



Timber Sale Appraisal
Boot Scoot
Sale AT-341-2017-08-

District: Astoria

Date: July 05, 2016

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$598,204.91	\$56,517.48	\$654,722.39
		Project Work:	(\$46,154.00)
		Advertised Value:	\$608,568.39



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Timber Description

Location: Portions of Section 5, T7N, R6W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	22	0	98
Western Hemlock / Fir	17	0	98
Sitka Spruce	19	0	95
Alder (Red)	13	0	95

Volume by Grade	2S	3S	4S	Other	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	219	89	10	0	0	0	0	0	318
Western Hemlock / Fir	226	113	20	0	0	0	0	0	359
Sitka Spruce	879	516	96	184	0	0	0	0	1,675
Alder (Red)	0	0	0	0	23	16	22	111	172
Total	1,324	718	126	184	23	16	22	111	2,524

Comments: Pond Values Used: 2nd Quarter Calendar Year 2016 + Local Pond Values.

Expected Log Markets: Warrenton, Tillamook, Garibaldi, Forest Grove, Clatskanie, Mist and Springfield, OR; Morton and Longview, WA.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$984.07/\text{MBF} = \$1,206.36/\text{MBF} - \$222.29/\text{MBF}$

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):
Additional Logging Costs:
Branding and Painting: $\$1/\text{MBF} \times 2,524 \text{ MBF} = \$2,524$
TOTAL Other Costs (with Profit & Risk to be added) = \$2,524

Other Costs (No Profit & Risk added):
Machine Washing for Invasive Weed Compliance = \$2,000
TOTAL Other Costs (No Profit & Risk added) = \$2,000

SLASH DISPOSAL
(See attached Site Prep Appraisal sheet)
TOTAL Slash Disposal = \$8,114

ROAD MAINTENANCE
(See attached Road Maintenance Cost Summary sheet)
TOTAL Road Maintenance: $\$11,400/2,524 \text{ MBF} = \$4.52/\text{MBF}$



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Logging Conditions

Combination#: 1	Douglas - Fir	100.00%
	Western Hemlock / Fir	100.00%
	Sitka Spruce	100.00%
	Alder (Red)	100.00%
Logging System:	Shovel	Process: Feller Buncher
yarding distance:	Medium (800 ft)	downhill yarding: No
tree size:	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF	
loads / day:	12	bd. ft / load: 3800
cost / mbf:	\$77.59	
machines:	Feller Buncher w/ Delimber	



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Logging Costs

Operating Seasons: 2.00	Profit Risk: 8%
Project Costs: \$46,154.00	Other Costs (P/R): \$2,524.00
Slash Disposal: \$8,114.00	Other Costs: \$2,000.00

Miles of Road

Road Maintenance: \$4.52

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	3.7
Western Hemlock / Fir	\$0.00	3.0	4.4
Sitka Spruce	\$0.00	2.0	3.7
Alder (Red)	\$0.00	3.0	3.3



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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									
\$77.59	\$4.61	\$3.47	\$107.52	\$1.00	\$15.54	\$3.21	\$5.00	\$0.79	\$218.73
Western Hemlock / Fir									
\$77.59	\$4.61	\$3.47	\$60.27	\$1.00	\$11.76	\$3.21	\$5.00	\$0.79	\$167.70
Sitka Spruce									
\$77.59	\$4.75	\$3.47	\$110.68	\$1.00	\$15.80	\$3.21	\$5.00	\$0.79	\$222.29
Alder (Red)									
\$77.59	\$4.75	\$3.47	\$82.73	\$1.00	\$13.56	\$3.21	\$5.00	\$0.79	\$192.10

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$595.65	\$376.92	\$0.00
Western Hemlock / Fir	\$0.00	\$472.60	\$304.90	\$0.00
Sitka Spruce	\$0.00	\$442.52	\$220.23	\$0.00
Alder (Red)	\$0.00	\$520.69	\$328.59	\$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
Sitka Spruce	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	318	\$376.92	\$119,860.56
Western Hemlock / Fir	359	\$304.90	\$109,459.10
Sitka Spruce	1,675	\$220.23	\$368,885.25
Alder (Red)	172	\$328.59	\$56,517.48

Gross Timber Sale Value

Recovery: \$654,722.39

Prepared By: Andrew Arvin

Phone: 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Boot Scoot
Date: March 16, 2016
By: Ed Holloran CB

MBF: 2,524
\$/MBF: \$4.52

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations and snow	Grader 14G	\$778	1	10	\$100	\$1,778
	Grader 14G	\$778	1	25	\$100	\$3,278
Final Road Maintenance	Dump Truck 12CY	\$163	1	10	\$79	\$953
	FE Loader C966	\$778	1	4	\$83	\$1,110
	Vibratory Roller	\$778	1	25	\$77	\$2,703
	Water Truck 2,500 gallon	\$190	1	12	\$89	\$1,258
	Labor			8	\$40	\$320
Total						\$11,400

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	5.8	6.20	1.1	9

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Process - Grader	2.0	6.2	3.1	25
Vibratory Roller	2.0	6.2	3.1	25

Process and compact: All crushed rock roads.

Shingle Mill from Highway to Shingle Shack Road = 4.4 miles

Shingle Shack Road to Pt. 1A = 1.4 miles

Grade & Process Total = 5.8 miles

Shape and compact only.

1A to 1B = 0.4 miles

Shape and Compact Only Total= 0.4

Sale Number: 341-17-08
Sale Name: Boot Scoot
Date: 03/30/2016

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	F	92.0	46	\$129.00	\$5,934.00
					In-unit Piling	Sub Total = \$5,934.00
Sale Area	Number of Landings to be Piled	Cost/Landing Pile	Total Cost/Area	Number of In-Unit Piles	Material Cost/Pile	Total Cost/Area
1	3	\$220.00	\$660.00	46	\$5.00	\$230.00
*Cost includes separating firewood					Materials	Sub Total = \$230.00
					Landing Piling	Sub Total = \$660.00
Move-In Allowance	Number of Move-In's	Total Move-In Allowance				
\$1,290.00	1	\$1,290.00			Move-In	Sub Total = \$1,290.00
Grand Total =						\$8,114.00

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Boot Scoot

ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
1A to 1B	19.10	\$22,925
TOTALS	19.10	\$22,925

ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
I1 to I2 and I3 to I4	322.9	\$10,489
TOTALS		\$10,489

SPECIAL PROJECTS:

<u>Description</u>	<u>Cost</u>
Project Road Maintenance	\$5,458
TOTAL	\$5,458

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
Excavator (C330 \$1,406)	\$1,406.00
Dozer (D8 \$1,406)	\$1,406.00
Loader (966 \$778)	\$778.00
Excavator (C315 \$805)	\$805.00
Large Grader (14G \$778)	\$778.00
Vibratory Roller (\$778)	\$778.00
Water Truck 2,500 gal (\$190)	\$190.00
10-12 yd³ dump truck (\$163 x 7)	\$1,141.00
TOTAL	\$7,282.00

