



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Rapid Stanley  
Sale 341-08-30

District: Astoria

Date: April 02, 2008

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**cost summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sale Value</b>	\$1,140,199.72	\$90,828.93	\$1,231,028.65
		<b>Project Work:</b>	\$(309,461.00)
		<b>Advertised Value:</b>	\$921,567.65



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**timber description**

**Location:** Areas 1, 2, 3, 4, and 5 are located in Portions of Sections 16, 19, 21, 28, 29, 30, 31, and 32, T5N, R6W, W.M., Clatsop County, Oregon.

**Stand Stocking:** 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	97
Western Hemlock / Fir	13	0	96
Red Cedar	18	0	95
Alder (Red)	14	0	95
Maple	14	0	95

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	3,631	1,804	307	0	5,742
Western Hemlock / Fir	607	792	203	0	1,602
Red Cedar	1	1	0	0	2
Alder (Red)	0	0	0	243	243
Maple	0	0	0	21	21
Total	4,239	2,597	510	264	7,610



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**comments:** Pond Values Used: 1st Quarter Calendar Year 2008.

Log Markets: Mist, Clatskanie, Tillamook, Forest Grove.

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

100% Branding and Painting: \$1MBF x = \$7,610

TOTAL Other Costs (with Profit & Risk to be added) = \$7,610

Other Costs (No Profit & Risk added):

Waterbar and block dirt road segments after harvest:

\$13.4/station x 25.9 stations = \$347

TOTAL Other Costs (No Profit & Risk added) = \$347



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**logging conditions**

**combination#: 1**

Douglas - Fir	57.46%
Western Hemlock / Fir	59.89%
Alder (Red)	57.42%
Maple	60.95%

**yarding distance:** Medium (800 ft)      **downhill yarding:** No  
**logging system:** Cable: Large Tower >=70      **Process:** Manual Delimiting  
**tree size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
**loads / day:** 5.0      **bd. ft / load:** 4,000  
**cost / mbf:** \$184.67

**machines:** Log Loader (A)  
Tower Yarder (Large)

**combination#: 2**

Douglas - Fir	35.09%
Western Hemlock / Fir	33.69%
Alder (Red)	32.30%
Maple	34.29%

**yarding distance:** Short (400 ft)      **downhill yarding:** No  
**logging system:** Shovel      **Process:** Manual Delimiting  
**tree size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF  
**loads / day:** 6.0      **bd. ft / load:** 4,000  
**cost / mbf:** \$104.36

**machines:** Shovel Logger

**combination#: 3**

Douglas - Fir	7.45%
Western Hemlock / Fir	6.43%
Red Cedar	100.00%
Alder (Red)	10.29%
Maple	4.76%

**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:** 8.0      **bd. ft / load:** 4,500  
**cost / mbf:** \$69.57

**machines:** Shovel Logger



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**logging costs**

Operating Seasons:	3.00	Profit Risk:	14.00%
Project Costs:	\$309,461.00	Other Costs (P/R):	\$7,610.00
Slash Disposal:	\$0.00	Other Costs:	\$347.00

**Miles of Road**

Road Maintenance: \$5.84

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	3.0	4.0
Western Hemlock / Fir	\$0.00	3.0	4.0
Red Cedar	\$0.00	2.0	3.8
Alder (Red)	\$0.00	2.0	3.5
Maple	\$0.00	2.0	3.5



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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>									
\$147.91	\$6.02	\$1.73	\$52.71	\$1.00	\$29.31	\$0.00	\$2.00	\$0.05	\$240.73
<b>Western Hemlock / Fir</b>									
\$150.22	\$6.07	\$1.73	\$53.22	\$1.00	\$29.71	\$0.00	\$2.00	\$0.05	\$244.00
<b>Red Cedar</b>									
\$69.57	\$6.13	\$1.73	\$84.83	\$1.00	\$22.86	\$0.00	\$2.00	\$0.05	\$188.17
<b>Alder (Red)</b>									
\$146.89	\$6.13	\$1.73	\$92.11	\$1.00	\$34.70	\$0.00	\$2.00	\$0.05	\$284.61
<b>Maple</b>									
\$151.65	\$6.13	\$1.73	\$92.11	\$1.00	\$35.37	\$0.00	\$2.00	\$0.05	\$290.04

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$420.56	\$179.83	\$0.00
Western Hemlock / Fir	\$0.00	\$310.10	\$66.10	\$0.00
Red Cedar	\$0.00	\$1,050.00	\$861.83	\$0.00
Alder (Red)	\$0.00	\$645.00	\$360.39	\$0.00
Maple	\$0.00	\$445.00	\$154.96	\$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
Red Cedar	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	5,742	\$179.83	\$1,032,583.86
Western Hemlock / Fir	1,602	\$66.10	\$105,892.20
Red Cedar	2	\$861.83	\$1,723.66
Alder (Red)	243	\$360.39	\$87,574.77
Maple	21	\$154.96	\$3,254.16

**Gross Timber Sale Value**

Recovery: \$1,231,028.65

Prepared by: Derek Bangs

Phone: 503-325-5451

**Road Maintenance Cost Summary**

Sale: Rapid Stanley  
 Date: 17-Jan-08  
 By: D.Bangs

MBF: 7.610  
 \$\$/MBF: \$5.84

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Production Rates	Miles/day	Distance(miles)	Days
Progressive Operations 1st Entry	Grader 14G	\$570	1	16	\$90	\$1,440	Grader	2.5	5.0	2.0
	Dump Truck 12CY x 2	\$357	2	16	\$73	\$2,336				
	FE Loader C966	\$570	1	8	\$74	\$592				
Progressive Operations 2nd Entry	Grader 14G	\$570	1	16	\$90	\$1,440	Grader	2.5	5.0	2.0
	Dump Truck 12CY x 2	\$357	2	16	\$73	\$2,336				
	FE Loader C966	\$570	1	8	\$74	\$592				
Final Road Maintenance	Grader 14G	\$570	1	110	\$90	\$9,900	Grader	1.5	16.5	11.0
	Dump Truck 12CY x 3	\$357	3	48	\$73	\$10,512				
	FE Loader C966	\$570	1	16	\$74	\$1,184	Vibratory Roller*	1.5	16.5	11.0
	Vibratory Roller	\$570	1	110	\$72	\$7,920				
	Water Truck 2,500 gallon Labor	\$139	1	70	\$78	\$5,460				
<b>Total</b>										\$44,452

\*Final Road Maintenance Only

x:\Jewell\_Unit\Timber Sales\2008\Rapid\_Stanley\projects\Road Maint.Harvest



**SUMMARY OF ALL PROJECT COSTS**

**SALE NAME:** Rapid Stanley

**NEW CONSTRUCTION:**

Project No. 1	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Dirt Roads	<u>1A-1B, 3A-3B, 3C-3D, 4I-4J</u>	<u>25.90 0.5 mi.</u>	<u>\$8,444</u>
Surfaced Roads	<u>4A-4B, 4C-4D, 4E-4F, 4G-4H</u> <u>5A-5B, 5C-5D, &amp; 5E-5F.</u>	<u>110.35 2.1 mi.</u>	<u>\$113,403</u>
<b>TOTALS</b>		<b>136.25 2.6 mi.</b>	<b>\$121,847</b>

**ROAD IMPROVEMENT:**

Project No. 1	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	<u>I1-I2, I3-I4, I5-I6, &amp; I6-I7</u>	<u>326.00</u>	<u>\$75,512</u>
<b>TOTALS</b>		<b>326.00 6.2 mi.</b>	<b>\$75,512</b>

**SPECIAL PROJECTS:**

Project No. 2	<u>Nettle Quarry Crushing</u>	<u>9,218 cy</u>	<u>\$79,997</u>
Project No. 3	<u>Road Vacating and Fill Removal</u>	<u>2.1 sta.</u>	<u>\$10,745</u>
	<u>Project Work Road Maintenance</u>		<u>\$12,888</u>
			<b>\$103,630</b>

**MOVE IN:**

	<u>Equipment</u>	<u>Cost</u>
	<u>Dozer (D8) x 2</u>	<u>\$2,360</u>
	<u>Dump Trucks (12 cy x 4)</u>	<u>\$548</u>
	<u>Dump Trucks (20 cy x 3)</u>	<u>\$483</u>
	<u>F E Loader (C966)</u>	<u>\$653</u>
	<u>Grader (14G)</u>	<u>\$653</u>
	<u>Rubber Tire Skidder (C518)</u>	<u>\$602</u>
	<u>Vibratory Roller</u>	<u>\$653</u>
	<u>Water Truck (2,500 gallon)</u>	<u>\$160</u>
	<u>Excavator (C330) x 2</u>	<u>\$2,360</u>
<b>TOTAL</b>		<b>\$8,472</b>

