



"STAND FOR THE FOREST"

Timber Sale Appraisal Knob Point Combination

Sale AT-341-2015-54-

District: Astoria

Date: April 20, 2015

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,321,653.69	\$34,121.84	\$1,355,775.53
		Project Work:	(\$37,826.00)
		Advertised Value:	\$1,317,949.53



Timber Sale Appraisal Knob Point Combination

Sale AT-341-2015-54-

District: Astoria

Date: April 20, 2015

Timber Description

Location: Portions of Sections 8, 18, and 19, T7N, R6W, and portions of Section 13, T7N, R7W, W.M., Clatsop County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	17	0	97
Western Hemlock / Fir	20	0	95
Sitka Spruce	15	0	95
Alder (Red)	13	0	95

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	1,880	837	189	0	2,906
Western Hemlock / Fir	711	218	30	0	959
Sitka Spruce	0	31	16	0	47
Alder (Red)	0	0	0	101	101
Total	2,591	1,086	235	101	4,013

Comments: Pond Values Used: 1st Quarter Calendar Year 2015.

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:
 $\$737.09/\text{MBF} = \$950.00/\text{MBF} - \$212.91/\text{MBF}$

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

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

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

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

Additional Logging Costs:

Branding and Painting: $\$1/\text{MBF} \times 4,013 = \$4,013$

Slash & Landing Piling (includes Move-in and Pile Materials) = \$6,065 (see attached appraisal)

End haul slash in Area 2:

Dump Truck - 8 hours $\times$ $\$79/\text{hr} = \632

Log Loader - 4 hours $\times$ $\$129/\text{hr} = \516

TOTAL Other Costs (with Profit & Risk to be added) = \$11,226

Other Costs (No Profit & Risk added):

Machine Washing for Invasive Weed Compliance = \$2,000

TOTAL Other Costs (No Profit & Risk added) = \$2,000



Timber Sale Appraisal Knob Point Combination

Sale AT-341-2015-54-

District: Astoria

Date: April 20, 2015

Logging Conditions

Combination#: 1

Douglas - Fir	40.00%
Western Hemlock / Fir	40.00%
Sitka Spruce	40.00%
Alder (Red)	40.00%

Logging System: Cable: Small Tower <=40
Process: Stroke Delimber

yarding distance: Medium (800 ft)
downhill yarding: No

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

loads / day: 10
bd. ft / load: 4200

cost / mbf: \$133.33

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

Combination#: 2

Douglas - Fir	34.00%
Western Hemlock / Fir	34.00%
Sitka Spruce	34.00%
Alder (Red)	34.00%

Logging System: Shovel
Process: Feller Buncher

yarding distance: Medium (800 ft)
downhill yarding: No

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

loads / day: 9
bd. ft / load: 4200

cost / mbf: \$93.60

machines: Feller Buncher w/ Delimber

Combination#: 3

Douglas - Fir	26.00%
Western Hemlock / Fir	26.00%
Sitka Spruce	26.00%
Alder (Red)	26.00%

Logging System: Track Skidder
Process: Manual Falling/Delimbing

yarding distance: Medium (800 ft)
downhill yarding: No

tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

loads / day: 8
bd. ft / load: 4300

cost / mbf: \$129.51

machines: Log Loader (B)
Track Skidder



Timber Sale Appraisal Knob Point Combination

Sale AT-341-2015-54-

District: Astoria

Date: April 20, 2015

Logging Costs

Operating Seasons: 2.00	Profit Risk: 8%
Project Costs: \$37,826.00	Other Costs (P/R): \$11,226.00
Slash Disposal: \$0.00	Other Costs: \$2,000.00

Miles of Road

Road Maintenance: \$5.78

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.3
Western Hemlock / Fir	\$0.00	3.0	4.0
Sitka Spruce	\$0.00	3.0	3.8
Alder (Red)	\$0.00	2.0	3.8



Timber Sale Appraisal Knob Point Combination

Sale AT-341-2015-54-

District: Astoria

Date: April 20, 2015

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$118.83	\$5.95	\$2.19	\$62.28	\$2.80	\$15.36	\$0.00	\$5.00	\$0.50	\$212.91
Western Hemlock / Fir									
\$118.83	\$6.07	\$2.19	\$68.25	\$2.80	\$15.85	\$0.00	\$5.00	\$0.50	\$219.49
Sitka Spruce									
\$118.83	\$6.07	\$2.19	\$71.84	\$2.80	\$16.14	\$0.00	\$5.00	\$0.50	\$223.37
Alder (Red)									
\$118.83	\$6.07	\$2.19	\$107.76	\$2.80	\$19.01	\$0.00	\$5.00	\$0.50	\$262.16

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$577.49	\$364.58	\$0.00
Western Hemlock / Fir	\$0.00	\$481.62	\$262.13	\$0.00
Sitka Spruce	\$0.00	\$453.19	\$229.82	\$0.00
Alder (Red)	\$0.00	\$600.00	\$337.84	\$0.00



Timber Sale Appraisal Knob Point Combination

Sale AT-341-2015-54-

District: Astoria

Date: April 20, 2015

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	2,906	\$364.58	\$1,059,469.48
Western Hemlock / Fir	959	\$262.13	\$251,382.67
Sitka Spruce	47	\$229.82	\$10,801.54
Alder (Red)	101	\$337.84	\$34,121.84

Gross Timber Sale Value

Recovery: \$1,355,775.53

Prepared By: Bryce Rodgers

Phone: 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Knob Point Combination
Date: March 19, 2015
By: Bryce Rodgers

MBF: 4,013
\$\$/MBF: \$5.78

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations Entries: 1	Grader 14G	\$778	1	17	\$100	\$2,478
	Dump Truck 12CY	\$163	1	4	\$79	\$479
	FE Loader C966	\$778	1	1	\$77	\$855
Final Road Maintenance	Grader 14G	\$778	1	72	\$100	\$7,978
	Dump Truck 12CY	\$163	2	16	\$79	\$1,590
	FE Loader C966	\$778	1	4	\$83	\$1,110
	Vibratory Roller	\$778	1	72	\$77	\$6,322
	Water Truck 2,500 gallon Labor	\$190	1	20	\$89	\$1,970
				10	\$40	\$400
Total						\$23,182

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	3.0	5.00	1.7	17

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	10.8	7.2	72
Vibratory Roller	1.5	10.8	7.2	72

Maintenance calculations were determined as follows:

Shingle Mill Road, Big Nic Road, and Spurs in Area 4.

TOTAL: 10.8 Miles

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	1.0	3.0
Hemlock/Fir	B	1.5	4.5
Hemlock/Spruce	C	2.0	6.0
Hemlock	D	2.0	6.0
Conifer/Hardwood	E	1.5	4.5
Whole Tree Yarding	F	0.5	0.5

Date: 03/18/2015

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	F	4.0	2	\$129.00	\$258.00
4	MC	F	41.0	21	\$129.00	\$2,644.50
					In-unit Piling	Sub Total = \$2,902.50
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	2	\$220.00	\$440.00	2	\$5.00	\$10.00
2	2	\$220.00	\$440.00	0	\$5.00	\$0.00
4	4	\$220.00	\$880.00	20.5	\$5.00	\$102.50
*Cost includes separating firewood					Materials	Sub Total = \$112.50
					Landing Piling	Sub Total = \$1,760.00
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
<i>Charles A. Meyer</i> 3-30-2015						
Grand Total =						\$6,065.00

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Knob Point Combinator

ROAD IMPROVEMENT:

Project No. 1	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	<u>I1-I2</u>	<u>553</u>	<u>\$32,343</u>
	<u> </u>	<u> </u>	<u> </u>
	<u> </u>	<u> </u>	<u> </u>
	<u>TOTALS</u>		<u>\$32,343</u>

SPECIAL PROJECTS:

<u>Description</u>	<u>Cost</u>
<u>Project Road Maintenance</u>	<u>\$1,064</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u>TOTAL</u>	<u>\$1,064</u>

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
<u>Excavator (C330)</u>	<u>\$1,406.00</u>
<u>Front End Loader (966)</u>	<u>\$778.00</u>
<u>10-12cy dump trucks X 3</u>	<u>\$489.00</u>
<u>Large Grader (14G)</u>	<u>\$778.00</u>
<u>Vibratory Roller</u>	<u>\$778.00</u>
<u>Water Truck (2,500 gal.)</u>	<u>\$190.00</u>
<u> </u>	<u> </u>
<u>TOTAL</u>	<u>\$4,419.00</u>

GRAND TOTAL **\$37,826.00**

Compiled By: Bryce Rodgers

Date: 02/25/2015

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Knobt Point Combination
 ROAD: Shingle Mill
 POINTS: I1 to I2

NEW CONSTRUCTION: _____ STATIONS _____ MILES
 IMPROVEMENT: 553.00 STATIONS 10.47 MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
273+40		x		=	
Landing Construction	\$/ldg. 1.00	x	\$389.00	=	\$389.00
279+40		x		=	
Landing Construction	\$/ldg. 1.00	x	\$389.00	=	\$389.00
		x		=	
Push over trees at landings (C330)	\$/hr. 2.00	x	\$155.00	=	\$310.00
		x		=	
Landing Compaction	\$/sta 3.00	x	\$20.19	=	\$60.57
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION

\$1,149

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost

Other/miscellaneous:	Description	Quantity	Rate	Cost

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

Subtotal of Clearing, Exc., Culv.