GRAND TOTAL **\$46,154.00**

Compiled By: Andrew Arvin CB

Date: 04/01/2016

SALE NAME:	Boot Scoot
ROAD:	1A to 1B, 11 to 12, and 13 to 14
POINTS:	

Method	Acres/amount	x	Rate	=	Cost
Scatter outside of R/W	1.35	x	1337	=	\$1,804.95
		x		=	
		x		=	
		x		=	

\$1,805

	Material	Cy/amount	x	Rate	=	Cost
1A to 1B	Balanced Construction	\$/sta 17.10	x	\$122.00	=	\$2,086.20
	Drift earth <200'	\$/sta 2.00	x	\$190.00	=	\$380.00
	Landing Construction	\$/ldg 1	x	\$389.00	=	\$389.00
	Excavate Ditch w/C330	\$/hr 10.0	x	\$155.00	=	\$1,550.00
11 to 12	Reconstruct ditch w/14G	\$/hr 8.00	x	\$100.00	=	\$800.00
	Scatter ditch material w/C580	\$/hr 8.00	x	\$77.00	=	\$616.00
	Clear culvert inlets/outlets w/laborer	\$/hr 8.00	x	\$40.00	=	\$320.00
	Clear culvert inlets/outlets w/C315	\$/hr 4.00	x	\$101.00	=	\$404.00
13 to 14	Reconstruct ditch w/14G	\$/hr 1.00	x	\$100.00	=	\$100.00
	Scatter ditch material w/C580	\$/hr 1.00	x	\$77.00	=	\$77.00
			x		=	

\$6,722

[illegible]

	Description	Quantity	Rate	Cost
Other/miscellaneous:	Culvert marker	1.00	\$20.00	\$20.00
Culvert stakes & markers:				

\$876

\$9,403

CRUSHED ROCK COST

SALE NAME:	Boot Scoot
PROJECT:	1 and 2
QUARRY:	Knob Point Stockpile

MATERIAL: 3/4"-0" Crushed

DATE: 04/01/2016
BY: Andrew Arvin

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$3.78	/cy
Load:	\$0.54	/cy
Spread:	\$0.96	/cy

Truck type: D12 No. trucks: 5
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 836

CRUSHED ROCK HAUL COSTS

489 cy @ \$5.28 /cy

PIT RUN ROCK COST

SALE NAME:	Boot Scoot
PROJECT:	1 and 2
QUARRY:	Knob Point Quarry

MATERIAL: Pit Run

DATE: 04/01/2016
BY: Andrew Arvin

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$5.46	/cy
Load:	\$0.54	/cy
Spread:	\$0.96	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>7</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 810

PIT RUN ROCK HAUL COSTS 1,390 cy @ \$6.96 /cy

Projects Road Maintenance Cost Summary

Sale: Boot Scoot
Date: 3/16/16
By: Ed Holloran CB

Type	Equipment/Rationale			Hours	Rate	Cost
Final Project Haul Road Maintenance	Grader 14G			20.0	\$100	\$2,000
	Dump Truck 12CY			4.0	\$79	\$316
	FE Loader C966			4.0	\$83	\$332
	Vibratory Roller			18.0	\$77	\$1,386
	Water Truck 2,500 gallon			16.0	\$89	\$1,424
Total						\$5,458

Production Rates

Grader

Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
2.0	4.60	2.3	18.40
2.0	4.60	2.3	18.40

Shingle Mill Road to Knob Point Quarry Road = 3.5 miles

Knob Point Quarry Road = 0.5 miles

Shingle Shack 0+00-30+60 = 0.6 miles

Total Miles = 4.6 Miles

Note: 1A to 1B and portions of Shingle Shack road will be freshly maintained from project work.

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**Boot Scoot
TIMBER CRUISE REPORT
FY 2017**

1. **Sale Area Location:** Areas 1, and 2 are located in portions of Section 5, T7N, R6W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 100%
CSL 0%

Tax Code: 1-02 (100%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Posted Buffers	GTRA	New R/W	Existing R/W	Net Acres	Survey Method
1	Modified Clearcut	101	4	2	1	2	92	GIS
2 (R/W)	Right of Way	1	-		-	-	1	Length x Width
TOTALS		101	4	2	1	2	93	

4. **Cruisers and Cruise Dates:** Area 1A was cruised by Andrew Arvin, and Norah Young on 03/11/16 and 03/16/16. Area 1B was cruised by Norah Young, Bryce Rodgers, and Andrew Arvin on 03/17/16.

5. **Cruise Method and Computation:** Data was collected on Juniper Allegro data collectors, and downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

Area 1 is a modified clearcut unit and was cruised using a stratified sampling method. The population was stratified into two stand types: Stand 1A and Stand 1B.

Stand 1A is a modified clearcut unit and was variable plot cruised using a 40 BAF for conifer and hardwoods. These plots are located on a 6 chain by 3 chain grid, with every other plot measured and graded. A total of 32 plots were sampled, with 16 measured and graded plots, and 16 count plots.

Stand 1B is a modified clearcut unit and was variable plot cruised using a 40 BAF for conifer and hardwoods. These plots are located on a 3 chain by 3 chain grid, with every other plot measured and graded. A total of 40 plots were sampled, with 19 measured and graded plots, and 21 count plots.

Area 2 R/W Right-of-way volume was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Area 1A. Right-of-way totals 1 acre.

AREA	CRUISE	TRACT	TYPE	ACRES
1A, 2RW	BOOTSCOO	AREA1A	TAKE	61
1B	BOOTSCOO	AREA1B	TAKE	35

6. Timber Description:

Area 1 is a modified clearcut unit, approximately 48 to 50 years old, consisting of Sitka spruce, Western hemlock, Douglas-fir, and Red alder. The average Sitka spruce tree size to be harvested is approximately 19 inches DBH, with an average height of 51 feet to a merchantable top (6 inch d.i.b./40% fp). The average Western hemlock tree size to be harvested is approximately 17 inches DBH, with an average height of 51 feet to a merchantable top (6 inch d.i.b./40% fp). The average Douglas-fir tree size to be harvested is approximately 22 inches DBH, with an average height of 67 feet to a merchantable top (6 inch d.i.b./40% fp). The average red alder tree size to be harvested is approximately 13 inches DBH, with an average height of 32 feet to a merchantable top (6 inch d.i.b./40% fp). The average volume per acre to be harvested (net) is 27 MBF.

Area 2 R/W is similar to the timber description mentioned above in Stand 1A. The average volume (net) is 26 MBF/acre.

