



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Circle K  
Sale 341-12-45

District: Astoria

Date: November 04, 2011

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**cost summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sale Value</b>	\$440,629.32	\$61,292.51	\$501,921.83
		<b>Project Work:</b>	\$(63,604.00)
		<b>Advertised Value:</b>	\$438,317.83



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**timber description**

Location: Portions of Sections 2 & 3, T4N, R7W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	20	0	97
Western Hemlock / Fir	19	0	96
Alder (Red)	14	0	95
Maple	15	0	95

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	931	367	58	0	1,356
Western Hemlock / Fir	59	43	0	0	102
Alder (Red)	0	142	25	0	167
Maple	0	0	0	2	2
Total	990	552	83	2	1,627



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

Expected Log Markets: Clatskanine, Tillamook, Longview, Mist, Warrenton

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost  
 $\$689.33/\text{MBF} = \$900.00/\text{MBF} - \$210.67/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$740 daily truck cost.

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

100% Brand and Paint:  $\$1/\text{MBF} \times 1,627 \text{ MBF} = \$1,627$

Log Loader Slash & Landing Piling (includes Move-In and Pile Materials): = \$3,292 (see attached appraisal)

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

TOTAL Other Costs (with Profit & Risk to be added) = \$6,919

Other Costs (No Profit & Risk added):

None.



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**logging conditions**

**combination#: 1**

Douglas - Fir	84.00%
Western Hemlock / Fir	84.00%
Alder (Red)	84.00%
Maple	84.00%

**yarding distance:** Medium (800 ft)      **downhill yarding:** No  
**logging system:** Cable: Medium Tower >40 - <70      **Process:** Stroke Delimber  
**tree size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF  
**loads / day:** 7.0      **bd. ft / load:** 4,500  
**cost / mbf:** \$106.16

**machines:** Log Loader (A)  
Stroke Delimber (A)  
Tower Yarder (Medium)

**combination#: 2**

Douglas - Fir	16.00%
Western Hemlock / Fir	16.00%
Alder (Red)	16.00%
Maple	16.00%

**yarding distance:** Short (400 ft)      **downhill yarding:** No  
**logging system:** Shovel      **Process:** Manual Delimiting  
**tree size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF  
**loads / day:** 7.0      **bd. ft / load:** 4,500  
**cost / mbf:** \$79.51

**machines:** Shovel Logger



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**logging costs**

Operating Seasons:	1.00	Profit Risk:	10.00%
Project Costs:	\$63,604.00	Other Costs (P/R):	\$6,919.00
Slash Disposal:	\$0.00	Other Costs:	\$0.00

**Miles of Road**

Road Maintenance: \$7.19

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

**Hauling Costs**

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.9
Western Hemlock / Fir	\$0.00	2.0	4.6
Alder (Red)	\$0.00	2.0	3.0
Maple	\$0.00	1.0	4.3
Other	\$0.00	0.0	0.0



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**logging costs breakdown**

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
<b>Douglas - Fir</b>									
\$101.90	\$7.41	\$2.70	\$70.71	\$4.25	\$18.70	\$0.00	\$5.00	\$0.00	\$210.67
<b>Western Hemlock / Fir</b>									
\$101.90	\$7.48	\$2.70	\$76.04	\$4.25	\$19.24	\$0.00	\$5.00	\$0.00	\$216.61
<b>Alder (Red)</b>									
\$101.90	\$7.55	\$2.70	\$117.73	\$4.25	\$23.41	\$0.00	\$5.00	\$0.00	\$262.54
<b>Maple</b>									
\$101.90	\$7.55	\$2.70	\$164.27	\$4.25	\$28.07	\$0.00	\$5.00	\$0.00	\$313.74

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$518.32	\$307.65	\$0.00
Western Hemlock / Fir	\$0.00	\$446.57	\$229.96	\$0.00
Alder (Red)	\$0.00	\$627.51	\$364.97	\$0.00
Maple	\$0.00	\$485.00	\$171.26	\$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
Alder (Red)	0	\$0.00	\$0.00
Maple	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	1,356	\$307.65	\$417,173.40
Western Hemlock / Fir	102	\$229.96	\$23,455.92
Alder (Red)	167	\$364.97	\$60,949.99
Maple	2	\$171.26	\$342.52

**Gross Timber Sale Value**

Recovery: \$501,921.83

Prepared by: Jenny Johnson

Phone: 503-325-5451

**Road Maintenance (Harvest) Cost Summary**

Sale: \_\_\_\_\_  
 Date: 02-Aug-11  
 By: J. Johnson

Circle K  
 MBF: 1,627  
 \$\$/MBF: \$7.19

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Production Rates	Miles/day	Distance(miles)	Days
Final Road Maintenance	Grader 14G	\$675	1	30	\$93	\$3,465	Grader	1.5	4.0	2.7
	Dump Truck 12CY x 2	\$282	2	10	\$73	\$1,742				
	FE Loader C966	\$675	1	10	\$77	\$1,445	Vibratory Roller*	1.5	4.0	2.7
	Vibratory Roller	\$675	1	30	\$72	\$2,835				
	Water Truck 2,500 gallon Labor	\$165	1	20	\$83	\$1,825				
<b>Total</b>						\$380				\$11,692

\*Final Road Maintenance Only



**Site Prep Appraisal**

Sale Number: 341-12-45  
 Sale Name: Circle K  
 Date: 08/02/2011

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

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area	
1	MC	B	9	13.5	\$110.00	\$1,485.00	
<b>Sub Total =</b>						<b>\$1,485.00</b>	
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	40.5	\$5.00	\$202.50	
<b>*Cost includes separating firewood</b>						<b>Sub Total =</b>	<b>\$862.50</b>
Move-In Allowance	Number of Move-In's	Total Move-In Allowance					
\$945.00	1	\$945.00	<b>Sub Total =</b>				<b>\$945.00</b>
<b>Grand Total =</b>						<b>\$3,292.50</b>	