**GRAND TOTAL** **\$309,461**

Compiled By: D. Bangs

Date: 02/27/2008

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**SUMMARY OF CONSTRUCTION COSTS**

**SALE NAME:** Rapid Stanley (Designed Roads)  
**ROADS:** 4A to 4B (49.1) and 5A to 5B (33.0)

**NEW CONSTRUCTION:** 82.10 STATIONS 1.55 MILES  
**IMPROVEMENT:** STATIONS 0.00 MILES

Method	Acres/amount	Rate	=	Cost
Scatter Outside of R/W	7.8	\$1,123.00	=	\$8,759.40
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>				<b>\$8,759</b>

Material	Cy/amount/station	Rate	=	Cost
Common drift excavation \$\$/cy	9,286	\$1.50	=	\$13,929.00
Common drift excavation (>50% slopes) \$\$/cy	1,300	\$1.80	=	\$2,340.00
Embankment compaction \$\$/cy	10,295	\$0.60	=	\$6,177.00
Truck End Haul	1,500	\$3.40	=	\$5,100.00
Cut Slope Rounding	39	\$36.00	=	\$1,404.00
Landing Construction 4B 4K, and 5B	3	\$327.00	=	\$981.00
<b>SUB TOTAL FOR EXCAVATION</b>				<b>\$29,931</b>

Location	Dial/type	Lineal ft.	Rate	Cost
4A-4B 3+15	18"CPP	35	\$17.64	\$617.40
4A-4B 9+10	18"CPP	30	\$17.64	\$529.20
4A-4B 16+00	18"CPP	40	\$17.64	\$705.60
4A-4B 18+35	18"CPP	45	\$17.64	\$793.80
4A-4B 24+90	18"CPP	40	\$17.64	\$705.60
4A-4B 27+70	18"CPP	35	\$17.64	\$617.40
4A-4B 31+90	18"CPP	40	\$17.64	\$705.60
4A-4B 38+00	18"CPP	40	\$17.64	\$705.60
5A-5B 7+00	18"CPP	30	\$17.64	\$529.20
5A-5B 13+80	18"CPP	30	\$17.64	\$529.20
5A-5B 20+70	18"CPP	35	\$17.64	\$617.40

CULVERT MATERIALS AND INSTALLATION		No. bands	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	6' Fiberglass Markers	11	\$17.00	\$187.00
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>				<b>\$7,243</b>

Subtotal **\$45,933**

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Rapid Stanley (Field Design) (Dirt)  
 ROAD: 1A-1B (5.3), 3A-3B (6.3), 3C-3D (1.8), and 4I-4J (12.5)

NEW CONSTRUCTION: 25.90 STATIONS  
 IMPROVEMENT: STATIONS

0.49 MILES  
 0.00 MILES

Method	Acres/amount	X	Rate	=	Cost
Scatter Outside of RW	2.0	X	\$1,123.00	=	\$2,246.00
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$2,246</b>

Material	Sta/amount	X	Rate	=	Cost
Common (Drift Earth up to 20')	25.90	X	\$160.00	=	\$4,144.00
Landing Construction	4	X	\$327.00	=	\$1,308.00
1B, 3B, 3D, and 4J					
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$5,452</b>

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
Other/miscellaneous:			Description	Quantity		Rate	Cost
			Grade 14' outslope	25.90		\$15.41	\$399.12
			Waterbar and block	25.90		\$13.40	\$347.06
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>							
						Subtotal	\$746
							\$8,444

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Rapid Stanley (Field Design) (Surfaced) 28.25 STATIONS 0.54 MILES  
 ROAD: 4C-4D (5.5), 4E-4F (4.25), 4G-4H (6.5), 5C-5D (0.8), & 5E-5F (11.2) IMPROVEMENT: STATIONS 0.00 MILES

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of RW	2.2	x	\$1,123.00	=	\$2,470.60
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$2,471</b>

Material	Sta/amount	x	Rate	=	Cost
Common (Drift Earth up to 20')	28.25	x	\$160.00	=	\$4,520.00
Landing Construction	5	x	\$327.00	=	\$1,635.00
4D, 4F, 4H, 5D, and 5F					
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$6,155</b>

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
4G to 4H	18"CPP	40	\$17.64	\$705.60			
Other/miscellaneous:							
			Description		Quantity	Rate	Cost
			Culvert markers:		1	\$17.00	\$17.00
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>							<b>\$723</b>

Subtotal **\$9,348**

**Project No. 1 New Road Construction**

**SUMMARY OF CONSTRUCTION COSTS**

NEW CONSTRUCTION: 110.35 STATIONS 2.09 MILES

SALE NAME: Rapid Stanley  
 ROAD: 4A-4B (49.1), 4C-4D (5.5), 4E-4F (4.25), 4G-4H (6.5),  
 5A-5B (33.0), 5C-5D (0.8), & 5E-5F (11.2).

SURFACING		Description		Stations/amount	Rate/Station/amt.	Cost
Subgrade prep:		Grade, Shape and Ditch 16"		110.35	x	\$2,300.80
		Subgrade Compaction		110.35	x	\$1,870.43
<b>ROAD SEGMENT 1A to 1B</b>						
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT Volume (CY) per station	Sta. to Sta. 0+00 to 0+50 Number of stations	Cost
Base Rock	1 1/2"-0" Crushed	1A	9	49	0.50	\$102
Total Rock for Road Segment: 22						
<b>ROAD SEGMENT 3C to 3D</b>						
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT Volume (CY) per station	Sta. to Sta. 0+00 to 0+50 Number of stations	Cost
Base Rock	1 1/2"-0" Crushed	3C	9	49	0.50	\$102
Total Rock for Road Segment: 22						
<b>ROAD SEGMENT 4A to 4B</b>						
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT Volume (CY) per station	Sta. to Sta. 0+00 to 49+10 Number of stations	Cost
Base Rock	4"-0" Crushed	4A to 4B	9	49	49-10	\$16,023
Turnouts	4"-0" Crushed	4A to 4B	9	22	6 turnouts	\$879
Turn-Around	4"-0" Crushed	4A to 4B	9	22	1 TA	\$147
Junction	4"-0" Crushed	4A to 4B	9	22	4 junctions	\$586
Curve Widening	4"-0" Crushed	4A to 4B	9	22	4 curves	\$799
Turnouts	1 1/2"-0" Crushed	4E, 4G	2	11	3 turnouts	\$152
Junction	1 1/2"-0" Crushed	4E, 4G	2	11	2 junctions	\$102
Curve Widening	1 1/2"-0" Crushed	23+00 to 25+00	2	2	2 curves	\$92
Traction Rock	1 1/2"-0" Crushed	0+00 to 7+00	2	11	7 stations	\$356
Traction Rock	1 1/2"-0" Crushed	21+00 to 47+00	2	11	26 stations	\$1,321
Culvert Bedding	1 1/2"-0" Crushed	18+35	N/A	22	1 Culverts	\$102
Landing	6'-0" Pit-run	4B, 4K	N/A	50	2 Landings	\$625
Dispaltor Rock	24"-6" Rip Rap	24+90	N/A	10	1 Disipator	\$47
Total Rock for Road Segment: 3,338						
<b>ROAD SEGMENT 4C to 4D</b>						
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT Volume (CY) per station	Sta. to Sta. 0+00 to 5+50 Number of stations	Cost
Base Rock	4"-0" Crushed	4C to 4D	9	49	5.50	\$1,795
Turn-Around	4"-0" Crushed	4C to 4D	N/A	22	1 TA	\$147
Landing	6'-0" Pit-run	4D	N/A	50	1 Landings	\$313
Total Rock for Road Segment: 342						
						\$21,231

