



Timber Sale Appraisal  
Voltaire's Flair  
Sale FG-341-2017-26-

District: Forest Grove

Date: January 09, 2017

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**Cost Summary**

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$630,874.96	\$0.00	\$630,874.96
		Project Work:	\$0.00
		Advertised Value:	\$630,874.96



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**Timber Description**

**Location:** Portions of Sections 23, 24, 25, and 26, T3N, R6W, W.M., Tillamook County, Oregon and portions of Section 30, T3N, R5W, W.M., Washington County, Oregon.

**Stand Stocking:** 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	12	0	98

Volume by Grade	3S	4S	Total
Douglas - Fir	1,634	402	2,036
<b>Total</b>	1,634	402	2,036

**Comments:** Pond Values Used: 4th Quarter Calendar Year 2016.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:  
 $\$188.81/\text{MBF} = \$490/\text{MBF} - \$301.19/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:  
 $\$808.81/\text{MBF} = \$1,110/\text{MBF} - \$301.19/\text{MBF}$

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus Logging Cost:  
 $\$343.81/\text{MBF} = \$645/\text{MBF} - \$301.19/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = \$2.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

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

Other Costs (with Profit & Risk to be added):  
None.

Other Costs (No Profit & Risk added):  
Block/Waterbar Roads/Skid Trails: 20 hrs x \$150/hour = \$3,000  
Pile Landing Slash/Sort Firewood: 30 hrs x \$150/hour = \$4,500  
Area 2 Slash Piling: 35 acres @ 150/acre = \$5,250  
Equipment Cleaning: 3 x \$1,000/Piece = \$3,000  
TOTAL Other Costs (No Profit & Risk added) = \$15,750

ROAD MAINTENANCE  
Move-in: \$4,000  
General Road Maintenance:  
2 miles x \$600/mile = \$1,200  
3 miles x \$1,200/mile = \$3,600  
TOTAL Road Maintenance:  $\$8,800/2,036 \text{ MBF} = \$4.32/\text{MBF}$



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**Logging Conditions**

<b>Combination#:</b> 1	Douglas - Fir	100.00%
<b>Logging System:</b>	Shovel	<b>Process:</b> Stroke Delimber
<b>yarding distance:</b>	Short (400 ft)	<b>downhill yarding:</b> No
<b>tree size:</b>	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF	
<b>loads / day:</b>	7	<b>bd. ft / load:</b> 3700
<b>cost / mbf:</b>	\$122.47	
<b>machines:</b>	Stroke Delimber (B)	

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### Logging Costs

Operating Seasons: 2.00	Profit Risk: 20%
Project Costs: \$0.00	Other Costs (P/R): \$0.00
Slash Disposal: \$0.00	Other Costs: \$15,750.00

Miles of Road

Road Maintenance: \$4.32

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

### Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	3.7



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### Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
<b>Douglas - Fir</b>									
\$122.47	\$4.41	\$4.31	\$107.52	\$0.00	\$47.74	\$0.00	\$7.00	\$7.74	\$301.19

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$611.05	\$309.86	\$0.00



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**Summary**

**Amortized**

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	2,036	\$309.86	\$630,874.96

**Gross Timber Sale Value**

**Recovery:** \$630,874.96

**Prepared By:** Eric Foucht

**Phone:** 503-359-7473

**TIMBER SALE SUMMARY**  
**VOLTAIRES FLAIR**  
**Contract No. 341-17-26**

1. **Location:** Portions of Sections 23, 24, 25, and 26, T3N, R6W, W.M., Tillamook County, Oregon and Portions of Section 30, T3N, R5W, W.M., Washington County, Oregon.
2. **Type of Sale:** This timber sale is 276 net acres of Moderate Partial Cut and 38 acres of a Group Selection Partial Cut. The timber will be sold on a recovery basis at a sealed bid auction.
3. **Revenue Distribution:** 100% BOF; 17% Washington County; 83% Tillamook County, Tax Code 56-1.
4. **Sale Acreage:** Acres are net of stream buffers and road prisms. Acreage was determined using ESRI ArcMap GIS software.
5. **Cruise:** The Timber Sale was cruised by ODF Cruisers in August of 2016. For more information see Cruise Report.
6. **Timber Description:** Area 1 consists of an over-stocked 35 year old Douglas-fir plantation. This portion of the stand has an average of 184 ft<sup>2</sup> of basal area (all species), an average take Douglas-fir DBH of 12 inches, and an estimated average net Douglas-fir take volume of approximately 6 MBF per acre. Area 2 consists of portions of the Timber Sale Area that were determined to be infected with *Phellinus Weirii*. These areas contain a combination of live green trees along with a number of trees that are dead and dying.
7. **Volume Summary** (Volume in MBF):