**SUMMARY OF ALL PROJECT COSTS**

**SALE NAME:** Circle K

**NEW CONSTRUCTION:**

Project No. 1

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Rock Roads	<u>1A -1B</u>	<u>26.8</u>	<u>\$32,832</u>
<b>TOTALS</b>	<u>0.51 miles</u>	<u>26.80</u>	<u>\$32,832</u>

**ROAD IMPROVEMENT:**

Project No. 1

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	<u>11-12 &amp; 13-14</u>	<u>177.70</u>	<u>\$21,522</u>
<b>TOTALS</b>	<u>3.37 miles</u>	<u>177.70</u>	<u>\$21,522</u>

**SPECIAL PROJECTS:**

Project Work Road Maintenance	<u>\$3,723</u>
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**MOVE IN:**

<u>Equipment</u>	<u>Cost</u>
<u>Dozer (D8)</u>	<u>\$1,220</u>
<u>Dump Trucks (10 -12 cy x 4 )</u>	<u>\$564</u>
<u>Dump Trucks (20 cy x 2)</u>	<u>\$332</u>
<u>F E Loader (C966)</u>	<u>\$675</u>
<u>Grader (14G)</u>	<u>\$675</u>
<u>Vibratory Roller</u>	<u>\$675</u>
<u>Water Truck (2,500 gallon)</u>	<u>\$165</u>
<u>Excavator (C330)</u>	<u>\$1,220</u>
<b>TOTAL</b>	<u>\$5,526</u>

**GRAND TOTAL** \$63,604

Compiled By: J. Johnson FL

Date: 09/30/2011

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Circle K (Designed Roads) NEW CONSTRUCTION: 26.80 STATIONS 0.51 MILES  
 ROADS: 1A - 1B IMPROVEMENT: STATIONS 0.00 MILES

Method	Acres/amount	Rate	=	Cost
Scatter Outside of RW				
1A-1B	2.5	\$1,161.00	x	\$2,902.50
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>				<b>\$2,903</b>

Material	Cy/amount/station	Rate	=	Cost
Common Drift Excavation \$\$/cy	3.768	\$1.60	x	\$6,028.80
End Haul Excavation \$\$/cy	700	\$3.50	x	\$2,450.00
Embankment Compaction \$\$/cy	3,657	\$0.60	x	\$2,194.20
Cut Slope Rounding \$\$/Sta	2	\$37.00	x	\$74.00
Landing Construction 1B, Sta. 19+00	2	\$338.00	x	\$676.00
<b>SUB TOTAL FOR EXCAVATION</b>				<b>\$11,423</b>

Location	Dia/type	Lineal ft.	Rate	No. bands	Rate	Cost
<b>CULVERT MATERIALS AND INSTALLATION</b>						
Subtotal Culverts & Installation:						\$0.00
Other/miscellaneous:						
Culvert stakes & markers:						
						\$0.00
<b>SUB TOTAL FOR WASTE AREA TREATMENT, CULVERT MATERIALS &amp; INSTALLATION</b>						<b>\$0</b>
<b>Grand Total:</b>						<b>\$14,326</b>

**Project No. 1 New Road Construction**

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Circle K  
 ROAD: 1A to 1B

Subgrade prep:  
 Grade, Shape and Ditch 16'  
 Subgrade Compaction

NEW CONSTRUCTION: 26.80 STATIONS  
 IMPROVEMENT: 0.00 STATIONS

0.51 MILES  
 0.00 MILES

Stations/amount	Rate/stalamt	Cost
26.80	\$21.55	\$577.54
26.80	\$17.52	\$469.54

ROAD SEGMENT	1A to 1B	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta. 0+00 to 26+80	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
			1A to 1B	Volume (CY) per				
Base Rock	4"-0" Crushed	8	station	50	stations	1,340	\$7.00	\$9,380
Turnouts	4"-0" Crushed	8	turnout	22	turnouts	154	\$7.00	\$1,078
Curve Widening	4"-0" Crushed	8	curve	11	curves	22	\$7.00	\$154
Fill Widening	4"-0" Crushed	8	turn around	11	turn arounds	44	\$7.00	\$308
Turn Arounds	4"-0" Crushed	8	turn around	22	turn arounds	44	\$7.00	\$308
Traction Rock	3/4"-0" Crushed	3	station	19	stations	247	\$7.00	\$1,729
Curve Widening	3/4"-0" Crushed	3	curve	11	curves	11	\$7.00	\$77
Turnouts	3/4"-0" Crushed	3	turnout	11	turnouts	11	\$7.00	\$77
Fill Widening	3/4"-0" Crushed	2	landing	50	landings	22	\$7.00	\$154
Landings	6"-0" Pit-run	N/A	landing	50	landings	100	\$7.00	\$700
Total Rock for Road Segment:						1,995		\$13,965
Processing:		Water, Process & Compact Crushed Base Rock:		in two lifts, Lift No. 1		No. stacy	Rate/sta	Cost
Processing:		Water, Process & Compact Crushed Base Rock:		Lift No. 2		26.8	\$49.02	\$1,314
Processing:		Traction Rock: 3 Inch Lift 13 Stations				26.8	\$49.02	\$637
Description:		Develop Pitrun Rock: 100 cy. @ 2.30 cy. =				100	\$2.30	\$230

**SUBTOTAL FOR SURFACING**

4"-0"	3/4"-0"	1 1/2"-0"	6"-0"	Total
1,604	291	0	100	1,995

\$18,507

**SPECIAL PROJECTS:**

No Special Projects

**GRAND TOTAL \$32,832**

Project No. 1 Road Improvement

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Circle K  
 ROAD: I1-12 (147+20) & I3-14 (30+50) Junctions, and Landings (I3, I4)  
 NEW CONSTRUCTION: 0.00 STATIONS  
 IMPROVEMENT: 177.70 STATIONS  
 0.00 MILES  
 3.37 MILES

Subgrade prep:	Description	Stations/amount	Rate/sta./amt	Cost
Grade, Shape and Ditch 16'		177.70	\$21.55	\$3,829.44