7. Statistical Analysis and Stand Summary: (See "Statistics" - Type Reports, attached)

Statistics for Stand B.F. volumes

Area	Stand	Estimated CV	Target SE%	Actual CV	Actual SE%
1	1A	50	11	49.7	8.8
1	1B	66	11	38.3	6.1

8. Take Volumes by Species and Log Grades for All Sale Areas by MBF: (See "Species, Sort Grade-Board Feet Volumes (Project)", "Statistics (Project)", and the "Stand Table Summary" attached). Volumes do not include "in-growth." The majority of defect and breakage was taken out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	% D & B	% Sale
Sitka spruce*	19"	1,675	1,044	535	96	<1	66
Western Hemlock	17"	359	226	113	20	-	14
Douglas-fir	22"	318	219	89	10	1.5	13

*Approximately 184 MBF of Sitka spruce is greater than 20" on the scaling end.

Species	DBH	Net Vol.	12"+	10"-11"	8"-9"	6"-7"	% D & B	% Sale
Red Alder	13"	172	23	16	22	111	<1	7

TOTAL NET VOLUME	2,524
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9. Approvals:

Prepared by: Andrew Arvin Date: March 22, 2016

Unit Forester Approval:  Date: 5/12/2016

- 10. Attachments:**
- Cruise Design and Map - 5 pages
 - Volume Report - 1 pages
 - Statistics Report - 6 pages
 - Stand Table Summary - 2 pages
 - Log Stock Tables - 3 pages

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**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Boot Scoot **Area** 1 A

Harvest Type: CC PC CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 95 **Estimated CV%** 50 Net BF /Acre **SE% Objective** 11 Net BF /Acre

Planned Sale Volume: 2.650 MMBF **Estimated Sale Area Value/Acre:** \$8,368

- A. Cruise Goals:** (a) Grade minimum 90 conifer and 20 hardwood trees:
(b) Sample 33 cruise plots; (c) Other goals Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters.

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 (Full point; Half point) (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) Due East/West - 90° / 270°
Cruise Line Spacing 6 chains 396 feet
Cruise Plot Spacing 3 chains 198 feet
Grade/Count Ratio 1:1
- 2. ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir Hemlock
Spruce True Fir Cedar Hardwood

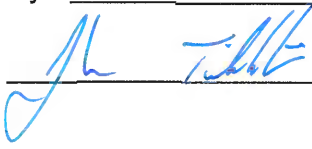
C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8 " for conifers and 8" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark (DOB) for conifer is 7", 7" for hardwoods or 40 % of DOB at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of DOB @ FP for trees > 18" DBH.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

Revised August, 2002

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths in conifer and 30' and 40' for hardwoods (8'/10' multiples), whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.
6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.) B. Sort: Use code "1" (Domestic). C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: Either Camp Run or Grade - #1 Sawmill = 12" + scaling diameter; #2 Sawmill = 10" and 11"; #3 Sawmill = 8" and 9", and #4 Sawmill = 6" and 7".
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.
9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Edward M. Holloran

Approved by:  Date: 4/25/16

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Boot Scoot **Area** 1 B

Harvest Type: CC PC CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 95 **Estimated CV%** 66 Net BF/Acre **SE% Objective** 11 Net BF/Acre

Planned Sale Volume: 2,650 MMBF **Estimated Sale Area Value/Acre:** \$8,368

A. Cruise Goals: (a) Grade minimum 70 conifer and 16 hardwood trees:
(b) Sample 41 cruise plots; (c) Other goals Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters.

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 (Full point) Half point) (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) Due East/West - 90° / 270°
Cruise Line Spacing 3 chains 198 feet
Cruise Plot Spacing 3 chains 198 feet
Grade/Count Ratio 1:1
2. ITS (Sample Tree) Cruises: Measure-grade ratios: D-fir Hemlock
Spruce True Fir Cedar Hardwood

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark (DOB) for conifer is 7", 7" for hardwoods or 40 % of DOB at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of DOB @ FP for trees > 18" DBH.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

Revised August, 2002

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths in conifer and 30' and 40' for hardwoods (8'/10' multiples), whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: Either Camp Run or Grade - #1 Sawmill = 12" + scaling diameter; #2 Sawmill = 10" and 11"; #3 Sawmill = 8" and 9", and #4 Sawmill = 6" and 7".

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Edward M. Holloran

Approved by: [Signature] Date: 4/25/16

BOOT SCOOT FY2017

Portions of Section 5,
T7N, R6W, W.M.,
Clatsop County, Oregon.

Area 1 (MC) = 95 Acres
Total MC Acres = 95

Cruise Plots

Area 1A	17 Grade
	16 Count
Total	33 Plots

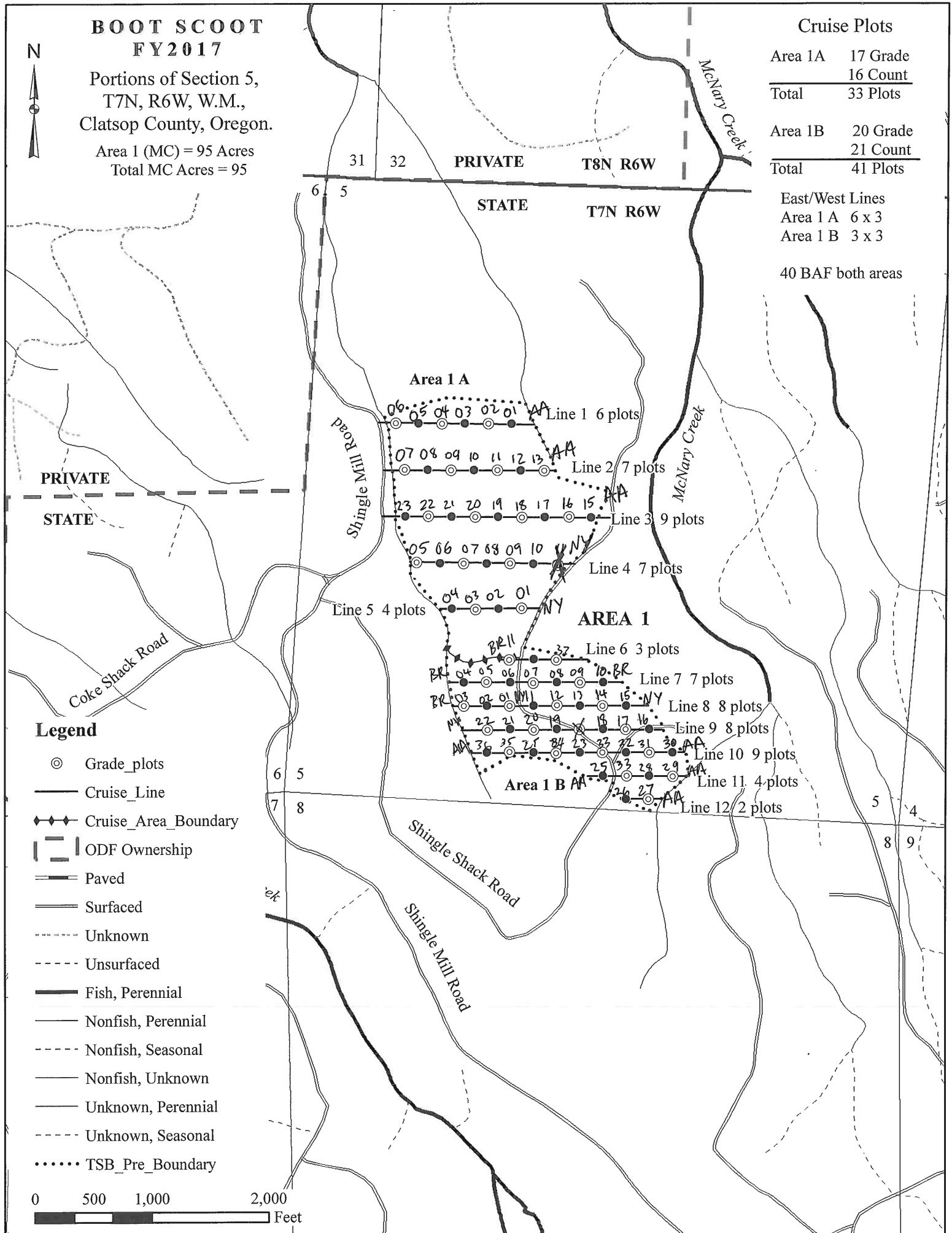
Area 1B	20 Grade
	21 Count
Total	41 Plots

