



"STEWARDSHIP IN FORESTRY"

# **Timber Sale Appraisal Cost Summary Norton Hill Thin Sale 341-05-33**

**District: West Oregon**

**Date: 7/2/04**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sale Value</b>	\$404,408.34	\$7,081.24	\$411,489.58
	<b>Project Work</b>		(\$67,716.00)
	<b>Advertised Value</b>		\$343,773.58



"STEWARDSHIP IN FORESTRY"

# **Timber Sale Appraisal** **Timber Description** **Norton Hill Thin** **Sale 341-05-33**

**District:** West Oregon

**Location:** Portions of Section 19, T10S, R8W, W.M., Lincoln County, Oregon

**Date:** 7/2/04

**Stand Stocking:** 20%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	15	0	98
Alder (Red)	12	0	98

Volume by Grade	Douglas - Fir	Alder (Red)	Total
SM	1	0	1
2S	615	0	615
3S	881	0	881
4S	240	0	240
Camprun	0	43	43
Total	1,737	43	1,780

**Comments:** Pond Values Used: 2nd Quarter 2004.

**Other Costs - No P&R**

Additional Scaling(\$2/MBF x 1780/MBF)	\$ 3,560
Substitute Earth Anchors (15@\$100ea)	\$ 1,500
Firewood Sorting	\$ 100
<b>TOTAL Other Costs - No P&amp;R</b>	<b>\$ 5,160</b>

**Other - Plus P&R**

Snag Creation - 72 trees x \$60/Tree	\$ 4,320
Downed Wood - 48 trees (24"ave, 2 days)	\$ 500
Machine Slash Piling - 10 hrs + move-in	\$ 1,633
<b>TOTAL Other - Plus P&amp;R</b>	<b>\$ 6,453</b>



# Timber Sale Appraisal

## Logging Conditions

### Norton Hill Thin

### Sale 341-05-33

"STEWARDSHIP IN FORESTRY"

<b>Combination#:</b>	<b>1</b>	Douglas - Fir	20.39%	
<b>Yarding Distance:</b>	Medium (800 ft)			<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Small Tower <=40			<b>Process:</b> Manual Delimbing
<b>Tree Size:</b>	Small / Thinning 9in (70 Bft/tree), 20+ logs/MBF			
<b>Loads/Day:</b>	3			<b>Bd. Ft./Load:</b> 3,000
<b>Cost/MBF:</b>	\$343.74			
<b>Machines:</b>				
	Log Loader (A)			
	Tower Yarder (Small)			
<b>Combination#:</b>	<b>2</b>	Douglas - Fir	2.00%	
		Alder (Red)	100.00%	
<b>Yarding Distance:</b>	Medium (800 ft)			<b>Downhill Yarding:</b> Yes
<b>Logging System:</b>	Wheel Skidder			<b>Process:</b> Manual Falling/Delimbing
<b>Tree Size:</b>	Small / Thinning 9in (70 Bft/tree), 20+ logs/MBF			
<b>Loads/Day:</b>	4			<b>Bd. Ft./Load:</b> 3,000
<b>Cost/MBF:</b>	\$250.06			
<b>Machines:</b>				
	Log Loader (B)			
	Tire Skidder			
<b>Combination#:</b>	<b>3</b>	Douglas - Fir	52.44%	
<b>Yarding Distance:</b>	Short (400 ft)			<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70			<b>Process:</b> Manual Delimbing
<b>Tree Size:</b>	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF			
<b>Loads/Day:</b>	4			<b>Bd. Ft./Load:</b> 4,000
<b>Cost/MBF:</b>	\$207.29			
<b>Machines:</b>				
	Log Loader (A)			
	Tower Yarder (Medium)			
<b>Combination#:</b>	<b>4</b>	Douglas - Fir	25.16%	
<b>Yarding Distance:</b>	Short (400 ft)			<b>Downhill Yarding:</b> Yes
<b>Logging System:</b>	Track Skidder			<b>Process:</b> Manual Falling/Delimbing
<b>Tree Size:</b>	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF			
<b>Loads/Day:</b>	4			<b>Bd. Ft./Load:</b> 4,000
<b>Cost/MBF:</b>	\$204.09			
<b>Machines:</b>				
	Log Loader (B)			
	Track Skidder			



