



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Devil's Boot
Sale 341-12-10

District: Forest Grove

Date: November 07, 2011

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,193,143.33	\$0.00	\$1,193,143.33
Project Work:			\$(93,500.00)
Advertised Value:			\$1,099,643.33



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timber description

Location: Portions of Sections 5, 7, and 8, T1N, R5W, W.M., Tillamook County, Oregon.

Stand Stocking: 20%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	20	0	98
Western Hemlock / Fir	14	0	98
Grand Fir	21	0	98

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	2,223	1,032	178	3,433
Western Hemlock / Fir	0	102	40	142
Grand Fir	38	61	4	103
Total	2,261	1,195	222	3,678



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comments: Pond Values Used: 3rd Quarter Calendar Year 2011.

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost:
 $\$713.17/\text{MBF} = \$900/\text{MBF} - \$186.83/\text{MBF}$

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus
Logging Cost:
 $\$398.17/\text{MBF} = \$585/\text{MBF} - \$186.83/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE
Hauling costs equivalent to \$740 daily truck cost.

Other Costs (with Profit and Risk to be added):
Brand and Paint: 3,678 MBF @ \$1/MBF = \$3,678
Total Other Costs (with Profit & Risk to be added) = \$3,678

Other Costs (No Profit & Risk added):
Machine time to block/waterbar roads, and skid trails: 10 Hours @
\$150/Hr. = \$1,500
Equipment Cleaning: 2 x \$1,000/Piece = \$2,000
Slash Treatment: 20 acres x \$150/acre = \$3,000
Piling Landing Slash: 10 hrs x \$150/hr = \$1,500
Tree Topping: 104 trees x \$40/tree = \$4,160
TOTAL Other Costs (No Profit & Risk added) = \$12,160

ROAD MAINTENANCE
Move-in: \$1,000
General Road Maintenance: 3.8 miles x \$1,000/mile = \$3,800
TOTAL: \$4,800 (\$1.31/MBF)



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logging conditions

combination#:	1	Douglas - Fir	64.00%
		Western Hemlock / Fir	64.00%
		Grand Fir	64.00%
yarding distance:	Short (400 ft)	downhill yarding:	No
logging system:	Shovel	Process:	Stroke Delimber
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
loads / day:	7.0	bd. ft / load:	4,200
cost / mbf:	\$48.92		
machines:	Stroke Delimber (B)		

combination#:	2	Douglas - Fir	36.00%
		Western Hemlock / Fir	36.00%
		Grand Fir	36.00%
yarding distance:	Short (400 ft)	downhill yarding:	No
logging system:	Cable: Small Tower <=40	Process:	Stroke Delimber
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
loads / day:	6.0	bd. ft / load:	4,200
cost / mbf:	\$112.47		
machines:	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Small)		



"STEWARDSHIP IN FORESTRY"

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logging costs

Operating Seasons:	2.00	Profit Risk:	10.00%
Project Costs:	\$93,500.00	Other Costs (P/R):	\$3,678.00
Slash Disposal:	\$0.00	Other Costs:	\$12,160.00

Miles of Road

Road Maintenance: \$1.31

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.0
Western Hemlock / Fir	\$0.00	2.0	3.6
Grand Fir	\$0.00	2.0	4.2



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Devil's Boot
Sale 341-12-10

District: Forest Grove

Date: November 07, 2011

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$71.80	\$1.34	\$2.38	\$85.77	\$1.00	\$16.23	\$0.00	\$5.00	\$3.31	\$186.83
Western Hemlock / Fir									
\$71.80	\$1.34	\$2.38	\$95.30	\$1.00	\$17.18	\$0.00	\$5.00	\$3.31	\$197.31
Grand Fir									
\$71.80	\$1.34	\$2.38	\$81.69	\$1.00	\$15.82	\$0.00	\$5.00	\$3.31	\$182.34

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$516.94	\$330.11	\$0.00
Western Hemlock / Fir	\$0.00	\$430.77	\$233.46	\$0.00
Grand Fir	\$0.00	\$441.80	\$259.46	\$0.00



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summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Grand Fir	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,433	\$330.11	\$1,133,267.63
Western Hemlock / Fir	142	\$233.46	\$33,151.32
Grand Fir	103	\$259.46	\$26,724.38

Gross Timber Sale Value

Recovery: \$1,193,143.33

Prepared by: Mark Savage

Phone: 503-359-7437

DEVIL'S BOOT
341-12-10
Volume Summary (Shown in MBF)
September 2011

Area 1: MC (104 Acres)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	2268	1053	182	3503
	Hidden D&B	(45)	(21)	(4)	(70)
	Total	2223	1032	178	3433
	<i>% Total</i>	65	30	5	