ROAD SEGMENT		4E to 4F		POINT TO POINT		4E to 4F		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Volume (CY)	Number of	0+00 to 4+25				
Base Rock	4"-0" Crushed	4E to 4F	9	49	station	4.25	stations	208	\$6.66	\$1,387		
Turnouts	4"-0" Crushed		9	22	turnout	1	turnouts	22	\$6.66	\$147		
Turn-Around	4"-0" Crushed		N/A	22	TA	1	TA	22	\$6.66	\$147		
Landing	6"-0" Pit-run	4F	N/A	50	Landing	1	Landings	50	\$6.25	\$313		
Total Rock for Road Segment:										302		\$1,992
ROAD SEGMENT		4G to 4H		POINT TO POINT		4G to 4H		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Volume (CY)	Number of	0+00 to 6+50				
Base Rock	4"-0" Crushed	4G to 4H	9	49	station	6.50	stations	319	\$6.66	\$2,121		
Turn-Around	4"-0" Crushed		N/A	22	TA	1	TA	22	\$6.66	\$147		
Landing	6"-0" Pit-run	4H	N/A	50	Landing	1	Landings	50	\$6.25	\$313		
Total Rock for Road Segment:										391		\$2,580
ROAD SEGMENT		4I to 4J		POINT TO POINT		4I to 4J		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Volume (CY)	Number of	0+00 to 0+50				
Base Rock	1 1/2"-0" Crushed	4I	9	49	station	0.50	stations	22	\$4.62	\$102		
Total Rock for Road Segment:										22		\$102
ROAD SEGMENT		5A to 5B		POINT TO POINT		5A to 5B		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Volume (CY)	Number of	0+00 to 33+00				
Base Rock	4"-0" Crushed	5A to 5B	9	49	station	33.00	stations	1,617	\$6.66	\$10,769		
Turnouts	4"-0" Crushed		9	22	turnout	5	turnouts	110	\$6.66	\$733		
Turn-Around	4"-0" Crushed		N/A	22	TA	1	TA	22	\$6.66	\$147		
Junction	4"-0" Crushed	5A, 5C, 5E	9	22	Junction	3	junctions	66	\$6.66	\$440		
Curve Widening	4"-0" Crushed		9	11	Junction	2	junctions	60	\$6.66	\$400		
Junction	1 1/2"-0" Crushed	5C, 5E	2	11	Junction	7	junctions	22	\$4.62	\$102		
Traction Rock	1 1/2"-0" Crushed	7+50 to 14+50	2	11	station	1	stations	77	\$4.62	\$356		
Landing	6"-0" Pit-run	5B	N/A	50	Landing	1	Landings	50	\$6.25	\$313		
Total Rock for Road Segment:										2,024		\$13,257
ROAD SEGMENT		5C to 5D		POINT TO POINT		5C to 5D		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Volume (CY)	Number of	0+00 to 0+80				
Base Rock	4"-0" Crushed	5C to 5D	9	49	station	0.80	stations	39	\$6.66	\$261		
Landing	6"-0" Pit-run	5D	N/A	50	Landing	1	Landings	50	\$6.25	\$313		
Total Rock for Road Segment:										89		\$574

ROAD SEGMENT	5E to 5F	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
					5E to 5F Volume (CY) per station	Sta. to Sta. 0+00 to 11+20 Number of stations			
Base Rock	4"-0" Crushed	5E to 5F	9	49	11.20	549	\$6.66	\$3,655	
Turnouts	4"-0" Crushed		N/A	22	2	44	\$6.66	\$293	
Turn-Around	4"-0" Crushed		N/A	22	1	22	\$6.66	\$147	
Landing	6"-0" Pit-run	5F	N/A	50	1	50	\$6.25	\$313	
Total Rock for Road Segment: \$4,407									
Processing: Description									
Water, Process & Compact Crushed Rock: \$5,233									
Process traction rock \$1,997									
<b>SUB TOTAL FOR SURFACING</b>								<b>\$57,902</b>	

SPECIAL PROJECTS		No.sta	Rate/sta	Cost
Description		110.35	\$47.42	\$5,233
Road Fabric on 4A to 4B 200 feet @ \$1.10 per linear foot		40.00	\$47.42	\$1,997
<b>SUB TOTAL FOR SPECIAL PROJECTS</b>				<b>\$220</b>
<b>GRAND TOTAL</b>				<b>\$113,403</b>

Compiled By: D. Bangs Date: 01/30/2008

**Project No. 1 Road Improvement**

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: **Rapid Stanley** NEW CONSTRUCTION: **0.00 STATIONS** **0.00 MILES**  
 ROAD: **11-12 (67.1), 13-14 (91.5), 15-16 (51.7), 16-17 (119.0)** IMPROVEMENT: **329.30 STATIONS** **6.24 MILES**

SURFACING		Description		Stations/ amount	Rate/ sta/amt	Cost
Subgrade prep:		Grade, Shape and Ditch		X		
Subgrade Leveling		Surfacing Rock Processing and Compaction (Subgrade Leveling)		329.30	\$20.85	\$6,865.91
Total Rock for Road Segment:				329.30	\$20.39	\$6,714.43
ROAD SEGMENT		POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
		11 to 12		100	\$4.62	\$462
Application		Rock Size and Type	Depth of Rock (inches)	Sta. to Sta. 0+00 to 67+10		
Subgrade Leveling		1 1/2"-0" Crushed	11 to 12	Number of		
Total Rock for Road Segment:				100		\$462
ROAD SEGMENT		POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
		13 to 14		3,203	\$4.62	\$14,796
Application		Rock Size and Type	Depth of Rock (inches)	Sta. to Sta. 0+00 to 91+50		
Surfacing		1 1/2"-0" Crushed	5	Number of		
Turnouts		1 1/2"-0" Crushed	5	stations	91.50	\$14,796
Culvert Bedding		1 1/2"-0" Crushed	N/A	turnouts	15	\$762
Culvert Bedding		1 1/2"-0" Crushed	N/A	Culvert	1	\$102
Culvert Bedding		1 1/2"-0" Crushed	N/A	Culvert	1	\$102
Junction		1 1/2"-0" Crushed	5	Culvert	1	\$102
Turnaround		1 1/2"-0" Crushed	5	Junction	6	\$305
Bridge Approach		1 1/2"-0" Crushed	4	Turnaround	1	\$51
Bridge Approach		4"-0" Crushed	8	stations	1	\$152
Bridge Approach		6"-0" Pit-run	12	stations	1	\$513
Dissipator		24"-6" Rip Rap	N/A	stations	1	\$688
Total Rock for Road Segment:				3,741	\$4.69	\$17,618
ROAD SEGMENT		POINT TO POINT		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
		15 to 16		2,419	\$4.69	\$11,219
Application		Rock Size and Type	Depth of Rock (inches)	Sta. to Sta. 0+00 to 51+70		
Surfacing		1 1/2"-0" Crushed	5	Number of		
Subgrade Leveling		1 1/2"-0" Crushed	5	stations	51.70	\$8,360
Turnouts		1 1/2"-0" Crushed	5	turnouts	5	\$254
Culvert Bedding		1 1/2"-0" Crushed	N/A	Culvert	1	\$102
Junction		1 1/2"-0" Crushed	5	Junction	2	\$102
Dissipator		24"-6" Rip Rap	N/A	Dissipator	1	\$47
Total Rock for Road Segment:				2,419	\$4.69	\$11,219



ROAD SEGMENT		16 to 17		POINT TO POINT		Sta. to Sta.		Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	Number of stations	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Rate/sta	Cost
Surfacing	1 1/2"-0" Crushed	16 to 17	3	21	119.00	2,500	\$4.71	\$47.42	\$11,775
Total Rock for Road Segment:						2,500			\$11,775

Processing:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact Crushed Rock:	329.30	\$47.42	\$15,615
<b>SUB TOTAL FOR SURFACING</b>				<b>\$71,245</b>

CULVERT MATERIALS AND INSTALLATION						
Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate
13 to 14	0+00	50	\$17.64	\$882.00		
13 to 14	21+00	40	\$17.64	\$705.60		
13 to 14	56+50	40	\$17.64	\$705.60		
15 to 16	11+20	40	\$17.64	\$705.60		

SPECIAL PROJECTS			Description	Cost
Culverts	Installing Culvert Markers @\$17/marker x 12 markers	=		\$204
Bridge Approach	Construct Dissipaters W/Excavator @\$130/hr. x 0.5/dissipator x 2 dissipators	=		\$130
	Excavate bridge approach @\$130/hr. X 5hrs.	=		\$650
Hand Seed/Mulch W/A's	Compact bridge approach w/hand tamper @\$9/hr x 5 hrs	=		\$45
	5 hours Labor @\$37/hour	=		\$185
	4 Bales Straw @\$10.0 bale	=		\$40
	10 lbs. Seed @\$1.40 lb.	=		\$14
<b>SUB TOTAL FOR SPECIAL PROJECTS</b>				<b>\$4,267</b>

**GRAND TOTAL** **\$75,512**

Compiled By: D. Bangs Date: 01/09/2008

## CRUSHED ROCK COST

SALE NAME: Rapid Stanley  
 PROJECT: No. 1  
 QUARRY: Nettle Quarry

ROCK TYPE: 24"-6" Rip Rap

DATE: 01/22/2008  
 BY: D. Bangs

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
4A to 4B	49.10	10				2.00	0.50	0.40	0.10	3.00
13 to 14	91.50	10			1.00	1.00	1.00	0.50	0.10	3.60
15 to 16	51.70	10			2.00	1.50	1.00	0.30	0.10	4.90
<b>TOTAL</b>	<b>192.30</b>	<b>30</b>								
	<b>STA./NO.</b>	<b>CU. YD.</b>								
<b>CUBIC YARD WEIGHTED HAUL</b>					<b>1.00</b>	<b>1.50</b>	<b>0.83</b>	<b>0.40</b>	<b>0.10</b>	
									<b>AVERAGE HAUL</b>	<b>3.83</b>
									<b>Average Round Trip Distance (miles)</b>	<b>7.67</b>

