



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rock 'n' Windy
Sale 341-14-81

District: Southwest

Date: March 10, 2014

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$558,026.57	\$0.00	\$558,026.57
		Project Work:	\$(22,540.19)
		Advertised Value:	\$535,486.38



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timber description

Location: Portions of Sections 6, 7, and 18, T32S, R5W, W.M., Douglas County, Oregon.

Stand Stocking: 40%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	14	0	90
Western Hemlock / Fir	15	0	90
Grand Fir	16	0	90
Sugar Pine	32	0	90

Volume by Grade	2S	3S	4S	5S	6S	Total
Douglas - Fir	307	873	320	0	0	1,500
Western Hemlock / Fir	24	62	13	0	0	99
Grand Fir	121	145	24	0	0	290
Sugar Pine	0	0	37	9	1	47
Total	452	1,080	394	9	1	1,936



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comments: Pond Values Used: 4th Quarter Calendar Year 2013 + Local Pond Values.

Incense Cedar and Other Cedars Stumpage Price = Pond Value minus
Logging Cost:
 $\$300/\text{MBF} = \$700/\text{MBF} - \$400/\text{MBF}$

Madrone and Other Hardwoods Stumpage Price = Pond Value minus
Logging Cost:
 $\$40/\text{MBF} = \$440/\text{MBF} - \$400/\text{MBF}$

Combination of two clearcut units and 4 thinning units. Douglas fir 48-71 yrs old with some grand fir, sugar pine, western hemlock and minor amounts of incense cedar.

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/MBF

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

Other Costs (with Profit & Risk to be added):
None. (No costs appraised for branding & painting logs.)

Other Costs (No Profit & Risk added):
None.

SLASH DISPOSAL
Slash Disposal = \$2,000



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logging conditions

combination#: 1 Douglas - Fir 72.98%
 Western Hemlock / Fir 89.00%
 Grand Fir 92.41%
 Sugar Pine 89.00%

yarding distance: Long (1,500 ft) **downhill yarding:** No
logging system: Cable: Medium Tower >40 - <70 **Process:** Manual Falling/Delimbing
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 3.5 **bd. ft / load:** 3,700
cost / mbf: \$267.19

machines: Log Loader (A)
 Tower Yarder (Medium)

combination#: 2 Douglas - Fir 27.02%
 Western Hemlock / Fir 11.00%
 Grand Fir 7.59%
 Sugar Pine 11.00%

yarding distance: Short (400 ft) **downhill yarding:** No
logging system: Track Skidder **Process:** Manual Falling/Delimbing
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 4.0 **bd. ft / load:** 3,500
cost / mbf: \$245.75

machines: Log Loader (B)
 Track Skidder



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logging costs

Operating Seasons:	1.00	Profit Risk:	15.00%
Project Costs:	\$22,540.19	Other Costs (P/R):	\$0.00
Slash Disposal:	\$2,000.00	Other Costs:	\$0.00

Miles of Road

Road Maintenance: \$0.00

Dirt	Rock (Contractor)	Rock (State)	Paved
8.0	0.0	2.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	3.5
Western Hemlock / Fir	\$63.30	3.0	3.5
Grand Fir	\$0.00	3.0	3.5
Sugar Pine	\$0.00	3.0	4.5



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Local Pond Values

Date	Specie	Grade	Value
3/10/14	Douglas - Fir	2S	\$725.00
3/10/14	Douglas - Fir	3S	\$710.00
3/10/14	Douglas - Fir	4S	\$700.00
3/10/14	Western Hemlock / Fir	2S	\$625.00
3/10/14	Western Hemlock / Fir	3S	\$615.00
3/10/14	Western Hemlock / Fir	4S	\$600.00
3/10/14	Grand Fir	2S	\$625.00
3/10/14	Grand Fir	3S	\$615.00
3/10/14	Grand Fir	4S	\$600.00
3/10/14	Sugar Pine	4S	\$535.00
3/10/14	Sugar Pine	5S	\$530.00
3/10/14	Sugar Pine	6S	\$525.00



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$261.40	\$7.08	\$2.26	\$71.06	\$0.00	\$51.27	\$1.03	\$5.00	\$0.00	\$399.10
Western Hemlock / Fir									
\$264.83	\$7.08	\$2.26	\$69.63	\$0.00	\$51.57	\$1.03	\$5.00	\$0.00	\$401.40
Grand Fir									
\$265.56	\$7.08	\$2.26	\$71.06	\$0.00	\$51.89	\$1.03	\$5.00	\$0.00	\$403.88
Sugar Pine									
\$264.83	\$7.08	\$2.26	\$55.26	\$0.00	\$49.41	\$1.03	\$5.00	\$0.00	\$384.87

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$710.94	\$311.84	\$0.00
Western Hemlock / Fir	\$0.00	\$615.45	\$214.05	\$0.00
Grand Fir	\$0.00	\$617.93	\$214.05	\$0.00
Sugar Pine	\$0.00	\$533.83	\$148.96	\$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
Grand Fir	0	\$0.00	\$0.00
Sugar Pine	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	1,500	\$311.84	\$467,760.00
Western Hemlock / Fir	99	\$214.05	\$21,190.95
Grand Fir	290	\$214.05	\$62,074.50
Sugar Pine	47	\$148.96	\$7,001.12

Gross Timber Sale Value

Recovery: \$558,026.57

Prepared by: John Wilburn

Phone: 541-471-4252

TIMBER SALE SUMMARY

Rock 'n' Windy
Contract No. 341-14-81

1. **Type of Sale:** Recovery sale, sealed bid auction of 200 acres of thinning and 39 acres of clearcut.
2. **Revenue Distribution:** 100% BOF
3. **Sale Acreage:** For the sale, 239 net acres were used for the cruise expansion of which approximately 2 acres are right-of-way volume, split 1.8 acres for Area 3 and 0.5 acres for Area V. Acreage was determined with ArcGIS 10.1 and GPS traverse.
4. **Volume:** Take trees are marked in blue in Areas I, II, and III as well as in the road right-of-way for segment A to B. Area V is not marked and will be thinned according to the specifications for Designated Timber in the Section 2210 and the Thinning Specifications in Section 2320 of the sale prospectus. Other volume will come from posted right-of-way and cable corridor trees. The sale areas were marked to BA targets as follows: 160 ft²/ac in the southern 1/4th of Area III and 140 ft²/ac feet in the remainder of Area III, and 120 ft²/ac in Areas I and II. In addition, a few smaller trees (<8") that have not been marked may need to be removed to facilitate logging. The volume per acre in the right-of-way in Area III and V is the average volume per acre for those areas, respectively, expanded to the right-of-way acreage. See the cruise report for additional detail.

