	4M	30	0		0	2.3			0									
NF		Totals		13	3.8	12	.1			0			2		4	6			
Total		All Species		14,485		14,457	100.0		148	1532	1171	1989	2568	2151	3317	1388	183	9	

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T04N R06W S35 Ty00PC 221.00

Project: **WLFDN_AL**

Acres **221.00**

Page **1**
Date **3/21/2014**
Time **11:40:59AM**

			%					Percent of Net Board Foot Volume								Average Log				Logs
	S	So Gr	Net	Bd. Ft. per Acre			Total	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	Per
Spp	T	rt ad	BdFt	Def%	Gross	Net	Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	/Acre
DF	L	2M			83	83	18			100					100	40	12	200	1.09	.4
DF	L	3M	100	.0	37,337	37,337	8,252		19	38	43		16	52	32	34	12	205	1.17	181.8
DF	**Totals**		57	.0	37,420	37,420	8,270		18	38	43		16	52	32	34	12	205	1.17	182.2
DF	T	2M	43	1.1	9,154	9,057	2,002			86	14	2	2		96	38	14	265	1.43	34.2
DF	T	3M	51	.2	10,668	10,642	2,352		100					10	90	39	8	99	0.57	107.7
DF	T	4M	6		1,150	1,150	254		100			50	50			19	6	23	0.29	49.3
DF	**Totals**		32	.6	20,973	20,849	4,608		57	37	6	4	3	5	88	34	9	109	0.71	191.1
WH	L	3M	98		6,012	6,012	1,329	11	30	51	9		12	54	34	33	9	124	0.76	48.5
WH	L	4M	2		67	67	15		100				100			22	6	30	0.23	2.2
WH	**Totals**		9		6,079	6,079	1,343	11	30	50	9		13	53	34	33	9	120	0.75	50.7
WH	T	2M	31		205	205	45			100					100	40	13	240	1.15	.9
WH	T	3M	50		330	330	73		100				11		89	38	8	94	0.51	3.5
WH	T	4M	19		124	124	27		100			39	61			23	6	29	0.27	4.3
WH	**Totals**		1		659	659	146		69	31		7	17		76	31	8	76	0.51	8.7
RC	L	3M	100		353	353	78	7	62	8	23		26	12	62	37	8	118	0.78	3.0
RC	**Totals**		1		353	353	78	7	62	8	23		26	12	62	37	8	118	0.78	3.0
NF	L	2M	97	3.9	57	54	12			14	86				100	40	18	570	2.59	.1
NF	L	4M	3		1	1	0		100				100			30	6	40	0.56	.0
NF	**Totals**		0	3.8	58	56	12		2	14	84		2		98	38	15	437	2.18	.1
Totals				0.2	65,542	65,416	14,457	1	32	39	28	1	12	36	51	33	10	150	0.90	435.9