**ROCK HAUL:**

Truck type: D20 No. trucks: 3  
 Delay min.: 8 Efficiency: 85%

Ave haul: \$3.51 /cy  
 Load: \$0.45 /cy  
 Spread: \$0.73 /cy

Truck type: D12 No. trucks: 4  
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks: \_\_\_\_\_  
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,307

**CRUSHED ROCK HAUL COSTS                  30 cy @                  \$4.69 /cy**

CRUSHED ROCK COST

SALE NAME: Rapid Stanley  
 PROJECT: No. 1  
 QUARRY: Nettle Quarry

ROCK TYPE: 6"-0" Pit Run

DATE: 01/22/2008  
 BY: D. Bangs

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
4A to 4B	49.10	100				2.00	0.50	0.40	0.10	3.00
4C to 4D	5.50	50			2.00	1.00	1.10	1.60	0.20	5.90
4E to 4F	4.25	50			1.00	2.00	1.00	1.60	0.30	5.90
4G to 4H	6.50	50			1.00	2.00	2.00	0.80	0.20	6.00
5A to 5B	33.00	50			1.00	2.00	1.00	0.50	0.50	5.00
5C to 5D	0.80	50			1.00	2.00	2.60	1.90	0.25	7.75
5E to 5F	11.20	50			1.00	2.00	2.60	1.90	0.30	7.80
I3 to I4	91.50	110			1.00	1.00	1.00	0.50	0.10	3.60
TOTAL	201.85	510								
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL					0.90	1.69	1.32	1.00	0.21	AVERAGE HAUL 5.12
									Average Round Trip Distance (miles)	10.25

ROCK HAUL:

Truck type: D20 No. trucks: 3  
 Delay min.: 8 Efficiency: 85%      Ave haul: \$5.02 /cy  
    Load: \$0.45 /cy  
 Truck type: D12 No. trucks: 4      Spread: \$0.78 /cy  
 Delay min.: 6 Efficiency: 85%  
 Truck type: D10 No. trucks:               Production: cy/day = 914  
 Delay min.: 5 Efficiency: 85%

CRUSHED ROCK HAUL COSTS      510 cy @      \$6.25 /cy

CRUSHED ROCK COST

SALE NAME: Rapid Stanley  
 PROJECT: No. 1  
 QUARRY: Nettle Quarry

ROCK TYPE: 1 1/2"-0"Crushed

DATE: 01/22/2008  
 BY: D. Bangs

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
1A to 1B	0.50	22			1.00	2.00	2.40	1.00	0.10	6.50
3C to 3D	0.50	22			1.00	2.00	0.80	0.70	0.20	4.70
4A to 4B	49.10	460				2.00	0.50	0.40	0.10	3.00
4I to 4J	0.50	22					1.00	0.50		1.50
5A to 5B	33.00	99			1.00	2.00	1.00	0.50	0.50	5.00
I1 to I2	67.10	100			2.00	2.00	0.30	0.20	0.30	4.80
I3 to I4	91.50	3,544			1.00	1.00	1.00	0.50	0.10	3.60
I5 to I6	51.70	1,909			2.00	1.50	1.00	0.30	0.10	4.90
I6 to I7	119.00	2,500			1.00	1.50	0.30	0.30	0.10	3.20
TOTAL	412.90	8,678								
	STA./NO.	CU. YD.								AVERAGE HAUL
CUBIC YARD WEIGHTED HAUL					1.18	1.33	0.77	0.39	0.11	3.77
Average Round Trip Distance (miles) 7.55										

ROCK HAUL:

Truck type: D20 No. trucks: 3  
 Delay min.: 8 Efficiency: 85%

Truck type: D12 No. trucks: 4  
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:       
 Delay min.: 5 Efficiency: 85%

Ave haul: \$3.45 /cy  
 Load: \$0.45 /cy  
 Spread: \$0.73 /cy

Production: cy/day = 1,332

**CRUSHED ROCK HAUL COSTS    8,678 cy @    \$4.62 /cy**



**SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS**

PROJECT NO. 2 Timber Sale Name: Rapid Stanley  
 Quarry: Nettle Swell: \_\_\_\_\_  
 Location: NE1/4, Sec 29, T5N, R6W Shrink: 16%  
 County: Clatsop  
 By: d.mellison  
 Date: 02/22/2008

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"	12%	CR			
1-1/2"-0"	2%	CR		8,678	8,678
4"-0"		CR			
6"-0"		PR		510	510
24"-6"		RR		30	30
36"		RR			
<b>TOTAL CUBIC YARDS OF ROCK:</b>				9,218	9,218

**1) MOBILIZATION & SET UP:**

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
xxx				Off Highway Dump Truck	1	\$515	\$515
Screening Plants	2	\$515	\$1,031	Screening Plant		\$515	
D8 Cat	1	\$1,180	\$1,180	Loading Hopper		\$515	
D6 Cat		\$653		Loader	1	\$676	\$676
Drill & Compressor	1	\$1,180	\$1,180	zzz		\$999	
Powder	1	\$327	\$327	3 Stage Crusher	1	\$2,694	\$2,694
3 Dump Trucks		\$411		3 Dump Trucks		\$411	
Excavator	1	\$1,180	\$1,180	Excavator		\$1,180	

SUB TOTAL FOR MOBILIZATION

\$8,783

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,205	\$3,205
Screening Plants	2	\$273	\$546
Loading Hopper		\$273	\$273
Original Calibration	1	\$507	\$507

SUB TOTAL FOR SET UP COSTS

\$4,531

**TOTAL MOBILIZATION & SET UP COSTS**

\$13,314

**2) CLEARING & GRUBBING**

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Pile and Burn	0.2	acres	\$2,268	\$386
Equipment time (C330)	4.0	hours	\$138	\$552
Fire Truck Mobilization	1.0	truck	\$137	\$137

**TOTAL CLEARING & GRUBBING COSTS**

\$1,075

**3) EXCAVATION**

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, dump)	3,750	bcy	\$2.29	\$8,588
Shape pile w/Cat	3	hours	\$132.00	\$396

**TOTAL EXCAVATION COSTS**

**\$8,984**

**4) DEVELOP ROCK**

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST	
Type	Cu. yd.	Vol.	Weight	Ripping	50%	4,609	\$2.20	\$10,140
crushed	8,678	94%	Drill & shoot	50%	4,696	\$2.30	\$10,800	
pit run	510	6%	Oversize red					
rip rap	30	0%	Other					
Total	9,218							
reject	174	1.9%						

**TOTAL ROCK DEVELOPMENT COSTS**

**\$20,940**

**5) CALIBRATION & TESTING**

DESCRIPTION	NO.	\$/TEST	COST
Calibrate			
Calibrate			
Test	5	\$57.30	\$287
Test			

**TOTAL CALIBRATION & TESTING COSTS**

**\$287**

**6) FEEDING & LOADING**

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	8,852	\$0.73	\$6,468

**TOTAL FEEDING & LOADING COSTS**

**\$6,468**

**7) ROCK CRUSHING**

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed					
1-1/2"-0"	crushed	8,678	3 stage w/s	130	\$2.99	\$25,967
4"-0"	crushed					

**TOTAL ROCK CRUSHING COSTS**

**\$25,967**

**8) STOCKPILING**

STOCKPILE PREPARATION OR CONST	COST
Construct Stockpile Site	
(See Footnote)	

SUB TOTAL

HAUL & STOCKPILE	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
STOCKPILE LOCATION					
1.					
2.					
3.					
4.					
5.					
6.					