<b><u>Area 1 (PC-M) 276 acres</u></b>		<b>2 SAW</b>	<b>3 SAW</b>	<b>4 SAW</b>	<b>TOTAL</b>
Douglas-fir	Cruise Volume	0	1,325	325	1,650
	% of Total	0	80	20	

<b><u>Area 2 (PC-GR) 38 acres</u></b>		<b>2 SAW</b>	<b>3 SAW</b>	<b>4 SAW</b>	<b>TOTAL</b>
Douglas-fir	Cruise Volume	0	309	77	386
	% of Total	0	80	20	

<b><u>TOTAL</u></b>		<b>2 SAW</b>	<b>3 SAW</b>	<b>4 SAW</b>	<b>TOTAL</b>
Douglas-fir	<b>Cruise Volume</b>	0	1,634	402	2,036
	% of Total	0	80	20	

8. **Topography and Logging Method:** Slopes within the sale areas range from 15% to 40%, but are generally less than 35%, and are variable in aspect. The Timber Sale Area is 100% ground-based yarding and is well-roaded. The average horizontal skid trail length is approximately 450 feet and the maximum is approximately 600 feet.



9. **Access:** All access to the Timber Sale Area is on surfaced all-weather roads. From Forest Grove travel north on Highway 8 for 8.5 miles to its junction with Highway 6 and turn left. Continue west on Highway 6 for 3.2 miles to its junction with Timber Road. Turn right onto Timber Road and continue north for 3 miles to its junction with Cochran road. Turn left and continue west on Cochran road for 2.6 miles to the Wheeler Road. Turn right and follow Wheeler Road for 1.4 miles to the southeast corner of the Timber Sale Area.
8. **Projects:** None

**CRUISE REPORT**  
**Voltaire's Flair**  
**341-17-26**

**1. LOCATION:** Portions of Sections 23, 24, 25, and 26, T3N, R6W, W.M., Tillamook County, Oregon and Section 30, T3N, R5W, W.M., Washington County, Oregon.

**2. CRUISE DESIGN:**

Pre-cruise evaluation indicated that the stand's average DBH is approximately 14 inches and its Coefficient of Variation is about 42%. For sales of this size and approximate value, ODF cruise standards require a Sampling Error of 11% at a 68% confidence level, and a minimum sample size of 100 graded trees. The cruise design chosen for this sale is a variable radius sample plot using a 20 BAF prism.

**3. SAMPLING METHOD:**

Area 1 was cruised in August, 2016. The Timber Sale Area was sampled with 35 variable radius grade plots using a 20 BAF prism. Plots were laid out on a 9 chain x 9 chain grid. Plots falling on or near existing roads or Group Selection Partial Cut areas (Area 2) were offset 1 chain. Cruisers 'thinned' plots from below to 120 ft<sup>2</sup> of basal area by assigning a 'Take' or 'Leave' status to each tree in every plot.

**4. CRUISE RESULTS**

322 trees were measured and graded producing a cumulative Sampling Error of 8.6% on the 'Take Tree' Basal Area and 9% on the harvested 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 DIB.

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**

Volume estimates and sampling statistics, were derived from SuperAce 2008 cruise software. Area 2 harvest volume was estimated to be ½ of the total net volume per acre reported on the SuperAce cruise tables.