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Western hemlock	Cruise Volume		104	41	145
	Hidden D&B		(2)	(1)	(3)
	Total		102	40	142
	<i>% Total</i>		72	28	

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Grand fir	Cruise Volume	39	62	4	105
	Hidden D&B	(1)	(1)	(0)	(2)
	Total	38	61	4	103
	<i>% Total</i>	37	59	4	

SALE TOTALS

SPECIES	TOTAL (MBF)
Douglas-fir	3433
Hemlock and Other Conifer	142
Grand fir	103
Total	3923

TIMBER SALE SUMMARY

Devil's Boot

341-12-10

1. **Type of Sale:** Modified clear cut, recovery, sealed bid auction
2. **Revenue Distribution:** 100% BOF, Tillamook County, Tax Code 56 (54%) & 9-2 (46%)
3. **Sale Acreage:** Approximately 104 acres of modified clearcut. Acres are net of buffers, roads, and retention areas and were determined using ESRI Arcmap GIS software.
4. **Cruise:** The Timber Sale was cruised with ODF cruiser variable radius plots. Volume estimates and plot data statistics were computed using SuperACE timber cruise software. For more information see the Cruise Report

5. **Volume:**

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	2268	1053	182	3503
	Hidden D&B	(45)	(21)	(4)	(70)
	Total	2223	1032	178	3433
	<i>% Total</i>	65	30	5	

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Western hemlock	Cruise Volume		104	41	145
	Hidden D&B		(2)	(1)	(3)
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	<i>% Total</i>		72	28	

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Grand fir	Cruise Volume	39	62	4	105
	Hidden D&B	(1)	(1)	(0)	(2)
	Total	38	61	4	103
	<i>% Total</i>	37	59	4	

TOTAL VOLUME: 3,678 MBF

6. **Timber Description:** The Sale Area is a stand of 60 year old Douglas-fir with components of Western hemlock and grand fir. The DBH averages 20 inches for Douglas-fir take trees, 14 inches for western hemlock, and 21 inches for Grand fir. The average net volume per acre is approximately 36 MBF.

7. Topography and Logging Method: This timber sale is 64% ground based yarding and 36% cable yarding. The maximum ground yarding distance is approximately 1,400 feet horizontal distance, with an average yarding distance of about 500 feet. The maximum cable yarding distance is approximately 1,300 feet horizontal distance, with an average yarding distance of about 440 feet. Slopes range from 15% to 65%.

8. Access: Follow Highway 6 just to the west of the summit and turn onto Beaverdam Road. Follow Beaverdam Road for 2.2 miles to the intersection of Beaverdam Road and Scoggins Creek Road. Turn left onto Scoggins Creek Road and follow for 1.6 miles to the sale area. See Exhibit A "Vicinity Map" for detailed access and haul route information. A gate key will be required.

9. Projects:

Project 1: 2.93 miles of road construction/improvement & gate installation	\$18,985.12
Project 2: Road surfacing	\$28,469.81
Project 3: Bridge installation	\$29,240.90
Project 4: Grass seeding	\$788.00
Project 5: Dust abatement	\$3,520.00
Project 6: Replace Bridge Decking	\$4,700.00
<u>Move in:</u>	\$7,788.54
Total Credit for all Projects (rounded)	\$93,492.37

10. Other Costs:

<u>Other Costs with (P/R)</u>	
Brand and Paint: 3,678 MBF @ \$1.00/MBF =	\$3,678.00
 Total Other Costs with (P/R):	 \$3,678.00
 <u>Other Costs (no P/R)</u>	
Blocking/Waterbarring skid roads: 10 Hours @ \$150.00/hour =	\$1,500.00
Equipment Cleaning: 2 x \$1,000/Piece =	\$2,000.00
Slash Treatment: 20 acres x \$150/acre =	\$3,000.00
Piling Landing Slash: 10 hours @ \$150.00/hour =	\$1,500.00
Tree Topping: 104 trees x \$40/tree =	\$4,160.00
 Total Other Costs (no P/R):	 \$12,160.00
 Total Other Costs:	 \$15,838.00

PROJECT COST SUMMARY SHEET

Timber Sale: Devils Boot
 Sale Number: 341-12-10

PROJECT NO. 1: ROAD CONSTRUCTION AND IMPROVEMENT

CONSTRUCTION

Road Segment	Length	Cost
B to C	57+50	\$14,611.97
D to E	6+50	\$1,895.95
	64+00 stations	
	1.21 miles	
<u>SUBTOTAL CONSTRUCTION</u>		\$16,507.92

IMPROVEMENTS

Road Segment	Length	Cost
A to B	90+60	\$2,477.20
	90+60 stations	
	1.72 miles	
<u>SUBTOTAL IMPROVEMENTS</u>		\$2,477.20