SUB TOTAL

**TOTAL STOCKPILING COSTS**

**9) MISCELLANEOUS COSTS**

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	
2.29                      174 CY	\$397
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access	\$2,565

**TOTAL MISCELLANEOUS COSTS**

\$2,962

**10) GRAND TOTAL:**

**\$79,997**

\$/Cubic Yard

\$9.22

**Footnotes:**

Construct/Reconstruct Stockpile Floor

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader		\$90.00	
Excavator		\$138.00	

Rock for Floor (CY)	\$/CY Haul	Total

Total Construct Stockpile Floor



SUMMARY OF VACATING COSTS

SALE NAME Rapid Stanley VACATING: 2.10 STATIONS 0.04 MILES

ROADS: Grasslands & Grand Rapids

POINTS: V1 to V2 & V3 to V4

Method	Hours	X	Rate	=	Cost
Grasslands 20 (V1-V2)		X		=	
Large Excavator	0.50	X	\$1,030.00	=	\$515.00
Grand Rapids 601030 (V3-V4)		X		=	
Large Excavator	0.50	X	\$1,030.00	=	\$515.00
		X		=	
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$1,030</b>

Material	Hours	X	Rate	=	Cost
Grasslands 20		X		=	
Large Excavator	3.50	X	\$1,030.00	=	\$3,605.00
Medium Dozer	2.50	X	\$590.00	=	\$1,475.00
Grand Rapids 601030		X		=	
Large Excavator	3.00	X	\$1,030.00	=	\$3,090.00
Medium Dozer	2.00	X	\$590.00	=	\$1,180.00
		X		=	
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$9,350</b>

Description	Cost
Hand Grass Seeding Pasture Mix (seed, fertilizer, la 0.15 ac @460/ac	\$69.00
Straw Bales 30 bales @ \$4.50 per bale	\$135.00
Labor 4 hours @\$18.00 per hour	\$72.00
<b>SUB TOTAL FOR SEEDING AND MULCHING</b>	
	<b>\$276</b>

Description	Cost
Haul away old pipes	
10-12 cy Highway Dump 1.5 hours @\$59.00 / hour	\$88.50
<b>SUB TOTAL FOR MISCELLANEOUS</b>	
	<b>\$89</b>

**GRAND TOTAL \$10,745**

**Road Maintenance after completion of Projects**

Sale: Rapid Stanley  
 Date: 23-Jan-08  
 By: D.Bangs

Type	Equipment/Rationale	Hours	Rate	Cost
	Grader 14G	57	\$90	\$5,130
Final Haul	Dump Truck 12CY	10	\$73	\$730
Road	FE Loader C966	10	\$74	\$740
Maintenance	Vibratory Roller	57	\$72	\$4,104
Haul Route	Water Truck 2,500 gallon	28	\$78	\$2,184
<b>Total</b>				<b>\$12,888</b>

Production Rates  
 Grader  
 Vibratory Roller

Miles/day	Distance(miles)	Days
1.5	8.6	5.7
1.5	8.6	5.7

**Road Maintenance Cost Summary**

Sale: Rapid Stanley  
 Date: 17-Jan-08  
 By: D.Bangs

MBF: 7.610  
 \$\$/MBF: \$5.84

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Production Rates	Miles/day	Distance(miles)	Days
Progressive Operations 1st Entry	Grader 14G	\$570	1	16	\$90	\$1,440	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 12CY x 2	\$357	2	16	\$73	\$2,336	Grader	2.5	5.0	2.0
Progressive Operations 2nd Entry	Grader 14G	\$570	1	16	\$90	\$1,440	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 12CY x 2	\$357	2	16	\$73	\$2,336	Grader	2.5	5.0	2.0
Final Road Maintenance	Grader 14G	\$570	1	110	\$90	\$9,900	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 12CY x 3	\$357	3	48	\$73	\$10,512	Grader	1.5	16.5	11.0
	FE Loader C966	\$570	1	16	\$74	\$1,184	Vibratory Roller*	1.5	16.5	11.0
	Vibratory Roller	\$570	1	110	\$72	\$7,920				
	Water Truck 2,500 gallon	\$139	1	70	\$78	\$5,460				
	Labor			20	\$37	\$740				
<b>Total</b>										

\*Final Road Maintenance Only

\$44,452

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**Rapid Stanley  
TIMBER CRUISE REPORT  
FY 2008**

1. **Sale Area Location:** Areas 1, 2, 3, 4, and 5 are located in Portions of Sections 16, 19, 21, 28, 29, 30, 31, and 32, T5N, R6W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 100%  
Tax Code 8-01 (100%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	New R/W	GTRA	Non-Thinnable	Stream Buffer	Net Acres	Survey Method
1	Partial Cut	35	1.5	0.5	0	0	4	29	GIS
2	Partial Cut	29	2	0	0	0	4	23	GIS
3	Partial Cut	52	2	1	0	0	4	45	GIS
4	Partial Cut	164	2.5	4.5	0	8	4	145	GIS
5	Partial Cut	204	7	6	0	1	8	182	GIS
6 R/W	Right-of-way	n/a	0	0	0	0	0	12	GIS
<b>TOTALS</b>		<b>484</b>	<b>15</b>	<b>12</b>	<b>0</b>	<b>9</b>	<b>24</b>	<b>436</b>	

4. **Cruisers and Cruise Dates:** Areas 1, 2, 3, 4, and 5 were cruised by Derek Bangs, Jon Long, Peter Stone, Jasen McCoy, Lanny Freeman, Scott Dowling and Ty Williams, in November-December, 2007.

5. **Cruise Method and Computation:**

AREAS 1 and 2 are "auto-mark" thinning units and were variable plot cruised using a 40 BAF. These plots are located on a 4 chain by 6 chain grid, with every other plot measured and graded. A total of 27 plots were sampled, with 14 measured and graded plots, and 13 count plots. Two to three leave trees were selected at each plot. Cedar and all conifer trees 18" and larger are a reserve species and recorded as leave trees.

AREAS 3, 4, and 5 are "auto-mark" thinning units and were variable plot cruised using a 40 BAF. These plots are located on a 4 chain by 12 chain grid, with every third plot measured and graded. A total of 85 plots were sampled, with 29 measured and graded plots, and 56 count plots. Four leave trees were selected at each plot. Cedar is a reserve species and recorded as a leave tree.

AREA 6 R/W The right-of-way volume was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Areas 3, 4, and 5. In-sale right-of-way totals 12 acres.

All cruisers used Corvallis MicroTechnology (CMT) and/or Allegro 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 and 2	05N06W SEC 19	TAKE_100	00PC	52
3, 4, and 5	05N06W SEC 29	Areas345_150	TAKE	372
6 R/W	05N06W SEC 29	Rightofway	ROW	12

6. **Timber Description**

Areas 1 and 2 are approximately 38 years old, consisting mostly of planted Douglas-fir stands. Pockets of low stocked, non-thinnable types are scattered throughout both areas. Areas 1 and 2 will be thinned to an SDI of 23 (100 Sq.Ft.BA), removing approximately 63 trees per acre and 5.1 MBF/acre (net). There is a diameter limit in which no trees 18" DBH or larger may be cut. The average conifer "take" tree size is 13.5 inches DBH and 45 feet to a merchantable top (6 inches d.i.b.). The average conifer "leave" tree size is 16.1 inches DBH and 52 feet to a merchantable top (6 inches d.i.b.).

Areas 3, 4, and 5 are approximately 75 years old, consisting of Douglas-fir and mixed conifer stands with patches and stringers of hardwoods. Some small, non-thinnable pockets are scattered throughout the unit. This stand will be thinned to a SDI of 34 (150 Sq.Ft.BA), removing approximately 97 trees per acre. The average volume per

acre to be harvested (net) is 18.2 MBF. The average Douglas-fir "take" tree size is 19 inches DBH, with an average height of 74 feet to a merchantable top (6 inch d.i.b.). The average alder tree size is 14 inches DBH and 37 feet to a merchantable top (6 inch d.i.b.). Area 5 has two alternate prescription sites within the area. These sites are identified by blue painted bands at breast height on a clump of trees. All unmarked trees within 75ft of the marked trees are to be cut.

Area 6 R/W is similar to the timber description mentioned above for Areas 3, 4, and 5. The average volume (net) is approximately 46.6 MBF/acre.

**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 and 2 (PC)	40%	10%	40.7%	8.0%
3, 4 and 5 (PC)	50%	7%	40.4%	4.4%

\* Statistics for the thinning units is for the current stand (Take and leave trees combined).

**8. Volumes by Species and Log Grade:** (See "Species, Sort, Grade - Type and Project Reports, attached, of individual sale areas and combined areas and two cruise types).

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	18"	5,742	3,631	1,804	307	0	3%	75%
Hemlock	13"	1,594	600	791	203	0	2%	21%
Alder	14"	243	0	0	0	243	5%	3%
Big Leaf Maple	14"	21	0	0	0	21	6%	<1%
Noble fir	26"	8	7	1	0	0	<1%	<1%
Cedar	18"	2	1	1	0	0	<1%	<1%
<b>TOTALS</b>		<b>7,610</b>	<b>4,239</b>	<b>2,597</b>	<b>510</b>	<b>264</b>		

**9. Approvals:**

Prepared by: Derek Bangs Date: January 03, 2008

Unit Forester Approval:  Date: 2/5/08

**10. Attachments:**

- Cruise Designs (2)
- Cruise Maps (3)
- Volume Reports - 4 pages
- Statistics Reports - 8 pages
- Stand Tables - 3 pages
- Log Stock Tables - 3 pages

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Rapid Stanley **Area(s)** 1 & 2

**Harvest Type:** (PC) "Automark Thinning"

**Approx. Cruise Acres:** 58 **Estimated CV%** 40 Net BF **SE% Objective** 10 Net BF

**Planned Sale Volume :** 348 MBF **Estimated Sale Area Value/Acre:** \$1,500/Ac  
(Areas 1 & 2) (6 MBF/Ac)

**A. Cruise Goals:** (a) Grade minimum 55 conifer:  
(b) Sample 27 cruise plots (14 grade/13 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) AZ= 90° (East/West)  
Cruise Line Spacing 4 (chains)  
Cruise Plot Spacing 6 (chains)  
Grade/Count Ratio 1/1

Basal Area leave target 100 sq. ft. Cruiser needs to select 2.5 leave trees per plot (leave 4 every other plot). Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer offset by 1 or 2 chains and continue. Alder will be thinned and will count towards basal area. The biggest and best trees should be selected as leave trees regardless of species. All cedar over 8" in diameter containing a merchantable log and trees exceeding 18 inches are leave trees and count towards the leave tree basal area. Record snag as SN and take heights and diameters. Grade alder as camprun-sawlogs (30 net BF minimum).