**6. Cruisers:** The sale was cruised by ODF cruiser Kenton Burns

Prepared by:

Kenton Burns

\_\_\_\_\_  
Date

Reviewed by:

Eric Foucht

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Date

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT		VOLTFIN				DATE	10/26/2016		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
03N	06	24	00A1	00PC		276.00	35	322	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			35	322	9.2						
CRUISE			35	322	9.2	56,845		.6			
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			209	122.8	13.4	82	32.7	119.4	14,359	14,359	3,377
DOUG FIR-T			111	81.7	11.9	81	18.4	63.4	6,136	5,977	1,651
WHEMLOCK-L			2	1.5	11.9	76	0.3	1.1	135	135	31
TOTAL			322	206.0	12.8	81	51.4	184.0	20,630	20,471	5,059
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			44.5	3.1	138	143	147				
DOUG FIR-T			37.3	3.5	78	81	84				
WHEMLOCK-L			37.2	34.8	62	95	128				
TOTAL			50.9	2.8	118	121	124	103	26	11	
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			47.0	3.3	33	34	35				
DOUG FIR-T			35.3	3.3	22	22	23				
WHEMLOCK-L			36.3	34.0	15	22	30				
TOTAL			49.3	2.7	29	30	31	97	24	11	
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			28.2	4.8	117	123	129				
DOUG FIR-T			50.0	8.4	75	82	89				
WHEMLOCK-L			591.6	99.9	0	1	3				
TOTAL			18.6	3.1	199	206	212	14	3	2	
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			6.4	1.1	118	119	121				
DOUG FIR-T			51.0	8.6	58	63	69				
WHEMLOCK-L			591.6	99.9	0	1	2				
TOTAL			18.0	3.0	178	184	190	13	3	1	
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			12.8	2.2	14,050	14,359	14,669				
DOUG FIR-T			53.0	9.0	5,442	5,977	6,512				
WHEMLOCK-L			591.6	99.9	0	135	270				
TOTAL			21.7	3.7	19,720	20,471	21,222	19	5	2	
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			13.2	2.2	3,302	3,377	3,452				
DOUG FIR-T			53.4	9.0	1,502	1,651	1,800				

TC PSTATS								PROJECT STATISTICS		PAGE	2
								PROJECT	VOLTFIN	DATE	10/26/2016
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
03N	06	24	00A1	00PC		276.00	35	322	S	W	
CL	68.1		COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.	INF. POP.		
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-L			591.6	99.9	0	31	63				
TOTAL			23.5	4.0	4,859	5,059	5,260	22	5	2	

TC PLOGSTVB				Log Stock Table - MBF																		
T03N R06W S24 Ty00PC 276.00				Project:		VOLTFIN												Page 1				
				Acres		276.00												Date 10/26/2016				
						Time 11:41:22AM																
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	17	18		18	.5			18											
DF	L		3M	18	27		27	.7			27											
DF	L		3M	20	28		28	.7			9	19										
DF	L		3M	21	24		24	.6			14	10										
DF	L		3M	22	126		126	3.2			43	83										
DF	L		3M	23	50		50	1.3			40	10										
DF	L		3M	24	158		158	4.0			55	50	53									
DF	L		3M	25	43		43	1.1			33	10										
DF	L		3M	26	159		159	4.0			33	102	23									
DF	L		3M	27	212		212	5.4			23	48	141									
DF	L		3M	28	558		558	14.1			111	108	325		14							
DF	L		3M	29	152		152	3.8			36	36	66	14								
DF	L		3M	30	573		573	14.5			221		309	43								
DF	L		3M	31	163		163	4.1			52		111									
DF	L		3M	32	495		495	12.5			123		343	29								
DF	L		3M	33	153		153	3.9			107		47									
DF	L		3M	34	324		324	8.2			90	17	200	17								
DF	L		3M	35	176		176	4.4			62		99	15								
DF	L		3M	36	187		187	4.7			71			82	34							
DF	L		3M	37	42		42	1.1			25		17									
DF	L		3M	38	120		120	3.0			69			51								
DF	L		3M	39	22		22	.5			22											
DF	L		3M	40	67		67	1.7			14			53								
DF	L		3M	41	89		89	2.2			89											
DF			Totals		3,963		3,963	70.1			1385	493	1734	302	49							
DF	T		3M	16	9		9	.5					9									
DF	T		3M	20	10		10	.6					10									
DF	T		3M	26	10		10	.6				10										
DF	T		3M	32	50		50	3.0			50											
DF	T		3M	34	66		66	4.0			66											
DF	T		3M	36	68		68	4.1			68											
DF	T		3M	38	64	2.7	62	3.7			36	25										
DF	T		3M	39	14		14	.9			14											
DF	T		3M	40	1,058	2.2	1,035	62.7			556	462	17									
DF	T		4M	12	31		31	1.9			31											
DF	T		4M	14	37		37	2.2			37											
DF	T		4M	16	35	12.8	30	1.8			16	8	6									