SPECIES	2 SAW	3 SAW	4 SAW	5SAW	6SAW	NET VOL (MBF)
Douglas-fir	307	873	320			1500
W. Hemlock/Fir	24	62	13			99
Sugar Pine			37	9	1	47
White Fir	121	145	24			290
Total	452	1080	394	9	1	1936

5. **Cruise Data:** The total volume above is measured to 7.7% standard error, meaning the actual volume will fall between 1787 and 2086 MBF (68% of the time). The volume of individual species will be more variable due to the smaller sample compared to the total volume sample. See the cruise report for more detail.
6. **Timber Description:** The marked timber has been marked to remove the smaller trees in suppressed and intermediate canopy positions and to release dominant and codominant trees. Additionally, dominant trees have been marked for harvest where possible to improve the economics of the sale and improve the quality of the residual stand. The stand age is 48-53 years for Area V and VI and 66-71 years for Areas I, II, III, and IV. The averages for DBH for take trees are: Douglas-fir 14", W. Hemlock 15", White Fir 16", Incense Cedar 14", and Sugar Pine 32". The cruise report gives a breakdown of log lengths and scaling diameters by species for the combined cruise.
7. **Topography and Logging Method:** Ground based logging will be located in Area III and is possible in portions of Area IV and Area VI. Lower portions of Area I and II may also be logged using existing skid trails. Ground based logging will not be permitted in areas where

slopes exceed 40%. In total, about 30% of the sale can be logged with ground based equipment and the remaining 70% will be cable logged with a maximum yarding distance of 1500 ft. Roads provide access to the ridges of Area V and VI and the upper limits of Area I and II. Road improvement and landing construction will provide access for cable yarding Area IV. Road reconstruction in Area III will provide a main artery into that sale area where landings will be located.

8. **Access:** All hauling routes are located on state maintained roads. The appraisal includes road grading and maintenance during and at the close of the sale. A winter haul option is available for logging in Areas I, II, and IV with added road improvement at the purchaser's expense. Details are included in the sale prospectus.
9. **Projects:** Road Construction and Improvement: \$22,540.19
10. **Road Maintenance:** The appraisal includes \$7.08/MBF for road maintenance (grading, pulling ditches, etc.).
11. **Other Costs:** The appraisal includes \$5/ MBF for Scaling and \$0.96/MBF for slash disposal. Costs not accounted for in the appraisal are the responsibility of the Purchaser.
12. **Slash Disposal:** Purchaser will pile slash on landings with an excavator or log loader, sorting out firewood into a separate pile. ODF will burn the slash piles.

Segment Name:	A to B	Length (ft.)	1269
Clearing Limits (ft.)	30	Stations	12.69
Subgrade Width (ft.)	14	Miles	0.24
Surface Width (ft.)	12		

Description

Clearing and grubbing of blue marked trees along roadway. Grade road to create a smooth running surface of adequate width for log hauling and repair road to original condition after completion of hauling.

Clearing and Grubbing	Acres	Per unit cost	Total Cost
	0.87	\$450.00	\$393.29
Grading	Miles	Per unit cost	
Single lane, no ditch	0.24	\$500.00	\$120.17
GRAND TOTAL			\$513.46
Per Sta. Cost			\$40.46

Segment Name:	B to C	Length (ft.)	2590
Clearing Limits	30	Stations	25.90
Subgrade Width	14	Miles	0.49
Surface Width	12		

Description

Reconstruction of old roadbed along railroad grade. Clearing and grubbing within Right of Way limits. Widening and compaction of existing through-fills. Widening of existing through-cuts. Grade road to create a smooth running surface of adequate width for log hauling and repair road to original condition after completion of hauling. Construction of 2 log landings has been costed for.

Clearing and Grubbing	Acres	Per unit cost	Total Cost
	1.78	\$1,200.00	\$2,140.50

Excavation	Stations	Units	Per unit cost	Total Cost
Common <30% sideslope	25.9		\$200.00	\$5,180.00
Landing Construction		2	\$250.00	\$500.00
			Subtotal	\$5,680.00

Culverts	Linear Ft.	Units	Per unit cost	Total Cost
30" diam. double wall HDPE culvert (includes installation)	40		\$38.00	\$1,520.00
Coupler band		1	\$70.00	\$70.00
Rip Rap 24" -6" (CY)*		4	\$40.00	\$160.00
Rock placement (CY)		4	\$30.00	\$120.00

* Rip Rap cost per CY includes sorting, loading, and hauling costs from rock pit.

	Subtotal	\$1,750.00
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Special Projects	Hrs.	Per unit cost	
At Sta. 7+31, construct and shape ditch, install corduroy logs in cross channel.	1	\$120.00	\$120.00

Grading	Miles	Per unit cost	
Single lane no ditch	0.49	\$500.00	\$245.27
		Subtotal	\$245.27

GRAND TOTAL \$9,815.76
Per Sta. Cost \$282.64

Segment Name:	D to E	Length (ft.)	7000
Clearing Limits	N/A	Stations	70.00
Subgrade Width	N/A	Miles	1.33
Surface Width	N/A		

Description

Grading to maintain a smooth running surface for hauling logs and repair road to original condition after completion of hauling. Construction of 1 log landing has been costed for.

Excavation	Stations	Units	Per unit cost	Total Cost
Landing Construction		1	\$250.00	\$250.00

Grading	Miles	Per unit cost	Total Cost
Single lane, restore ditches where existing, or as directed by STATE.	1.33	\$800.00	\$1,060.61
GRAND TOTAL			\$1,310.61
Per Sta. Cost			\$18.72

Segment Name:	E to G	Length (ft.)	1678
Clearing Limits	N/A	Stations	16.78
Subgrade Width	N/A	Miles	0.32
Surface Width	N/A		

Description Grading to produce a smooth outsloped running surface and installation of waterbars after completion of use. Construction of 1 log landings has been costed for.

Excavation	Stations	Units	Per unit cost	Total Cost
Landing Construction		1	\$250.00	\$250.00

Grading	Miles	Per unit cost	Total Cost
Outsloped, single lane, no ditch. Waterbarred at close, as directed by STATE.	0.32	\$800.00	\$254.24
GRAND TOTAL			\$504.24
Per Sta. Cost			\$30.05

Segment Name:	H to J	Length (ft.)	9772
Clearing Limits	N/A	Stations	97.72
Subgrade Width	N/A	Miles	1.85
Surface Width	N/A		

Description

Grading to maintain a smooth running surface for hauling logs and repair road to original condition after completion of hauling. Installation of waterbars at the direction of STATE. Construction of 1 log landings has been costed for.

