

**CRUISE REPORT**  
**Roundabout**  
**343-18-096**

**1. LOCATION:** Portions of section 31, T3N, R5W, W.M., Washington Co. Oregon

**2. CRUISE DESIGN:**

Pre-cruise evaluation indicated that the stand's average DBH is approximately 12 inches with a Coefficient of Variation of about 40%. For sales of this size and approximate value, ODF cruise standards require a Sampling Error of 13% at a 68% confidence level, and a minimum sample size of 100 graded trees. Statistical analysis indicated that 9 variable radius plots utilizing a 20 BAF prism would produce an adequate sample size.

**3. SAMPLING METHOD:**

The Timber Sale Area was cruised in summer 2017. Sale Areas 1, & 2 were sampled with 9 variable radius grade plots laid out on a 5 chain x 4 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain, In Areas 1 and 2 cruisers chose 'take' trees as though thinning from below to 140 ft<sup>2</sup> of basal area.

**4. CRUISE RESULTS**

36 trees were measured and graded producing a cumulative Sampling Error of 19.2% on the Basal Area and 21.4% on the Board Foot Volume.

**5. TREE MEASUREMENT AND GRADING:**

All sample trees were measured and graded following Columbia River Log Scale grade rules and favored 40 foot segments.

a) **Height Standards:**

Total tree heights were measured to the nearest foot. Bole heights were calculated to a six inch top.

b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.

c) **Form Factors** were measured for each grade tree using a form point of 16 feet.

**5. DATA PROCESSING**

a) **Volumes and Statistics**, Cruise estimates and sampling statistics, were derived from Super Ace 2008 cruise software

b) **Deductions:** Two percent of the volume was subtracted from the computed volumes to account for hidden defect and breakage.

**6. Cruisers:** The sale was cruised by ODF cruisers.

Prepared by:

  
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ODF Forester

11/29/17  
\_\_\_\_\_  
Date

Reviewed by:

  
\_\_\_\_\_  
Erik Marcy

11-29-17  
\_\_\_\_\_  
Date

TC PSTATS		PROJECT STATISTICS						PAGE	1	
		PROJECT <i>Roundabout</i>						DATE	11/27/2017	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
03N	05	31	00MS	00PC	45.00	9	99	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES			
TOTAL			9	99	11.0					
CRUISE			9	99	11.0	11,190	.9			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE TREES		TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR-L		63	134.9	13.8	86	37.7	140.0	17,600	17,600	4,244
DOUG FIR-T		36	113.8	11.4	84	23.7	80.0	8,694	8,484	2,066
<b>TOTAL</b>		<b>99</b>	<b>248.7</b>	<b>12.7</b>	<b>85</b>	<b>61.6</b>	<b>220.0</b>	<b>26,294</b>	<b>26,084</b>	<b>6,310</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-L		37.6	4.7	141	148	155				
DOUG FIR-T		40.1	6.7	76	82	87				
<b>TOTAL</b>		<b>46.8</b>	<b>4.7</b>	<b>118</b>	<b>124</b>	<b>129</b>	<b>88</b>	<b>22</b>	<b>10</b>	
CL	68.1	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-L		40.0	5.0	34	36	38				
DOUG FIR-T		44.5	7.4	19	20	22				
<b>TOTAL</b>		<b>48.6</b>	<b>4.9</b>	<b>29</b>	<b>30</b>	<b>32</b>	<b>94</b>	<b>24</b>	<b>10</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-L		25.1	8.9	123	135	147				
DOUG FIR-T		53.5	18.9	92	114	135				
<b>TOTAL</b>		<b>21.6</b>	<b>7.6</b>	<b>230</b>	<b>249</b>	<b>268</b>	<b>21</b>	<b>5</b>	<b>2</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-L				140	140	140				
DOUG FIR-T		54.5	19.2	65	80	95				
<b>TOTAL</b>		<b>19.8</b>	<b>7.0</b>	<b>205</b>	<b>220</b>	<b>235</b>	<b>18</b>	<b>4</b>	<b>2</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-L		10.0	3.5	16,979	17,600	18,221				
DOUG FIR-T		60.5	21.4	6,671	8,484	10,297				
<b>TOTAL</b>		<b>24.4</b>	<b>8.6</b>	<b>23,837</b>	<b>26,084</b>	<b>28,330</b>	<b>27</b>	<b>7</b>	<b>3</b>	
CL	68.1	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-L		10.2	3.6	4,092	4,244	4,397				
DOUG FIR-T		59.2	20.9	1,634	2,066	2,498				
<b>TOTAL</b>		<b>24.2</b>	<b>8.5</b>	<b>5,771</b>	<b>6,310</b>	<b>6,849</b>	<b>26</b>	<b>7</b>	<b>3</b>	