TC		PLOGSTVB																		Log Stock Table - MBF									
T03N R06W S24 Ty00PC				276.00				Project: VOLTFIN Acres 276.00				Page 2 Date 10/26/2016 Time 11:41:22AM																	
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	T		4M	18	19		19	1.1			19																		
DF	T		4M	20	44	3.9	42	2.5			35	7																	
DF	T		4M	22	16		16	.9			16																		
DF	T		4M	24	18		18	1.1			18																		
DF	T		4M	26	23	8.9	21	1.2			13	8																	
DF	T		4M	28	14		14	.8			14																		
DF	T		4M	30	12		12	.7			12																		
DF	T		4M	32	52	14.4	44	2.7			44																		
DF	T		4M	34	18		18	1.1			18																		
DF	T		4M	36	28	10.5	25	1.5			25																		
DF			Totals		1,693	2.6	1,650	29.2			1087	521	42																
WH	L		3M	22	10		10	25.7			10																		
WH	L		3M	24	7		7	19.2			7																		
WH	L		3M	26	15		15	41.3				15																	
WH	L		3M	28	5		5	13.8			5																		
WH			Totals		37		37	.7			12	10	15																
Total			All Species		5,694		5,650	100.0			2484	1024	1791	302	49														

TC		Species, Sort Grade - Board Foot Volumes (Project)																			
T03N R06W S24 Ty00PC 276.00				Project: VOLTFIN												Page 1					
				Acres 276.00												Date 10/26/2016					
																Time 11:41:21AM					
Spp	So T	Gr rt	Ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			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		14,359	14,359	3,963		91	9		2	52	33	13	29	8	66	0.54	216.5
DF	Totals			70		14,359	14,359	3,963		91	9		2	52	33	13	29	8	66	0.54	216.5
DF	T		CU														20	10		0.00	.5
DF	T		3M	80	1.9	4,891	4,799	1,325		100			1	1	9	89	38	7	71	0.52	67.6
DF	T		4M	20	5.4	1,245	1,178	325		100			49	24	19	8	20	6	24	0.32	48.2
DF	Totals			29	2.6	6,136	5,977	1,650		100			11	5	11	73	31	7	51	0.47	116.3
WH	L		3M	100		135	135	37		100							25	7	45	0.43	3.0
WH	Totals			1		135	135	37		100							25	7	45	0.43	3.0
Totals					0.8	20,630	20,471	5,650		94	6		4	39	26	31	30	7	61	0.51	335.7