Excavation	Stations	Units	Per unit cost	Total Cost
Landing Construction		1	\$250.00	\$250.00

Grading	Miles	Per unit cost	Total Cost
Single lane, restore ditches where existing, Waterbarred at close, as directed by STATE.	1.85	\$500.00	\$925.38
GRAND TOTAL			\$1,175.38
Per Sta. Cost			\$12.03

Segment Name:	J to K	Length (ft.)	683
Clearing Limits	30	Stations	6.83
Subgrade Width	14	Miles	0.13
Surface Width	12		

Description

Clearing and grubbing within Right of Way limits. Most of the trees along this segment have been felled and decked. Grade road to create a smooth running surface of adequate width for log hauling. Construction of 2 log landings has been costed for.

Clearing and Grubbing	Acres	Per unit cost	Total Cost
	0.47	\$400.00	\$188.15

Excavation	Stations	Units	Per unit cost	Total Cost
Common <30% sideslope	6.8		\$100.00	\$683.00
Landing Construction		2	\$250.00	\$500.00
			Subtotal	\$1,183.00

Grading	Miles	Per unit cost	
Single lane, no ditch. Waterbarred at close, as directed by STATE.	0.13	\$500.00	\$64.68
		Subtotal	\$64.68

GRAND TOTAL \$1,435.83

Per Sta. Cost \$210.22

Segment Name:	L to M	Length (ft.)	1300
Clearing Limits	30	Stations	13.00
Subgrade Width	14	Miles	0.25
Surface Width	12		

Description

Clearing and grubbing within Right of Way limits. Excavation and embankment using an outsloped balanced cross section of the required subgrade and surface width along the staked line. Grade road to create a smooth running surface of adequate width for log hauling. Waterbar according to Exhibit I at close of hauling. Construction of 1 log landing has been costed for.

Clearing and Grubbing	Acres	Per unit cost	Total Cost
	0.90	\$1,200.00	\$1,074.38

Excavation	Stations	Units	Per unit cost	Total Cost
Common <30% sideslope	8.0		\$200.00	\$1,600.00
Common <50% sideslope	5.0		\$250.00	\$1,250.00
Landing Construction		2	\$250.00	\$500.00
			Subtotal	\$3,350.00

Grading	Miles	Per unit cost	
	0.25	\$500.00	\$123.11
Single lane no ditch. Waterbar according to Exhibit I at close of hauling.		Subtotal	\$123.11

GRAND TOTAL \$4,547.49
Per Sta. Cost \$349.81

Segment Name:	D to G	Length (ft.)	10345
Clearing Limits	N/A	Stations	103.45
Subgrade Width	N/A	Miles	1.96
Surface Width	N/A		

Description

Grading to maintain a smooth running surface for hauling logs and repair road to original condition after completion of hauling. Construction of 2 log landings has been costed for.

Grading	Miles	Per unit cost	Total Cost
	1.96	\$800.00	\$1,567.42
Single lane, restore ditches where existing, or as directed by STATE.		GRAND TOTAL	\$1,567.42
		Per Sta. Cost	\$15.15

Project Summary

Sale Name: Rock 'n' Windy

Project 1	Segment	Miles	Activity	Cost
	A to B	0.2	Road improvement	\$513.46
	B to C	0.49	Road reconstruction	\$9,815.76
	Subtotal	0.7	Subtotal	\$10,329.22

Project 2	Segment	Miles	Activity	Cost
	D to E	1.3	Improvement and landing construction	\$1,310.61
	E to G	0.3	Grading and waterbars	\$504.24
	Subtotal	1.6	Subtotal	\$1,814.85

Project 3	Segment	Miles	Activity	Cost
	D to G	1.96	Road Improvement	\$1,567.42
	H to J	1.9	Road Improvement	\$1,175.38
	J to K	0.13	Road construction (clearing finished)	\$1,435.83
	L to M	0.25	Road construction	\$4,547.49
	Subtotal	4.19	Subtotal	\$8,726.12

100 mi round trip

Mobilization	hrs.	Rate	Cost
Lowboy	6	\$75.00 per/hr	\$450.00
Flagger	6	\$30.00 per/hr	\$180.00
Grader	3	\$100.00 per/hr	\$300.00
Fire equipment	1	\$200.00 move in	\$200.00
D7 walk time	4	\$90.00 per/hr	\$360.00
Excavator walk time	2	\$90.00 per/hr	\$180.00
		Subtotal	\$1,670.00
		Total Project Cost	\$22,540.19

Rock 'n' Windy
341-14-81
Green Tree Retention

Rock 'n' Windy

341-14-81

Green Tree Retention Report

GTR was designated in 0.5 acres of the southwest corner of Area IV totaling 50 trees (42 conifer/8 hardwood). In the interior of Area IV, 16 trees including 4 trees ≥ 31 " DBH were marked as GTR for a grand total of 66 trees for a 12 acre clearcut (5.5 GTPA). GTR areas are shown on Exhibit A.

In area VI, all Incense cedar outside of the road R/W for segment L to M is reserved as GTR, as well as 53 trees ≥ 11 " DBH which were marked red to the inside of the switchback. GTR is also reserved in the RMZ of Area VI (12 trees). The cruise shows between 12 and 22 TPA in cedar within the 27 acres of Area VI.

GTR was removed from the cruise by: reducing the area for expansion in Area IV (now 11.93 ac), and calculating the volume by grade of interior trees (3,369 bf) based on the VBAR and reducing the total volume by the ratios of the combined total volume for DF before and after removing the volume by grade.

Area IV	Sum of BDFT by grade for interior GTR trees in Area IV			
Row Labels	2S	3S	4S	Grand Total
Interior DF	1668.37	1470.26	230.60	3369.24
Volume ratio	0.994485561	0.998255069	0.999234	

In Area VI cruise volumes were reduced by removing the acreage for expansion by area inside switchback and by changing the status of cedar to leave.

The table on the following page lists the GTR tally and approximate volumes. Not all volume information was used where contiguous GTR areas were excluded from the cruise expansion area. Volume information was only used for the interior trees tallied in Area IV.