**C. Tree Measurements:**

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest  $\frac{1}{2}$ " 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 R=Camprun
  
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: Derek Bangs  
 Approved by: *Jon Long*  
 Date: 11/28/07

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Rapid Stanley **Area(s)** 3, 4, & 5

**Harvest Type:** (PC) "Automark Thinning"

**Approx. Cruise Acres:** 399 **Estimated CV%** 50 Net BF **SE% Objective** 7 Net BF

**Planned Sale Volume :** 6,384 MBF **Estimated Sale Area Value/Acre:** \$6,400/Ac  
(Areas 3, 4, & 5) (16 MBF/Ac.)

**A. Cruise Goals:** (a) Grade minimum 100 conifer:  
(b) Sample 85 cruise plots (29 grade/56 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 Lines 1-8 Direction(s) AZ= 135° /315° (Northwest/Southeast)  
Cruise Line 9 Direction(s) AZ= 360° /180° (North/South)  
Cruise Line Spacing 4 (chains)  
Cruise Plot Spacing 12 (chains)  
Grade/Count Ratio 1/2

Basal Area leave target 150 sq. ft. Cruiser needs to select 4 leave trees per plot. Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer offset by 1 or 2 chains and continue. Alder will be thinned and will count towards basal area. The biggest and best trees should be selected as leave trees regardless of species. All cedar over 8" in diameter containing a merchantable log are leave trees and count towards the leave tree basal area. Record snag as SN and take heights and diameters. Grade alder as camprun-sawlogs (30 net BF minimum).

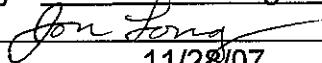
**C. Tree Measurements:**

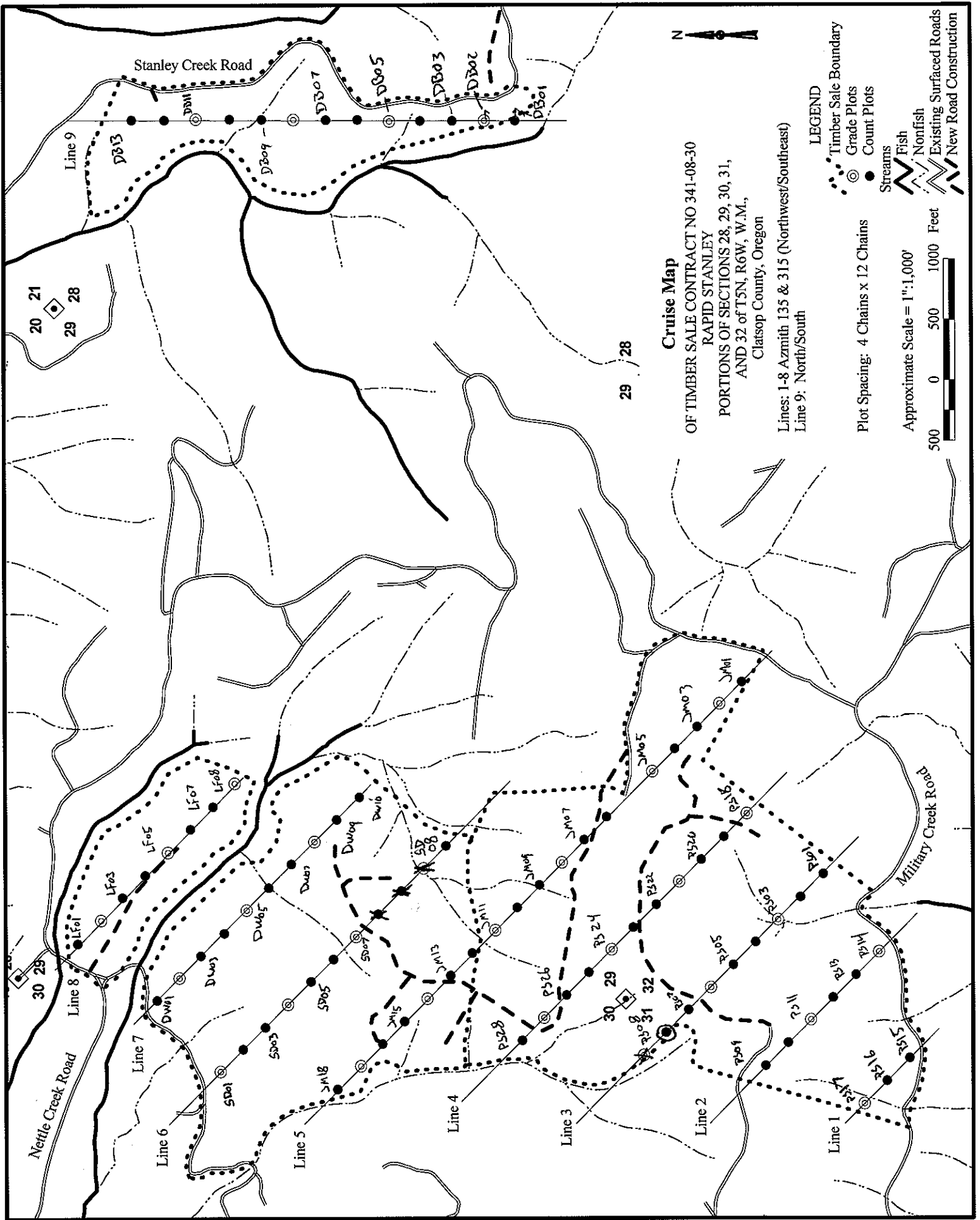
- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest  $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest 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 R = Camprun
  
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.

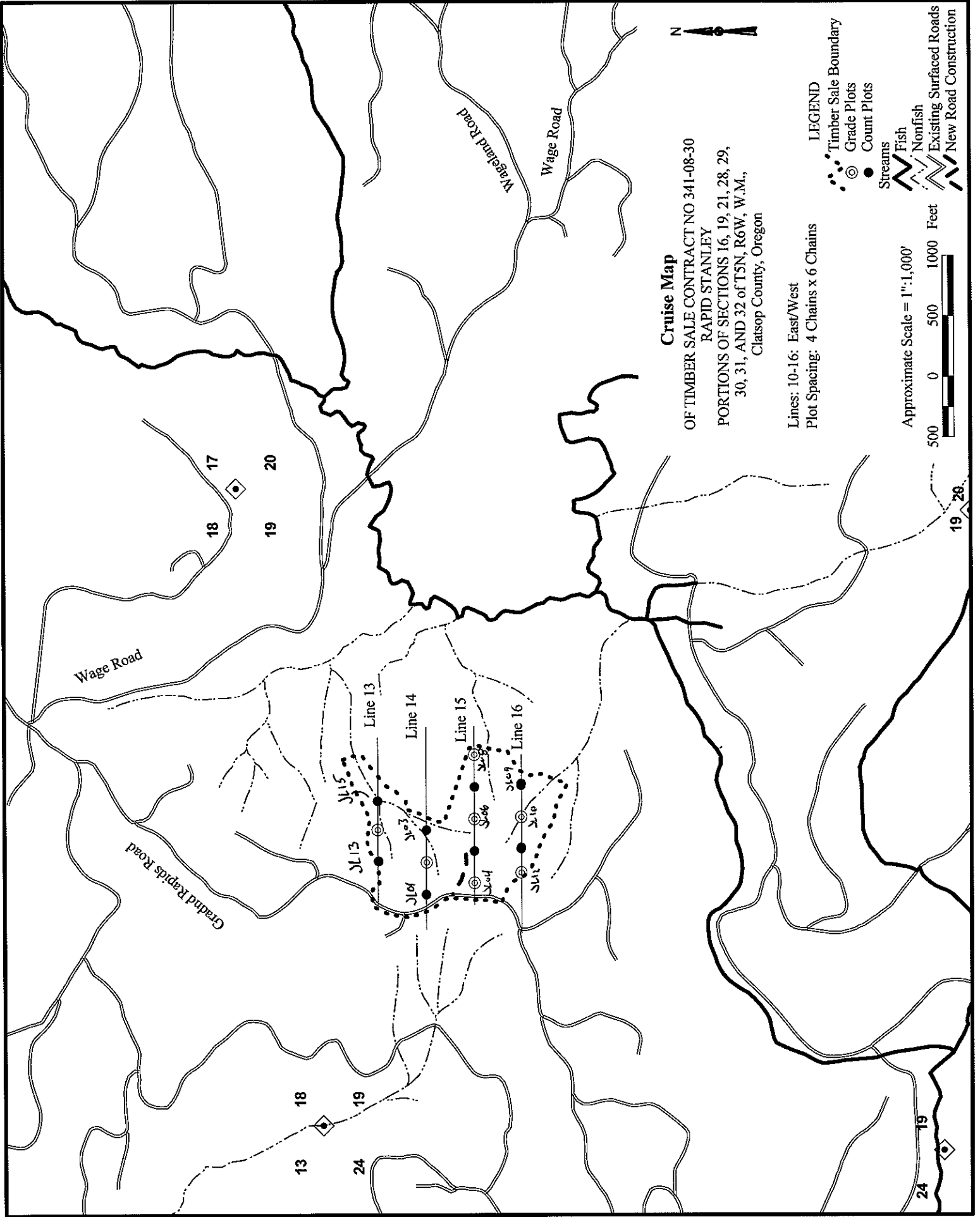
Cruise Design by: Derek Bangs  
Approved by:   
Date: 11/28/07