TC PSTNDSUM

Stand Table Summary

Page 1
Date: 3/21/2014

T04N R06W S35 Ty00PC 221.00

Project WLFDN_AL
Acres 221.00

Time: 11:40:59AM
Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF	L	10	1	88	110	1.313	.72	2.63	8.0	35.0	.60	21	92	133	47	20
DF	L	11	2	88	105	2.171	1.43	4.34	10.6	50.0	1.31	46	217	289	101	48
DF	L	12	2	88	91	1.824	1.43	3.65	10.8	42.5	1.13	39	155	249	87	34
DF	L	13	1	90	125	.777	.72	2.33	12.3	56.7	.82	29	132	181	64	29
DF	L	14	3	89	114	2.010	2.15	5.36	14.6	67.5	2.23	78	362	493	173	80
DF	L	16	5	89	123	2.565	3.58	3.08	20.3	96.7	1.78	63	298	394	138	66
DF	L	17	4	90	133	1.818	2.87	5.45	24.3	119.2	3.78	133	650	836	293	144
DF	L	18	8	90	139	3.243	5.73	9.73	27.5	133.7	7.61	267	1,301	1,683	590	288
DF	L	19	13	90	144	4.814	9.48	14.08	30.8	152.9	12.37	434	2,153	2,733	959	476
DF	L	20	19	89	141	6.324	13.80	17.24	35.0	174.4	17.22	604	3,007	3,806	1,335	664
DF	L	21	10	89	147	2.978	7.16	10.12	36.1	181.8	10.40	365	1,840	2,299	807	407
DF	L	22	20	90	148	5.427	14.33	16.55	40.7	203.6	19.21	674	3,370	4,246	1,490	745
DF	L	23	21	89	150	5.213	15.04	18.87	41.3	213.6	22.19	779	4,029	4,904	1,721	890
DF	L	24	21	89	150	5.002	15.71	18.53	41.9	220.7	22.12	776	4,089	4,888	1,715	904
DF	L	25	19	89	151	3.992	13.61	13.45	47.7	250.9	18.28	641	3,374	4,039	1,417	746
DF	L	26	15	90	158	2.914	10.74	11.66	51.6	287.3	17.14	601	3,349	3,787	1,329	740
DF	L	27	8	89	155	1.441	5.73	5.58	56.0	307.4	8.92	313	1,717	1,970	691	379
DF	L	28	15	89	161	2.513	10.74	9.38	60.7	336.6	16.22	569	3,157	3,584	1,258	698
DF	L	29	6	90	158	.937	4.30	3.75	63.0	348.3	6.73	236	1,305	1,487	522	289
DF	L	30	3	90	160	.438	2.15	1.75	70.8	400.0	3.53	124	700	781	274	155
DF	L	31	4	90	160	.547	2.87	2.19	74.8	428.1	4.66	164	936	1,031	362	207
DF	L	32	3	90	165	.385	2.15	1.54	80.9	460.0	3.55	125	708	784	275	156
DF	L	33	1	90	160	.121	.72	.48	85.2	500.0	1.17	41	241	259	91	53
DF	L	34	1	90	160	.114	.72	.45	89.1	520.0	1.15	40	236	255	89	52
DF	L	Totals	205	89	141	58.878	147.86	182.19	39.3	205.4	204.13	7,162	37,420	45,112	15,829	8,270
DF	T	9	1	91	101	1.565	.69	1.57	10.9	60.0	.49	17	94	108	38	21
DF	T	10	5	89	93	6.339	3.46	11.41	8.1	40.0	2.64	93	456	584	205	101
DF	T	11	5	87	91	5.239	3.46	9.43	10.1	44.4	2.70	95	419	597	210	93
DF	T	12	5	87	122	4.402	3.46	9.68	12.9	59.1	3.57	125	572	789	277	126
DF	T	13	12	87	109	9.439	8.70	18.88	15.6	70.0	8.41	295	1,322	1,859	652	292
DF	T	14	10	88	126	6.468	6.91	15.52	18.8	87.9	8.30	291	1,365	1,834	643	302
DF	T	15	9	88	122	5.351	6.57	14.08	18.3	83.9	7.33	257	1,181	1,621	569	261
DF	T	16	16	88	128	7.923	11.06	21.79	22.0	99.3	13.68	480	2,164	3,023	1,061	478
DF	T	17	18	89	138	8.102	12.77	23.87	24.2	109.5	16.49	579	2,613	3,645	1,279	577
DF	T	18	16	88	142	6.352	11.23	20.23	26.8	121.9	15.44	542	2,466	3,413	1,198	545
DF	T	19	9	88	140	3.325	6.55	10.33	28.6	132.4	8.40	295	1,367	1,857	652	302
DF	T	20	8	87	137	2.535	5.53	7.61	34.5	152.9	7.47	262	1,163	1,651	579	257
DF	T	21	7	88	140	2.012	4.84	6.04	39.1	186.7	6.73	236	1,127	1,487	522	249
DF	T	22	8	87	144	2.095	5.53	6.55	42.5	200.0	7.94	278	1,310	1,754	615	289
DF	T	23	7	87	149	1.678	4.84	5.51	44.8	212.6	7.04	247	1,172	1,556	546	259
DF	T	24	6	87	149	1.321	4.15	4.62	46.3	214.3	6.10	214	990	1,348	473	219
DF	T	26	2	86	160	.375	1.38	1.50	48.5	228.8	2.07	73	343	458	161	76
DF	T	27	2	84	152	.348	1.38	1.22	58.1	262.9	2.02	71	320	446	156	71
DF	T	28	2	89	166	.323	1.38	1.29	61.4	312.5	2.26	79	404	500	175	89
DF	T	Totals	148	88	124	75.192	103.89	191.12	23.7	109.1	129.10	4,530	20,849	28,530	10,011	4,608
WH	L	8	1	89	59	2.247	.78	2.25	5.1	30.0	.37	11	67	81	25	15
WH	L	10	1	90	75	1.438	.78	2.88	6.8	30.0	.63	20	86	139	43	19
WH	L	12	1	93	100	.999	.78	2.00	14.0	70.0	.89	28	140	198	62	31
WH	L	13	3	92	92	2.553	2.35	5.11	15.4	68.3	2.52	79	349	557	174	77
WH	L	14	1	94	130	.734	.78	2.20	16.7	76.7	1.18	37	169	260	81	37
WH	L	15	4	93	128	2.556	3.14	7.67	19.2	90.8	4.71	147	697	1,041	325	154
WH	L	16	3	93	130	1.685	2.35	5.06	23.4	118.9	3.78	118	601	835	261	133