TOTAL PROJECT NO. 1 COST = \$18,985.12

PROJECT NO. 2: SURFACING

Road Segment	Amount	Type	Cost
A to B	1,153 cy	1 1/2" - 0	\$6,825.76
B to C	2,245 cy	3" - 0	\$17,668.15
D to E	375 cy	3" - 0	\$2,827.50
Point F	100 cy	1 1/2" - 0	\$657.00
Point F	70 cy	24" - 6"	\$491.40
Total	1,253 cy	1 1/2" - 0	
	2,620 cy	3" - 0	
	70 cy	24" - 6	

TOTAL PROJECT NO. 2 COST = \$28,469.81

PROJECT NO. 3: BRIDGE INSTALLATION

Install temporary bridge at Point F	\$29,240.90
<u>TOTAL PROJECT NO. 3 COST =</u>	\$29,240.90

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

Grass seed, fertilize, & mulch areas of disturbed soil.	\$788.00
<u>TOTAL PROJECT NO. 4 COST =</u>	\$788.00

PROJECT NO. 5: DUST ABATEMENT

Provide dust abatement treatment on A to B, between stations 16+70 & 32+70	\$3,520.00
<u>TOTAL PROJECT NO. 5 COST =</u>	\$3,520.00

PROJECT NO. 6: REPLACE BRIDGE DECKING

<u>TOTAL PROJECT NO. 6 COST =</u>	\$4,700.00
MOVE IN & EQUIPMENT CLEANING	\$7,788.54

<u>TOTAL ALL PROJECTS</u>	<u>\$93,492.37</u>
<u>TOTAL CREDITS</u>	<u>\$93,500.00</u>

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Devils Boot	Timber Sale No.:	341-12-10
Road Segment:	A to B	Improvement:	90+60 stations 1.72 miles

PROJECT NO. 1

Grade and Ditch (0+00 to 82+40)	82.40	sta @	\$15.50 per sta =	\$1,277.20
Install a gate at 81+40 according to specifications in Exhibit J.				\$600.00
Install an OHV Trail filter on west end of the gate and block all other access around the gate using existing boulders onsite according to the specifications in Exhibit K.				\$375.00
Load and Haul 20 cubic yards of boulders from 84+00 and stockpile at Pt. B				\$225.00

PROJECT NO. 1 TOTAL COST = \$2,477.20

PROJECT NO. 2:

SURFACING

Spot Rock (0+00 to 23+60)	100	cy of	1 1/2"-0	@	\$5.92 per cy =	\$592.00
3" Lift (24+00 to Pt. B)	999	cy of	1 1/2"-0	@	\$5.92 per cy =	\$5,914.08
Turnouts (6)	54	cy of	1 1/2"-0	@	\$5.92 per cy =	\$319.68
Total =	1153	cy of	1 1/2"-0			

PROJECT NO. 2 TOTAL COST = \$6,825.76

PROJECT NO. 5: Dust Abatement

Dust abatement treatment from station 16+70 to station 32+70 (2 applications)	3200	lf @	\$1.10 per lf =	\$3,520.00
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PROJECT NO. 5 TOTAL COST = \$3,520.00

TOTAL COST = \$12,822.96

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devils Boot Timber Sale No.: 341-12-10
 Road Segment: B to C Construction : 57+50 stations
1.09 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	5.28	acres @	\$1,274.00	per acre =	\$6,726.72
Balanced Road Construction	57.50	sta @	\$90.00	per sta =	\$5,175.00
Construct Junctions (Pts. B & D)	2	sta @	\$60.00	per sta =	\$120.00
Construct Turnouts (6)	6	ea @	\$60.00	per ea =	\$360.00
Construct Turnarounds (2)	2	ea @	\$75.00	per ea =	\$150.00
Landings	1	ea @	\$285.00	per ea =	\$285.00
Roadside landing	1	ea @	\$145.00	per ea =	\$145.00
Grade, Ditch, and Roll	57.50	sta @	\$28.70	per sta =	\$1,650.25

PROJECT NO. 1 TOTAL COST = \$14,611.97

PROJECT NO. 2:

SURFACING

	6	" deep =	33 cy/sta		
B to C	1,898	cy of	3"-0	@	\$7.87 per cy = \$14,937.26
Curve Widening	24	cy of	3"-0	@	\$7.87 per cy = \$188.88
Turnouts (6)	66	cy of	3"-0	@	\$7.87 per cy = \$519.42
Junctions (2)	40	cy of	3"-0	@	\$7.87 per cy = \$314.80
Turnaround (2)	20	cy of	3"-0	@	\$7.87 per cy = \$157.40
Landing (2)	197	cy of	3"-0	@	\$7.87 per cy = \$1,550.39
Total =					
	2245	cy of	3"-0		