**Cruise Map**  
OF TIMBER SALE CONTRACT NO 341-08-30  
RAPID STANLEY  
PORTIONS OF SECTIONS 28, 29, 30, 31,  
AND 32 of T5N, R6W, W.M.,  
Clatsop County, Oregon  
Lines: 1-8 Azimuth 135 & 315 (Northwest/Southeast)  
Line 9: North/South

**LEGEND**  
● Timber Sale Boundary  
⊙ Grade Plots  
⊕ Count Plots  
~ Streams  
~ Fish  
~ Nonfish  
— Existing Surfaced Roads  
- - - New Road Construction

Plot Spacing: 4 Chains x 12 Chains  
Approximate Scale = 1":1,000  
500 0 500 1000 Feet

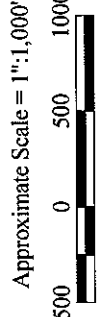


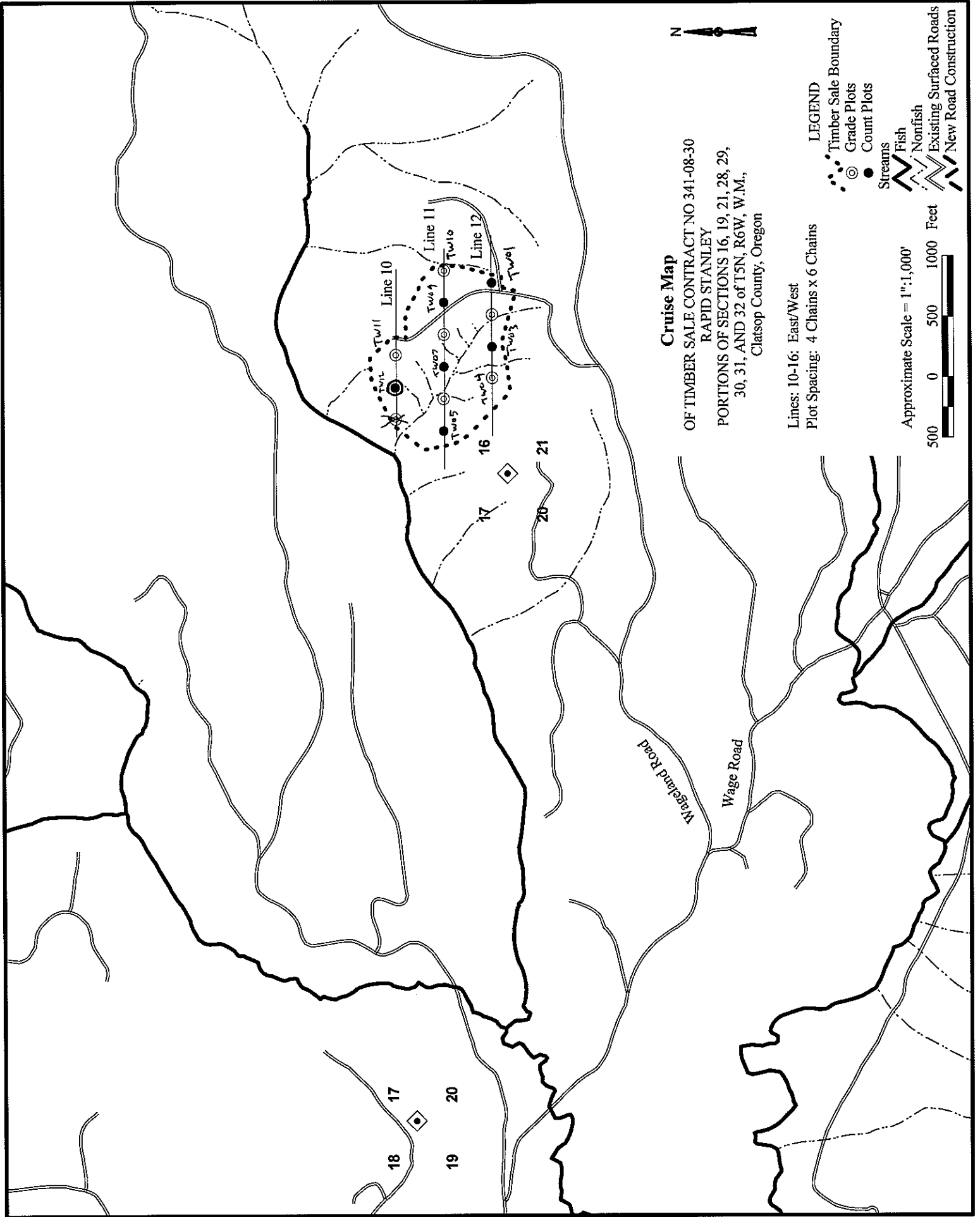
**Cruise Map**

OF TIMBER SALE CONTRACT NO 341-08-30  
 RAPID STANLEY  
 PORTIONS OF SECTIONS 16, 19, 21, 28, 29,  
 30, 31, AND 32 of T5N, R6W, W.M.,  
 Clatsop County, Oregon

Lines: 10-16: East/West  
 Plot Spacing: 4 Chains x 6 Chains

- LEGEND**
- Timber Sale Boundary
  - ⊙ Grade Plots
  - Count Plots
  - Streams
  - Fish
  - Nonfish
  - Existing Surfaced Roads
  - New Road Construction



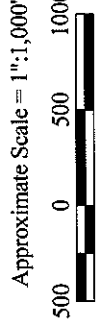


**Cruise Map**

OF TIMBER SALE CONTRACT NO 341-08-30  
 RAPID STANLEY  
 PORTIONS OF SECTIONS 16, 19, 21, 28, 29,  
 30, 31, AND 32 of TSN, R6W, W.M.,  
 Clatsop County, Oregon

Lines: 10-16: East/West  
 Plot Spacing: 4 Chains x 6 Chains

- LEGEND**
- Timber Sale Boundary
  - ⊙ Grade Plots
  - Count Plots
  - ~ Streams
  - ⊙ Fish
  - Nonfish
  - Existing Surfaced Roads
  - New Road Construction