\$1,149

SURFACING				Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:							
0+00 to 158+40				Light/Spot Grading, leveling rock (Grader hrs)	16.00	\$100.00	\$1,600.00
158+40 to 553+00				Subgrade prep, leveling rock (Grader hrs.)	24.00	\$100.00	\$2,400.00

ROAD SEGMENT		I 1-12		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I 1-12		0+00 to 553+00				
				Volume (CY) per	Number of					
Landing	6"-0" Pit-run	273+40	N/A	landing	120	landings	1.00	120	\$5.80	\$696
Landing	6"-0" Pit-run	279+40	N/A	landing	120	landings	1.00	120	\$5.80	\$696
Leveling	3/4"-0" Stockpile	0+00 to 553+00	N/A	load	11	loads	50.00	550	\$4.90	\$2,695
junction	3/4"-0" Stockpile	273+40	N/A	junction	20	junctions	1.00	20	\$4.90	\$98
junction	3/4"-0" Stockpile	279+40	N/A	junction	20	junctions	1.00	20	\$4.90	\$98
Total Rock for Road Segment:				I 1-12				830		\$4,283

Processing:		Description	No. sta	Rate/sta	Cost
		Water, Process & Compact: (158+40 to 553+00)	394.60	\$56.48	\$22,287
		6"-0"pr	3/4"-0"	Total	
		240	590	830	\$30,570

SPECIAL PROJECTS		Description	Cost
		Pit-run development	
		\$2.60/cy @240 cy	\$624.00

SPECIAL PROJECTS			
SUB TOTAL FOR SURFACING			\$624
		Subtotal of Surfacing & Spec. Proj.	\$31,194
		Subtotal of Clearing, Exc.,Culv.	\$1,149
GRAND TOTAL			\$32,343

CRUSHED ROCK COST

SALE NAME:	Knob Point Combination
PROJECT:	Project No. 1
QUARRY:	Knob Point Stockpile

MATERIAL: Crushed

DATE: 02/25/2015
BY: B Rodgers

[illegible]

ROCK HAUL:

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

Ave haul:	\$2.92	/cy
Load:	\$0.72	/cy
Spread:	\$1.26	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>3</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 649

CRUSHED ROCK HAUL COSTS 590 cy @ \$4.90 /cy

PIT RUN ROCK COST

SALE NAME:	Konb Point Combination
PROJECT:	Project No. 1
QUARRY:	Knob Point

MATERIAL: Pit Run

DATE: 02/25/2015
BY: B Rodgers

[illegible]

ROCK HAUL:

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

Ave haul:	\$3.39	/cy
Load:	\$0.84	/cy
Spread:	\$1.56	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>3</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 558

PIT RUN ROCK HAUL COSTS

240 cy @ \$5.80 /cy

Projects Road Maintenance Cost Summary

Sale: Knob Point Combination
Date: 30-Mar-15
By: C.Bangs

Type	Equipment/Rationale		Hours	Rate	Cost
Projects Road Maintenance	Grader 14G		4	\$100	\$400
	Vibratory Roller		4	\$77	\$308
	Water Truck 2,500 gallon		4	\$89	\$356
Total					\$1,064

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	0.7	0.5
Vibratory Roller	1.5	0.7	0.5

Knob Point Quarry Road

Knob Point Combination TIMBER CRUISE REPORT FY 2015

1. **Sale Area Location:** Areas 1, 2, 3, and 4 are located in portions of Sections 8, 18, and 19, T7N, R6W, and Section 13, T7N, R7W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 92%
CSL 8%

Tax Code: 30-05 (73%)
01-02 (19%)
CSL (8%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Posted Buffers	Existing R/W	Net Acres	Survey Method
1	Modified Clearcut	15	1	1	13	GIS
2	Modified Clearcut	18	0	1	17	GIS
3	Partial Cut	35	0	<1	35	GIS
4	Modified Clearcut	78	4	5	69	GIS
TOTALS		146	5	7	134	

4. **Cruisers and Cruise Dates:** All areas were cruised by Bryce Rodgers, John Choate, Ed Holloran, Andrew Arvin, and Jon Long in February 2015.

5. **Cruise Method and Computation:** All cruisers used Corvallis Micro Technology (CMT) data collectors, and were downloaded to the Atterbury Super A.C.E. program at the Astoria 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.

Areas 1 and 2 are modified clearcut units and were variable plot cruised using a 54.44 BAF for all species. These plots are located on a 3 chain by 3 chain grid, with every other plot measured and graded. A total of 32 plots were sampled, with 15 measured and graded plots, and 17 count plots.

Area 3 is a partial cut unit and was variable plot cruised using a 40 BAF for all species. These plots are located on a 4 chain by 3 chain grid, with every other plot measured and graded. A total of 27 plots were sampled, with 14 measured and graded plots, and 13 count plots.

Area 4 is a modified clearcut unit and was variable plot cruised using a 54.44 BAF for all species. These plots are located on a 4 chain by 4 chain grid, with every other plot measured and graded. A total of 44 plots were sampled, with 17 measured and graded plots, and 27 count plots.

AREA	CRUISE	TRACT	TYPE	ACRES
1 and 2	T07N R06W 08	AREA1AND2	TAKE	30
3	T07N R07W 13	AREA3	TAKE	35
4	T07N R07W 13	AREA4	TAKE	69

6. **Timber Description:**

Areas 1 and 2 are modified clearcut units, approximately 45 to 75 years old, consisting of Douglas-fir, Western hemlock, Sitka spruce, and red alder, with a minor cohort of Noble fir. The average Douglas-fir tree size to be harvested is approximately 19 inches DBH, with an average height of 50 feet to a merchantable top (6 inch d.i.b./40% fp). The average Western hemlock tree size to be harvested is approximately 22 inches DBH, with an average height of 61 feet to a merchantable top (6 inch d.i.b./40% fp). The average red alder tree size to

be harvested is approximately 12 inches DBH, with an average height of 33 feet to a merchantable top (6 inch d.i.b./40% fp). The average volume per acre to be harvested (net) is 26 MBF.

Area 3 is a partial cut unit, approximately 50 years old, consisting of Douglas-fir, and Sitka spruce. The average Douglas-fir tree size to be harvested is approximately 16 inches DBH, with an average height of 50 feet to a merchantable top (6 inch d.i.b./40% fp). The average Sitka spruce tree size to be harvested is approximately 12 inches DBH, with an average height of 17 feet to a merchantable top (6 inch d.i.b./40% fp). The average volume per acre to be harvested (net) is 9 MBF.

Area 4 is a modified clearcut unit, approximately 55 to 65 years old, consisting of Douglas-fir, Western hemlock, and red alder. The average Douglas-fir tree size to be harvested is approximately 17 inches DBH, with an average height of 52 feet to a merchantable top (6 inch d.i.b./40% fp). The average western hemlock tree size to be harvested is approximately 19 inches DBH, with an average height of 62 feet to a merchantable top (6 inch d.i.b./40% fp). The average red alder tree size to be harvested is approximately 14 inches DBH, with an average height of 46 feet to a merchantable top (6 inch d.i.b./40% fp). The average volume per acre to be harvested (net) is 43 MBF.

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

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1 and 2	50	11	51.1	9.0
3	45	10	42.6	8.4
4	45	9	27.3	4.1

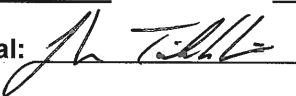
8. Take Volumes by Species and Log Grades for All Sale Areas by MBF: (See "Species, Sort Grade-Board Feet Volumes (Project)", "Statistics (Project)", and the "Stand Table Summary" attached). Volumes do not include "in-growth." The majority of defect and breakage was taken out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	17"	2,906	1,880	837	189	-	1	72
Western hemlock	20"	949	703	216	30	-	1	24
Red alder	13"	101	-	-	-	101	1	3
Sitka spruce	15"	47	-	31	16	-	-	1
Noble fir	30"	10	8	2	-	-	-	<1

TOTAL NET VOLUME	4,013
-------------------------	--------------

9. Approvals:

Prepared by: Andrew Arvin Date: February 25, 2015

Unit Forester Approval:  Date: 3/30/2015

10. Attachments:

Cruise Designs and Maps - 6 pages
Volume Report - 3 page
Statistics Report - 3 pages
Log Stock Tables - 1 page
Stand Table Summary - 1 pages

CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Knob Piont CombinationArea(s) 1&2

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 31 Estimated CV% 50 Net BF/Acre SE% Objective 11 Net BF/AcrePlanned Sale Volume : 800 MBF Estimated Sale Area Value/Acre: \$8,000/Ac
(Areas 1&2) (26 MBF/Ac.)