East/West Lines

Area 1 A 6 x 3

Area 1 B 3 x 3

40 BAF both areas



TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																
T07N R06W S05 TyTAKE 58.00 T07N R06W S05 TyTAKE 34.00 T07N R06W S05 TyRW 1.00				Project: BOOTSCOO Acres 93.00										Page 1 Date 5/12/2016 Time 8:35:32AM						
S Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
			Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
A	DOCU														13	10		0.00	15.4	
A	DO1S	13		250	250	23			100		71	29			22	14	155	1.64	1.6	
A	DO2S	9		175	175	16		100			50	50			24	10	91	1.12	1.9	
A	DO3S	13		235	235	22		100			100				20	8	43	0.69	5.5	
A	DO4S	65	1.2	1,204	1,190	111	1	99			19	11	7	63	30	6	45	0.58	26.2	
A Totals		7	.8	1,864	1,849	172	0	86	13		39	16	5	41	23	8	36	0.55	50.7	
S	DOCU														7	12		0.00	12.0	
S	DO2S	62	.3	11,261	11,227	1,044			61	39		9	32	60	35	15	324	2.29	34.7	
S	DO3S	32	.2	5,765	5,752	535		77	16	7	2	15	36	48	34	8	94	0.97	61.2	
S	DO4S	6		1,036	1,036	96		100			64	33	4		20	7	30	0.58	35.0	
S Totals		66	.3	18,063	18,015	1,675		30	43	26	4	12	31	52	28	10	126	1.27	142.9	
H	DOCU														3	21		0.00	.4	
H	DO2S	62		2,426	2,426	226			53	47	3	2	23	71	36	15	340	2.37	7.1	
H	DO3S	32		1,213	1,213	113		88	7	5	3	5	41	52	35	7	73	0.72	16.6	
H	DO4S	6		214	214	20		100			77	5	18		20	6	28	0.51	7.7	
H Totals		14		3,853	3,853	359 358		33	35	31	7	3	29	61	31	9	121	1.12	31.9	
D	DOCU														4	14		0.00	2.0	
D	DO2S	68	1.8	2,401	2,358	219			71	29	2	3	9	86	37	14	278	2.07	8.5	
D	DO3S	28	1.0	971	961	89		94	6			17	34	48	33	8	88	0.89	10.9	
D	DO4S	4		111	111	10	9	91			71	29			21	6	24	0.52	4.6	
D Totals		13	1.5	3,483	3,430	319 319	0	29	51	20	4	8	16	72	30	10	132	1.31	26.0	
Totals			0.4	27,262	27,148	2,525	0	34	41	24	7	10	27	55	28	9	108	1.13	251.5	

2,524

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT		BOOTSCOO		DATE 5/12/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	05	1A	00MC	58.00	32	212	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL				32	212	6.6				
CRUISE				16	106	6.6	11,230	.9		
DBH COUNT										
REFOREST										
COUNT				16	106	6.6				
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
S SPRUCE		67	113.5	17.5	49	45.4	190.0	21,428	21,389	6,179
R ALDER		25	57.1	13.0	32	14.6	52.5	2,497	2,474	870
WHEMLOCK		10	20.3	11.6	43	4.4	15.0	1,420	1,420	422
SNAG		2	1.7	19.9	26	0.8	3.8			
DOUG FIR		1	.4	34.0	84	0.4	2.5	404	400	98
SPRUCELV		1	.7	18.0	52	0.3	1.3	141	141	36
TOTAL		106	193.6	15.8	43	66.6	265.0	25,892	25,825	7,606
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	
S SPRUCE		82.3	10.0	258	287	316				
R ALDER		73.7	15.0	41	48	56				
WHEMLOCK		83.5	27.8	76	105	134				
SNAG										
DOUG FIR										
SPRUCELV										
TOTAL		108.5	10.5	191	214	236	470	117	52	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		64.4	11.4	101	113	126				
R ALDER		139.7	24.7	43	57	71				
WHEMLOCK		291.8	51.5	10	20	31				
SNAG		317.0	56.0	1	2	3				
DOUG FIR		393.5	69.5	0	0	1				
SPRUCELV		565.7	99.9	0	1	1				
TOTAL		49.9	8.8	177	194	211	99	25	11	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		58.3	10.3	170	190	210				
R ALDER		133.3	23.5	40	53	65				
WHEMLOCK		222.1	39.2	9	15	21				
SNAG		315.9	55.8	2	4	6				
DOUG FIR		393.5	69.5	1	3	4				
SPRUCELV		565.7	99.9	0	1	2				
TOTAL		35.3	6.2	248	265	282	50	12	6	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		61.0	10.8	19,083	21,389	23,694				
R ALDER		152.6	26.9	1,808	2,474	3,141				
WHEMLOCK		221.6	39.1	865	1,420	1,976				
SNAG										