Rock 'n' Windy
341-14-81
Green Tree Retention

Spp	DBH	Count	Grade	Area	Unit	BA	VBAR	Total Volume (BF)
DF	11	11	4	SW corner	Area IV	0.66	116.8	848
DF	12	6	4	SW corner	Area IV	0.79	116.8	550
DF	13	7	3	SW corner	Area IV	0.92	116.8	754
DF	14	7	3	SW corner	Area IV	1.07	116.8	874
DF	15	4	3	SW corner	Area IV	1.23	116.8	573
DF	16	3	3	SW corner	Area IV	1.40	116.8	489
MA	all	8		SW corner	Area IV			0
IC	11	1		SW corner	Area IV	0.66	55.3	36
IC	12	1		SW corner	Area IV	0.79	55.3	43
IC	14	1		SW corner	Area IV	1.07	55.3	59
IC	20	1		SW corner	Area IV	2.18	55.3	121
DF	33	2	2	Interior	Area IV	5.94	116.8	1387
IC	42	1		Interior	Area IV	9.62	55.3	532
IC	20	1		Interior	Area IV	2.18	55.3	121
IC	22	1		Interior	Area IV	2.64	55.3	146
DF	15	1	3	Interior	Area IV	1.23	116.8	143
DF	31	1	3	Interior	Area IV	5.24	116.8	612
DF	10	1	4	Interior	Area IV	0.55	116.8	64
DF	28	1	3	Interior	Area IV	4.28	116.8	499
IC	26	1		Interior	Area IV	3.69	55.3	204
DF	21	1	2	Interior	Area IV	2.41	116.8	281
DF	13	1	3	Interior	Area IV	0.92	116.8	108
DF	13	1	3	Interior	Area IV	0.92	116.8	108
DF	9	1	4	Interior	Area IV	0.44	116.8	52
DF	9	1	4	Interior	Area IV	0.44	116.8	52
DF	10	1	4	Interior	Area IV	0.55	116.8	64
DF	12	50	3	in switchback	Area VI	0.79	116.8	4587
SP	12	1	5	in switchback	Area VI	0.79	150.3	118
GC	"	1		in switchback	Area VI			
IC	"	All in unit		Interior	Area VI			
DF	12	2	3	RMA	Area VI	0.79	116.8	183
DF	22	1	2	RMA	Area VI	2.64	116.8	308
DF	14	1	3	RMA	Area VI	1.07	116.8	125
DF	20	3	2	RMA	Area VI	2.18	116.8	764
DF	22	1	2	RMA	Area VI	2.64	116.8	308
GF	18	1	3	RMA	Area VI	1.77	154.5	273
GF	14	1	3	RMA	Area VI	1.07	154.5	165
GF	14	1	3	RMA	Area VI	1.07	154.5	165
IC	14	1	5	RMA	Area VI	1.07	55.3	59

OREGON DEPARTMENT of FORESTRY
CRUISE REPORT

SALE NAME: Rock 'n' Windy

SALE NUMBER: 341-14-81

1. **Acreage Calculation:** There are 239.15 net cruise acres in the sale area determined by a combination of GPS traverse waypoints and ArcGIS 10.1 software. Net acres do not include the riparian management areas or non-stocked areas which were not cruised.
2. **Cruise Method:** Rock 'n' Windy was cruised by ODF during the Fall and Winter of 2013. A variable plot cruise was conducted on 6 harvest areas each of which were treated as individual strata.
3. **RIGHT of WAY VOLUMES:** The road right-of-ways in Area III and Area V were assigned the same per acre volumes as their respective areas and expanded by the area of the right of way to estimate the total volume for removal.
4. **Sampling Intensity:**
Plots 144 Total Plots (67 measured, 77 counted)
CV (BDFT) 93%
SE (BDFT) 7.7%

As per ODF standards, total harvest volume of conifers ("take" trees) is estimated to be 1,936 MBF \pm 149.8 MBF at the 68% confidence level and a sampling error of 7.7%*. 68.1 times out of 100 the volume estimate will be within range of error specified.
5. **Computation Procedures:** Volume was computed using the SuperACE cruise program. Volumes reported are based on the Scribner Log Rule (West).
6. **Form Factors:** Form factors (a ratio of diameter at 4 and 16 feet) were sampled across the diameter distribution in all strata. Those form factors which were not measured were estimated by SuperACE.
7. **Height Standards:** Most conifer trees were measured for total height with a laser rangefinder.
8. **Diameter standards:** Diameters were measured outside bark at breast height to the nearest inch.
9. **Grading System:** Trees were graded primarily as 34 foot segments lengths and according to the Official Log Scaling and Grading Rules published by the Northwest Log Rules Advisory Group.
10. **Merchantable top:** Conifers were graded to a merchantable tops specified by the official log scaling rules. For all species except pine, 2S segments were graded to a 12" top inside bark, 3S to a 6" top, and 4S to a 5" top (inside bark). Pine 4S logs were graded to a 12" top inside bark, 5S to a 6" top, and 6S to a 5" top (inside bark).
11. **Deductions for Cull, Defect and Breakage:** All visible field cull was removed in the cruise computation. Additional volume was deducted for the anticipated amount of hidden cull and breakage during logging. The estimated volume reduction used for this anticipated loss to volume was 10%.
12. **Cruisers:** Cruising was performed by John Wilburn with assistance by Chris Rudd and Curtis Clark.

*ODF does not guarantee the volume of this or any other cruise. Prospective purchasers are advised to do their own cruise and sale volume calculations.

Chris Rudd, Unit Forester

Date

OREGON DEPARTMENT of FORESTRY
CRUISE REPORT

STRATA VOLUME SUMMARY (TOTAL NET MBF*)

Area 1	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir		107	27	135		269
Grand Fir	23	13	1	37		75
Total	23	121	28			172
Area 2	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	35	86	25			146
Grand Fir		53				53
Total	35	139	25			199
Area 3	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	21	126	37			185
Total	21	126	37			185
Area 3 R/W	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	1	5	2			8
Total	1	5	2			8
Area 4	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	111	115	29			256
Total	111	115	29			256
Area 5	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	17	178	139			334
Grand Fir	44	40	18			102
Western Hemlock	17	51	13			81
Total	78	270	169			517
Area 5 R/W	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	0	1	1			2
Grand Fir	0	0	0			1
Western Hemlock	0	0	0			0
Total	0	1	1			3
Area 6	2 Saw	3 Saw	4 Saw	5 Saw	6 Saw	TOTAL MBF
Douglas-fir	123	253	60			436
Grand Fir	54	38	5			97
Sugar Pine			37	9	1	47
Western Hemlock	7	11	0			18
Total	184	302	102	9	1	598

*Adjusted for 10% hidden cull and breakage.

Because of the nature of the stratified sample, area (stratum) volume estimates will be less accurate than the total combined volume estimate.