ROAD SEGMENT	Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta. 0+00 - 147+20	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
					11 to 12	Volume (CY) per				
11 to 12	Leveling Rock	3/4"-0" crushed	0+00 - 23+00	N/A	load	10	16	160	\$7.00	\$1,120
	Turnouts	3/4"-0" crushed	0+00 - 23+00	N/A	turnout	10	2	20	\$7.00	\$140
	Leveling Rock	3/4"-0" crushed	23+00 - 37+35	N/A	load	10	6	60	\$7.00	\$420
	Turnouts	3/4"-0" crushed	23+00 - 37+35	N/A	turnout	10	2	20	\$7.00	\$140
	Leveling Rock	3/4"-0" crushed	37+35 - 51+85	N/A	load	10	13	130	\$7.00	\$910
	Turnouts	3/4"-0" crushed	37+35 - 51+85	N/A	turnout	10	1	10	\$7.00	\$70
	Leveling Rock	3/4"-0" crushed	51+85 - 99+40	N/A	load	10	31	310	\$7.00	\$2,170
	Turnouts	3/4"-0" crushed	51+85 - 99+40	N/A	turnout	10	3	30	\$7.00	\$210
	Leveling Rock	3/4"-0" crushed	99+40 - 147+20	N/A	load	10	21	210	\$7.00	\$1,470
	Turnouts	3/4"-0" crushed	99+40 - 147+20	N/A	turnout	10	6	60	\$7.00	\$420
Turnaround	3/4"-0" crushed	146+00	N/A	turnaround	10	1	10	\$7.00	\$70	
Total Rock for Road Segment:								1,020		\$7,140

ROAD SEGMENT	Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta. 0+00 - 30+50	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
					13 to 14	Volume (CY) per				
13 to 14	Leveling Rock	3/4"-0" crushed		N/A	load	10	15	150	\$7.00	\$1,050
	Turnouts	3/4"-0" crushed		N/A	turnout	10	5	50	\$7.00	\$350
	Turnaround	3/4"-0" crushed		N/A	turnaround	10	1	10	\$7.00	\$70
	Junctions	3/4"-0" crushed	I3	N/A	junction	10	1	10	\$7.00	\$70
	Landings	6"-0" Pit-run	I4	N/A	landing	30	1	30	\$7.00	\$210
Total Rock for Road Segment:								280		\$1,750

Processing:	Description	# Lifts	No. sta	Rate/sta	Cost
Water, Process & Compact: (I1 to I2, & I3 to I4)		1	177.70	\$49.02	\$8,711
					\$12,719

SUBTOTAL FOR SURFACING					
24"-6"	3/4"-0"	1 1/2"-0"	6"-0"	Total	
0	1,240	0	30	1,270	

SPECIAL PROJECTS		Description	Cost
SUB TOTAL FOR SPECIAL PROJECTS		Pit-run development (\$2.30/cy)	\$92.00
GRAND TOTAL			\$92.00

Compiled By: J. Johnson Date: 09/30/11

Subtotal of Surfacing & Spec. Proj. \$21,522  
 Subtotal of Cleaning, Exc., Culv. \$0  
 \$21,522



**Road Maintenance after completion of Projects**

**Sale:** Circle K  
**Date:** 30-Sep-11  
**By:** J. Johnson  
 (Buster Creek Quarry to Mullenbach Rd.)

Type	Equipment/Rationale	Move in Rate	Hours	Rate	Cost
	Grader 14G	\$93	10	\$93	\$1,023
	Dump Truck 12CY (1 truck)	\$73	8	\$73	\$657
	FE Loader C966 (already onsite)	\$0	3	\$77	\$231
	Vibratory Roller	\$94	10	\$94	\$1,034
	Dump Truck w/20 Tilt Deck Trailer	\$188.00	1	\$92	\$280
	Water Truck 2500 gallon	\$83	5	\$83	\$498
<b>Total</b>					<b>\$3,723</b>

Miles/day	Distance(miles)	Days
1.0	1.1	1.1

Production Rates  
 Grader

**Circle K  
TIMBER CRUISE REPORT  
FY 2012**

1. **Sale Area Location:** Areas 1 and 2 are located in portions of Sections 2 and 3, T4N, R7W, W.M., Clatsop County, Oregon.
2. **Fund Distribution:** BOF 100%  
Tax Code 8-01 (100%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	GTRA	New R/W	Stream Buffer	Net Acres	Survey Method
1	Modified Clearcut	70	3	2	9	56	GIS
2	Right-of-way	2	0	0	0	2	GIS
<b>TOTALS</b>		<b>72</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>58</b>	

4. **Cruisers and Cruise Dates:** All areas were cruised by Jenny Johnson, Kevin Berry, Jasen McCoy, and Bryce Rodgers, September 15, 2011.

5. **Cruise Method and Computation:** Area 1 is a modified clearcut and was variable plot cruised using a 40 BAF. These plots are located on a 2 chain by 8 chain grid, with every third plot measured and graded. A total of 34 plots were sampled, with 11 measured and graded plots, and 23 count plots. No cedar was cruised in Areas 1 and 2, but will be a reserved species in these two areas. Area 2 (R/W) is located within Area 1 and was cruised concurrently. Volume per acre from Area 1 was applied to Area 2.

All cruisers used Corvallis MicroTechnology (CMT) data collectors, and were 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	CRUISE	TRACT	TYPE	ACRES
1	T4NR6W05	AREA1	TAKE	56
2 (R/W)	T4NR6W05	AREA1	R/W	2

6. **Timber Description:**

Area 1 is a modified clearcut unit, approximately 68 year-old, consisting of Douglas-fir, red alder and western hemlock. The average Douglas-fir tree size to be harvested is approximately 20 inches DBH, with an average height of 70 feet to a merchantable top (6 inch d.i.b./40% fp). The average alder tree size is approximately 14 inches DBH and 50 feet to a merchantable top. The average hemlock tree size is approximately 19 inches DBH and 52 feet to a merchantable top. The average volume per acre to be harvested (net) is 28 MBF.