TC TSTATS				STATISTICS				PAGE	2
				PROJECT	BOOTSCOO			DATE	5/12/2016
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	05	1A	00MC	58.00	32	212	1	W
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		393.5	69.5	122	400	679			
SPRUCELV		565.7	99.9	0	141	283			
TOTAL		49.7	8.8	23,560	25,825	28,091	99	25	11

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	BOOTSCOO			DATE	5/12/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
07N	06W	05	1B	00MC	34.00	40	251	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL			40	251	6.3						
CRUISE			20	114	5.7	3,229		3.5			
DBH COUNT											
REFOREST											
COUNT			20	135	6.8						
BLANKS											
100 %											
STAND SUMMARY											
SAMPLE			TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES			/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
S SPRUCE			44	28.6	24.2	63	18.5	91.0	12,218	12,158	3,362
DOUG FIR			32	32.4	21.2	66	17.2	79.0	8,825	8,688	2,615
WHEMLOCK			28	23.7	22.3	64	13.6	64.0	8,073	8,073	2,291
R ALDER			4	6.5	16.8	43	2.4	10.0	765	765	261
SNAG			3	2.0	19.2	38	0.9	4.0			
SPRUCELV			1	.1	35.0	72	0.2	1.0	145	135	39
NOB FIR			1	1.5	11.0	25	0.3	1.0	45	45	17
DOUGLEAV			1	.2	31.0	72	0.2	1.0	134	132	31
TOTAL			114	95.0	22.0	62	53.5	251.0	30,205	29,995	8,615
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	
S SPRUCE		69.7		10.5		529		591		653	
DOUG FIR		48.3		8.5		292		319		346	
WHEMLOCK		52.9		10.2		383		426		469	
R ALDER		60.0		34.3		95		145		195	
SNAG											
SPRUCELV											
NOB FIR											
DOUGLEAV											
TOTAL		74.6		7.0		411		441		472	
CL: 68.1 %		COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%		S.E.%		LOW		AVG		HIGH	
										5	
										10	
										15	
S SPRUCE		78.2		12.4		25		29		32	
DOUG FIR		96.0		15.2		27		32		37	
WHEMLOCK		134.6		21.3		19		24		29	
R ALDER		329.7		52.1		3		6		10	
SNAG		352.3		55.7		1		2		3	
SPRUCELV		632.5		99.9		0		0		0	
NOB FIR		632.5		99.9		0		2		3	
DOUGLEAV		632.5		99.9		0		0		0	
TOTAL		42.5		6.7		89		95		101	
CL: 68.1 %		COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%		S.E.%		LOW		AVG		HIGH	
										5	
										10	
										15	
S SPRUCE		72.5		11.4		81		91		101	
DOUG FIR		92.1		14.5		68		79		90	
WHEMLOCK		127.2		20.1		51		64		77	
R ALDER		323.4		51.1		5		10		15	
SNAG		303.8		48.0		2		4		6	
SPRUCELV		632.5		99.9		0		1		2	
NOB FIR		632.5		99.9		0		1		2	
DOUGLEAV		632.5		99.9		0		1		2	
TOTAL		35.0		5.5		237		251		265	
										</	

TC TSTATS				STATISTICS				PAGE	2
				PROJECT	BOOTSCOO			DATE	5/12/2016
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	05	1B	00MC	34.00	40	251	1	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
S SPRUCE	75.5	11.9		10,708	12,158	13,608			
DOUG FIR	91.2	14.4		7,436	8,688	9,940			
WHEMLOCK	127.0	20.1		6,453	8,073	9,694			
R ALDER	325.4	51.4		372	765	1,158			
SNAG									
SPRUCELV	632.5	99.9		0	135	269			
NOB FIR	632.5	99.9		0	45	91			
DOUGLEAV	632.5	99.9		0	132	263			
TOTAL	38.3	6.1		28,180	29,995	31,811	59	15	7

TC PSTATS				PROJECT STATISTICS				PAGE 1					
				PROJECT		BOOTSCO		DATE 5/12/2016					
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt				
07N	06	05	1A	TAKE	93.00	104	664	1	W				
07N	06W	05	1B	TAKE									
07N	06W	05	2 RW	RW									
				TREES	ESTIMATED	PERCENT							
				PER PLOT	TOTAL	SAMPLE							
					TREES	TREES							
TOTAL				104	664	6.4							
CRUISE				51	317	6.2	14,380	2.2					
DBH COUNT													
REFOREST													
COUNT				53	347	6.5							
BLANKS													
100 %													
STAND SUMMARY													
SAMPLE				TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
TREES				/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
S SPRUCE				179	82.4	18.5	51	35.8	153.8	18,063	18,015	5,149	5,149
R ALDER				54	38.6	13.3	32	10.2	37.0	1,864	1,849	647	647
WHEMLOCK				48	21.5	16.7	51	8.0	32.9	3,853	3,853	1,105	1,105
DOUG FIR				34	12.1	21.5	67	6.6	30.5	3,483	3,430	1,018	1,018
SNAG				2	.0	19.9	26	0.0	.0				
TOTAL				317	154.6	17.4	48	61.0	254.2	27,262	27,148	7,920	7,920
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				
S SPRUCE			87.4	6.5	337	361	385						
R ALDER			85.1	11.6	49	56	62						
WHEMLOCK			82.2	11.9	258	292	327						
DOUG FIR			61.9	10.6	321	359	398						
SNAG													
TOTAL			97.6	5.5	280	296	312	380	95	42			
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.				
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15				
S SPRUCE			156.5	15.3	70	82	95						
R ALDER			268.0	26.3	28	39	49						
WHEMLOCK			326.1	31.9	15	22	28						
DOUG FIR			194.7	19.1	10	12	14						
SNAG			585.0	57.3	0	0	0						
TOTAL			125.1	12.3	136	155	174	625	156	69			
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.				
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15				
S SPRUCE			132.9	13.0	134	154	174						
R ALDER			250.7	24.6	28	37	46						
WHEMLOCK			198.6	19.5	27	33	39						
DOUG FIR			185.4	18.2	25	30	36						
SNAG			583.0	57.1	0	0	0						
TOTAL			92.2	9.0	231	254	277	339	85	38			
CL	68.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.				
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15				
S SPRUCE			129.9	12.7	15,722	18,015	20,308						
R ALDER			266.6	26.1	1,366	1,849	2,332						
WHEMLOCK			198.9	19.5	3,102	3,853	4,603						
DOUG FIR			182.9	17.9	2,815	3,430	4,045						
SNAG													
TOTAL			94.4	9.2	24,638	27,148	29,657	355	89	39			

TC PSTATS				PROJECT STATISTICS				PAGE	2
				PROJECT BOOTSCOO				DATE	5/12/2016
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06	05	1A	TAKE	93.00	104	664	1	W
07N	06W	05	1B	TAKE					
07N	06W	05	2 RW	RW					