Log Stock Table - MBF

T03N R05W S31 Ty00PC 45.00

Project: *Roundabout*  
Acres 45.00

Page 1  
Date 11/27/2017  
Time 12:52:55PM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF	L	3M	25		6		6	.8				6								
DF	L	3M	26		37		37	4.6		8		29								
DF	L	3M	27		45		45	5.7		14		32								
DF	L	3M	28		42		42	5.3		19		23								
DF	L	3M	30		54		54	6.8		10		8	36							
DF	L	3M	31		7		7	.9		7										
DF	L	3M	32		25		25	3.1		6	9	10								
DF	L	3M	33		73		73	9.2		4		56	12							
DF	L	3M	34		258		258	32.6			56		202							
DF	L	3M	35		37		37	4.7		7			30							
DF	L	3M	36		31		31	3.9		31										
DF	L	3M	38		76		76	9.5		3			72							
DF	L	3M	39		11		11	1.4					11							
DF	L	3M	40		91		91	11.4		24	33			34						
DF		Totals			792		792	67.5		187	42	164	365	34						
DF	T	3M	32		16		16	4.2			16									
DF	T	3M	34		20		20	5.4			20									
DF	T	3M	36		15		15	4.0			15									
DF	T	3M	38		32		32	8.4			32									
DF	T	3M	40		263	2.9	255	66.8			162	71	21							
DF	T	4M	12		9		9	2.5			9									
DF	T	4M	14		11		11	3.0			11									
DF	T	4M	16		2		2	.6			2									
DF	T	4M	18		4		4	1.2			4									
DF	T	4M	20		2		2	.6			2									
DF	T	4M	22		3		3	.9			3									
DF	T	4M	26		2		2	.6			2									
DF	T	4M	28		2		2	.6			2									
DF	T	4M	30		7	25.0	6	1.4			6									
DF		Totals			391	2.4	382	32.5			289	71	21							
Total		All Species			1,183		1,174	100.0		187	331	235	386	34						

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

T03N R05W S31 Ty00PC      45.00	<b>Project:</b> <i>Roundabout</i> <b>Acres</b> <b>45.00</b>	<b>Page</b> <b>1</b> <b>Date</b> <b>11/27/2017</b> <b>Time</b> <b>12:52:56PM</b>
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S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	L	3M	100	17,600	17,600	792	24	72	4		23	50	26	33	7	71	0.52	247.9		
<b>DF Totals</b>			67	17,600	17,600	792	24	72	4		23	50	26	33	7	71	0.52	247.9		
DF	T	3M	88	2.2	7,701	7,531	339	100					11	89	39	7	67	0.42	111.8	
DF	T	4M	12	4.1	994	953	43	100				69	31			16	6	18	0.27	53.1
<b>DF Totals</b>			33	2.4	8,694	8,484	382	100				8	3	10	79	31	6	51	0.40	164.9
<b>Totals</b>				0.8	26,294	26,084	1,174	16	81	3		3	17	37	43	32	7	63	0.47	412.8