A. **Cruise Goals:** (a) Grade minimum 100 conifer and 5 hardwood trees
(b) Sample 36 cruise plots (1 grade/ 1 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. **Plot Cruises:** BAF 54.44 (Full point, Half point) (circle one)
Cruise Line Directions 60° / 240°
Cruise Line Spacing 3 (chains)
Cruise Plot Spacing 3 (chains)
Grade/Count Ratio 1/1

Take plots as marked on cruise map. All cedar will be reserved. Grade all alder as camprun.
Record all snags as SN.

C. Tree Measurements:

- 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.
- 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.
- Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 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.
- 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.
- Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, 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:

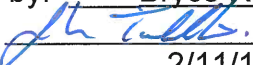
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: 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
- D. Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.

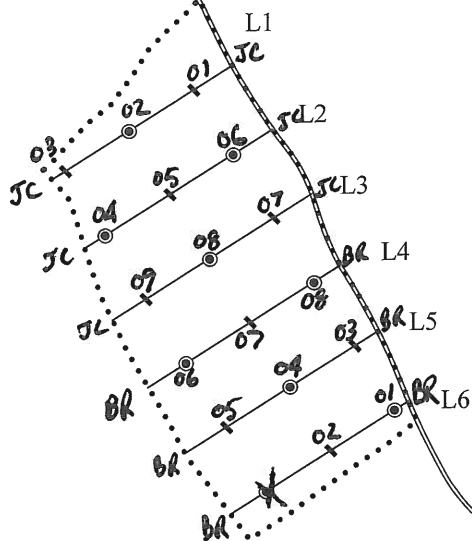
7. **Deductions**: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally 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 inter-visible 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.

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: Bryce Rodgers
Approved by: 
Date: 2/11/15

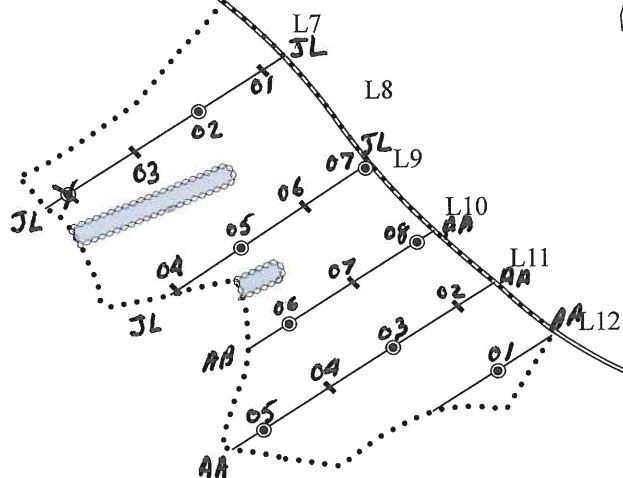


AREA 1

Line spacing = 3 ch
 Plot spacing = 3 ch
 Az = 60/240
 BAF 54.45

AREA 2

Line spacing = 3 ch
 Plot spacing = 3 ch
 Az = 60/240
 BAF 54.45



AREAS 1 & 2

OF TIMBER SALE CONTRACT NO. 341-15 - 54
 KNOB POINT COMBINATION
 PORTIONS OF SECTIONS 8, 18 & 19, T7N, R6W,
 AND SECTION 13, T7N, R7W
 W.M., CLATSOP COUNTY, OREGON

1 inch = 500 feet



CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Knob Point Combination

Area 3

Harvest Type: (PC) Partial Cut

Approx. Cruise Acres: 35 **Estimated CV%** 45 Net BF/Acre **SE% Objective** 10 Net BF/Acre

Planned Sale Volume : 280 MBF **Estimated Sale Area Value/Acre:** \$2,800/Ac
(Area 3) (8 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 100 conifer and 0 hardwood trees
(b) Sample 27 cruise plots (1 grade/1 count); (c) Other goals (X Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)
Cruise Line Directions 180° / 360°
Cruise Line Spacing 4 (chains)
Cruise Plot Spacing 3 (chains)
Grade/Count Ratio 1/1

The target B/A is 130. Leave approximately 3-4 trees per plot.

Take plots as marked on cruise map. All cedar will be reserved. Grade all alder as camprun. Record all snags as SN.

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 is 7" for conifers and 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.
- 5. Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, 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:

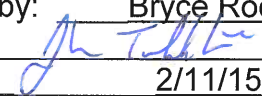
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: 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
- D. Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.

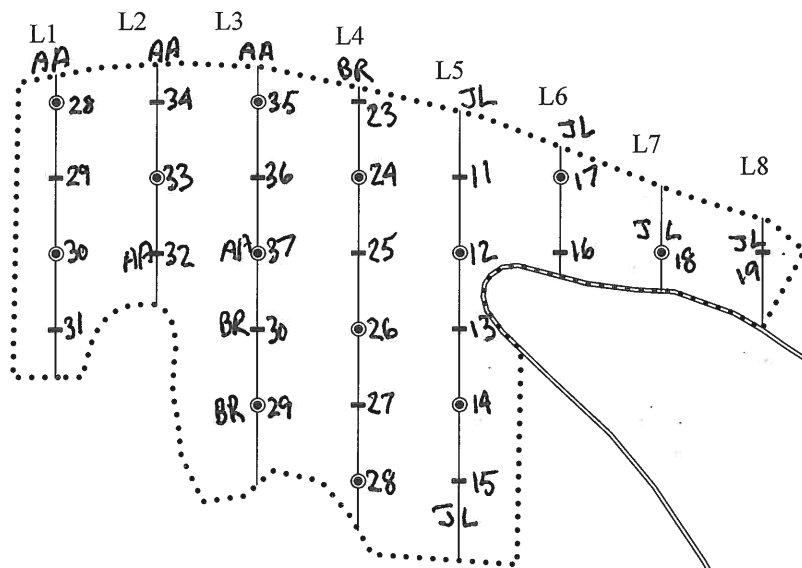
7. **Deductions**: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally 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 inter-visible 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.

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: Bryce Rodgers
Approved by: 
Date: 2/11/15



AREA 3

Line spacing = 4 ch
 Plot spacing = 3 ch
 Az = 180/360
 BAF 40

Approximate Scale 1" = 1000'



AREA 3
 OF TIMBER SALE CONTRACT NO. 341-15 - 54
 KNOB POINT COMBINATION
 PORTIONS OF SECTIONS 8, 9, 18 & 19, T7N, R6W,
 and Section 13, T7N, R7W
 W.M., CLATSOP COUNTY, OREGON

CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Knob Point CombinationArea 4

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 169 Estimated CV% 45 Net BF/Acre SE% Objective 9 Net BF/AcrePlanned Sale Volume : 2,970 MMBF Estimated Sale Area Value/Acre: \$15,000/Ac
(Area 4) (45 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 100 conifer and 5 hardwood trees
 (b) Sample 47 cruise plots (1 grade/ 2 count); (c) Other goals (Determine "automark"
 thinning standards; X Determine log grades for sale value; X Determine snag and leave
 tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 54.44 (Full point; Half point) (circle one)
 Cruise Line Directions 120° / 300°
 Cruise Line Spacing 4 (chains)
 Cruise Plot Spacing 4 (chains)
 Grade/Count Ratio 1/2

Take plots as marked on cruise map. All cedar will be reserved. Grade all alder as camprun.
Record all snags as SN.

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 is 7" for conifers and 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.
- 5. Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, 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:

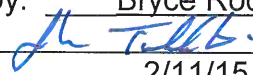
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: 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
- D. Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.