TC		PSTNDSUM		Stand Table Summary										Page Date:		1 5/12/2016		
T07N R06W S05 TyTAKE 58.00 T07N R06W S05 TyTAKE 34.00 T07N R06W S05 TyRW 1.00				Project Acres				BOOTSCOO 93.00				Time: Grown Year:				8:35:33AM		
S Spc	T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net		Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Totals		
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.	Tons	Cunits				MBF		
S		10	4	84	31	6.596	3.60	6.60	8.5	30.0	1.19	56	198		110	52	18	
S		11	4	85	43	5.451	3.60	5.45	14.0	40.0	1.31	76	218		122	71	20	
S		12	6	84	45	6.871	5.40	6.87	16.0	43.3	1.79	110	298		166	102	28	
S		13	3	84	51	2.772	2.55	2.77	21.5	54.1	.90	60	150		84	55	14	
S		14	8	86	56	6.731	7.20	8.41	22.0	60.0	3.03	185	505		282	172	47	
S		15	6	87	67	4.397	5.40	5.86	27.8	82.5	2.90	163	484		270	151	45	
S		16	9	86	76	5.695	7.95	10.85	26.0	89.0	5.79	282	965		539	262	90	
S		17	8	86	70	4.383	6.91	7.81	29.5	95.7	4.48	231	747		417	214	69	
S		18	14	85	61	6.553	11.58	10.64	30.4	87.9	5.61	323	935		522	301	87	
S		19	9	87	71	4.038	7.95	8.08	34.1	112.9	5.47	276	912		509	256	85	
S		20	9	86	72	3.645	7.95	7.29	36.2	123.5	5.40	264	900		502	245	84	
S		21	15	87	76	5.549	13.35	11.10	42.3	156.2	10.40	469	1,734		968	436	161	
S		22	10	86	79	3.299	8.71	6.60	44.1	164.1	6.51	291	1,083		606	270	101	
S		23	11	85	77	3.379	9.75	6.14	53.3	184.6	6.80	327	1,133		632	304	105	
S		24	7	83	75	1.867	5.87	3.73	54.9	193.3	4.33	205	722		403	191	67	
S		25	21	85	83	5.246	17.88	10.80	62.5	224.0	14.53	675	2,419	1,351		627	225	
S		26	7	86	86	1.591	5.87	3.18	71.1	294.0	5.61	226	935		522	210	87	
S		27	5	84	94	1.023	4.07	1.86	83.2	325.8	3.65	154	605		340	144	56	
S		28	2	84	89	.354	1.51	.71	87.3	327.5	1.39	62	232		129	57	22	
S		29	4	83	93	.659	3.02	1.32	95.7	355.0	2.86	126	468		266	117	44	
S		30	1	82	87	.154	.76	.31	94.0	335.0	.62	29	103		58	27	10	
S		31	6	84	97	.920	4.82	1.70	117.9	456.2	4.82	200	774		448	186	72	
S		32	4	84	107	.644	3.60	1.61	104.8	454.0	4.39	169	731		408	157	68	
S		33	1	86	89	.127	.76	.25	121.0	490.0	.75	31	125		70	29	12	
S		34	2	82	95	.240	1.51	.48	131.5	500.0	1.44	63	240		134	59	22	
S		37	1	78	93	.101	.76	.20	151.0	555.0	.67	31	112		63	28	10	
S		40	1	86	99	.087	.76	.17	192.5	850.0	.88	33	147		82	31	14	
S		47	1	85	97	.063	.76	.13	266.0	1125.0	.85	33	141		79	31	13	
S		Totals	179	85	64	82.436	153.82	130.91	39.3	137.6	108.38	5,149	18,015		10,079	4,789	1,675	
H		8	2	82	84	2.726	.95	2.73	5.0	20.0	.38	14	55		35	13	5	
H		10	4	84	84	3.490	1.90	3.49	17.0	60.0	1.47	59	209		136	55	19	
H		11	4	86	84	2.884	1.90	4.33	15.0	50.0	1.51	65	216		141	60	20	
H		12	2	83	23	1.212	.95	1.21	10.0	30.0	.25	12	36		24	11	3	
H		13	2	85	58	1.032	.95	1.03	24.0	60.0	.43	25	62		40	23	6	
H		14	1	82	53	.782	.84	.78	25.0	60.0	.33	20	47		31	18	4	
H		16	2	86	71	.682	.95	1.36	24.0	85.0	.81	33	116		75	30	11	
H		17	3	84	67	1.590	2.51	2.12	35.0	100.0	1.48	74	212		138	69	20	
H		18	1	86	80	.473	.84	.95	31.0	105.0	.70	29	99		65	27	9	
H		19	1	86	64	.424	.84	.85	29.5	90.0	.53	25	76		50	23	7	
H		20	3	88	70	.819	1.79	1.64	35.5	124.0	1.42	58	203		132	54	19	
H		21	3	86	77	.743	1.79	1.49	41.0	140.0	1.46	61	208		135	57	19	
H		22	2	86	76	.633	1.67	1.27	46.0	150.0	1.33	58	190		124	54	18	
H		23	2	86	91	.579	1.67	1.16	57.5	212.5	1.72	67	246		160	62	23	
H		24	4	85	89	1.064	3.34	2.13	62.9	228.8	3.41	134	487		317	124	45	
H		25	1	89	87	.245	.84	.49	66.0	260.0	.89	32	127		83	30	12	
H		26	2	86	89	.453	1.67	.91	72.5	265.0	1.68	66	240		156	61	22	
H		27	3	83	82	.630	2.51	1.26	68.7	248.3	2.19	87	313		204	81	29	
H		28	3	83	83	.586	2.51	1.17	77.3	270.0	2.22	91	317		206	84	29	
H		29	1	80	99	.182	.84	.36	93.0	325.0	.83	34	118		77	32	11	
H		31	1	85	87	.159	.84	.32	99.5	405.0	.90	32	129		84	30	12	
H		34	1	82	94	.133	.84	.40	78.0	363.3	1.01	31	144		94	29	13	
H		Totals	48	84	76	21.522	32.91	31.43	35.2	122.6	26.97	1,105	3,853		2,508	1,028	358	