# **Timber Sale Appraisal** **Logging Costs** **Norton Hill Thin** **Sale 341-05-33**

"STEWARDSHIP IN FORESTRY"

Date: 7/2/04

Operating Seasons: 2.0

Profit & Risk: 19%

Project Costs: \$67,716

Other Costs (P/R): \$6,453

Slash Disposal: \$0

Other Costs: \$5,160

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
1.0	3.5	0.0	0.0

Road Maintenance: \$0.00

## **Hauling Costs**

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	3.0	4.0
Alder (Red)	\$0.00	3.0	3.5



"STEWARDSHIP IN FORESTRY"

# **Timber Sale Appraisal Logging Costs Breakdown Norton Hill Thin Sale 341-05-33**

<b>Costs</b>	<b>Douglas - Fir</b>	<b>Alder (Red)</b>
<b>Logging</b>	235.16	250.06
<b>Road Maintenance</b>	2.16	2.16
<b>Fire Protection</b>	3.12	0.00
<b>Hauling</b>	39.13	44.69
<b>Other (P/R appl.)</b>	3.72	0.00
<b>Profit &amp; Risk</b>	53.83	56.41
<b>Slash Disposal</b>	0.00	0.00
<b>Scaling</b>	2.00	2.00
<b>Other</b>	2.97	0.00
<b>Total</b>	342.09	355.32

<b>Amortization</b>	0.00	0.00
<b>Pond Value</b>	574.91	520.00
<b>Stumpage</b>	232.82	164.68
<b>Amortized</b>	0.00	0.00



"STEWARDSHIP IN FORESTRY"

# **Timber Sale Appraisal Summary Norton Hill Thin Sale 341-05-33**

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## **Amortized**

	<b>Douglas - Fir</b>	<b>Alder (Red)</b>
<b>MBF</b>	0.00	0.00
<b>Value</b>	0.00	0.00
<b>Total</b>	0.00	0.00

## **Unamortized**

	<b>Douglas - Fir</b>	<b>Alder (Red)</b>
<b>MBF</b>	1,737.00	43.00
<b>Value</b>	232.82	164.68
<b>Total</b>	404,408.34	7,081.24

## **Gross Timber Sale Value**

**Recovery \$411,489.58**

Prepared by: Dave Wiger

Date: 7/2/04

District: West Oregon

Phone: (541) 929-3266

## SUMMARY OF ALL PROJECT COSTS

Sale Name: Norton Hill Thin

Date:

June 2004

Time:

11:38

### Project #1 - New Construction

<u>Road Segment</u>		<u>Length</u>	<u>Cost</u>	<u>% Total</u>
B1 to B2	4+10 to 8+50	4.4 sta	\$607	1%
B3 to B4		3.0 sta	\$2,276	3%
B5 to B6		6.3 sta	\$808	1%
B5 to B7		3.5 sta	\$513	1%
C4 to C7		4.7 sta	\$641	1%
Logger's choice		6.0 sta	\$758	1%
<b>TOTALS</b>		27.9 sta		\$5,603

### Project #2 - Improvements

<u>Road Segment</u>		<u>Length</u>	<u>Cost</u>	
A to B		111.6 sta	\$3,987	6%
B to C		46.0 sta	\$20,924	31%
B1 to B2	0+00 to 4+10	4.1 sta	\$305	0%
C to D		80.8 sta	\$16,595	25%
C1 to C2		6.7 sta	\$789	1%
C3 to C4		2.4 sta	\$85	0%
C4 to C5		11.9 sta	\$1,111	2%
C4 to C6		7.9 sta	\$739	1%
D to D1		30.0 sta	\$3,679	5%
D2 to D3		8.5 sta	\$916	1%
<b>TOTALS</b>		309.9 sta		\$49,130

### Project #3 - Post Harvest Activities

Tank traps, surfacing, and culvert removals 16% \$11,082

<u>Move in</u>	<u>Cost</u>	<u>On-site move</u>	
Crawler tractor, D-7 or equiv.	\$387		
Grader, Cat 14-G or equiv.	\$241		
Backhoe	\$241	\$50	
Vibratory roller	\$241	\$50	
Excavator	\$533		
Water truck	\$158		
<b>TOTAL</b>		\$1,901	3% 100%
			\$1,901