PROJECT NO. 2 TOTAL COST = \$17,668.15

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	2.64	acres @	\$200.00	per acre =	\$528.00
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PROJECT NO. 4 TOTAL COST = \$528.00

TOTAL COST = \$32,808.12

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Devils Boot	Timber Sale No.:	341-12-10
Road Segment:	D to E	Construction:	6+50 stations 0.12 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.60	acres @	\$1,274.00	per acre =	\$764.40
Balanced Road Construction	6.50	sta @	\$90.00	per sta =	\$585.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	6.50	sta @	\$28.70	per sta =	\$186.55

PROJECT NO. 1 TOTAL COST = \$1,895.95

PROJECT NO. 2:

SURFACING	6	" deep =	33 cy/sta		
D to E	215	cy of	3" - 0	@	\$7.54 per cy = \$1,621.10
Turnaround	10	cy of	3" - 0	@	\$7.54 per cy = \$75.40
Landing (1)	150	cy of	3" - 0	@	\$7.54 per cy = \$1,131.00
Total =	375	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$2,827.50

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.30	acres @	\$200.00	per acre =	\$60.00
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PROJECT NO. 4 TOTAL COST = \$60.00

TOTAL COST = \$4,783.45

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devils Boot
 Road Segment: Point F, Bridge Installation

Timber Sale No.: 341-12-10

PROJECT NO. 3

EXCAVATION

Fill Excavation & Endhaul					
Excavate & Load	790	cy @	\$2.41 per cy =	\$1,903.90	
Haul	790	cy @	\$2.05 per cy =	\$1,619.50	
Shape and Compact Waste Area	790	cy @	\$0.75 per cy =	\$592.50	
			TOTAL EXCAVATION COSTS=		\$4,115.90

EROSION CONTROL

Volume pump	2	days @	\$75.00 per day =	\$150.00	
Sandbags	20	bags @	\$5.00 per bag =	\$100.00	
Silt Fencing	100	feet @	\$4.00 per foot =	\$400.00	
Check dam material	1	unit @	\$200.00 per unit =	\$200.00	
			TOTAL EROSION CONTROL COSTS=		\$850.00

BRIDGE MATERIALS

53 foot rail car bridge w/ timber decking including delivery of bridge)				\$21,800.00	
Installation (Excavator)	15	hr @	\$165.00 per hr =	\$2,475.00	
			TOTAL BRIDGE MATERIAL COSTS=		\$24,275.00

PROJECT NO. 3 TOTAL COST = \$29,240.90

PROJECT NO. 2:

SURFACING

	0				
Crushed rock for abutments	40	cy of 1 1/2" - 0	@	\$6.57 per cy =	\$262.80
Crushed rock for approaches	60	cy of 1 1/2" - 0	@	\$6.57 per cy =	\$394.20
Riprap (including placement)	70	cy of 24" - 6"	@	\$7.02 per cy =	\$491.40
Total =					
	100	cy of 1 1/2" - 0			
	70	cy of 24" - 6"			

PROJECT NO. 2 TOTAL COST = \$1,148.40

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	0.25 acres @	\$200.00 per acre =	\$50.00	
Mulch	0.25 acres @	\$600.00 per acre =	\$150.00	

PROJECT NO. 4 TOTAL COST = \$200.00

TOTAL COST = \$30,589.30

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devils Boot
Point: G

Timber Sale No. : 841-12-10

PROJECT NO. 6: BRIDGE DECK REPLACEMENT

Wood and Hardware	\$3,200.00
Labor and Equipment	\$1,500.00

PROJECT NO. 6 TOTAL COST = \$4,700.00

TOTAL COST = \$4,700.00

Move-In Calculations

Timber Sale: **Devils Boot**
 Sale Number: **341-12-10**

LOWBOY HAUL		
DIST. (mi)	ROADWAY	SPEED (mph)
3.5	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
0	Drill & Compressor		\$0.00	\$0.00		\$46.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Brush Cutter		\$0.00	\$0.00		\$4.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Graders	\$1,000	\$300.00	\$90.00		\$3.65	\$0.00	\$0.00	\$0.00	\$0.00	\$1,390.00
0	Loader (Small)		\$0.00	\$0.00	1	\$3.55	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Loader (Med. & Large)		\$414.39	\$170.78	1	\$9.00	\$0.00	\$0.00	\$0.00	\$0.00	\$585.17
1	Rollers & Compactors		\$308.59	\$120.75		\$5.00	\$0.00	\$0.00	\$0.00	\$0.00	\$429.34
0	Excavators (Small)		\$0.00	\$0.00		\$22.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Excavators (Med.)	\$1,000	\$330.44	\$150.08		\$35.50	\$0.00	\$0.00	\$0.00	\$0.00	\$1,480.52
1	Excavators (Large)	\$1,000	\$466.14	\$186.30	1	\$44.80	\$0.00	\$0.00	\$0.00	\$0.00	\$1,652.44
0	Tired Backhoes/Skidlers		\$0.00	\$0.00		\$3.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Tractors (D6)		\$0.00	\$0.00	2	\$7.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Tractors (D7)		\$0.00	\$0.00	2	\$11.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Tractor (D8)	\$1,000	\$473.80	\$177.10	2	\$15.10	\$0.00	\$0.00	\$0.00	\$0.00	\$1,650.90
3	Dump Truck (10 cy +)		\$350.00	\$105.00		\$2.85	\$0.00	\$0.00	\$0.00	\$0.00	\$455.00
0	Dump Truck (Off Hiway)		\$0.00	\$0.00	1	\$4.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Water Truck (1500 Gal)		\$0.00	\$0.00		\$2.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Water Truck (2500 Gal)		\$111.67	\$33.50		\$2.85	\$0.00	\$0.00	\$0.00	\$0.00	\$145.17
TOTAL MOVE-IN COSTS:										\$7,788.54	