TC PSTNDSUM		Stand Table Summary											Page 2			
													Date:	5/12/2016		
T07N R06W S05 TyTAKE 58.00					Project BOOTSCOO					Time: 8:35:33AM						
T07N R06W S05 TyTAKE 34.00					Acres 93.00					Grown Year:						
T07N R06W S05 TyRW 1.00																
S Spec	T	Tot						Average Log		Net		Net		Totals		
		Sample DBH	FF Trees	Av 16' Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF	
D		15	1	80 68	.735	.90	1.47	16.0	55.0	.53	24	81	49	22	8	
D		16	2	85 67	1.293	1.81	2.59	17.3	60.0	1.01	45	155	94	41	14	
D		17	1	85 85	.573	.90	1.15	26.5	95.0	.71	30	109	66	28	10	
D		18	2	86 86	1.021	1.81	2.04	29.8	100.0	1.33	61	204	123	57	19	
D		19	2	84 84	.917	1.81	1.83	29.8	95.0	1.13	55	174	105	51	16	
D		20	5	86 91	2.069	4.51	4.14	38.9	125.0	3.44	161	517	320	150	48	
D		21	4	86 84	1.501	3.61	3.00	40.9	127.5	2.56	123	383	238	114	36	
D		22	1	83 87	.342	.90	.68	46.5	135.0	.60	32	92	56	30	9	
D		23	1	80 82	.313	.90	.63	45.5	145.0	.59	28	91	55	26	8	
D		24	4	86 90	1.149	3.61	2.30	56.6	200.0	2.99	130	460	278	121	43	
D		25	2	83 88	.530	1.81	1.06	58.2	187.5	1.29	62	199	120	57	18	
D		26	2	84 89	.490	1.81	.98	62.5	212.5	1.45	61	208	135	57	19	
D		27	1	86 89	.227	.90	.45	71.5	245.0	.77	32	111	71	30	10	
D		28	1	86 92	.211	.90	.42	80.0	310.0	.85	34	131	79	31	12	
D		32	2	82 81	.323	1.81	.48	102.7	333.3	1.08	50	162	101	46	15	
D		34	2	85 105	.252	1.59	.50	124.0	505.0	1.67	62	254	155	58	24	
D		35	1	83 80	.135	.90	.27	108.0	370.0	.65	29	100	60	27	9	
D		Totals	34	85 84	12.080	30.47	24.00	42.4	142.9	22.64	1,018	3,430	2,105	947	319	
A		10	4	86 62	4.885	2.66	2.44	17.0	60.0	.92	42	147	85	39	14	
A		11	8	87 48	8.075	5.33	6.06	16.3	53.3	2.02	99	323	188	92	30	
A		12	8	87 28	6.785	5.33	5.09	11.3	30.0	.95	58	153	89	54	14	
A		13	8	87 44	5.781	5.33	5.78	17.5	47.5	1.81	101	275	168	94	26	
A		14	9	85 54	5.840	6.24	7.09	19.2	50.7	2.24	136	359	209	126	33	
A		15	3	86 47	1.830	2.25	1.83	21.9	52.2	.60	40	96	56	37	9	
A		16	2	86 21	.954	1.33	.95	17.0	40.0	.24	16	38	22	15	4	
A		17	4	86 49	1.690	2.66	2.54	18.7	60.0	.95	47	152	88	44	14	
A		19	4	86 40	1.353	2.66	1.35	35.5	90.0	.76	48	122	71	45	11	
A		20	3	86 45	1.030	2.25	1.45	24.4	73.4	.66	35	106	62	33	10	
A		22	1	86 57	.346	.91	.69	36.5	115.0	.50	25	80	46	24	7	
A		Totals	54	86 45	38.571	36.96	35.27	18.4	52.4	11.65	647	1,849	1,083	602	172	
SN		19	1	83 35	.010	.02										
SN		21	1	89 18	.008	.02										
SN		Totals	2	86 27	.019	.04										
Totals			317	85 63	154.627	254.20	221.61	35.7	122.5	169.63	7,920	27,148	15,776	7,366	2,525	

Log Stock Table - MBF

T07N R06W S05 TyTAKE	58.00
T07N R06W S05 TyTAKE	34.00
T07N R06W S05 TyRW	1.00

Project: **BOOTSCOO**
Acres **34.00**

Page **1**
Date **5/12/2016**
Time **8:35:32AM**

S T Spp	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+
A	DO	1S	20	16		16	9.6					9	7						
A	DO	1S	30	7		7	3.9						7						
A	DO	2S	20	8		8	4.7					8							
A	DO	2S	30	8		8	4.8					8							
A	DO	3S	18	4		4	2.1				4								
A	DO	3S	20	18		18	10.6				18								
A	DO	4S	16	9		9	5.4			5	5								
A	DO	4S	18	1		1	.7			1									
A	DO	4S	20	10		10	6.1		1	10									
A	DO	4S	24	2		2	1.4			2									
A	DO	4S	26	6		6	3.7			6									
A	DO	4S	30	3		3	1.8			3									
A	DO	4S	34	8		8	4.7			8									
A	DO	4S	40	71	1.9	70	40.5			70									
A	Totals			173		172	6.8		1	105	27	16	9	14					
S	DO	2S	22	4		4	.3							4					
S	DO	2S	24	60		60	3.6							44	16				
S	DO	2S	30	27		27	1.6					27							
S	DO	2S	32	330		330	19.7					49	151	130					
S	DO	2S	36	7		7	.4							7					
S	DO	2S	40	619		616	36.7					79	123	249	142	12	11		
S	DO	3S	16	2		2	.1					2							
S	DO	3S	18	3		3	.2			3									
S	DO	3S	20	3		3	.2				3								
S	DO	3S	24	4		4	.2					4							
S	DO	3S	26	29		29	1.7						12		16				
S	DO	3S	28	7		7	.4				7								
S	DO	3S	30	38		38	2.2			13	12	1	11						
S	DO	3S	32	188		188	11.2			72	32	74			10				
S	DO	3S	34	5		5	.3			4			2						
S	DO	3S	36	47		47	2.8			35	2	4	6						
S	DO	3S	38	11		11	.6			11									
S	DO	3S	40	199		197	11.8			47	16	68	2		46	19			
S	DO	4S	12	1		1	.1			1									
S	DO	4S	16	34		34	2.1			22	12								