TC PSTNDSUM		Stand Table Summary											Page	1	
T03N R05W S31 Ty00PC 45.00		Project Roundabout											Date:	11/27/2017	
		Acres 45.00											Time:	12:52:58PM	
													Grown Year:		
S Spc T	DBH	Sample 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
DF L	10	4	86	80	16.297	8.89	16.30	12.5	57.5	5.82	204	937	262	92	42
DF L	11	3	88	80	10.102	6.67	20.20	9.1	40.0	5.23	184	808	236	83	36
DF L	12	9	86	80	25.465	20.00	45.27	10.3	40.6	13.30	467	1,839	599	210	83
DF L	13	4	88	83	9.643	8.89	19.29	13.3	53.7	7.33	257	1,037	330	116	47
DF L	14	7	88	90	14.551	15.56	29.10	16.4	72.1	13.61	478	2,100	613	215	94
DF L	15	15	88	89	27.162	33.33	54.32	19.3	82.3	29.83	1,047	4,473	1,342	471	201
DF L	16	14	88	93	22.282	31.11	44.56	24.0	97.5	30.45	1,068	4,345	1,370	481	196
DF L	17	4	88	93	5.639	8.89	11.28	25.9	102.5	8.32	292	1,156	374	131	52
DF L	18	3	88	100	3.773	6.67	7.55	32.8	120.0	7.06	248	905	318	111	41
DF L	Totals	63	87	86	134.915	140.00	247.87	17.1	71.0	120.96	4,244	17,600	5,443	1,910	792
DF T	9	2	87	80	10.060	4.44	10.06	9.0	50.0	2.58	91	503	116	41	23
DF T	10	9	87	80	36.669	20.00	36.67	12.1	55.6	12.67	445	2,037	570	200	92
DF T	11	6	87	84	20.203	13.33	26.94	12.0	50.0	9.19	323	1,347	414	145	61
DF T	12	9	88	87	25.465	20.00	50.93	10.7	41.7	15.59	547	2,122	702	246	95
DF T	13	4	87	84	9.643	8.89	16.88	14.8	55.7	7.11	250	940	320	112	42
DF T	14	4	88	89	8.315	8.89	16.63	15.8	57.5	7.48	262	956	337	118	43
DF T	15	1	88	96	1.811	2.22	3.62	21.3	85.0	2.20	77	308	99	35	14
DF T	16	1	88	92	1.592	2.22	3.18	22.5	85.0	2.05	72	271	92	32	12
DF T	Totals	36	87	84	113.759	80.00	164.91	12.5	51.4	58.88	2,066	8,484	2,650	930	382
Totals		99	87	85	248.674	220.00	412.78	15.3	63.2	179.84	6,310	26,084	8,093	2,840	1,174

## RESIDUAL STAND SPECIFICATIONS

SALE NAME: Roundabout  
SALE NUMBER: 343-18-096

### AREA 1

Residual QMD assumption (from leave tree cruise information) = 

14
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Target Relative Density = 

35
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	Minimum	Target	Maximum
<b>Relative Density</b>	35	37	40
<b>Basal Area</b>	130	140	150
<b>Trees per Acre</b>	122	131	140