Area 2 (R/W) is the same timber type as Area 1.

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

Statistics for Stand B.F. volumes

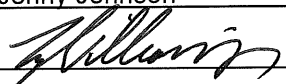
Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1 (MC)	65%	12%	49.6%	8.5%



**8. Volumes by Species and Log Grade:** (See "Species, Sort, Grade" - Project Report, attached).  
 Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	CampRun	% D & B	% Sale
Douglas-fir	20"	1,356	931	367	58		9%	83%
Alder	14"	167		142	25		17%	10%
Hemlock	19"	102	59	43			4%	6%
Maple	15"	2				2	~1%	1%
<b>TOTALS</b>		<b>1,627</b>	<b>990</b>	<b>552</b>	<b>83</b>	<b>2</b>		

**9. Approvals:**

Prepared by: Jenny Johnson Date: September 30, 2011  
 Unit Forester Approval:  Date: 10/11/11

- 10. Attachments:**
- Cruise Designs and Maps - 2 pages
  - Volume Report - 3 pages
  - Statistics Report - 2 pages
  - Log Stock Tables - 2 page
  - Stand Table Summary – 1 page

X:\Jewell\_Unit\Timber Sales\2012\Circle K\Cruise\CruiseReport\_CK.docx

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Circle K **Area(s)** 1

**Harvest Type:** (MC)

**Approx. Cruise Acres:** 58 **Estimated CV%** 65 Net BF **SE% Objective** 12 Net BF

**Planned Sale Volume:** 1,474 **Estimated Sale Area Value/Acre:** \$4,950/Ac  
(22 MBF/Ac.)

**A. Cruise Goals:** (a) Grade minimum 75 conifer & 20 alder:  
(b) Sample 35 cruise plots ( 12 grade/ 23 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 40 (Full point; Half point) (circle one)  
Cruise Line Direction(s) N-S  
Cruise Line Spacing 8 (chains)  
Cruise Plot Spacing 2 (chains)  
Count/Grade Ratio 2:1

Cedar and marked wildlife trees are leave trees and are recorded as such. Record snags (SN) as cull and estimate heights and diameters. Grade alder as 2S, 3S, 4S or camprun-sawlogs (30 net BF minimum). Do not take plots in a buffer.

**C. Tree Measurements:**

- 1. Diameter:** Minimum DBH to cruise is 8” for conifers and 10” for hardwoods.  
Record dbh to nearest ½” 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.

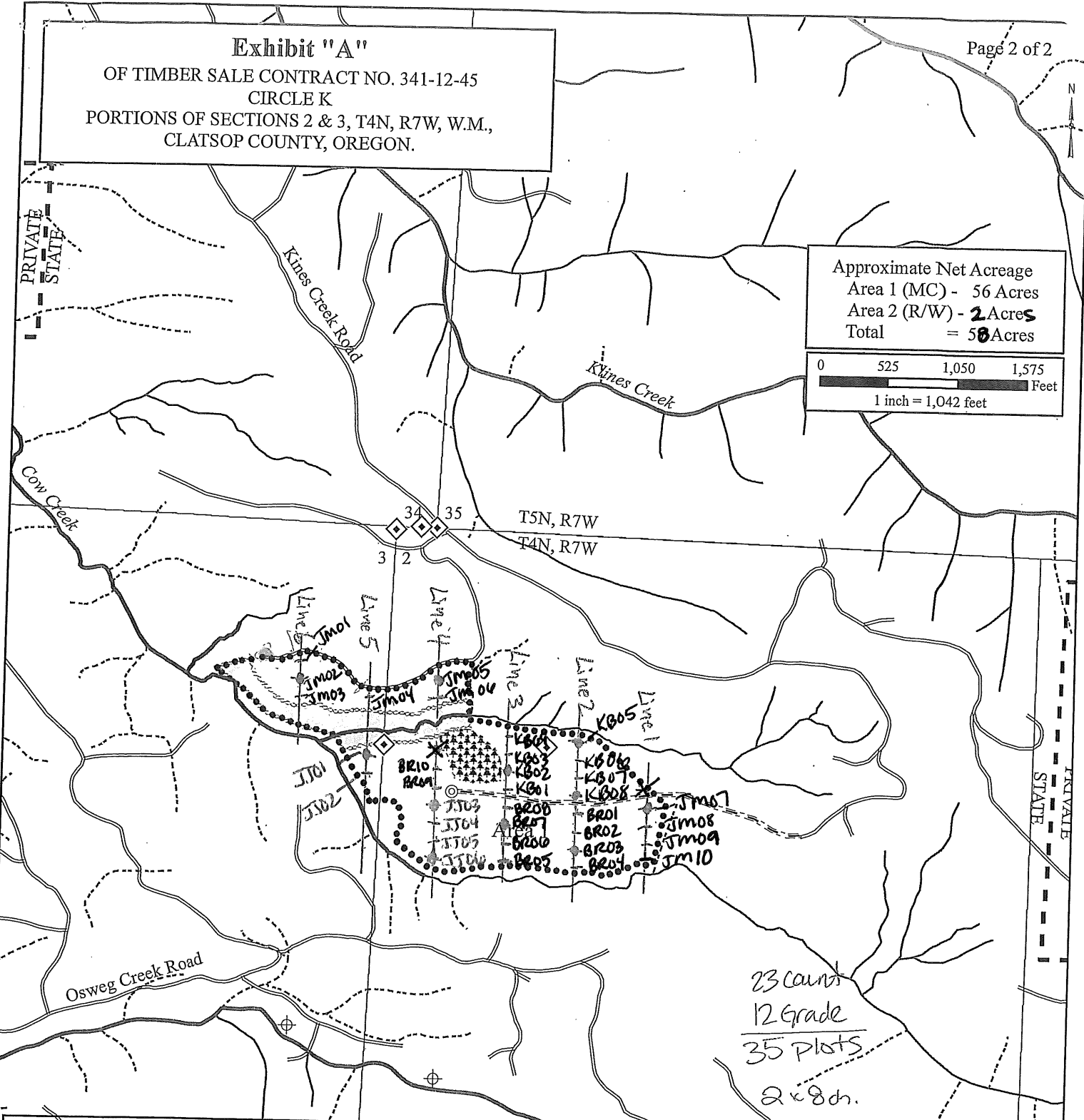
5. **Tree Segments:** Record log segments in “standard” log lengths in general use, such as 32’ and 40’ lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12’; for hardwoods, it’s 8’. Maximum 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; 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: Jenny Johnson  
 Approved by: *Jon Long*  
 Date: 8/23/11