TC PSTNDSUM

Stand Table Summary

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Date: 3/21/2014

T04N R06W S35 Ty00PC 221.00

Project WLFDN_AL
Acres 221.00

Time: 11:40:59AM
Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
WH	L	17	4	94	134	1.990	3.14	5.97	25.6	125.8	4.89	153	751	1,080	337	166
WH	L	18	5	93	122	2.219	3.92	6.21	29.8	141.4	5.93	185	879	1,309	409	194
WH	L	19	1	94	140	.398	.78	1.20	35.0	176.7	1.34	42	211	295	92	47
WH	L	20	2	93	145	.719	1.57	2.16	42.1	213.3	2.91	91	460	643	201	102
WH	L	21	4	90	131	1.543	3.71	4.63	33.2	169.8	4.91	153	786	1,085	339	174
WH	L	22	1	94	140	.297	.78	.89	48.1	236.7	1.37	43	211	303	95	47
WH	L	23	2	94	140	.544	1.57	1.90	45.5	241.4	2.77	87	459	612	191	102
WH	L	26	1	94	130	.213	.78	.64	63.2	333.3	1.29	40	213	285	89	47
WH	L	Totals	34	92	112	20.135	27.24	50.75	24.3	119.8	39.47	1,234	6,079	8,723	2,726	1,343
WH	T	9	1	89	61	1.509	.67	1.51	8.2	40.0	.40	12	60	87	27	13
WH	T	10	1	92	103	1.222	.67	2.44	8.9	45.0	.70	22	110	155	48	24
WH	T	13	1	92	128	.723	.67	2.17	14.2	73.3	.98	31	159	217	68	35
WH	T	16	1	93	134	.477	.67	1.43	22.8	103.3	1.05	33	148	231	72	33
WH	T	18	1	93	142	.377	.67	1.13	32.1	160.0	1.16	36	181	257	80	40
WH	T	Totals	5	91	99	4.309	3.33	8.69	15.4	75.8	4.29	134	659	947	296	146
RC	L	14	2	81	124	.624	.67	1.25	23.1	90.0	.68	29	112	149	64	25
RC	L	16	1	80	100	.239	.33	.48	26.6	90.0	.30	13	43	66	28	9
RC	L	17	1	80	140	.211	.33	.63	24.6	100.0	.37	16	63	81	35	14
RC	L	19	1	81	110	.169	.33	.51	25.0	100.0	.30	13	51	66	28	11
RC	L	44	1	81	140	.032	.33	.13	126.2	662.5	.37	16	84	83	35	18
RC	L	Totals	6	81	121	1.275	2.00	2.99	28.6	118.0	2.02	86	353	445	190	78
NF	L	31	1	88	173	.032	.17	.13	81.9	437.5	.25	10	56	55	23	12
NF	L	Totals	1	88	173	.032	.17	.13	81.9	437.5	.25	10	56	55	23	12
Totals			399	89	128	159.821	284.49	435.87	30.2	150.1	379.25	13,156	65,416	83,814	29,074	14,457

VOLUME SUMMARY

Volume in Mbf

WOLF DEN CITY
341-14-18
March 2014

AREA 1: PC-L (221 ACRES)