Species by Grade - Board Foot Volumes (Project)																				
					Percent of Net BF Volume															
					Log Scale Dia.				Log Length				Average Log							
SPP	GRADE	% NET BDFT	% Total Volume	DEF%	Gross BF/Ac	Net BF/Ac	Total Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft.	Diam.	BF	Logs per Ac	
GF	2M	41	6%	12.0	577	508	121			62	38	5	95			33	15	266	1.9	
GF	3M	50	7%	12.6	693	606	145			60	40		100			34	10	111	5.5	
GF	4M	9	1%	10.0	110	99	24	39	61			13	25	61		25	5	27	3.7	
GF	Totals	100	15%	12.1	1,381	1,213	290									31	9	110	11.0	
DF	2M	21	16%	16.0	1,533	1,288	308			80	20		100			34	14	203	6.3	
DF	3M	58	45%	13.0	4,194	3,650	873		88	12			100			34	9	83	43.9	
DF	4M	21	16%	10.9	1,498	1,336	319	91	7	2		7	35	51	7	28	5	28	47.7	
DF	Totals	100	77%	13.2	7,226	6,273	1,500									31	7	64	97.8	
WH	2M	24	1%	10.0	110	99	24			100			100			34	14	211	0.5	
WH	3M	62	3%	20.4	325	259	62		91	9			100			34	9	76	3.4	
WH	4M	14	1%	10.0	62	56	13	100				42	30	27		21	5	20	2.7	
WH	Totals	100	5%	16.8	497	414	99									29	8	63	6.6	
SP	2M	78	2%	10.0	171	154	37			7	93		100			34	19	514	0.3	
SP	3M	19	0%	10.0	42	37	9		26	31	43		100			34	13	206	0.2	
SP	4M	3	0%	10.0	6	6	1	100				26	44	30		24	5	23	0.2	
SP	Totals	100	2%	10.0	219	197	47									31	13	273	0.7	
Totals				100%	9,323	8,097	1,936													

OREGON DEPARTMENT of FORESTRY
CRUISE REPORT

Project Statistics: All Statistics are reported at the 68% confidence level.

	PLOTS	TREES	TREES PER PLOT
CRUISE	67	421	6.3
COUNT	77	473	6.1
TOTAL	144	894	6.2

PROJECT SUMMARY								
Species Status	SAMPLE TREES	TPA	AVG DBH	BOLE LEN	BA	GROSS BF/AC	NET BF/AC	Total MBF
DOUG FIR-T	124	55.9	13.5	81	55.2	7226	6273	1500
GR FIR-T	23	5.5	16.2	89	7.9	1381	1213	290
WHEMLOCK-T	12	3.3	14.7	79	3.8	497	414	99
SUG.PINE-T	4	0.2	31.6	108	1.3	219	197	47
TOTAL	163	64.9			68.2	9323	8097	1936

NET BF/ACRE CONFIDENCE INTERVAL					
Species-Status	CV%	S.E.%	LOW	AVG	HIGH
DOUG FIR-T	135.1	11.3	5567	6273	6979
GR FIR-T	267.0	22.2	943	1213	1483
WHEMLOCK-T	612.2	51.0	203	414	625
SUG.PINE-T	559.9	46.6	105	197	289
Totals	91%	7.6%	7484	8097	8710

Board Foot Volume Summary by Strata									
Area	Acres	Plots	Net BF/ac	CV	SE%	SE (BdFt)	Low (BF)	Average Total BF	High (BF)
1	29.67	8	5800	104%	36.6%	63,009	109,065	172,074	235,083
2	32.71	10	6080	86%	27.1%	53,956	144,936	198,893	252,849
3	42.48	18	4356	113%	26.7%	49,334	135,704	185,038	234,372
3RW	1.76	18	4356	113%	26.7%	2,044	5,622	7,666	9,710
4	11.64	6	21958	33%	13.3%	33,922	221,667	255,589	289,511
5	93.3	26	5539	95%	18.5%	95,857	420,923	516,780	612,637
5RW	0.47	26	5539	95%	18.5%	483	2,120	2,603	3,086
6	27.12	32	22040	49%	8.6%	52,779	544,944	597,723	650,502
Combined	239.15	144	8097	93%	7.7%	149,815	1,786,552	1,936,367	2,086,182

**Because of the nature of the stratified sample, area (stratum) volume estimates will be less accurate than the total combined volume estimate.

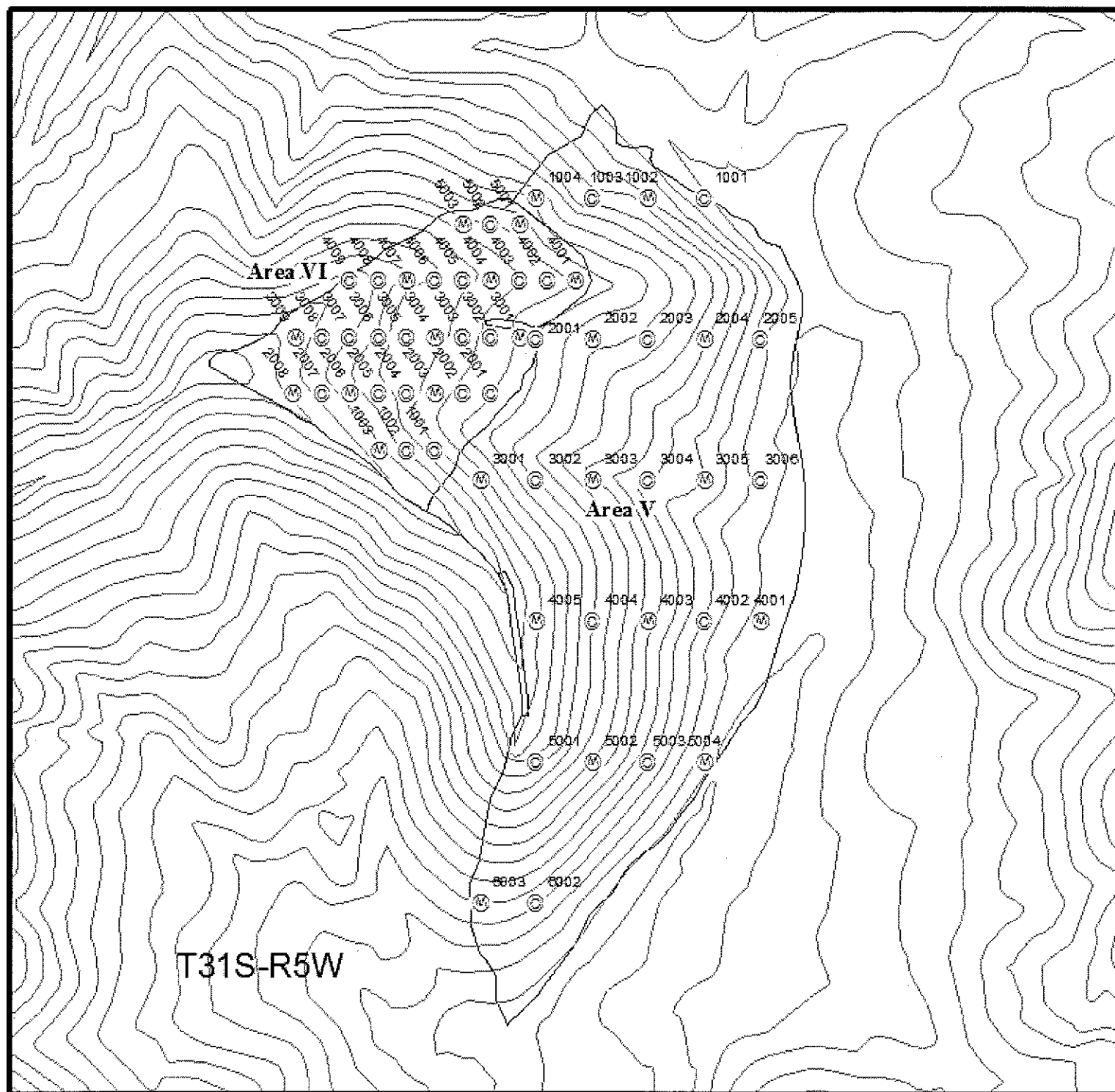
OREGON DEPARTMENT of FORESTRY
CRUISE REPORT