### AREA 2

Residual QMD assumption (from leave tree cruise information) = 

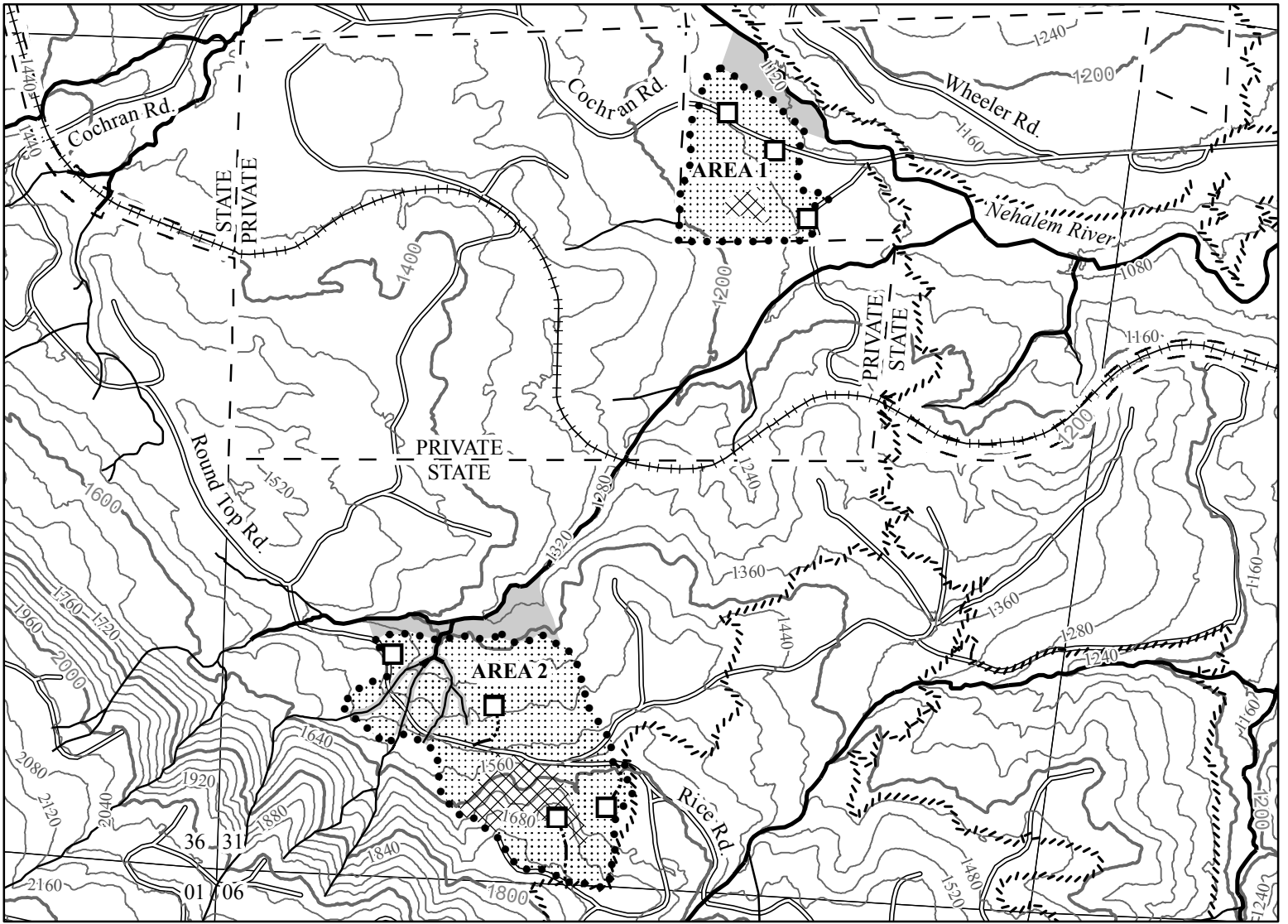
14
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Target Relative Density = 

35
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	Minimum	Target	Maximum
<b>Relative Density</b>	35	37	40
<b>Basal Area</b>	130	140	150
<b>Trees per Acre</b>	122	131	140

$RD = BA / \sqrt{DBH}$   
 $BA = \sqrt{DBH} (RD)$   
 $TPA = (BA/acre) / (BA/tree)$   
 $BA / tree = (\pi r^2) / (144)$



## Legend

- Timber Sale Boundary
- Surfaced Roads
- - - - Non Project Road
- ////// Recreation Trail
- + + + + Railroad Track
- Type F Stream
- Type N Stream
- Stream Buffer
- Tractor Yarding Area
- ▣ Thinning Not Required
- Tractor Landing
- 40 Foot Contour
- 200 Foot Contour
- - - - ODF Ownership Boundary
- Section Line

## LOGGING PLAN

FOR TIMBER SALE CONTRACT 343-18 -096  
 ROUNDABOUT  
 PORTIONS OF SECTION 31  
 T3N, R5W, W.M.,  
 WASHINGTON Co. OREGON

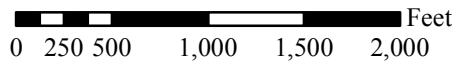
Forest Grove District GIS  
 November, 2017

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



1:12,000

1 inch = 1,000 feet



### APPROXIMATE NET ACRES TRACTOR CABLE

AREA 1	15	0
AREA 2	30	0
<b>TOTAL</b>	<b>45</b>	<b>0</b>