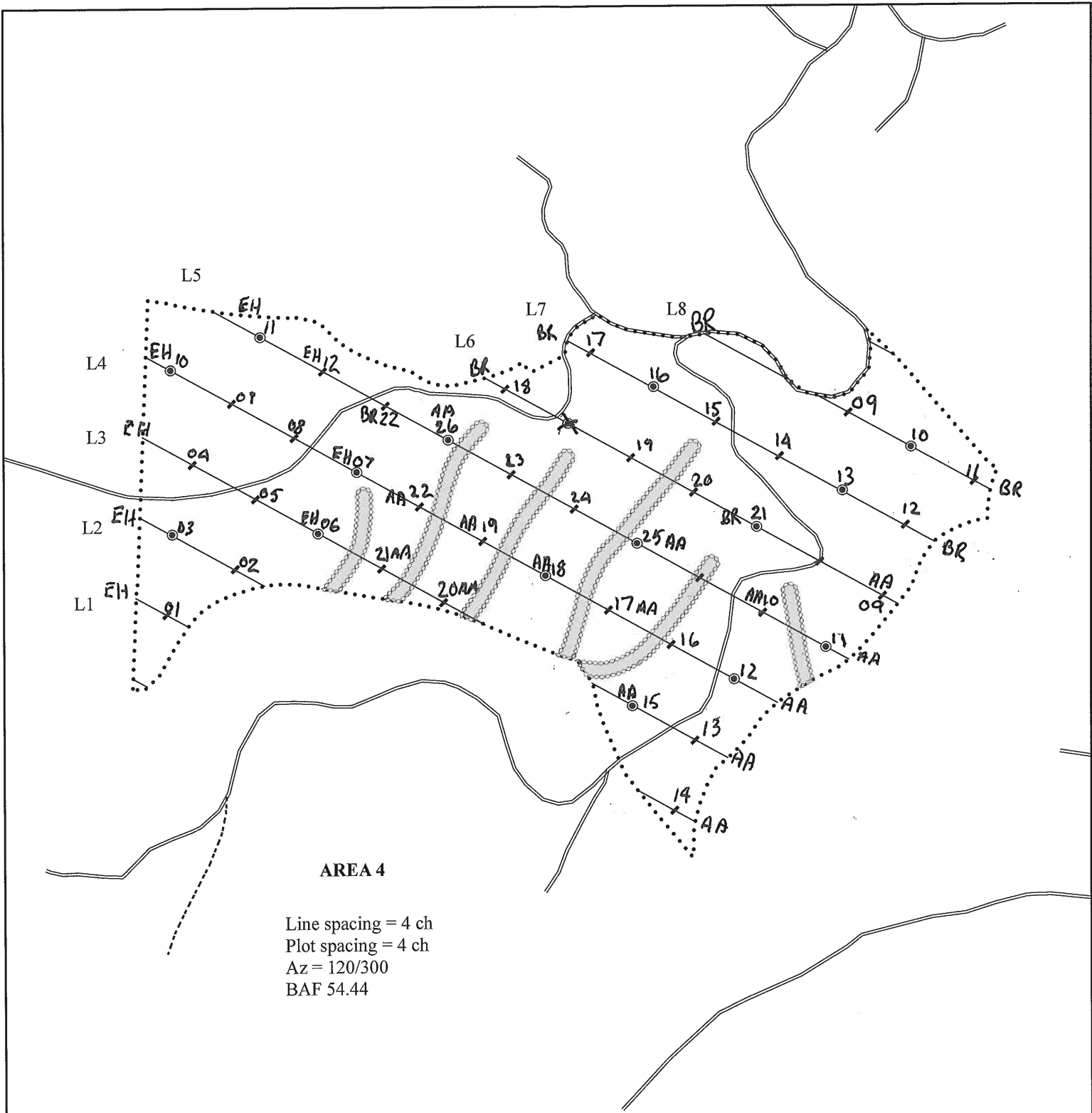
7. Deductions: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results 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 inter-visible 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.

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: Bryce Rodgers
Approved by: 
Date: 2/11/15



AREA 4

AREA 4

OF TIMBER SALE CONTRACT NO. 341-15 - 54
 KNOB POINT COMBINATION
 PORTIONS OF SECTIONS 8, 9, 18 & 19, T7N, R6W,
 and Section 13, T7N, R7W
 W.M., CLATSOP COUNTY, OREGON

1 inch = 500 feet



TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																
T07N R06W S08 TyTAKE30.00 T07N R07W S13 TyPCTK35.00 T07N R07W S13 TyTAKE69.00				Project: KNOBPT Acres134.00										Page1 Date3/30/2015 Time2:14:16PM						
Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre Def%GrossNet			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
							Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
D	DOCU														10	11		0.00	16.1	
D	DO2S	64	.7	14,128	14,026	1,880			62	38	2	1	9	88	37	15	320	2.04	43.9	
D	DO3S	29	.6	6,286	6,246	837		93	7		1	4	46	49	35	8	85	0.78	73.3	
D	DO4S	7	4.2	1,471	1,409	189		100			73	21	6		19	7	27	0.47	52.6	
D Totals		72	.9	21,885	21,681	2,906 2,905		33	42	24	7	3	20	71	29	9	117	1.08	185.8	
S	DO3S	66		232	232	31		56	44			16	84		29	11	121	1.15	1.9	
S	DO4S	34		117	117	16		100			60	40			21	7	35	0.78	3.4	
S Totals		1		348	348	47		71	29		20	24	56		24	8	66	0.94	5.3	
H	DOCU														7	22		0.00	1.9	
H	DO2S	74	1.2	5,308	5,244	703			41	59		2	9	90	38	15	366	2.26	14.3	
H	DO3S	22	1.2	1,631	1,612	216		92	8		2	13	21	64	34	8	86	0.92	18.7	
H	DO4S	4		222	222	30		100			65	35			18	7	30	0.64	7.5	
H Totals		24	1.2	7,161	7,078	949		24	32	44	2	5	11	81	32	11	167	1.43	42.3	
NF	DO2S	83		59	59	8				100				100	40	21	760	3.57	.1	
NF	DO3S	17		12	12	2		100						100	40	10	150	1.52	.1	
NF Totals		0		71	71	10 9		16		84				100	40	16	455	2.55	.2	
A	DOCU														7	9		0.00	1.3	
A	DOCR	100	.6	757	753	101		82	18		5	24	51	20	31	7	72	0.68	10.4	
A Totals		3	.6	757	753	101		82	18		5	24	51	20	28	8	64	0.66	11.7	
Totals			1.0	30,222	29,931	4,013 4,011		33	39	28	6	4	19	71	29	10	122	1.13	245.3	

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1						
				Project: KNOBPT										Date 3/30/2015						
														Time 2:14:16PM						
T07N R06W S08 TTAKE										T07N R06W S08 TTAKE										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
07N	06W	08	AREA1AND2	TAKE	30.00	32	61	1	W											
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log		Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln	Dia		Bd	CF/ Lf
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		
H	DO	CU														7	22		0.00	8.4
H	DO	2S	71	1.6	12,636	12,433	373			40	60			6	94	39	16	390	2.37	31.9
H	DO	3S	26	1.9	4,489	4,405	132		88	12		3	12	10	75	35	8	94	1.05	46.6
H	DO	4S	3		479	479	14		100			28	72			21	7	33	0.69	14.3
H Totals			67	1.6	17,603	17,317	520		25	32	43	1	5	7	87	32	12	171	1.51	101.2
D	DO	CU														6	17		0.00	2.5
D	DO	2S	65	3.8	4,346	4,182	125			62	38			5	9	86	38	15	347	2.31
D	DO	3S	29	3.3	1,905	1,842	55		75	25		4	2	57	38	34	9	97	1.00	19.1
D	DO	4S	6		355	355	11		100			88	12			17	6	22	0.44	16.0
D Totals			25	3.4	6,606	6,380	191		27	48	25	6	5	22	67	28	10	129	1.31	49.6
S	DO	3S	66		1,035	1,035	31		56	44			16	84		29	11	121	1.15	8.6
S	DO	4S	34		521	521	16		100			60	40			21	7	35	0.78	15.1
S Totals			6		1,556	1,556	47		71	29		20	24	56		24	8	66	0.94	23.7
A	DO	CR	100		433	433	13		100				100			32	6	50	0.50	8.7
A Totals			2		433	433	13		100				100			32	6	50	0.50	8.7
NF	DO	2S	83		263	263	8			100				100		40	21	760	3.57	.3
NF	DO	3S	17		52	52	2		100					100		40	10	150	1.52	.3
NF Totals			1		315	315	9		16	84				100		40	16	455	2.55	.7
Type Totals				1.9	26,514	26,001	780		29	35	36	4	6	15	75	30	10	141	1.36	183.8

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1								
Project: KNOBPT												Date	3/30/2015							
												Time	2:14:16PM							
T07N R07W S13 TPCTK										T07N R07W S13 TPCTK										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
07N	07W	13	AREA3	PCTK	35.00	27	23	1	W											
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log		Logs Per /Acre		
			Log Scale Dia.					Log Length				Ln	Dia	Bd	CF/ Lf					
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
D DO CU																11	13		0.00	4.0
D DO 2S			26	2,193	2,193	77			100				13		87	36	13	210	1.62	10.5
D DO 3S			63	5,151	5,151	180		100					3	35	62	36	8	87	0.74	59.0
D DO 4S			11	2.4	928	907	32		100			48	52			21	6	27	0.44	33.3
D Totals			100	.3	8,273	8,251	289		73	27		5	11	22	62	31	8	77	0.77	106.8
Type Totals				.3	8,273	8,251	289		73	27		5	11	22	62	31	8	77	0.77	106.8