Log Stock Table - Percent Board Feet (Strata Combined)																		
							Percent Net Volume by Scaling Diameter in Inches											
SPP	GRD	LOG LEN	GROSS MBF	DEF%	NET MBF	% SPC	2- 3	4-5	6-7	8- 9	10- 11	12- 13	14- 15	16- 19	20- 23	24- 29	30- 39	40+
GF	2M	16	6	10.0	6	2.0									100			
GF	2M	34	132	12.1	116	39.8						28	13	36	23			
GF	3M	34	166	12.6	145	50.0			14	9	37	24	16					
GF	4M	12	2	10.0	2	0.6	100											
GF	4M	13	1	10.0	1	0.2	100											
GF	4M	18	1	10.0	1	0.3	100											
GF	4M	21	1	10.0	1	0.2	100											
GF	4M	22	1	10.0	1	0.2	100											
GF	4M	24	1	10.0	1	0.4	100											
GF	4M	26	0	10.0	0	0.1	100											
GF	4M	30	4	10.0	3	1.2	100											
GF	4M	34	16	10.0	15	5.0			100									
GF Total																		
DF	2M	34	367	16.0	308	20.6						49	27	24				
DF	3M	34	1,003	13.0	873	58.1			15	45	27	12	0					
DF	4M	12	4	10.0	3	0.2	100											
DF	4M	13	3	10.0	2	0.2	100											
DF	4M	14	1	10.0	1	0.0	100											
DF	4M	15	2	10.0	2	0.1	100											
DF	4M	16	5	10.0	4	0.3	100											
DF	4M	17	3	10.0	3	0.2	100											
DF	4M	18	5	10.0	4	0.3	100											
DF	4M	19	1	10.0	1	0.1	100											
DF	4M	20	2	10.0	2	0.1	100											
DF	4M	21	6	10.0	5	0.4	100											
DF	4M	22	24	10.0	22	1.4	86				14							
DF	4M	23	7	10.0	6	0.4	100											
DF	4M	24	16	27.7	12	0.8	51	49										
DF	4M	25	5	10.0	4	0.3	100											
DF	4M	26	18	11.6	16	1.1	100											
DF	4M	27	14	10.0	13	0.8	100											
DF	4M	28	6	10.0	5	0.3	100											
DF	4M	29	13	10.0	12	0.8	100											
DF	4M	30	20	10.0	18	1.2	100											
DF	4M	31	23	10.0	21	1.4	100											
DF	4M	32	4	10.0	4	0.3	100											
DF	4M	33	6	10.0	6	0.4	100											
DF	4M	34	142	10.0	127	8.5	88	12										
DF	4M	35	5	10.0	5	0.3	100											
DF	4M	36	8	10.0	7	0.5	18					82						
DF	4M	40	3	10.0	3	0.2	100											
DF	4M	41	14	10.0	13	0.9	100											
DF Total																		
			1,728	13.2	1,500													

OREGON DEPARTMENT of FORESTRY
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Log Stock Table - Percent Board Feet (Strata Combined)																		
							Percent Net Volume by Scaling Diameter in Inches											
SPP	GRD	LOG LEN	GROSS MBF	DEF%	NET MBF	% SPC	2- 3	4-5	6- 7	8- 9	10- 11	12- 13	14- 15	16- 19	20- 23	24- 29	30- 39	40+
WH	2M	34	26	10.0	24	24.0						72		28				
WH	3M	34	78	20.4	62	62.5			7	42	42	9						
WH	4M	12	2	10.0	2	1.6	100											
WH	4M	17	5	10.0	4	4.1	100											
WH	4M	28	4	10.0	4	4.1	100											
WH	4M	34	4	10.0	4	3.7	100											
WH Total			119	16.8	99													
SP	2M	34	41	10.0	37	78.1						7		22	45	27		
SP	3M	34	10	10.0	9	19.0					26		31	43				
SP	4M	18	0	10.0	0	0.8	100											
SP	4M	23	0	10.0	0	0.5	100											
SP	4M	24	0	10.0	0	0.7	100											
SP	4M	38	0	10.0	0	0.8	100											
SP Total			52	10.0	47													
Total			2,230		1,936													