**GRAND TOTAL \$67,716**

Compiled by J. Doyal

Date

6/23/2004



## TIMBER SALE SUMMARY

**Sale Name:** Norton Hill Thin, 341-05-33

**Sale Type:** Commercial thinning harvest; recovery sale; 176 net acres; 100% BOF

**Sale Area:** Portions of Section 19 T10S, R8W, W.M., Lincoln County, Oregon

**Access:** From Philomath drive west on Highway 20 approximately 11 miles to Blodgett. Turn north at the Blodgett Country Store toward Summit-Nashville (SR 180) and travel approximately 7 miles to Nashville. From Nashville continue driving west toward Eddyville approximately 6 miles (5 railroad crossings). Turn right at MP 6 onto Norton Road and proceed north approximately 2 miles to Area V of the sale. (See Exhibit "A")

**Boundary Lines:** Areas I through V are posted with "Timber Sale Boundary" signs and fluorescent pink flagging. Patch cuts in Areas I, II, and III are posted with "Area Boundary" signs and blue/white striped flagging. Lines between Areas I and II are posted with fluorescent pink flagging and "Area Boundary" signs. The boundaries between Areas II & III and Areas II & IV are unposted timber type breaks. Area V is an individually posted unit. Road right-of-way boundaries are posted with "Right-of-Way" signs and fluorescent pink flagging. Type "N" stream buffers are not posted, but do have fluorescent pink flagging and an aluminum tag at the top of the active channel (highest point on the stream that needs to be buffered). The type "F" stream (Stony Creek) is posted out of the units with 100' or more between the stream and the sale unit boundaries.

**Timber Description:** This 5 unit sale is a Douglas fir automark thinning. Douglas fir trees less than 40" DBH may be considered for harvest to meet stand prescriptions. All areas will be thinned leaving the biggest and best Douglas fir trees. Areas I and II were pre-commercially thinned about 15 years ago. For Areas I and II larger portions of the units with Douglas fir stocking lower than 120 SQFT basal area per acre are designated on exhibit "A" as no harvest areas.

Area I is approximately 28 net acres. It is a plantation Douglas fir stand with patches of hardwoods. The average age of the timber available for harvest is 32 years old. There are approximately 41 Douglas fir "take" trees per acre. The average DBH of the "take" trees is 11". The target residual basal area is 120 SQFT. Up to 40 SQFT of merchantable size red alder or big leaf maple may be counted toward meeting the residual basal area per acre requirement. There are 3 patch cuts (approximately 5 acres) in Area I. The patch cuts contain mature red alder averaging 12" DBH. Red alder in these patch cuts shall be harvested

Area II is approximately 80 net acres. It is a plantation Douglas fir stand with patches of hardwoods. The average age of the timber available for harvest is 32 years old. There are approximately 63 Douglas fir "take" trees per acre. The average DBH of the "take" trees is 11". The target residual basal area is 120 SQFT. There is 1 patch cut

(approximately 1 acre) in Area II. This patch cut is a brush field, containing no trees, that is to be scarified and piled with this contract for future reforestation.

Area III is 28 net acres. It is a natural Douglas fir stand. There are approximately 83 "take" trees per acre. The average DBH of the "take" trees is 16". There is a small patch cut in Area III on the north-west side. The average age of this stand is 67 years. The target residual basal area is 160 SQFT. There is 1 patch cut (approximately 1 acre) containing mature red alder averaging 12" DBH that are to be harvested. Within this patch cut approximately 12 Douglas fir have been marked with blue paint for removal.

Areas IV, and V are 24 and 16 net acres respectively. They are primarily natural Douglas fir stands. On Area IV there are approximately 120 Douglas fir "take" trees per acre and on Area V there are approximately 89 Douglas fir "take" trees per acre. The average DBH of the "take" trees is 16". The average age of these stands is 59 years. The target residual basal area is 160 SQFT.

Some additional Douglas fir and red alder have been marked with blue paint for removal along the haul route within Area V to improve visibility and safety along that road.

**Topography:** Areas I and II: These areas vary from benchy to steep. Area I has some steeper ground in the north end of the unit. Area II has some steeper ground in the center and in the north end of the unit. Slopes vary from 5% to 85%. Aspect is primarily east.

Area III: This area is primarily on a broad ridge top. There is some steeper ground along the south edge of the area with slopes up to 100%. Aspect is east-west.

Areas IV and V: These areas are primarily a SW aspect. The timber is located on top of a main ridge and several spur ridges. Slopes vary from 50-90% off the ridge tops.