CRUISE REPORT
Devil's Boot
341-12-10

1. ACREAGE CALCULATION: The Timber Sale Area is 104 acres, determined with ESRI ArcMap GIS Software. Acres are net of stream buffers, leave areas, and existing roads.

2. SAMPLING INTENSITY:

The cruise design assumed a Coefficient of Variation (CV%) of 50%, a desired sampling error (SE%) of 10% and a minimum sample size of 100 grade trees. The Sale Area was cruised in 05/04/2011 with 27 variable radius grade plots. 129 trees were measured and graded. This produced an acceptable cumulative sampling error of 9.1%.

3. SAMPLING METHOD:

Pre-cruise plots indicated an optimal 6 to 8 grade trees per plot, and a total sample size of 100 or more trees could be realized with a variable radius plot using a 40 BAF prism. Plots were laid out on a 6 chain x 6 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

4. TREE MEASUREMENT AND GRADING:

All (grade plot) sample 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 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: Peter Stone, Nathan Agalzoff, and Mark Savage.

Prepared by:

ODF Forester

Date

Reviewed by:

Eric Foucht

Date

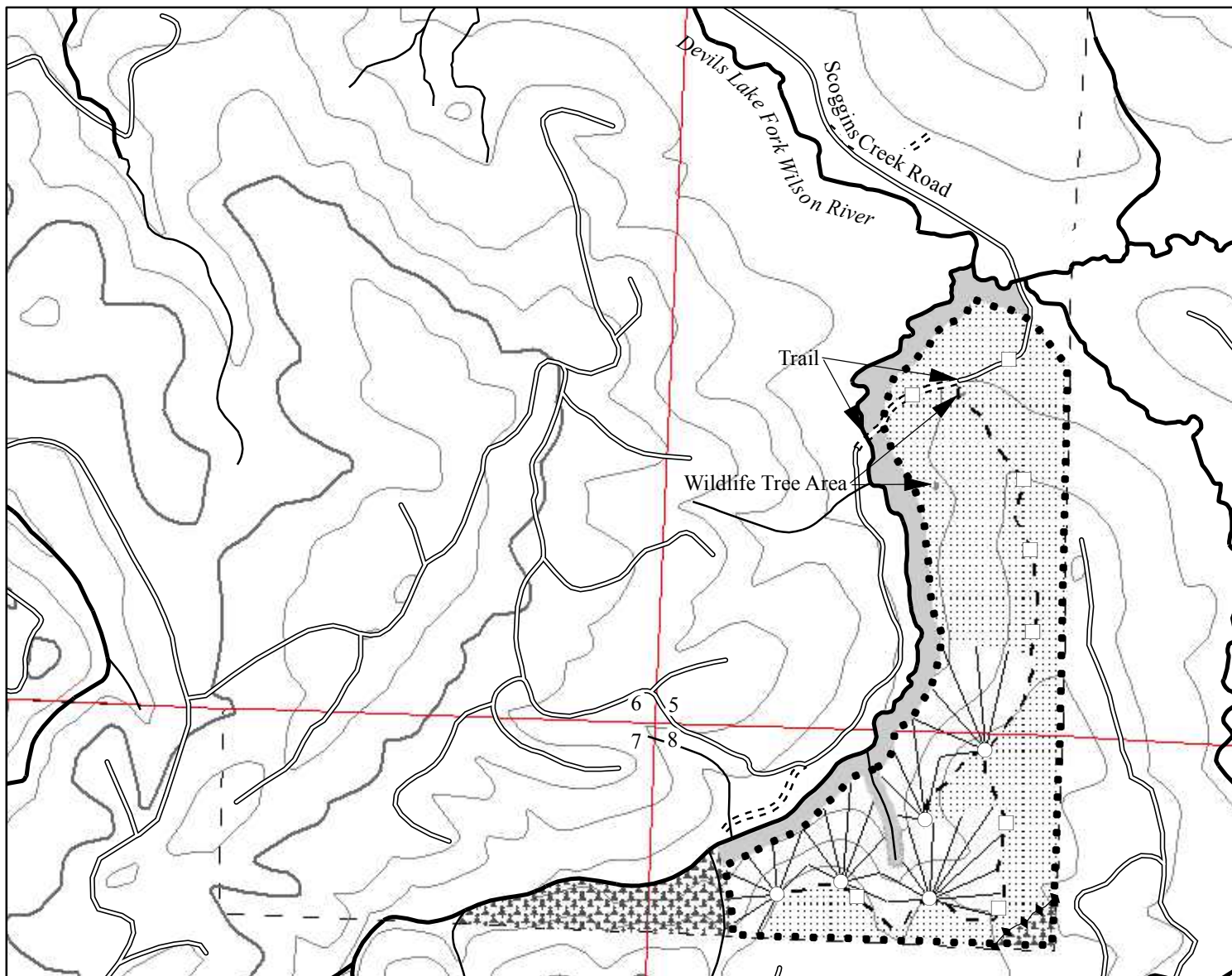
TC PSTATS				PROJECT STATISTICS				PAGE	1
				PROJECT	DVLSBOOT				
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
01N	06	08	1	MC	104.00	27	129	S	W
				TREES		ESTIMATED	PERCENT		
				PLOTS	TREES	TOTAL	SAMPLE		
					PER PLOT	TREES	TREES		
TOTAL				27	129	4.8			
CRUISE				27	129	4.8	9,600	1.3	
DBH COUNT									
REFOREST									
COUNT									
BLANKS									
100 %									
STAND SUMMARY									
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC
DOUG FIR-L		5	1.0	37.2	130	1.2	7.4	1,897	372
DOUG FIR-T		114	79.8	19.7	100	38.1	168.9	33,679	7,256