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		10/26/2016	
T03N R06W S24 Ty00PC				276.00		Project				VOLTFIN				Time:		11:41:20AM	
						Acres				276.00				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	T o t a l s			
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
DF	L	8	7	85	62	11.459	4.00	11.46	4.3	22.9	1.42	50	262	391	137	72	
DF	L	9	6	86	71	7.761	3.43	7.76	8.2	40.0	1.81	63	310	499	175	86	
DF	L	10	9	87	78	9.429	5.14	10.48	11.3	58.0	3.37	118	608	929	326	168	
DF	L	11	8	87	77	6.927	4.57	12.99	8.4	36.7	3.10	109	476	856	300	131	
DF	L	12	14	87	78	10.186	8.00	19.64	9.9	38.5	5.53	194	757	1,526	535	209	
DF	L	13	27	88	85	16.738	15.43	33.48	12.8	50.4	12.19	428	1,686	3,364	1,180	465	
DF	L	14	39	88	85	20.847	22.29	41.69	16.0	71.9	18.99	666	2,999	5,242	1,839	828	
DF	L	15	37	88	87	17.229	21.14	34.46	17.9	76.2	17.57	616	2,626	4,849	1,701	725	
DF	L	16	27	88	88	11.050	15.43	22.10	21.8	92.4	13.76	483	2,042	3,798	1,333	564	
DF	L	17	15	88	89	5.438	8.57	10.88	24.4	100.3	7.58	266	1,091	2,091	734	301	
DF	L	18	7	88	92	2.264	4.00	4.53	29.1	114.3	3.76	132	517	1,036	364	143	
DF	L	19	5	88	94	1.451	2.86	2.90	34.1	137.0	2.82	99	398	777	273	110	
DF	L	20	6	88	91	1.572	3.43	3.14	36.2	138.3	3.24	114	435	895	314	120	
DF	L	21	2	88	92	.475	1.14	.95	41.1	160.0	1.11	39	152	307	108	42	
DF	L	Totals	209	87	82	122.825	119.43	216.46	15.6	66.3	96.24	3,377	14,359	26,561	9,320	3,963	
DF	T	8	2	87	65	3.274	1.14	3.27	4.6	20.0	.43	15	65	119	42	18	
DF	T	9	4	86	76	5.174	2.29	5.17	8.6	45.0	1.27	44	233	350	123	64	
DF	T	10	11	80	74	11.525	6.29	11.52	11.7	44.5	3.85	135	513	1,061	372	142	
DF	T	11	13	81	79	11.256	7.43	11.26	16.6	59.2	5.34	187	667	1,473	517	184	
DF	T	12	30	84	83	21.827	17.14	29.10	15.7	52.5	12.99	456	1,528	3,585	1,258	422	
DF	T	13	25	85	85	15.498	14.29	29.76	13.5	48.7	11.42	401	1,451	3,151	1,106	400	
DF	T	14	16	86	84	8.553	9.14	16.57	14.7	54.5	6.96	244	903	1,920	674	249	
DF	T	15	8	86	86	3.725	4.57	7.45	18.1	66.3	3.84	135	494	1,060	372	136	
DF	T	16	2	87	85	.819	1.14	1.64	20.9	75.0	.97	34	123	269	94	34	
DF	T	Totals	111	84	81	81.650	63.43	115.75	14.3	51.6	47.06	1,651	5,977	12,989	4,557	1,650	
WH	L	11	1	90	75	.866	.57	1.73	8.2	35.0	.45	14	61	125	39	17	
WH	L	13	1	91	78	.620	.57	1.24	13.8	60.0	.55	17	74	152	47	21	
WH	L	Totals	2	90	76	1.486	1.14	2.97	10.5	45.4	1.00	31	135	277	87	37	
Totals		322	86	81		205.961	184.00	335.17	15.1	61.1	144.30	5,059	20,471	39,827	13,964	5,650	



## RESIDUAL STAND SPECIFICATIONS

**SALE NAME: VOLTAIRE'S FLAIR**

**SALE NUMBER: 341-17-26**

Residual QMD assumption (from leave tree cruise information) = 

13
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Target Relative Density = 