**Streams:** A type "F" stream (Stony Creek) flows out the main draw between the units. The type "F" portion of this stream is below Areas IV & V and the southern end of Area II. The timber sale boundaries for these areas are posted at least 100' from the stream.

Type "N" tributaries from the sale areas flow into Stony Creek. These small tributaries flow from or through Areas I and II. These tributaries are unposted with a 25' horizontal distance, no-touch buffer on either side of the stream. There is fluorescent pink flagging and an aluminum tag at the top of the active water channel. There are no type "N" streams within Areas III, IV, or V.

**Reserve Trees:** Area I and II: All trees other than Douglas fir are reserved from cutting in the automark thin areas. Within the patch cuts all trees other than red alder are reserved from cutting.

Area III: Douglas fir larger than 40" are reserved from cutting. All trees other than Douglas fir are reserved from cutting in the automark thin areas. Within the patch cut all trees other than red alder and Douglas fir marked with blue paint are reserved from cutting.

Areas IV and V: Douglas fir larger than 40" are reserved from cutting. All trees other than Douglas fir are reserved from cutting

The exceptions to these requirements are trees within posted rights-of-way and trees approved by the STATE within skid roads, cable corridors, and "loggers choice" spurs.

**T & E Surveys:** The timber sale has been surveyed to protocol for northern spotted owls and marbled murrelets as of the summer of 2004 with no detections.

**Logging Methods:** The sale areas will be logged using a combination of cable logging and ground based logging systems. Use of cable yarding systems is planned for approximately 70% of the sale area with the remainder of the acreage supporting ground based yarding.

Trees must be felled parallel to or away from stream buffers. Bucking of tree tops prior to yarding is required.

**Project Work:**

1. Road Construction 0.5 miles
2. Road Improvement 5.9 miles
3. Post Harvest Activities

**Other Requirements:**

- Tree topping for snag recruitment
- Tree felling for large woody debris recruitment
- Mechanical slash piling in patch cuts.

### Cruise Summary:

#### **Volume Summary**

Species	Gross Volume (MBF)	Net Volume (MBF)	% Hidden D&B	% Vol. Adjust-ment**	Final Adjusted Volume (MBF)
<b>Areas I &amp; II - 108 ac*</b>					
Douglas fir	358	354	2%	10%	382
Hardwood	28	28			28
<b>Areas III, IV, &amp; V - 68 ac*</b>					
Douglas fir	1,308	1,297	5%	10%	1,355
Hardwood	15	15			15
<b>Total Volumes</b>					
Douglas fir	1,666	1,651			1,737
Hardwood	43	43			43

\* Net acres represent a reduction of gross acres to account for existing roads and stream buffers.

\*\* Volume adjustment is factored in to account for extra volume from right-of-way widening, corridor/skid roads, and ingrowth.

#### **Grade by Percent**

Species	Special-Mill	2-Saw	3- Saw	4-Saw	Camp Run
Douglas fir	< 1	35	51	14	-
Hardwood	-	-	-	-	100

**Cruise Method:** Combined Big BAF Variable Plot and ITS cruise. A total of 117 plots were sampled on a 3 x 3 chain grid in Areas I and II. A total of 41 plots were sampled on a 4 x 4 chain grid in Areas III, IV, and V.

**Discussion:** The cruise design was based on pre-cruise plot data taken in the month prior to the cruise and the ODF Stand Level Inventory data for West Oregon District. Equipment used included Spencer loggers tape, Biltmore stick, Spiegel- relaskop, and Topcon range finder. Plot and line spacing were maintained using aerial photo, hand compass, and pacing. In big BAF cruising a small basal area factor (BAF) is selected to get basal area data on a stand, then a large BAF is used to randomly select trees for height measurement and grading.

Areas I & II were cruised individually then volumes were combined for the Timber Sale Summary. Plots were sampled by counting the number of "in" trees at each plot using a BAF of 20. DBH on trees that were selected as "take" trees were measured. All "take" trees that were in with a BAF of 40 also had their height measured and grade determined. On Area II, 120 Ft<sup>2</sup> of conifer basal area per acre (6 trees) were left on each plot as the residual stand (Leave trees). On Area I up to 40 Ft<sup>2</sup> of hardwood basal area per acre (2 trees) could be counted toward the residual stand requirements.