WHEMLOCK-T		6	9.0	13.5	84	2.4	8.9	1,394	344
GR FIR-T		4	2.5	20.8	94	1.3	5.9	1,041	239
TOTAL		129	92.3	19.5	99	43.3	191.1	37,982	8,210
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		25.4	12.6	1,730	1,980	2,230			
DOUG FIR-T		58.0	5.4	578	611	645			
WHEMLOCK-T		47.5	21.2	147	187	226			
GR FIR-T		51.8	29.6	327	465	603			
TOTAL		70.2	6.2	601	640	680	197	49	22
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		18.3	9.1	351	386	421			
DOUG FIR-T		54.4	5.1	124	130	137			
WHEMLOCK-T		50.1	22.3	36	46	57			
GR FIR-T		40.7	23.3	82	107	132			
TOTAL		64.0	5.6	128	136	143	163	41	18
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		271.1	53.1	0	1	2			
DOUG FIR-T		69.5	13.6	69	80	91			
WHEMLOCK-T		293.3	57.5	4	9	14			
GR FIR-T		320.1	62.7	1	3	4			
TOTAL		68.8	13.5	80	92	105	197	49	22
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		261.0	51.2	4	7	11			
DOUG FIR-T		47.5	9.3	153	169	185			
WHEMLOCK-T		314.1	61.6	3	9	14			
GR FIR-T		307.8	60.3	2	6	10			
TOTAL		42.4	8.3	175	191	207	75	19	8
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		249.3	48.9	970	1,897	2,825			
DOUG FIR-T		52.0	10.2	30,243	33,679	37,115			
WHEMLOCK-T		330.5	64.8	491	1,394	2,297			
GR FIR-T		292.2	57.3	432	1,011	1,590			

TC PSTATS				PROJECT				PAGE		2	
				DVLSBOOT				DATE	9/19/2011		
TWP	RGE	SC	TRACT	TYPE	ACRES			PLOTS	TREES	CuFt	BdFt
01N	06	08	1	MC	104.00			27	129	S	W
CL	68.1	COEFF		NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL			46.6	9.1	34,514	37,982	41,449	90	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-L			255.1	50.0	186	372	558				
DOUG FIR-T			50.4	9.9	6,540	7,256	7,972				
WHEMLOCK-T			328.7	64.4	122	344	565				
GR FIR-T			302.4	59.3	97	239	381				
TOTAL			44.6	8.8	7,492	8,210	8,929	83	21	9	