Log Stock Table - MBF

T07N R06W S05 TyTAKE	58.00
T07N R06W S05 TyTAKE	34.00
T07N R06W S05 TyRW	1.00

Project: **BOOTSCOO**
Acres **34.00**

Page 2
Date 5/12/2016
Time 8:35:32AM

S T Spp	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+
S	DO	4S	18	3		3	.2			3									
S	DO	4S	20	23		23	1.3			14	7	2							
S	DO	4S	24	20		20	1.2			17	3								
S	DO	4S	30	12		12	.7			12									
S	DO	4S	32	3		3	.2			3									
S	Totals			1,680		1,675	66.4			258	94	155	188	317	479	161	12	11	
H	DO	2S	20	7		7	2.0									7			
H	DO	2S	24	5		5	1.5							5					
H	DO	2S	32	53		53	14.8					21		24	8				
H	DO	2S	40	160		160	44.7					7		37	106	10			
H	DO	3S	18	3		3	.9			3									
H	DO	3S	28	1		1	.4				1								
H	DO	3S	30	4		4	1.1			1	1	2							
H	DO	3S	32	46		46	12.8			9	20	9	8						
H	DO	3S	36	1		1	.4				1								
H	DO	3S	38	4		4	1.2			4									
H	DO	3S	40	53		53	14.7			37	10			6					
H	DO	4S	16	7		7	1.8			5	1	1							
H	DO	4S	20	9		9	2.4			7	1								
H	DO	4S	30	1		1	.3			1									
H	DO	4S	31	1		1	.3				1								
H	DO	4S	32	2		2	.7			2									
H	Totals			358		358	14.2			70	37	11	36	61	125	10	7		
D	DO	2S	16	5		5	1.5					5							
D	DO	2S	24	7	9.4	7	2.1							7					
D	DO	2S	32	20		20	6.3					13		7					
D	DO	2S	40	191	1.7	188	58.8					59		63	37	28			
D	DO	3S	24	6		6	1.9					6							
D	DO	3S	30	9		9	2.9			2	7								
D	DO	3S	32	31		31	9.6			20	3	7							
D	DO	3S	40	44	2.1	43	13.5			2	9	26		5					
D	DO	4S	18	3		3	1.0			3									
D	DO	4S	20	4		4	1.3		1	3									
D	DO	4S	28	1		1	.3			1									
D	DO	4S	30	2		2	.6			2									

TC PLOGSTVB				Log Stock Table - MBF															
T07N R06W S05 TyTAKE58.00 T07N R06W S05 TyTAKE34.00 T07N R06W S05 TyRW1.00				Project: BOOTSCOO Acres34.00												Page3 Date5/12/2016 Time8:35:32AM			
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	6-78-9		10-11	12-13	14-1516-19		20-23	24-29	30-39	40+
D	Totals			324	1.5	319	12.6	1		34	20	40	78	75	44	28			
Total	All Species			2,535		2,525	100.0	2		468	178	222	312	467	648	200	19	11	

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-17-08

BOOT SCOOT

PORTIONS OF SECTION 5, T7N, R6W,
W.M., CLATSOP COUNTY, OREGON

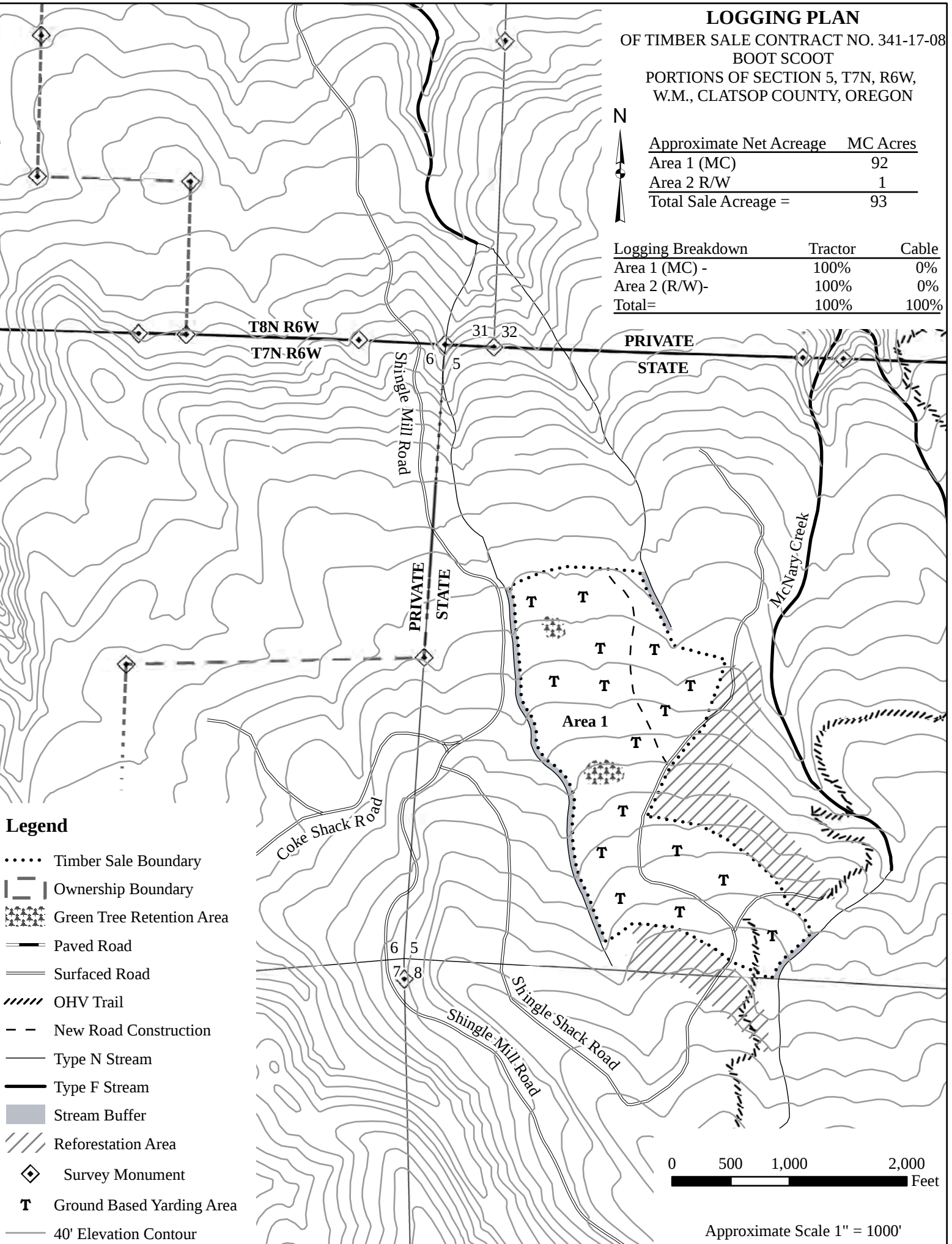


Approximate Net Acreage	MC Acres
Area 1 (MC)	92
Area 2 R/W	1
Total Sale Acreage =	93

Logging Breakdown	Tractor	Cable
Area 1 (MC) -	100%	0%
Area 2 (R/W)-	100%	0%
Total=	100%	100%

Legend

- Timber Sale Boundary
- Ownership Boundary
- Green Tree Retention Area
- Paved Road
- Surfaced Road
- OHV Trail
- - New Road Construction
- Type N Stream
- Type F Stream
- Stream Buffer
- Reforestation Area
- Survey Monument
- T Ground Based Yarding Area
- 40' Elevation Contour



Approximate Scale 1" = 1000'