In Areas III, IV, and V, all "take" Douglas fir were sampled by counting the number of "in" trees at each plot using a BAF of 20. DBH on trees that were selected as

“take” trees were measured. All “take” trees that were in with a BAF of 62.5 also had their height measured and grade determined.

On the patch cuts all hardwoods were counted and 1/5 of them were measured and graded (ITS 1:5). All Douglas fir trees in the Area III patch cut, marked with blue paint, were measured and graded (100%).

**Tree Form:** Form point for all species is assumed to be at 16 feet. Form factors for each measure tree were taken with a relaskop using a bars at form point over bars at breast height ratio.

**Measurement Standards:** Heights were measured in feet to the top of the merchantable bole with a minimum diameter of 5 inches or 40% of form point diameter outside bark. If the merchantable bole ended before the minimum diameter cutoff was reached, then the outside diameter at that point was measured using a relaskop and recorded on the cruise cards. Diameters were measured at breast height and recorded to the nearest inch.

**Grading System:** All trees were graded using the segment grading system. Trees were graded using 40' segment lengths unless breakage, defect or length to top of grade warranted otherwise. All hardwoods were graded camp run. A total of 183 Douglas fir and 92 hardwoods were measured and graded. An additional 276 Douglas fir were counted on plots for basal area calculations. (Hardwoods are only being removed in patch cuts, road right-of-ways, and cable/tractor corridors.)

**Utilization Standards:** A minimum log segment 5" inside bark at the small end by 12' in length was used. Only trees 8" DBH with a minimum bole length of 17' or larger were cruised.

**Hidden D & B and Volume Adjustment:** Hidden defect & breakage adjustments and volume adjustments are noted in the table above.

**Computation Procedures:** All sampled cruise data was recorded on plot cards and entered into a State Lands computer at Philomath office for processing. All data entry and computations were done by the District Cruise Specialist. SuperAce was used to determine V-Bar and volume per acre by grade. An in-house program is used to adjust the Big BAF volumes.

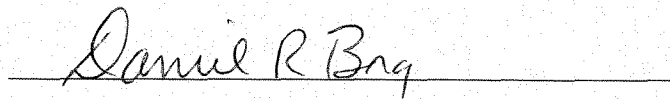
**Cruisers and dates:** The sale was cruised by Borg, Humcke, Hayzlett, McMinds, Moore, and Wiger during April and May of 2004.

**Signatures:**

Cruise Specialist:

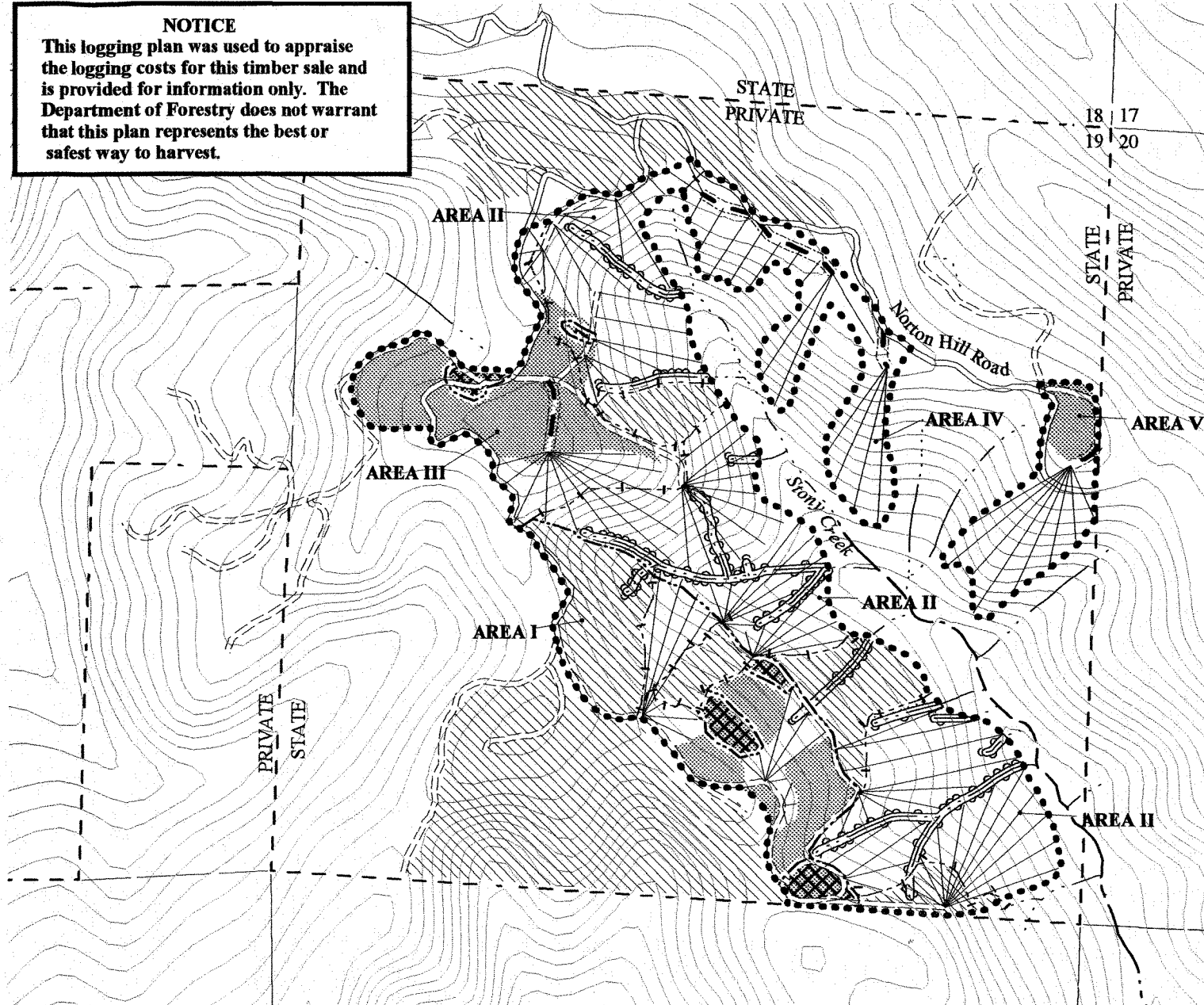


Unit Forester:



# NOTICE

This logging plan was used to appraise the logging costs for this timber sale and is provided for information only. The Department of Forestry does not warrant that this plan represents the best or safest way to harvest.



## LEGEND

### Boundaries

- ..... Timber Sale Boundary
- Area Boundary (Posted)
- - - - Area Boundary (Unposted)
- State Forest Property Boundary
- Right Of Way Boundary

### Roads

- ==== County Road
- ===== Surfaced Road
- ===== Unsurfaced Road
- New Construction

### Streams

- Type F
- Type N
- Stream Buffer (Unposted)

Tractor Yarding Area

Patch Cut

Restricted Operations Area

Land Survey Monument

Cable Corridor

40 Foot Contour

## LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-05-33  
NORTON HILL THIN  
PORTIONS OF SECTION 19, T10S, R8W, W.M.,  
LINCOLN COUNTY, OREGON

AREA	NET ACRES	
	CABLE	TRACTOR
I	11	17
II	78	2
III	8	20
IV	24	0
V	13	3
TOTAL	134	42



Scale  
1 : 12,000  
1 inch = 1000 feet



**FPA Written Plan for timber harvest**  
**Norton Hill Thin Timber Sale**  
**Portions of Sections 19, T10S, R8W, W.M.,**  
**Lincoln County, Oregon.**

**Protected Resource:** Stony Creek.

**Situation:** Stony Creek is a type "F" stream approximately ½ of the way through the area of the sale. It flows into the Yaquina River. The sale boundary is posted a minimum of 100 ft from Stony Creek.

**Resource Protection Measures:**

1. If the design of the logging system requires skylines to pass over the stream, pull cables out of the streamside vegetation prior to rigging the next yarding road.
2. Do not lower skyline cables into streamside vegetation during the yarding cycle.
3. Fell trees adjacent to the stream buffer so that they do not fall into the stream buffer.
4. Yard all logs away from the stream.
5. Hauling is restricted from November 1<sup>st</sup> through April 30<sup>th</sup> and will be restricted any time that there is water actively flowing on the haul route.

**I, the undersigned, submit this written plan in compliance with the requirements of the Forest Practices Act, regarding operations conducted within 100 feet of type D streams.**

\_\_\_\_\_  
PURCHASER REPRESENTATIVE

\_\_\_\_\_  
DATE