T		Species, Sort Grade - Board Foot Volumes (Type)										Page 1							
TSPCSTGR		Project: KNOBPT										Date 3/30/2015							
												Time 2:14:16PM							
T07N R07W S13 TTAKE										T07N R07W S13 TTAKE									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt										
07N	07W	13	AREA4	TAKE	69.00	44	88	1	W										
S So Gr T rt ad Spp	%	Bd. Ft. per Acre	Total	Percent Net Board Foot Volume								Average Log		Logs Per /Acre					
				Log Scale Dia.	Log Length			Ln Dia		Bd	CF/								
		Def%	Gross	Net	Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
D	DO	CU												10	11		0.00		
D	DO	2S	69	.5	24,435	24,309	1,677		61	39	2		10	88	37	15	326	2.05	
D	DO	3S	24	.6	8,766	8,716	601		92	8	2	4	48	46	35	8	84	0.78	
D	DO	4S	7	4.9	2,231	2,121	146		100		77	15	8		19	7	27	0.48	
D Totals			82	.8	35,432	35,146	2,425		29	44	27	7	2	19	72	29	10	123	1.13
H	DO	2S	76	.7	4,814	4,778	330		41	59		3	11	85	37	15	342	2.14	
H	DO	3S	20		1,216	1,216	84		100			14	40	46	34	8	76	0.74	
H	DO	4S	4		224	224	15		100		100				16	7	27	0.58	
H Totals			15	.6	6,253	6,217	429		23	31	45	4	5	16	75	31	10	163	1.33
A	DO	CU													7	9		0.00	
A	DO	CR	100	.7	1,282	1,273	88		80	20		6	28	43	23	31	8	77	0.72
A Totals			3	.7	1,282	1,273	88		80	20		6	28	43	23	27	8	67	0.70
Type Totals				.8	42,968	42,636	2,942		30	41	29	6	3	19	71	29	10	125	1.13

TC PSTATS					PROJECT STATISTICS					PAGE	1
					PROJECT	KNOBPT		DATE		3/30/2015	
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt	
07N	06	08	AREA1AND2	TAKE	134.00		103	453	1	W	
07N	07W	13	AREA3	PCTK							
07N	07W	13	AREA4	TAKE							
					TREES	ESTIMATED	PERCENT				
					PER PLOT	TOTAL	SAMPLE				
					PLOTS	TREES	TREES	TREES			
TOTAL			103	453	4.4						
CRUISE			44	172	3.9	19,244		.9			
DBH COUNT											
REFOREST											
COUNT			53	266	5.0						
BLANKS			6								
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
DOUG FIR			109	109.0	17.0	51	41.6	171.5	21,885	21,681	5,817
WHEMLOCK			45	22.6	20.7	62	11.6	52.8	7,161	7,078	1,914
S SPRUCE			6	4.0	16.2	34	1.4	5.7	348	348	120
R ALDER			11	7.9	13.5	43	2.1	7.9	757	753	218
NOB FIR			1	.1	30.0	82	0.1	.4	71	71	16
TOTAL			172	143.6	17.4	52	57.0	238.2	30,222	29,931	8,085
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			87.7	8.4	317	346	375				
WHEMLOCK			55.3	8.2	378	412	446				
S SPRUCE			80.7	35.9	58	90	122				
R ALDER			65.1	20.6	100	126	152				
NOB FIR											
TOTAL			82.5	6.3	322	344	365	272	68	30	
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			76.4	7.3	84	90	97				
WHEMLOCK			47.1	7.0	102	110	117				
S SPRUCE			48.0	21.4	25	32	39				
R ALDER			56.0	17.7	30	36	43				
NOB FIR											
TOTAL			71.6	5.5	85	90	95	205	51	23	
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			110.6	10.9	97	109	121				
WHEMLOCK			176.2	17.4	19	23	26				
S SPRUCE			321.3	31.6	3	4	5				
R ALDER			374.3	36.8	5	8	11				
NOB FIR			1014.9	99.9	0	0	0				
TOTAL			80.3	7.9	132	144	155	258	64	29	
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			96.3	9.5	155	171	188				
WHEMLOCK			160.0	15.7	44	53	61				
S SPRUCE			310.2	30.5	4	6	7				
R ALDER			350.0	34.5	5	8	11				
NOB FIR			1014.9	99.9	0	0	1				
TOTAL			65.3	6.4	223	238	254	170	43	19	

PROJECT STATISTICS

PROJECT KNOBPT

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06	08	AREA1AND2	TAKE	134.00	103	453	1	W
07N	07W	13	AREA3	PCTK					
07N	07W	13	AREA4	TAKE					

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		101.6	10.0	19,513	21,681	23,848			
WHEMLOCK		160.6	15.8	5,960	7,078	8,197			
S SPRUCE		334.6	32.9	234	348	463			
R ALDER		387.3	38.1	466	753	1,040			
NOB FIR		1014.9	99.9	0	71	141			
TOTAL		74.3	7.3	27,740	29,931	32,121	221	55	25

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		98.7	9.7	5,252	5,817	6,382			
WHEMLOCK		159.1	15.7	1,614	1,914	2,214			
S SPRUCE		319.3	31.4	82	120	158			
R ALDER		372.3	36.6	138	218	298			
NOB FIR		1014.9	99.9	0	16	32			
TOTAL		70.6	7.0	7,523	8,085	8,647	199	50	22

TC TSTATS				STATISTICS				PAGE	1			
				PROJECT KNOBPT				DATE	3/30/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt			
07N	06W	08	AREA1AND2	00CC	30.00	32	144	1	W			
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			32	144	4.5							
CRUISE			18	66	3.7	3,469	1.9					
DBH COUNT												
REFOREST												
COUNT			13	69	5.3							
BLANKS			1									
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	
WHEMLOCK			33	54.4	22.1	61	30.8	144.6	17,603	17,317	4,870	4,870
DOUG FIR			20	29.4	18.7	50	13.0	56.1	6,606	6,380	1,820	1,820
S SPRUCE			6	17.8	16.2	34	6.3	25.5	1,556	1,556	536	536
SNAG			3	3.9	18.0	39	1.6	6.8				
R ALDER			1	8.7	12.0	33	2.0	6.8	433	433	139	139
NOB FIR			1	.3	30.0	82	0.3	1.7	315	315	71	71
DOUGLEAV			1	.9	19.0	72	0.4	1.7	181	164	60	60
SPRUCELV			1	.3	30.0	82	0.3	1.7	315	315	77	77
TOTAL			66	115.6	19.7	52	55.2	245.0	27,011	26,480	7,571	7,571
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		
WHEMLOCK			55.9	9.7	360	399	438					
DOUG FIR			70.9	16.3	319	381	443					
S SPRUCE			80.7	35.9	58	90	122					
SNAG												
R ALDER												
NOB FIR												
DOUGLEAV												
SPRUCELV												
TOTAL			75.2	9.3	322	354	387	226	57	25		
CL: 68.1 %	COEFF		SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH			5	10	15		
WHEMLOCK			46.4	8.1	99	108	117					
DOUG FIR			59.6	13.7	91	105	120					
S SPRUCE			48.0	21.4	25	32	39					
SNAG												
R ALDER												
NOB FIR												
DOUGLEAV												
SPRUCELV												
TOTAL			64.2	7.9	89	97	104	165	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		
WHEMLOCK			90.2	15.9	46	54	63					
DOUG FIR			165.4	29.2	21	29	38					
S SPRUCE			160.2	28.3	13	18	23					
SNAG			283.2	50.0	2	4	6					
R ALDER			442.9	78.2	2	9	15					
NOB FIR			565.7	99.9	0	0	1					
DOUGLEAV			565.7	99.9	0	1	2					