120
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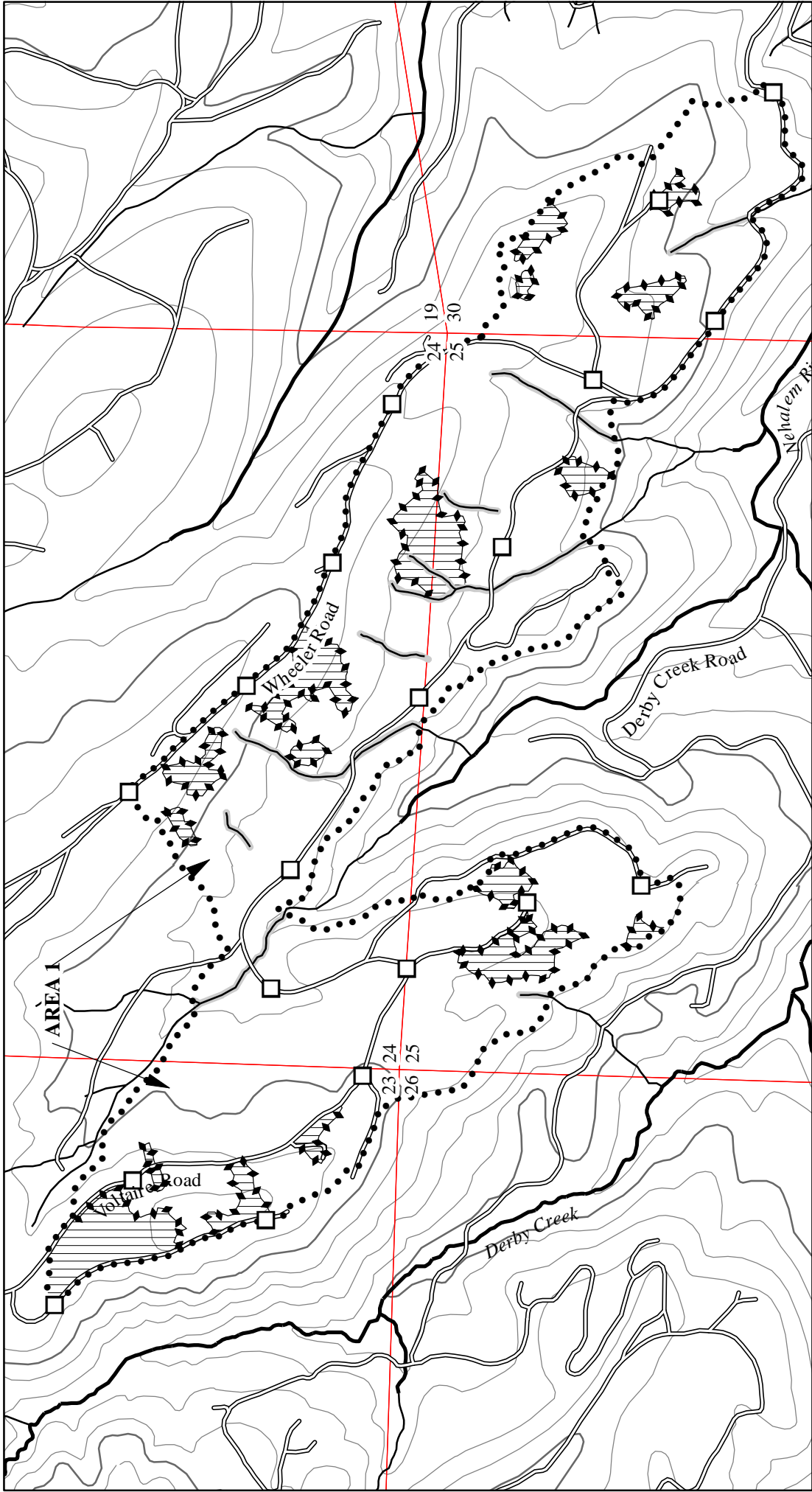
	Minimum	Target	Maximum
Relative Density	31	33	36
Basal Area	110	120	130
Trees per Acre	119	130	141

$$RD = BA / \sqrt{DBH}$$

$$BA = \sqrt{DBH} (RD)$$

$$TPA = (BA/acre) / (BA/tree)$$

$$BA / tree = (\pi r^2) / (144)$$



# Legend

- Timber Sale Boundary
- Easements
- ◆◆◆◆ Area Boundary
- Roads
- Type F Stream
- Type N Stream
- Stream Buffer
- ||||| Area 2
- Landings
- | ODF Ownership Boundary
- Sections
- 400 Foot Contour Band
- 80 Foot Contour Band

# LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-17-26  
 VOLTAIRES FLAIR  
 PORTIONS OF SECTIONS 23, 24, 25 & 26, T3N, R6W,  
 TILLAMOOK COUNTY, OREGON AND  
 PORTIONS OF SECTION 30, T3N, R5W, W.M.  
 WASHINGTON COUNTY, OREGON.

Forest Grove District GIS  
 September, 2016  
 This product is for informational use and may not be  
 suitable for legal, engineering, or surveying purposes.

APPROXIMATE NET ACRES	
TRACTOR YARDING	314
CABLE YARDING	0