**Exhibit "A"**  
 OF TIMBER SALE CONTRACT NO. 341-12-45  
 CIRCLE K  
 PORTIONS OF SECTIONS 2 & 3, T4N, R7W, W.M.,  
 CLATSOP COUNTY, OREGON.

Approximate Net Acreage  
 Area 1 (MC) - 56 Acres  
 Area 2 (R/W) - 2 Acres  
 Total = 58 Acres

0 525 1,050 1,575  
 Feet  
 1 inch = 1,042 feet



23 counts  
 12 Grade  
 35 plots  
 2 x 8 ch.

**Legend**

◆ Survey Corner	Streams	▨ Posted Stream Buffer
⊙ Landings	— Fish	⋯ Timber Sale Boundary
⊕ Domestic Water Use	— Nonfish	□ SGPLS Polygon
⊙ Registered Water Use Site	- - - Unknown	- - - ODF Ownership
- - - New Road Construction	▭ New Construction Right of Way	— Paved
— Highway	▨ GTRA	— Surfaced

**Species, Sort Grade - Board Foot Volumes (Project)**

T04N R07W S03 TyR/W 2.00  
T04N R07W S03 TyTAKE 56.00

**Project: CIRCLEK**  
**Acres 58.00**

**Page 1**  
**Date 10/4/2011**  
**Time 10:44:11AM**

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	Bd Ft	CF/ Lf		
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D	DOCU			100.0	1,499											15		0.00	14.5	
D	DO2S	68		4.1	16,730	16,050	931		2	38	61				39	61	36	389	2.36	41.3
D	DO3S	27		1.2	6,406	6,329	367			69	28	3	2	14	53	32	32	103	0.93	61.3
D	DO4S	5		2.7	1,031	1,004	58	10	90				47	28	25	22	30	0.48	33.5	
<b>D Totals</b>			83	8.9	25,667	23,382	1,356	0	24	33	42	2	5	41	51	29	155	1.30	150.6	
M	DOCR	100			40	40	2		100						100	40	60	0.90	.7	
<b>M Totals</b>			0		40	40	2		100						100	40	60	0.90	.7	
SN	DOCU			100.0	4											29		0.00	.1	
<b>SN Totals</b>				100.0	4											29		0.00	.1	
A	DOCU			100.0	575											6		0.00	14.4	
A	DO3S	85			2,450	2,450	142		100				53	47		33	79	0.77	30.9	
A	DO4S	15			431	431	25		100				100			26	30	0.42	14.4	
<b>A Totals</b>			10	16.6	3,456	2,881	167		100				60	40		25	48	0.64	59.6	
H	DO2S	58			1,021	1,021	59				100				100	40	530	3.18	1.9	
H	DO3S	42		8.4	797	729	424		100				26	74		38	84	0.91	8.6	
<b>H Totals</b>			6	3.7	1,817	1,750	102		42		58		11	89		39	166	1.34	10.6	
<b>Totals</b>				9.5	30,985	28,053	1,627		0	33	28	39	2	10	35	53	29	127	1.14	221.6

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1								
Project: CIRCLEK												Date 10/4/2011								
												Time 10:45:15AM								
T04N R07W S03 TR/W										T04N R07W S03 TR/W										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
04N	07W	03	AREA1	R/W	2.00	34	61	1	W											
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Bd	CF/	
	T	r	ad	BdFt			Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	Ft	Lf	Per	
D	DO	CU		00.0	1,535											15		0.00	14.8	
D	DO	2S	68	4.1	17,124	16,427	33		2	38	61			39	61	36	389	2.36	42.3	
D	DO	3S	27	1.2	6,557	6,477	13		69	28	3	2	14	53	32	32	103	0.93	62.8	
D	DO	4S	5	2.7	1,056	1,027	2	10	90			47	28		25	22	30	0.48	34.3	
<b>D</b>	<b>Totals</b>			84	8.9	26,271	23,932	48	0	24	33	42	2	5	41	51	29	155	1.30	154.2
A	DO	CU		00.0	575											6		0.00	14.4	
A	DO	3S	85		2,450	2,450	5	100				53		47		33	79	0.77	30.9	
A	DO	4S	15		431	431	1	100				100				26	30	0.42	14.4	
<b>A</b>	<b>Totals</b>			10	16.6	3,456	2,881	6	100				60	40		25	48	0.64	59.6	
H	DO	2S	58		1,021	1,021	2			100				100		40	530	3.18	1.9	
H	DO	3S	42	8.4	797	729	1	100					26	74		38	84	0.91	8.6	
<b>H</b>	<b>Totals</b>			6	3.7	1,817	1,750	4	42	58			11	89		39	166	1.34	10.6	
SN	DO	CU		00.0	129											29		0.00	3.2	
<b>SN</b>	<b>Totals</b>				00.0	129										29		0.00	3.2	
M	DO	CR	100		40	40	0	100						100		40	60	0.90	.7	
<b>M</b>	<b>Totals</b>			0		40	40	0	100					100		40	60	0.90	.7	
<b>Type Totals</b>					9.8	31,714	28,604	57	0	33	28	39	2	10	35	52	29	125	1.13	228.3