TC TSTATS				STATISTICS				PAGE	2
				PROJECT	KNOBPT			DATE	3/30/2015
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	08	AREA1AND2	00CC	30.00	32	144	1	W
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
SPRUCELV	565.7	99.9	0	0	1				
TOTAL	53.4	9.4	105	116	127	114	29	13	
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	89.5	15.8	122	145	167				
DOUG FIR	111.5	19.7	45	56	67				
S SPRUCE	153.1	27.0	19	26	32				
SNAG	268.8	47.5	4	7	10				
R ALDER	442.9	78.2	1	7	12				
NOB FIR	565.7	99.9	0	2	3				
DOUGLEAV	565.7	99.9	0	2	3				
SPRUCELV	565.7	99.9	0	2	3				
TOTAL	41.9	7.4	227	245	263	70	17	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	
WHEMLOCK	90.5	16.0	14,550	17,317	20,083				
DOUG FIR	111.0	19.6	5,129	6,380	7,630				
S SPRUCE	168.7	29.8	1,092	1,556	2,019				
SNAG									
R ALDER	442.9	78.2	94	433	772				
NOB FIR	565.7	99.9	0	315	630				
DOUGLEAV	565.7	99.9	0	164	328				
SPRUCELV	565.7	99.9	0	315	630				
TOTAL	51.1	9.0	24,090	26,480	28,870	104	26	12	
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	
WHEMLOCK	89.6	15.8	4,100	4,870	5,641				
DOUG FIR	109.8	19.4	1,467	1,820	2,172				
S SPRUCE	158.9	28.1	385	536	686				
SNAG									
R ALDER	442.9	78.2	30	139	247				
NOB FIR	565.7	99.9	0	71	141				
DOUGLEAV	565.7	99.9	0	60	119				
SPRUCELV	565.7	99.9	0	77	154				
TOTAL	48.6	8.6	6,922	7,571	8,221	94	24	10	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		KNOBPT		DATE	3/30/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	07W	13	AREA3	00PC	35.00	27	163	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		27	163	6.0						
CRUISE		14	72	5.1	4,475		1.6			
DBH COUNT										
REFOREST										
COUNT		13	87	6.7						
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
DOUGLEAV		45	53.9	22.3	69	31.0	146.7	17,786	17,708	5,153
DOUG FIR		23	68.9	15.4	49	22.7	88.9	8,273	8,251	2,507
SPRUCELV		3	4.8	13.0	20	1.2	4.4	95	95	47
NFIRLEAV		1	.2	33.0	85	0.3	1.5	234	234	59
TOTAL		72	127.9	18.6	57	56.0	241.5	26,388	26,289	7,766
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	
DOUGLEAV		49.1	7.3	368	397	426				
DOUG FIR		63.0	13.4	128	147	167				
SPRUCELV		94.4	65.3	9	27	44				
NFIRLEAV										
TOTAL		71.2	8.4	284	310	336	203	51	23	
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15	
DOUGLEAV		44.3	6.6	107	114	122				
DOUG FIR		60.5	12.9	39	45	51				
SPRUCELV		106.6	73.8	4	14	24				
NFIRLEAV										
TOTAL		65.2	7.7	83	89	96	170	42	19	
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15	
DOUGLEAV		30.7	6.0	51	54	57				
DOUG FIR		84.8	16.6	57	69	80				
SPRUCELV		361.1	70.8	1	5	8				
NFIRLEAV		519.6	101.9		0	1				
TOTAL		49.5	9.7	115	128	140	102	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	
DOUGLEAV		25.1	4.9	139	147	154				
DOUG FIR		82.2	16.1	75	89	103				
SPRUCELV		381.3	74.7	1	4	8				
NFIRLEAV		519.6	101.9		1	3				
TOTAL		39.4	7.7	223	241	260	64	16	7	
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15	
DOUGLEAV		29.5	5.8	16,684	17,708	18,732				
DOUG FIR		87.9	17.2	6,828	8,251	9,673				
SPRUCELV		519.6	101.9		95	192				
NFIRLEAV		519.6	101.9		234	473				
TOTAL		42.6	8.4	24,093	26,289	28,484	75	19	8	

TC TSTATS				STATISTICS			PAGE	2	
				PROJECT KNOBPT			DATE	3/30/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	07W	13	AREA3	00PC	35.00	27	163	1	W
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
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
DOUGLEAV		27.3	5.4	4,877	5,153	5,429			
DOUG FIR		87.3	17.1	2,078	2,507	2,936			
SPRUCELV		519.6	101.9		47	94			
NFIRLEAV		519.6	101.9		59	120			
TOTAL		41.5	8.1	7,135	7,766	8,398	71	18	8

TC TSTATS				STATISTICS				PAGE	1			
				PROJECT	KNOBPT			DATE	3/30/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt			
07N	07W	13	AREA4	00CC	69.00	44	260	1	W			
				TREES	ESTIMATED	PERCENT						
				PER PLOT	TOTAL	SAMPLE						
					TREES	TREES						
PLOTS		TREES										
TOTAL		44		260							5.9	
CRUISE		17		90							5.3	
DBH COUNT											13,701	
REFOREST											.7	
COUNT		27		158							5.9	
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		
DOUG FIR		66	164.0	17.2	52	63.6	263.5	35,432	35,146	9,234		
WHEMLOCK		12	20.2	19.0	62	9.1	39.6	6,253	6,217	1,600		
R ALDER		10	11.7	14.0	46	3.3	12.4	1,282	1,273	363		
CEDLEAV		1	2.1	18.0	60	0.9	3.7	357	357	116		
DOUGLEAV		1	.6	28.0	91	0.5	2.5	411	394	94		
TOTAL		90	198.6	17.2	53	77.5	321.7	43,736	43,387	11,406		
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		82.3	10.1	364	405	445						
WHEMLOCK		54.9	16.5	374	448	523						
R ALDER		61.6	20.5	107	134	161						
CEDLEAV												
DOUGLEAV												
TOTAL		82.4	8.7	348	381	414	271	68	30			
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		73.5	9.0	92	101	111						
WHEMLOCK		50.6	15.2	96	113	131						
R ALDER		52.8	17.6	32	38	45						
CEDLEAV												
DOUGLEAV												
TOTAL		73.6	7.8	89	96	104	217	54	24			
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		65.4	9.9	148	164	180						
WHEMLOCK		198.2	29.8	14	20	26						
R ALDER		272.4	41.0	7	12	16						
CEDLEAV		489.8	73.8	1	2	4						
DOUGLEAV		463.6	69.8	0	1	1						
TOTAL		46.1	6.9	185	199	212	85	21	9			
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		45.6	6.9	245	264	282						
WHEMLOCK		173.8	26.2	29	40	50						
R ALDER		248.6	37.4	8	12	17						
CEDLEAV		489.8	73.8	1	4	6						
DOUGLEAV		463.6	69.8	1	2	4						
TOTAL		26.5	4.0	309	322	335	28	7	3			
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		42.9	6.5	32,872	35,146	37,419						
WHEMLOCK		169.4	25.5	4,631	6,217	7,804						

TC TSTATS				STATISTICS			PAGE	2	
				PROJECT KNOBPT			DATE	3/30/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	07W	13	AREA4	00CC	69.00	44	260	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
R ALDER		273.7	41.2	748	1,273	1,798			
CEDLEAV		489.8	73.8	94	357	621			
DOUGLEAV		463.6	69.8	119	394	668			
TOTAL		27.3	4.1	41,601	43,387	45,173	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		43.0	6.5	8,635	9,234	9,832			
WHEMLOCK		169.5	25.5	1,191	1,600	2,008			
R ALDER		263.7	39.7	219	363	508			
CEDLEAV		489.8	73.8	30	116	201			
DOUGLEAV		463.6	69.8	28	94	159			
TOTAL		26.6	4.0	10,948	11,406	11,864	28	7	3

Log Stock Table - MBF

T07N R06W S08 TyTAKE	30.00
T07N R07W S13 TyPCTK	35.00
T07N R07W S13 TyTAKE	69.00

Project: KNOBPT
Acres 134.00

Page 1
Date 3/30/2015
Time 2:14:17PM

S T Spp	So Gr rt	Log de Len	Gross MBF	Def %	Net MBF	% Sp	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+
D	DO	2S	16		16	.5					16							
D	DO	2S	20		26	.9							26					
D	DO	2S	22		10	.3					10							
D	DO	2S	24	26.2	9	.2									6			
D	DO	2S	32		170	5.9					122	48						
D	DO	2S	40		1,663	56.8					346	387	677	242				
D	DO	3S	16		2	.1					2							
D	DO	3S	18		6	.2					6							
D	DO	3S	20		4	.1					4							
D	DO	3S	22		15	.5				12	3							
D	DO	3S	26		11	.4				1	10							
D	DO	3S	28		3	.1			3									
D	DO	3S	30		2	.1			2									
D	DO	3S	31		21	.7						21						
D	DO	3S	32	1.5	354	12.0			101	45	196	7						
D	DO	3S	34		15	.5			15									
D	DO	3S	36		11	.4			11									
D	DO	3S	38		8	.3			8									
D	DO	3S	40		390	13.4			164	52	142	25	7					
D	DO	4S	12		2	.1			2									
D	DO	4S	14		5	.2			5									
D	DO	4S	16	7.0	77	2.5			60	11								
D	DO	4S	18		34	1.2			27	8								
D	DO	4S	20		25	.9			14	11								
D	DO	4S	22		8	.3			8									
D	DO	4S	24		6	.2			6									
D	DO	4S	26		10	.3			10									
D	DO	4S	28		12	.4			12									
D	DO	4S	30		3	.1			3									
D	DO	4S	32	20.0	15	.4			12									
D	Totals				2,933	2,905	72.4		464	138	363	526	463	703	242	6		
S	DO	3S	24		5	10.4			5									
S	DO	3S	32		26	56.1					12	14						
S	DO	4S	18		3	6.7			3									
S	DO	4S	20		6	13.3			1	5								
S	DO	4S	24		6	13.5			6									