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
<div>T01N R06W S08 TyMC104.00</div>				Project:		DVLSBOOT												Page		1		
				Acres		104.00												Date		9/19/2011		
																		Time		8:26:15AM		
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			
				Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99							
DF	T	CU															19	13		0.00	6.0	
DF	T	2M	64	1.2	22,067	21,804	2,268			51	49		6	7	7	79	34	16	348	2.01	62.7	
DF	T	3M	30	.1	10,140	10,130	1,053			87	12	1			2	4	94	39	9	111	0.68	91.5
DF	T	4M	6		1,746	1,746	182	13	84	3			19	40	10	31	25	6	34	0.37	51.3	
DF Totals			89	.8	33,953	33,679	3,503	1	31	37	32		5	7	6	81	34	10	159	1.01	211.5	
DF	L	2M	55		1,046	1,046	109					100				100	40	25	1176	5.01	.9	
DF	L	3M	43		830	830	86			9	11	80				100	40	17	511	2.77	1.6	
DF	L	4M	2		22	22	2	39	61							100	38	6	50	0.83	.4	
DF Totals			5		1,897	1,897	197	0	5	5	90					100	40	18	645	3.18	2.9	
WH	T	3M	71		1,001	1,001	104			66	34					100	40	9	119	0.74	8.4	
WH	T	4M	29		393	393	41	23	77				12	23		64	32	6	46	0.34	8.5	
WH Totals			4		1,394	1,394	145	7	69	24			3	7		90	36	8	82	0.56	16.9	
GF	T	2M	36	4.8	390	371	39					100				100	40	14	283	1.62	1.3	
GF	T	3M	59	1.8	608	597	62	8	38	34	21				34	27	39	34	10	142	1.02	4.2
GF	T	4M	5		43	43	4			39	61		100				18	8	35	0.48	1.2	
GF Totals			3	2.9	1,041	1,011	105	5	24	59	12		4	20	16	60	32	10	150	1.11	6.7	
Totals				0.8	38,286	37,982	3,950	1	30	35	33		5	7	6	82	34	10	160	1.01	238.1	

TC PSTNDSUM				Stand Table Summary									Page	1
													Date:	9/19/2011
T01N R06W S08 TyMC 104.00				Project DVLSBOOT									Time:	8:26:14AM
				Acres 104.00									Grown Year:	
S	Sample	FF	Tot				Average Log		Net			Totals		
Spc T	DBH	Trees	16' Ht	Trees/	BA/	Logs	Net	Net	Tons/	Cu.Ft.	Bd.Ft.	Tons	Cunits	MBF
				Acre	Acre	Acre	Cu.Ft.	Bd.Ft.	Acre	Acre	Acre			
DF T	10	3	88 146	8.149	4.44	13.58	11.8	56.0	4.58	161	761	476	167	79
DF T	11	2	88 129	4.490	2.96	11.22	10.0	48.0	3.19	112	539	332	116	56
DF T	12	2	87 151	3.773	2.96	7.55	16.2	75.0	3.48	122	566	362	127	59
DF T	13	3	88 107	4.822	4.44	9.64	15.8	70.0	4.35	153	675	453	159	70
DF T	14	1	88 150	1.386	1.48	4.16	16.7	80.0	1.98	70	333	206	72	35
DF T	15	4	88 115	4.829	5.93	8.45	24.3	110.0	5.86	206	930	610	214	97
DF T	16	7	88 124	7.427	10.37	21.22	19.7	90.5	11.93	419	1,920	1,241	435	200
DF T	17	3	88 120	2.820	4.44	8.46	21.1	90.0	5.08	178	761	528	185	79
DF T	18	2	89 139	1.677	2.96	5.03	27.4	128.3	3.92	138	646	408	143	67
DF T	19	7	89 126	5.267	10.37	15.05	29.5	133.5	12.66	444	2,009	1,317	462	209
DF T	20	4	84 112	2.716	5.93	4.75	33.4	140.0	4.53	159	665	471	165	69
DF T	21	4	89 147	2.464	5.93	8.01	37.4	181.5	8.54	300	1,454	888	312	151
DF T	22	8	87 129	4.490	11.85	14.03	37.8	173.2	15.13	531	2,430	1,574	552	253
DF T	23	11	87 124	5.648	16.30	15.40	44.4	197.0	19.48	684	3,035	2,026	711	316
DF T	24	9	87 134	4.244	13.33	11.79	52.5	235.6	17.65	619	2,778	1,835	644	289
DF T	25	12	88 128	5.215	17.78	14.34	52.3	238.2	21.36	749	3,416	2,221	779	355
DF T	26	7	87 134	2.813	10.37	9.64	49.2	241.7	13.53	475	2,331	1,407	494	242
DF T	27	3	88 131	1.118	4.44	3.73	55.9	272.0	5.93	208	1,013	617	217	105
DF T	28	3	86 133	1.039	4.44	3.12	65.7	310.0	5.84	205	967	608	213	101
DF T	29	4	86 134	1.292	5.93	3.88	72.6	343.3	8.02	282	1,331	835	293	138
DF T	30	5	88 133	1.509	7.41	4.53	77.4	380.7	9.98	350	1,723	1,038	364	179
DF T	31	3	89 125	.848	4.44	2.54	79.3	384.4	5.75	202	978	598	210	102
DF T	32	4	88 138	1.061	5.93	3.18	87.2	440.0	7.91	278	1,401	823	289	146
DF T	33	2	84 139	.499	2.96	1.50	92.4	440.0	3.94	138	658	410	144	68
DF T	34	1	85 141	.235	1.48	.70	106.7	513.3	2.14	75	362	223	78	38
DF T	Totals	114	88 130	79.829	168.89	205.50	35.3	163.9	206.79	7,256	33,679	21,506	7,546	3,503
DF L	35	1	82 135	.222	1.48	.67	101.9	466.7	1.93	68	310	201	70	32
DF L	36	2	85 144	.419	2.96	1.26	118.7	601.7	4.25	149	757	442	155	79
DF L	39	1	88 148	.179	1.48	.54	145.2	790.0	2.22	78	423	231	81	44
DF L	41	1	89 141	.162	1.48	.48	158.6	840.0	2.19	77	407	228	80	42
DF L	Totals	5	86 142	.981	7.41	2.94	126.3	644.7	10.59	372	1,897	1,102	387	197
WH T	11	2	85 127	4.490	2.96	6.73	14.4	56.7	3.10	97	382	322	101	40
WH T	13	1	86 124	1.607	1.48	3.21	20.0	90.0	2.06	64	289	214	67	30
WH T	15	1	86 112	1.207	1.48	3.62	16.6	70.0	1.92	60	254	200	62	26
WH T	18	2	85 122	1.677	2.96	3.35	36.5	140.0	3.91	122	469	407	127	49
WH T	Totals	6	85 123	8.981	8.89	16.92	20.3	82.4	10.99	344	1,394	1,143	357	145
GF T	18	2	86 110	1.677	2.96	4.19	28.4	114.0	2.62	119	478	272	124	50
GF T	24	1	86 118	.472	1.48	1.41	45.0	176.7	1.40	64	250	146	66	26
GF T	27	1	81 132	.373	1.48	1.12	50.6	253.3	1.24	57	283	129	59	29
GF T	Totals	4	85 114	2.521	5.93	6.72	35.6	150.3	5.26	239	1,011	547	249	105
Totals		129	87 129	92.311	191.11	232.10	35.4	163.6	233.64	8,210	37,982	24,299	8,539	3,950