OREGON DEPARTMENT of FORESTRY
CRUISE REPORT



Areas V and VI Cruise Map

1 inch equals 660 feet

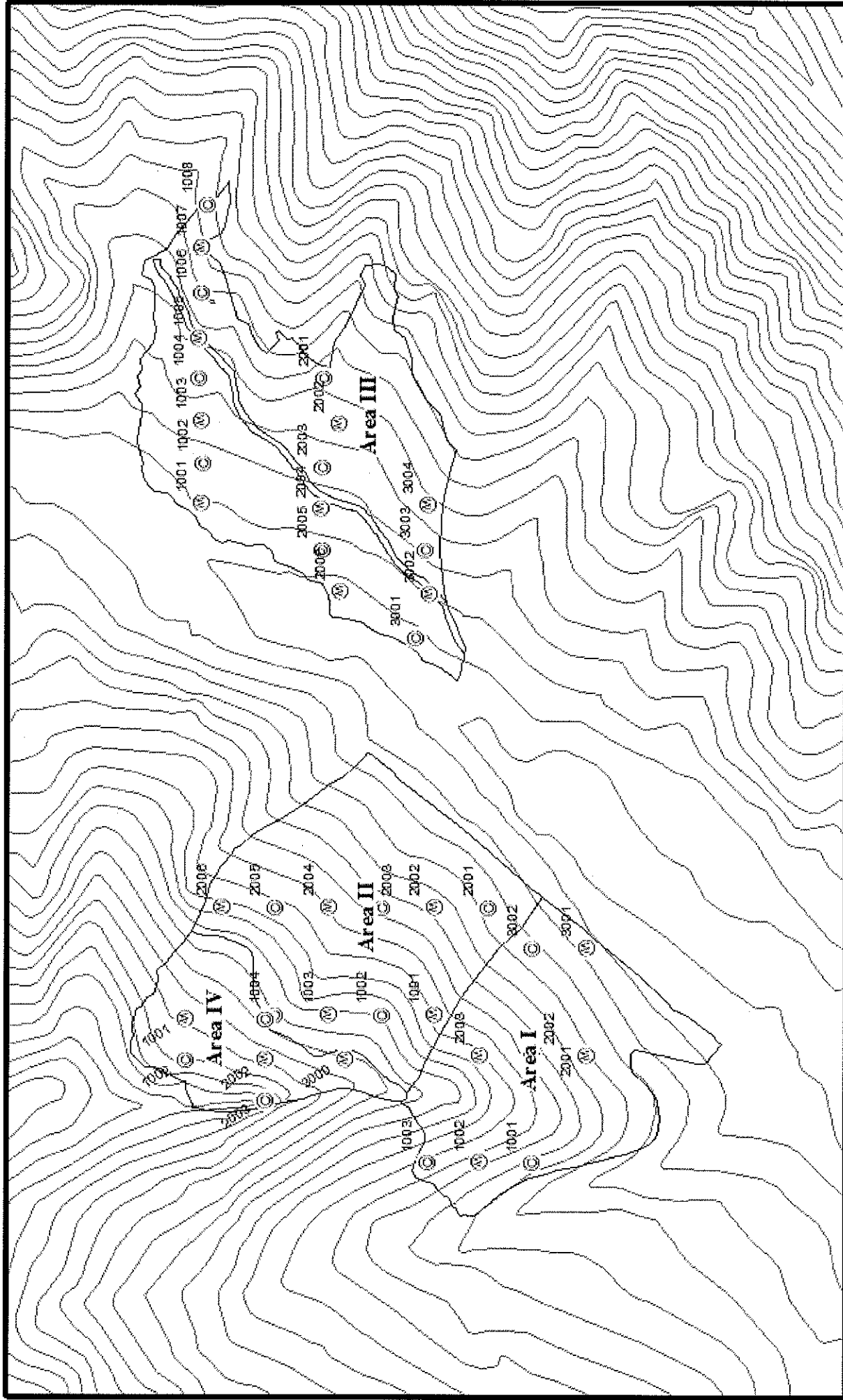
Area V: 10 x 4 ch. spacing, count 1 measure 1.

Area VI: 4 x 2 ch. spacing, count 2 measure 1.



ODF, Grants Pass Unit

OREGON DEPARTMENT of FORESTRY
CRUISE REPORT

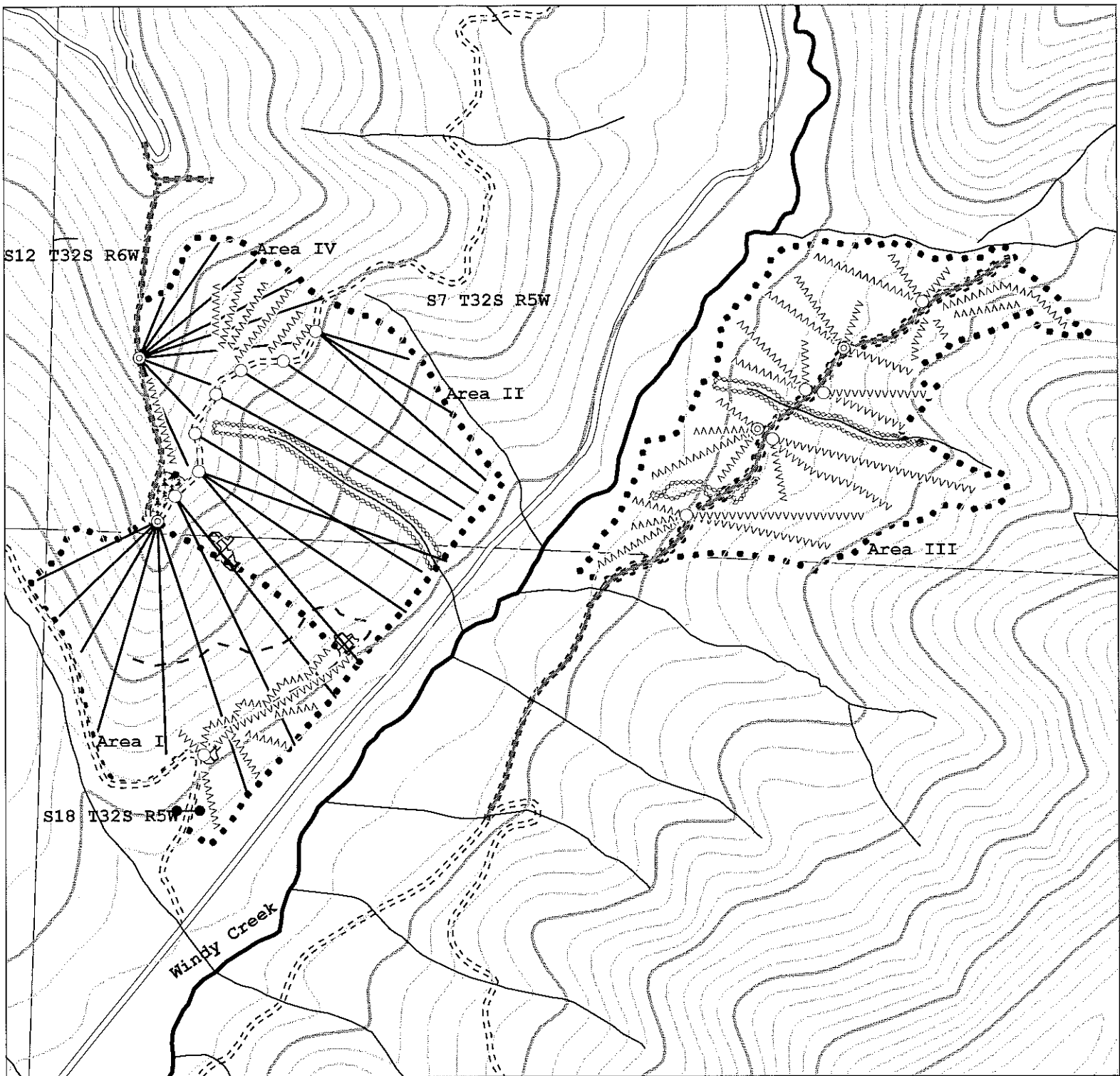


Areas I, II, III, & IV Cruise Map

1 inch equals 660 feet

- Area I: 4 x 8: count one, measure one
- Area II: 4 x 8 c/m: count one, measure one
- Area III: 5 x 3 c/m: count one, measure one
- Area IV: 8 x 3 c/m: count one, measure one