<b>T04N R07W S03 TTAKE</b>										<b>T04N R07W S03 TTAKE</b>			
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>				
<b>04N</b>	<b>07W</b>	<b>03</b>	<b>AREA1</b>	<b>TAKE</b>	<b>56.00</b>	<b>34</b>	<b>56</b>	<b>1</b>	<b>W</b>				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
D		DO	CU		00.0	1,498											15		0.00	14.5
D		DO	2S	68	4.1	16,716	16,036	898		2	38	61			39	61	36	389	2.36	41.2
D		DO	3S	27	1.2	6,401	6,323	354		69	28	3	2	14	53	32	32	103	0.93	61.3
D		DO	4S	5	2.7	1,031	1,003	56	10	90			47	28	25	22	30	0.48	33.5	
<b>D</b>	<b>Totals</b>			<b>83</b>	<b>8.9</b>	<b>25,646</b>	<b>23,362</b>	<b>1,308</b>	<b>0</b>	<b>24</b>	<b>33</b>	<b>42</b>	<b>2</b>	<b>5</b>	<b>41</b>	<b>51</b>	<b>29</b>	<b>155</b>	<b>1.30</b>	<b>150.5</b>
A		DO	CU		00.0	575											6		0.00	14.4
A		DO	3S	85		2,450	2,450	137		100				53	47		33	79	0.77	30.9
A		DO	4S	15		431	431	24		100				100			26	30	0.42	14.4
<b>A</b>	<b>Totals</b>			<b>10</b>	<b>16.6</b>	<b>3,456</b>	<b>2,881</b>	<b>161</b>	<b>100</b>				<b>60</b>	<b>40</b>		<b>25</b>	<b>48</b>	<b>0.64</b>	<b>59.6</b>	
H		DO	2S	58		1,021	1,021	57			100				100		40	530	3.18	1.9
H		DO	3S	42	8.4	797	729	41		100				26	74		38	84	0.91	8.6
<b>H</b>	<b>Totals</b>			<b>6</b>	<b>3.7</b>	<b>1,817</b>	<b>1,750</b>	<b>98</b>	<b>42</b>	<b>58</b>			<b>11</b>	<b>89</b>		<b>39</b>	<b>166</b>	<b>1.34</b>	<b>10.6</b>	
M		DO	CR	100		40	40	2		100					100		40	60	0.90	.7
<b>M</b>	<b>Totals</b>			<b>0</b>		<b>40</b>	<b>40</b>	<b>2</b>	<b>100</b>						<b>100</b>		<b>40</b>	<b>60</b>	<b>0.90</b>	<b>.7</b>
<b>Type Totals</b>					<b>9.4</b>	<b>30,959</b>	<b>28,034</b>	<b>1,570</b>	<b>0</b>	<b>33</b>	<b>28</b>	<b>39</b>	<b>2</b>	<b>10</b>	<b>35</b>	<b>53</b>	<b>29</b>	<b>127</b>	<b>1.14</b>	<b>221.4</b>

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	CIRCLEK		DATE	9/26/2011		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	03	AREA1	TAKE	56.00	34	169	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		34	169	5.0						
CRUISE		11	55	5.0	5,982		.9			
DBH COUNT										
REFOREST										
COUNT		23	114	5.0						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	49	65.4	20.1	70		144.7	25,646	23,362	6,031	5,727
R ALDER	2	30.9	14.5	50		35.3	3,456	2,881	1,068	953
WHEMLOCK	2	8.6	18.7	52		16.5	1,817	1,750	548	548
BL MAPLE	2	1.9	14.9	30		2.4	40	40	24	24
<b>TOTAL</b>	<b>55</b>	<b>106.8</b>	<b>18.5</b>	<b>62</b>		<b>198.8</b>	<b>30,959</b>	<b>28,034</b>	<b>7,671</b>	<b>7,252</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				<b># OF TREES REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	76.0	10.9	523	587	651					
R ALDER	37.2	34.8	62	95	128					
WHEMLOCK	109.6	102.6		355	719					
BL MAPLE	141.4	132.4		30	70					
<b>TOTAL</b>	<b>82.8</b>	<b>11.2</b>	<b>480</b>	<b>541</b>	<b>601</b>	<b>274</b>	<b>68</b>	<b>30</b>		
CL: 68.1 %	COEFF	<b>TREES/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	70.8	12.1	57	65	73					
R ALDER	164.5	28.2	22	31	40					
WHEMLOCK	202.1	34.6	6	9	12					
BL MAPLE	426.8	73.1	1	2	3					
<b>TOTAL</b>	<b>46.9</b>	<b>8.0</b>	<b>98</b>	<b>107</b>	<b>115</b>	<b>88</b>	<b>22</b>	<b>10</b>		
CL: 68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	65.3	11.2	129	145	161					
R ALDER	164.5	28.2	25	35	45					
WHEMLOCK	199.3	34.2	11	16	22					
BL MAPLE	406.0	69.6	1	2	4					
<b>TOTAL</b>	<b>43.3</b>	<b>7.4</b>	<b>184</b>	<b>199</b>	<b>214</b>	<b>75</b>	<b>19</b>	<b>8</b>		
CL: 68.1 %	COEFF	<b>NET BF/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	65.7	11.3	20,732	23,362	25,993					
R ALDER	164.6	28.2	2,069	2,881	3,694					
WHEMLOCK	200.7	34.4	1,148	1,750	2,352					
BL MAPLE	583.1	99.9	0	40	80					
<b>TOTAL</b>	<b>49.6</b>	<b>8.5</b>	<b>25,652</b>	<b>28,034</b>	<b>30,416</b>	<b>98</b>	<b>25</b>	<b>11</b>		



**STATISTICS**  
PROJECT CIRCLEK

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	07W	03	AREA1	00MC	58.00	34	176	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	34	176	5.2		
CRUISE	11	56	5.1	6,350	.9
DBH COUNT					
REFOREST					
COUNT	23	116	5.0		
BLANKS					
100 %					