Log Stock Table - MBF

T07N R06W S08 TyTAKE	30.00
T07N R07W S13 TyPCTK	35.00
T07N R07W S13 TyTAKE	69.00

Project: **KNOBPT**
Acres **134.00**

Page **2**
Date **3/30/2015**
Time **2:14:17PM**

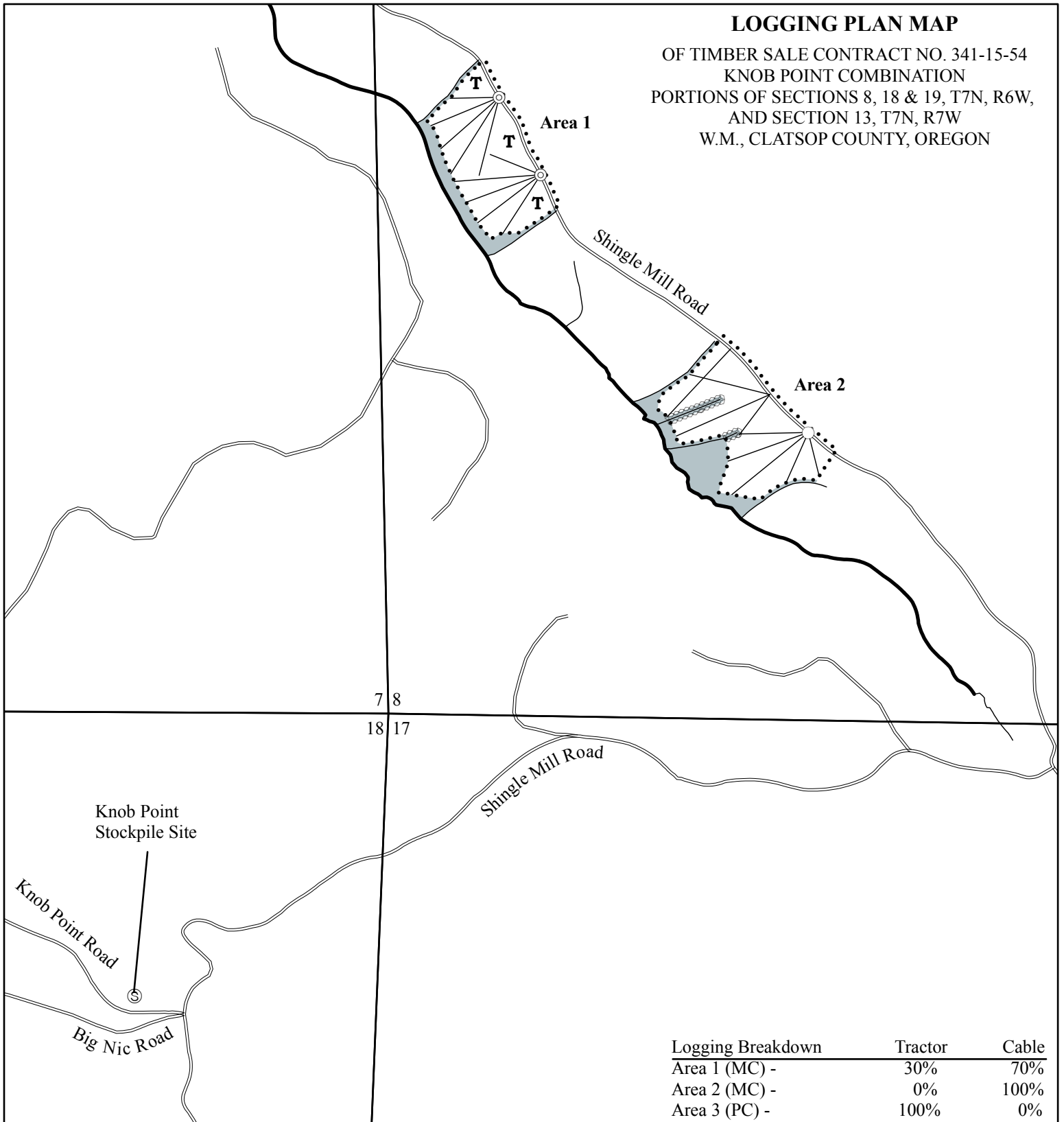
S Spp	T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Sp	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
S		Totals		47		47	1.2			11	10	12	14						
H		DO 2S	30	11		11	1.1						11						
H		DO 2S	32	60		60	6.3						37	9	14				
H		DO 2S	36	18		18	1.9									18			
H		DO 2S	40	622	1.4	614	64.7						54	162	361	37			
H		DO 3S	16	2		2	.2			2									
H		DO 3S	18	2		2	.2					2							
H		DO 3S	24	5		5	.5			2		3							
H		DO 3S	26	12		12	1.2			12									
H		DO 3S	28	4		4	.4				4								
H		DO 3S	30	8		8	.8			5		3							
H		DO 3S	32	43		43	4.5			4	6	34							
H		DO 3S	34	3		3	.4					3							
H		DO 3S	36	9		9	.9			9									
H		DO 3S	40	132	1.9	130	13.7			45	19	49		16					
H		DO 4S	14	3		3	.3				3								
H		DO 4S	16	11		11	1.1			3	7								
H		DO 4S	18	6		6	.6			6									
H		DO 4S	22	3		3	.3			3									
H		DO 4S	24	8		8	.8			6	2								
H		Totals		960	1.2	949	23.6			95	41	93	102	187	375	55			
NF		DO 2S	40	8		8	83.5									8			
NF		DO 3S	40	2		2	16.5					2							
NF		Totals		9		9	.2					2				8			
A		DO CR	20	5		5	5.1			2		3							
A		DO CR	24	5		5	4.7			5									
A		DO CR	30	20		20	19.6			2			9	9					
A		DO CR	32	52	1.2	51	50.5			25	8	18							
A		DO CR	36	13		13	12.4			13									
A		DO CR	40	8		8	7.7					8							
A		Totals		101		101	2.5			46	8	29	9	9					
Total		All Species		4,050		4,011	100.0			616	197	499	650	659	1078	304	6		

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		3/30/2015	
T07N R06W S08 TyTAKE30.00 T07N R07W S13 TyPCTK35.00 T07N R07W S13 TyTAKE69.00				Project					KNOBPT					Time:		2:14:17PM	
				Acres					134.00					Grown Year:			
S Spc	T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
D		8	1	86	17	1.800	.63	1.80	4.0	20.0		7	36		10	5	
D		10	7	86	21	24.470	13.35	16.93	7.2	25.5		122	433		164	58	
D		11	2	83	30	4.949	3.07	4.95	9.9	29.3		49	145		65	19	
D		12	2	90	77	3.903	3.07	6.52	13.8	49.9		90	326		120	44	
D		13	6	85	53	13.384	12.34	13.38	19.3	51.7		259	692		347	93	
D		14	5	86	61	5.344	5.71	6.29	21.8	59.4		137	374		184	50	
D		15	4	86	75	3.290	4.04	5.76	20.0	62.9		115	362		154	48	
D		16	9	87	79	9.709	13.56	18.97	21.9	78.6		416	1,491		557	200	
D		17	5	85	86	3.866	6.09	7.73	26.7	84.9		207	657		277	88	
D		18	4	86	81	2.446	4.32	4.89	28.4	97.3		139	476		186	64	
D		19	8	87	87	6.372	12.55	11.70	37.2	120.6		435	1,411		583	189	
D		20	8	86	93	6.580	14.36	12.23	42.7	151.6		522	1,855		700	249	
D		21	4	85	104	2.984	7.18	5.97	48.1	167.2		287	998		385	134	
D		22	5	86	110	3.101	8.19	8.54	40.8	167.3		349	1,429		467	191	
D		23	4	86	102	2.851	8.22	6.41	44.8	175.6		287	1,126		385	151	
D		24	7	87	113	3.672	11.54	9.96	50.8	211.3		506	2,105		678	282	
D		25	7	84	111	2.966	10.11	7.74	55.4	212.7		429	1,647		575	221	
D		26	2	85	123	1.115	4.11	3.35	58.2	241.7		195	809		261	108	
D		27	4	85	119	1.350	5.37	3.73	65.4	256.2		244	957		327	128	
D		28	5	83	117	1.736	7.43	4.43	63.7	255.6		283	1,133		379	152	
D		29	2	82	124	.585	2.68	1.62	70.8	277.1		115	449		154	60	
D		30	3	84	132	.966	4.74	2.90	77.2	335.8		224	973		300	130	
D		31	3	84	119	1.177	6.17	3.53	78.8	358.9		278	1,267		373	170	
D		33	1	86	113	.106	.63	.32	76.3	306.7		24	97		32	13	
D		35	1	81	133	.308	2.06	.92	107.7	473.3		99	437		133	59	
D		Totals	109	86	67	109.032	171.49	170.59	34.1	127.1		5,817	21,681		7,795	2,905	
H		12	1	88	37	2.163	1.70	2.16	14.0	40.0		30	87		41	12	
H		13	1	89	56	1.843	1.70	1.84	22.0	60.0		41	111		54	15	
H		15	2	89	63	2.184	2.68	3.57	20.8	71.6		74	256		99	34	
H		16	2	89	53	1.405	1.96	1.41	31.0	65.0		44	91		58	12	
H		17	2	87	58	1.245	1.96	1.87	26.3	73.3		49	137		66	18	
H		19	2	88	73	.997	1.96	1.99	34.5	117.5		69	234		92	31	
H		20	4	87	78	1.799	3.92	3.15	44.3	142.9		139	450		187	60	
H		21	2	84	99	1.114	2.68	2.93	39.8	142.4		117	418		156	56	
H		22	3	88	94	1.387	3.66	2.77	54.3	209.6		151	581		202	78	
H		23	4	89	102	2.107	6.08	5.39	51.0	213.1		275	1,149		368	154	
H		24	4	86	91	1.478	4.64	3.18	56.3	208.8		179	665		240	89	
H		26	6	87	98	1.986	7.32	4.43	71.9	281.5		319	1,248		427	167	
H		27	3	82	95	.921	3.66	1.84	76.7	285.1		141	525		189	70	
H		28	6	85	83	1.377	5.89	2.75	69.7	270.8		192	746		257	100	
H		30	2	84	91	.400	1.96	.80	72.5	300.0		58	240		78	32	
H		32	1	82	87	.176	.98	.35	106.0	405.0		37	142		50	19	
H		Totals	45	87	76	22.579	52.76	40.45	47.3	175.0		1,914	7,078		2,565	949	
A		10	1	86	40	1.168	.64	1.17	9.0	30.0		11	35		14	5	
A		11	1	87	66	.965	.64	.97	16.0	60.0		15	58		21	8	
A		12	1	87	47	1.940	1.52	1.94	16.0	50.0		31	97		42	13	
A		13	1	87	99	.691	.64	1.38	18.5	70.0		26	97		34	13	
A		14	2	86	71	1.192	1.27	1.79	21.7	76.7		39	137		52	18	
A		15	1	86	74	.519	.64	1.04	21.0	75.0		22	78		29	10	
A		16	1	86	42	.456	.64	.46	26.0	50.0		12	23		16	3	
A		18	1	87	77	.361	.64	.72	31.5	110.0		23	79		30	11	
A		19	2	87	75	.647	1.27	.97	41.7	153.3		40	149		54	20	