TC PLOGSTVB				Log Stock Table - MBF																
T01N R06W S08 TyMC 104.00				Project: DVLSBOOT Acres 104.00				Page 2 Date 9/19/2011 Time 8:26:15AM												
Spp	S T	So rt	Gr 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		4M	40	1		1	.4		1										
DF			Totals		197		197	5.0		1	1	2	6		19	64	76	28		
WH	T		3M	40	104		104	71.8			22	28	19	35						
WH	T		4M	20	5		5	3.5				5								
WH	T		4M	22	3		3	1.7		3										
WH	T		4M	30	7		7	4.8		7										
WH	T		4M	40	26		26	18.2			26									
WH			Totals		145		145	3.7		10	49	33	19	35						
GF	T		2M	40	41	4.8	39	36.7					21		18					
GF	T		3M	24	14	8.3	13	12.2							13					
GF	T		3M	28	7		7	6.5					7							
GF	T		3M	30	1		1	1.4		1										
GF	T		3M	34	17		17	15.8		3			13							
GF	T		3M	40	24		24	23.2			10				14					
GF	T		4M	12	3		3	2.6					3							
GF	T		4M	20	2		2	1.7			2									
GF			Totals		108	2.9	105	2.7		5	2	10	13	31	14	30				
Total			All Species		3,982		3,950	100.0		39	422	357	425	445	530	1114	457	133	28	



LEGEND

- • • Timber Sale Boundary
- ◆ ◆ ◆ Area Boundary
- Surfaced Road
- == == Unsurfaced Road
- - New Construction
- Type F Stream
- Type N Stream
- ▨ Posted Stream Buffer
- ▩ Unposted Stream Buffer
- ▤ Green Tree Retention Area
- Wildlife Tree Area
- Cable Landing
- Tractor Landing
- ◁ Cable Yarding Area
- ▤ Tractor Logging Area
- 400 Foot Contour Band
- 80 Foot Contour Band
- ▤ ODF Ownership Boundary
- ▭ Sections

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-12-10
DEVIL'S BOOT
PORTIONS OF SECTIONS 5, 7 & 8, T1N, R5W, W.M
TILLAMOOK COUNTY, OREGON

Forest Grove District GIS
September, 2011

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



APPROXIMATE NET ACRES

CABLE	TRACTOR
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37

67

1:12,000

1 inch = 1,000 feet