**STAND SUMMARY**

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	49	65.4	20.1	70		144.7	25,646	23,362	6,031	5,727
R ALDER	2	30.9	14.5	50		35.3	3,456	2,881	1,068	953
WHEMLOCK	2	8.6	18.7	52		16.5	1,817	1,750	548	548
SNAG	2	3.3	14.1	30		3.5	129		36	
BL MAPLE	1	1.3	18.0	41		2.4	80	80	48	48
<b>TOTAL</b>	<b>56</b>	<b>109.5</b>	<b>18.4</b>	<b>61</b>		<b>202.4</b>	<b>31,129</b>	<b>28,074</b>	<b>7,731</b>	<b>7,276</b>

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		76.0	10.9	523	587	651			
R ALDER		37.2	34.8	62	95	128			
WHEMLOCK		109.6	102.6		355	719			
SNAG									
BL MAPLE									
<b>TOTAL</b>		<b>84.6</b>	<b>11.3</b>	<b>471</b>	<b>531</b>	<b>591</b>	<b>286</b>	<b>71</b>	<b>32</b>

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		70.8	12.1	57	65	73			
R ALDER		164.5	28.2	22	31	40			
WHEMLOCK		202.1	34.6	6	9	12			
SNAG		424.8	72.8	1	3	6			
BL MAPLE		406.0	69.6	0	1	2			
<b>TOTAL</b>		<b>51.7</b>	<b>8.9</b>	<b>100</b>	<b>109</b>	<b>119</b>	<b>107</b>	<b>27</b>	<b>12</b>

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		65.3	11.2	129	145	161			
R ALDER		164.5	28.2	25	35	45			
WHEMLOCK		199.3	34.2	11	16	22			
SNAG		326.3	55.9	2	4	6			
BL MAPLE		406.0	69.6	1	2	4			
<b>TOTAL</b>		<b>44.1</b>	<b>7.5</b>	<b>187</b>	<b>202</b>	<b>218</b>	<b>77</b>	<b>19</b>	<b>9</b>

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		65.7	11.3	20,732	23,362	25,993			
R ALDER		164.6	28.2	2,069	2,881	3,694			
WHEMLOCK		200.7	34.4	1,148	1,750	2,352			
SNAG									
BL MAPLE		406.0	69.6	24	80	135			
<b>TOTAL</b>		<b>49.2</b>	<b>8.4</b>	<b>25,706</b>	<b>28,074</b>	<b>30,442</b>	<b>97</b>	<b>24</b>	<b>11</b>



**Log Stock Table - MBF**

T04N R07W S03 TyR/W	2.00
T04N R07W S03 TyTAKE	56.00

**Project: CIRCLEK**  
**Acres 58.00**

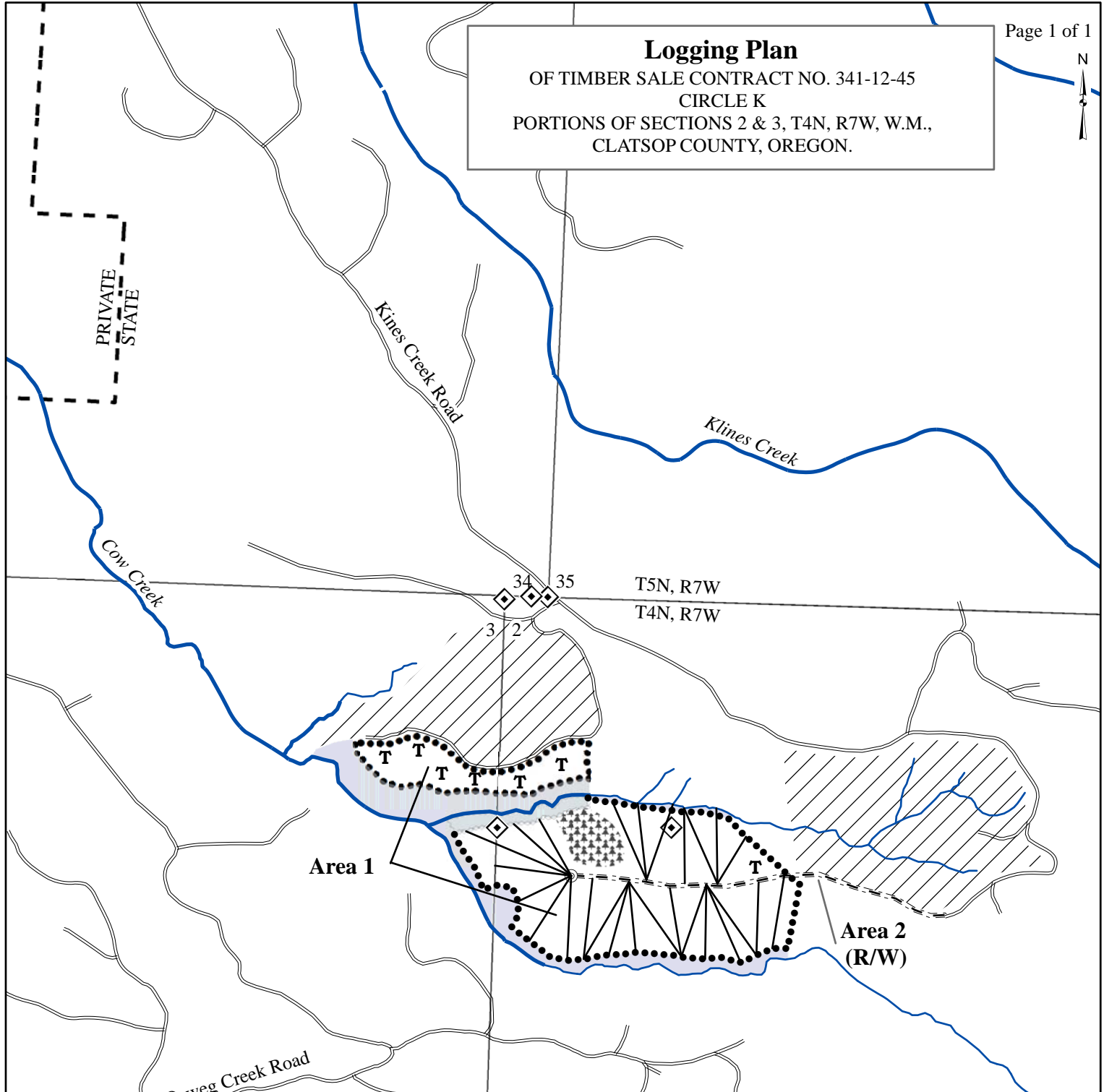
**Page 2**  
**Date 10/4/2011**  
**Time 2:23:15PM**