Legend

- | | |
|------------------------------|--------------------------|
| ○ Landing Recommended | Non-posted Stream Buffer |
| ⊙ Landing To Construct | Posted Stream Buffer |
| — Cable Yarding | Nonstocked |
| vvvvvv Ground Based Skidding | Timber Sale Boundary |
| ===== Collector Rd. | Green Tree Retention |
| —— Mainline Rd. | Rock Pit |
| - - - Skid Trail | PLSS Sections |
| ----- Spur Rd. | Fish Stream |
| | Nonfish Stream |

EXHIBIT "A"

LOGGING PLAN

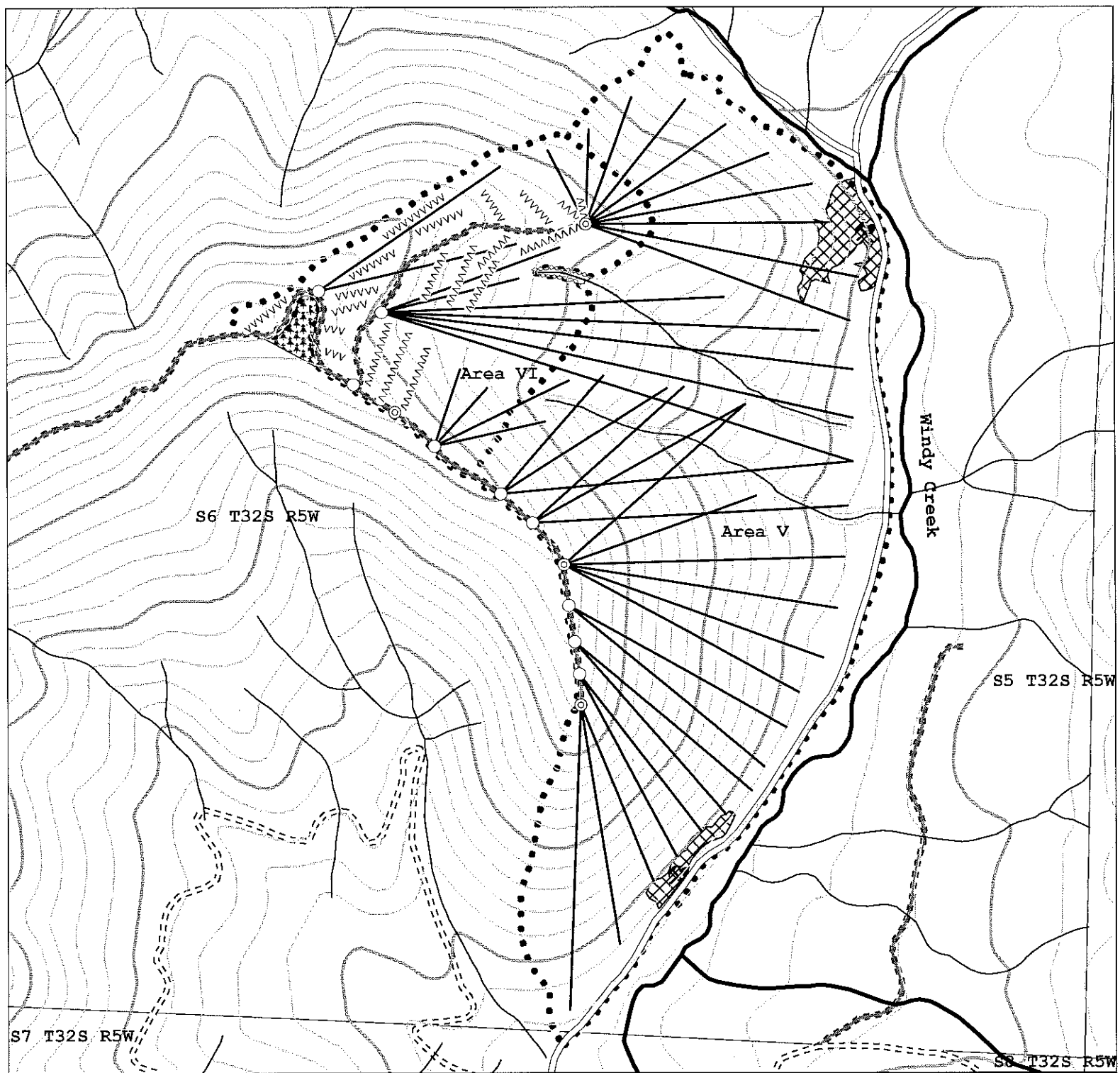
TIMBER SALE CONTRACT NO. 341-14-81

ROCK 'N' WINDY AREAS I, II, III, & IV

**PORTIONS OF SECTIONS 7 & 18, T32S R5W, W.M.
DOUGLAS COUNTY, OR**



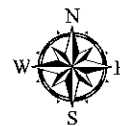
0 250 500 1,000
Feet



Legend

- | | |
|------------------------------|--------------------------|
| ○ Landing Recommended | Non-posted Stream Buffer |
| ⊙ Landing To Construct | Posted Stream Buffer |
| — Cable Yarding | Nonstocked |
| vvvvvv Ground Based Skidding | Timber Sale Boundary |
| ===== Collector Rd. | Green Tree Retention |
| — Mainline Rd. | Rock Pit |
| - - - Skid Trail | PLSS Sections |
| Spur Rd. | Fish Stream |
| | Nonfish Stream |

EXHIBIT "A"
LOGGING PLAN
TIMBER SALE CONTRACT NO. 341-14-81
 ROCK 'N' WINDY AREAS V & VI
 PORTIONS OF SECTION 6, T32S R5W, W.M.
 DOUGLAS COUNTY, OR



0 250 500 1,000
 Feet