TC		PSTNDSUM		Stand Table Summary								Page Date:		2 3/30/2015	
T07N R06W S08 TyTAKE30.00 T07N R07W S13 TyPCTK35.00 T07N R07W S13 TyTAKE69.00					Project		KNOBPT		Time:		2:14:17PM				
					Acres		134.00		Grown Year:						
S	Tot							Average Log		Net		Net		Totals	
Spec	DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
A	Totals	11	87	61	7.940	7.89	10.43	20.9	72.2		218	753		292	101
S	14	1	83	25	.891	.95	.89	16.0	40.0		14	36		19	5
S	15	2	83	50	1.552	1.90	2.33	20.0	63.3		47	147		62	20
S	17	1	83	33	.604	.95	.60	26.0	60.0		16	36		21	5
S	18	1	91	64	.539	.95	1.08	28.5	105.0		31	113		41	15
S	21	1	81	27	.396	.95	.40	32.0	40.0		13	16		17	2
S	Totals	6	84	41	3.981	5.71	5.30	22.6	65.8		120	348		161	47
NF	30	1	91	99	.078	.38	.16	102.0	455.0		16	71		21	9
NF	Totals	1	91	99	.078	.38	.16	102.0	455.0		16	71		21	9
Totals		172	86	68	143.610	238.24	226.92	35.6	131.9		8,085	29,931		10,834	4,011

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-15-54
KNOB POINT COMBINATION
PORTIONS OF SECTIONS 8, 18 & 19, T7N, R6W,
AND SECTION 13, T7N, R7W
W.M., CLATSOP COUNTY, OREGON



Legend

- Timber Sale Boundary
- Posted Stream Buffer
- Stream Buffer
- Type N Stream
- Type F Stream
- Ownership Boundary
- Existing Landing
- New Landing Construction
- Ground Yarding Area
- Cable Yarding Area
- Surfaced Road
- Paved Road
- Stockpile Site



Approximate Scale 1" = 1000'

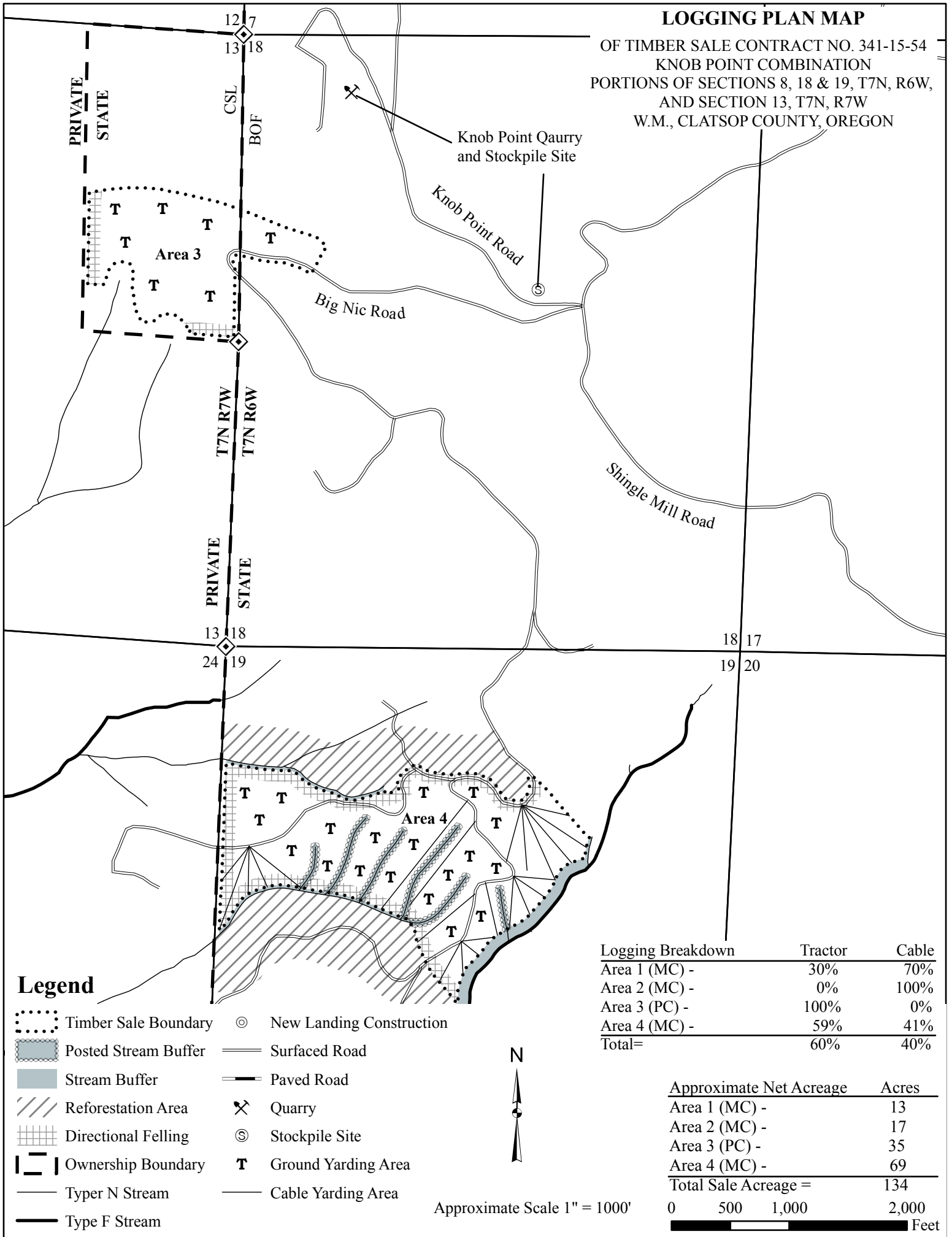
Logging Breakdown	Tractor	Cable
Area 1 (MC) -	30%	70%
Area 2 (MC) -	0%	100%
Area 3 (PC) -	100%	0%
Area 4 (MC) -	59%	41%
Total=	60%	40%

Approximate Net Acreage	Acres
Area 1 (MC) -	13
Area 2 (MC) -	17
Area 3 (PC) -	35
Area 4 (MC) -	69
Total Sale Acreage =	134



LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-15-54
KNOB POINT COMBINATION
PORTIONS OF SECTIONS 8, 18 & 19, T7N, R6W,
AND SECTION 13, T7N, R7W
W.M., CLATSOP COUNTY, OREGON



Legend

- Timber Sale Boundary
- Posted Stream Buffer
- Stream Buffer
- Reforestation Area
- Directional Felling
- Ownership Boundary
- Type N Stream
- Type F Stream
- New Landing Construction
- Surfaced Road
- Paved Road
- Quarry
- Stockpile Site
- Ground Yarding Area
- Cable Yarding Area