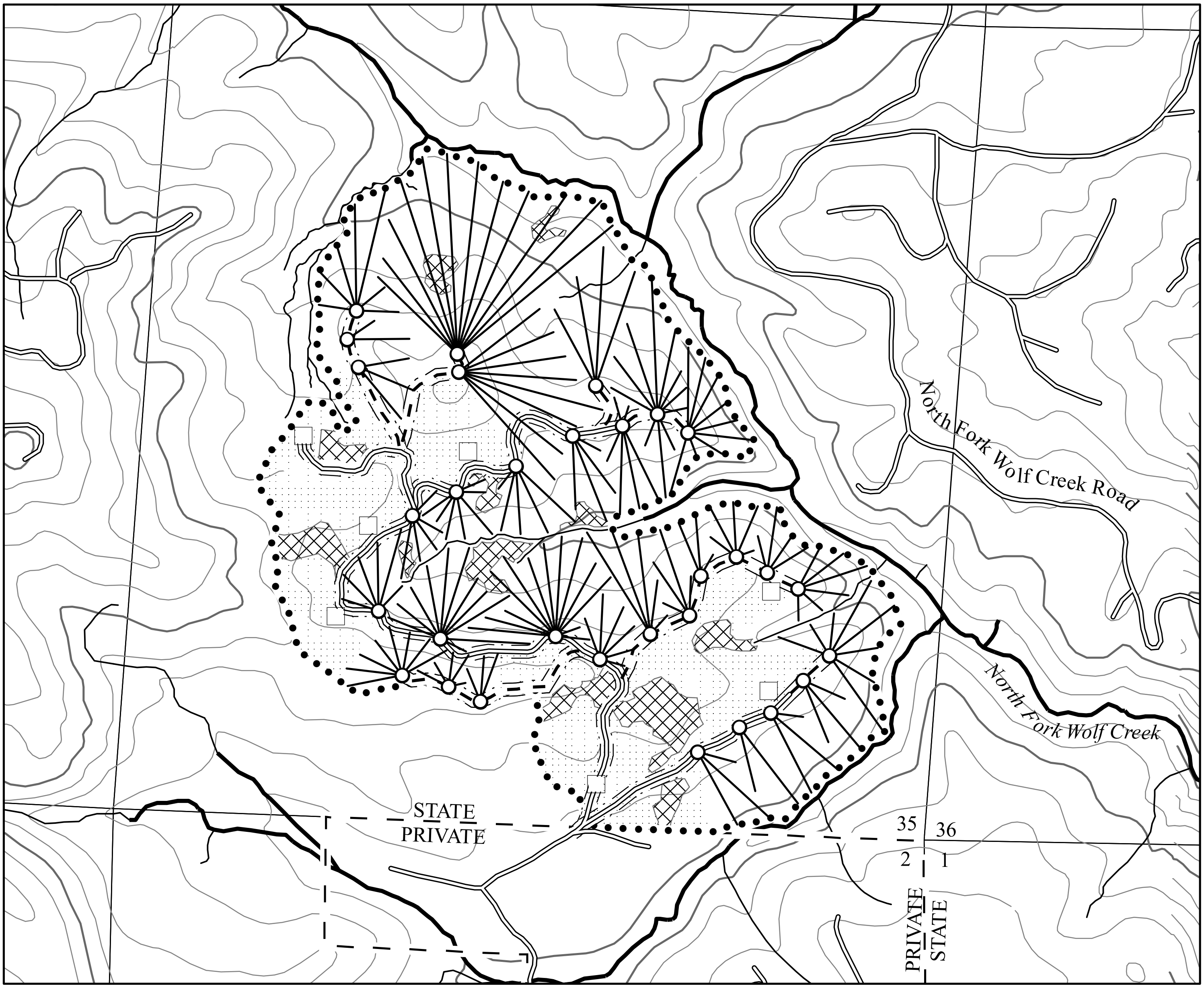
SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	2,002	2,352	254	4,608
	Hidden D&B (2%)	(40)	(47)	(5)	(92)
	NET TOTAL	1,962	2,305	249	4,516
	% of Total	43	51	6	
Western hemlock	Cruise Volume	45	73	27	145
	Hidden D&B (2%)	(1)	(1)	(1)	(3)
	NET TOTAL	44	72	26	142
	% of Total	31	51	18	

AREA 2: R/W (4 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	83	98	12	193
	Hidden D&B (2%)	(2)	(2)	()	(4)
	NET TOTAL	81	96	12	189
	% of Total	43	51	6	
Western hemlock	Cruise Volume	21	34	12	67
	Hidden D&B (2%)	()	(1)	()	(1)
	NET TOTAL	21	33	12	66
	% of Total	32	50	18	

SALE TOTAL

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir		2,043	2,401	261	4,705
Western hemlock		65	105	38	208
SALE TOTAL		2,108	2,506	299	4,913



LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-14-18
WOLF DEN CITY
PORTIONS OF SECTION 35, T4N, R6W, W.M.
CLATSOP COUNTY, OREGON
AND PORTIONS OF SECTION 1, T3N, R6W, W.M.,
TILLAMOOK COUNTY, OREGON

Legend

- • • • • Timber Sale Boundary
- — · ODFProperty Boundary
- ═ ·: ═ Posted Right of Way Boundary
- ═ Roads
- – – New Construction
- ━ Type F Stream
- — Type N Stream
- ○ Cable Landing
- ☐ Tractor Landing
- < Cable Yarding Area
- ⋯ Tractor Yarding Area
- ▨ Thinning Optional Area
- — 400 Foot Contour Band
- — 80 Foot Contour Band
- ☐ Section Line
- ═·: ═ Area 2 (R/W)
- ●—● Gate

Forest Grove District GIS
Month, Year
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

0 250 500 1,000 1,500 2,000
Feet

N

APPROXIMATE NET ACRES

	TRACTOR	CABLE
AREA 1	60	161
AREA 2	4	0
TOTAL	64	161