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
A		DO	CU	6	33	100.0															
A		DO	3S	26	75		75	44.9				75									
A		DO	3S	40	67		67	40.1			67										
A		DO	4S	26	25		25	15.0			25										
A		Totals			200	16.6	167	10.3			92	75									
H		DO	2S	40	59		59	58.3						59							
H		DO	3S	33	11		11	11.0			11										
H		DO	3S	40	35	11.1	31	30.7			31										
H		Totals			105	3.7	102	6.2			42			59							
Total		All Species			1,797	9.5	1,627	100.0		6	191	135	206	130	236	381	290	52			

TC PSTNDSUM		Stand Table Summary										Page 1			
												Date: 10/4/2011			
T04N R07W S03 TyR/W 2.00		Project CIRCLEK										Time: 2:22:51PM			
T04N R07W S03 TyTAKE 56.00		Acres 58.00										Grown Year:			
S Spc T	Sample DBH	Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
			FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
D	10	2	86	56	5.419	2.96	5.42	11.0	30.0		60	163		35	9
D	11	2	80	18	4.479	2.96	4.48	8.0	30.0		36	134		21	8
D	13	4	85	66	6.413	5.91	9.62	16.3	56.7		157	545		91	32
D	14	2	85	81	2.765	2.96	5.53	16.5	50.0		91	276		53	16
D	16	4	87	105	4.234	5.91	8.47	26.2	97.5		222	826		129	48
D	17	10	87	93	9.376	14.78	15.00	27.8	95.0		416	1,425		241	83
D	19	8	86	91	6.005	11.82	12.01	32.9	116.3		395	1,396		229	81
D	20	4	88	92	2.710	5.91	5.42	40.5	142.5		219	772		127	45
D	21	2	85	76	1.229	2.96	3.69	16.7	60.0		61	221		36	13
D	22	2	85	116	1.120	2.96	3.36	39.7	170.0		133	571		77	33
D	23	6	87	113	3.073	8.87	9.22	42.0	170.0		387	1,567		225	91
D	24	6	86	105	2.822	8.87	7.53	47.6	162.5		358	1,223		208	71
D	25	10	86	121	4.335	14.78	12.14	53.4	217.9		649	2,645		376	153
D	26	8	90	126	3.207	11.82	9.62	61.1	285.0		588	2,742		341	159
D	27	2	94	146	.743	2.96	2.23	76.0	376.7		169	840		98	49
D	28	6	86	114	2.074	8.87	6.22	62.1	271.1		386	1,687		224	98
D	29	2	85	134	.644	2.96	1.93	64.0	296.7		124	573		72	33
D	30	8	87	135	2.408	11.82	7.23	76.7	350.8		555	2,535		322	147
D	31	2	89	120	.583	2.96	1.75	77.0	366.7		135	641		78	37
D	32	2	85	132	.529	2.96	1.59	92.0	386.7		146	614		85	36
D	34	2	81	133	.469	2.96	1.41	99.7	426.7		140	600		81	35
D	37	2	86	137	.396	2.96	1.19	128.3	630.0		152	748		88	43
D	38	2	86	140	.375	2.96	1.13	134.7	566.7		152	638		88	37
D	Totals	98	86	92	65.407	144.83	136.16	42.1	171.7		5,732	23,382		3,325	1,356
A	14	2	86	56	16.508	17.65	16.51	29.0	70.0		479	1,156		278	67
A	15	2	87	80	14.380	17.65	28.76	16.5	60.0		475	1,726		275	100
A	Totals	4	86	67	30.888	35.29	45.27	21.1	63.6		953	2,881		553	167
H	15	2	85	65	6.711	8.24	6.71	34.0	80.0		228	537		132	31
H	28	2	86	91	1.926	8.24	3.85	83.0	315.0		320	1,213		185	70
H	Totals	4	85	71	8.637	16.47	10.56	51.9	165.7		548	1,750		318	102
M	13	2	87	29	1.276	1.18									
M	18	2	86	47	.666	1.18	.67	36.0	60.0		24	40		14	2
M	Totals	4	87	35	1.942	2.35	.67	36.0	60.0		24	40		14	2
SN	10	1	89	54	.112	.06									
SN	89	1	88	25	.001	.06									
SN	Totals	2	89	54	.113	.12									
Totals		112	86	82	106.986	199.07	192.65	37.7	145.6		7,257	28,053		4,209	1,627



**Logging Plan**  
 OF TIMBER SALE CONTRACT NO. 341-12-45  
 CIRCLE K  
 PORTIONS OF SECTIONS 2 & 3, T4N, R7W, W.M.,  
 CLATSOP COUNTY, OREGON.

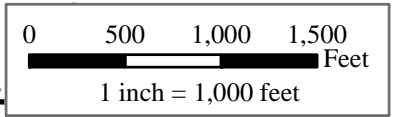


Area 1

Area 2  
(R/W)

Logging Breakdown		
	Tractor	Cable
Area 1	16%	84%

Approximate Net Acreage  
 Area 1 (MC) - 56 Acres  
 Area 2 (R/W) - 2 Acre  
 Total = 58 Acres



**Legend**

	Survey Corner		Right-of-Way Boundary
	New Construction Landing		Green Tree Retention Area
	Paved Road		Buffer Zone
	Existing Surfaced Road		Posted Stream Buffer
	New Road Construction - Rocked		Timber Sale Boundary
	Type F Stream		Ownership Boundary
	Type N Stream		Yarding Area - Tractor
	Reforestation Area		Yarding Area - Cable