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

T05N R06W S19 Ty00PC	52.00
T05N R06W S29 TyTAKE	372.00
T05N R06W S29 TyROW	12.00

**Project: RAPID**  
**Acres 436.00**

**Page 1**  
**Date 1/17/2008**  
**Time 10:35:38AM**

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																9		0.00	3.6
D	DO2S	63	3.5	8,629	8,328	3,631		7	68	26		0	0	53	46	36	255	1.73	32.7	
D	DO3S	31	.6	4,161	4,138	1,804		98	2			2	2	41	55	36	89	0.75	46.4	
D	DO4S	6	.4	706	703	307		100	0			37	63			21	26	0.45	26.9	
<b>D</b>	<b>Totals</b>	<b>75</b>	<b>2.4</b>	<b>13,495</b>	<b>13,169</b>	<b>5,742</b>		<b>40</b>	<b>43</b>	<b>16</b>		<b>3</b>	<b>4</b>	<b>47</b>	<b>47</b>	<b>31</b>	<b>120</b>	<b>1.02</b>	<b>109.7</b>	
A	DOCR	100	3.2	575	556	243		4	72	23		11	45	20	24	30	62	0.78	9.0	
<b>A</b>	<b>Totals</b>	<b>3</b>	<b>3.2</b>	<b>575</b>	<b>556</b>	<b>243</b>		<b>4</b>	<b>72</b>	<b>23</b>		<b>11</b>	<b>45</b>	<b>20</b>	<b>24</b>	<b>30</b>	<b>62</b>	<b>0.78</b>	<b>9.0</b>	
H	DOCU																8		0.00	1.2
H	DO2S	37	2.2	1,406	1,375	600			6	91	3		0	40	60	37	207	1.41	6.6	
H	DO3S	50		1,814	1,814	791			100			0	1	57	42	36	76	0.63	23.9	
H	DO4S	13	3.9	485	466	203		6	94			24	60	16		24	28	0.44	16.7	
<b>H</b>	<b>Totals</b>	<b>21</b>	<b>1.3</b>	<b>3,705</b>	<b>3,656</b>	<b>1,594</b>		<b>1</b>	<b>64</b>	<b>34</b>	<b>1</b>	<b>3</b>	<b>8</b>	<b>46</b>	<b>43</b>	<b>31</b>	<b>76</b>	<b>0.70</b>	<b>48.4</b>	
C	DO2S	45	8.3	2	2	1				100					100	40	220	2.35	.0	
C	DO3S	37		2	2	1				100			17	83		32	51	0.81	.0	
C	DO4S	18		1	1	0		100							100	38	40	0.76	.0	
<b>C</b>	<b>Totals</b>	<b>0</b>	<b>4.0</b>	<b>4</b>	<b>4</b>	<b>2</b>		<b>18</b>	<b>37</b>	<b>46</b>			<b>6</b>	<b>30</b>	<b>63</b>	<b>35</b>	<b>73</b>	<b>1.06</b>	<b>.1</b>	
M	DOCR	100	6.2	54	51	22				100					100	33	43	0.61	1.2	
<b>M</b>	<b>Totals</b>	<b>0</b>	<b>6.2</b>	<b>54</b>	<b>51</b>	<b>22</b>				<b>100</b>					<b>100</b>	<b>33</b>	<b>43</b>	<b>0.61</b>	<b>1.2</b>	
NF	DOCU																15		0.00	.0
NF	DO2S	86		15	15	7				100					100	40	400	2.07	.0	
NF	DO3S	14		2	2	1				100					100	32	60	0.88	.0	
<b>NF</b>	<b>Totals</b>	<b>0</b>		<b>18</b>	<b>18</b>	<b>8</b>			<b>13</b>	<b>87</b>					<b>13</b>	<b>87</b>	<b>29</b>	<b>153</b>	<b>1.28</b>	<b>.1</b>
<b>Totals</b>			<b>2.2</b>	<b>17,852</b>	<b>17,454</b>	<b>7,610</b>		<b>0</b>	<b>47</b>	<b>41</b>	<b>13</b>	<b>3</b>	<b>6</b>	<b>46</b>	<b>45</b>	<b>31</b>	<b>104</b>	<b>0.92</b>	<b>168.4</b>	

T05N R06W S19 T00PC		T05N R06W S19 T00PC
Twp Rge Sec Tract	Type Acres Plots Sample Trees	CuFt BdFt
05N 06W 19 TAKE_100	00PC 52.00 27 20	1 W

S Spp	So T	Gr rt 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																			
D	DO	3S	87	1.9	4,595	4,508	234		100				33	67			3		0.00		8.4
D	DO	4S	13	3.5	679	655	34		100		100						37	79	0.69		56.9
											100						14	16	0.36		40.3
<b>D</b>	<b>Totals</b>		100	2.1	5,274	5,163	268		100		13		29	58			26	49	0.61		105.6
<b>Type Totals</b>				2.1	5,274	5,163	268		100		13		29	58			26	49	0.61		105.6

<b>T05N R06W S29 TTAKE</b>										<b>T05N R06W S29 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>				
05N	06W	29	AREAS345_150	TAKE	372.00	85	94	1	W				

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		
					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		DO	CU														11		0.00	2.9		
D		DO	2S	65	3.6	9,156	8,824	3,283		7	70	23				53	47	36	248	1.70	35.5	
D		DO	3S	29	.3	4,052	4,038	1,502		98	2			2	1	43	54	35	91	0.76	44.4	
D		DO	4S	6		699	699	260		100				29	71			23	28	0.46	24.8	
<b>D</b>	<b>Totals</b>			74	2.5	13,906	13,561	5,045		39	46	15		2	4	47	46	32	126	1.05	107.7	
H		DO	CU															8		0.00	1.3	
H		DO	2S	36	2.3	1,486	1,452	540		7	93					41	59	37	201	1.38	7.2	
H		DO	3S	50		2,051	2,051	763		100					1	57	42	36	76	0.63	27.0	
H		DO	4S	14	3.8	548	527	196	6	94				24	60	16		24	28	0.44	18.9	
<b>H</b>	<b>Totals</b>			22	1.3	4,084	4,030	1,499	1	66	34			3	9	46	43	31	74	0.69	54.4	
A		DO	CR	100	3.2	604	585	218		5	74	21			11	45	21	22	30	60	0.76	9.8
<b>A</b>	<b>Totals</b>			3	3.2	604	585	218		5	74	21		11	45	21	22	30	60	0.76	9.8	
M		DO	CR	100	6.2	62	58	21		100						100		33	43	0.61	1.3	
<b>M</b>	<b>Totals</b>			0	6.2	62	58	21		100						100		33	43	0.61	1.3	
<b>Type Totals</b>					2.3	18,656	18,233	6,783	0	46	42	11		3	6	46	45	32	105	0.92	173.2	

T05N R06W S29 TROW T05N R06W S29 TROW  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 05N 06W 29 RIGHTOFWAY ROW 12.00 85 210 1 W

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	
					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		DO	CU														9		0.00	5.0	
D		DO	2S	81	2.1	29,674	29,039	348		3	43	54		0	1	57	43	35	337	2.12	86.1
D		DO	3S	16	.7	5,658	5,619	67		95	5			2	9	39	50	34	88	0.81	64.2
D		DO	4S	3		1,059	1,059	13		97	3			32	68			23	31	0.52	33.8
<b>D</b>		<b>Totals</b>		77	1.9	36,391	35,717	429		20	36	44		1	4	52	43	32	189	1.42	189.0
H		DO	CU															7		0.00	2.0
H		DO	2S	62	1.3	5,024	4,957	59		2	65	33			1	38	61	36	283	1.80	17.5
H		DO	3S	30		2,335	2,335	28		100				1	4	52	43	35	73	0.65	32.0
H		DO	4S	8	5.3	647	613	7	8	92				24	55	21		24	29	0.48	21.4
<b>H</b>		<b>Totals</b>		17	1.3	8,006	7,905	95		1	38	41	21	2	6	41	51	31	108	0.93	72.9
A		DO	CR	100	3.0	2,145	2,080	25		1	55	44		8	39	7	46	29	90	1.03	23.1
<b>A</b>		<b>Totals</b>		4	3.0	2,145	2,080	25		1	55	44		8	39	7	46	29	90	1.03	23.1
NF		DO	CU															15		0.00	1.4
NF		DO	2S	86		562	562	7			100						100	40	400	2.07	1.4
NF		DO	3S	14		84	84	1		100						100		32	60	0.88	1.4
<b>NF</b>		<b>Totals</b>		1		646	646	8		13	87					13	87	29	153	1.28	4.2
C		DO	2S	45	8.3	77	71	1			100						100	40	220	2.35	.3
C		DO	3S	37		57	57	1		100				17	83			32	51	0.81	1.1
C		DO	4S	18		28	28	0	100								100	38	40	0.76	.7
<b>C</b>		<b>Totals</b>		0	4.0	162	156	2		18	37	46		6	30	63		35	73	1.06	2.1
M		DO	CR	100	6.2	62	58	1		100							100	33	43	0.61	1.3
<b>M</b>		<b>Totals</b>		0	6.2	62	58	1		100							100	33	43	0.61	1.3
<b>Type Totals</b>					1.8	47,411	46,561	559		0	25	38	37	2	6	48	45	32	159	1.26	292.7



TC TSTATS		STATISTICS					PAGE 1			
		PROJECT RAPID					DATE 1/17/2008			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	19	AREAS12 100	00PC	52.00	27	113	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		27	113	4.2						
CRUISE		14	63	4.5	7,122	.9				
DBH COUNT										
REFOREST										
COUNT		13	50	3.8						
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
DOUGLEAV	37	65.2	16.1	51		91.9	8,563	8,477	2,562	2,562
DOUG FIR	20	62.6	13.5	45		62.2	5,274	5,163	1,654	1,654
HEMLEAV	5	8.3	16.2	59		11.9	1,338	1,338	398	398
SNAG	1	.9	17.0	45		1.5	132	132	37	37
<b>TOTAL</b>	<b>63</b>	<b>137.0</b>	<b>15.0</b>	<b>49</b>		<b>167.4</b>	<b>15,307</b>	<b>15,111</b>	<b>4,650</b>	<b>4,650</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		
DOUGLEAV	50.7	8.3	137	149	162					
DOUG FIR	43.6	10.0	81	90	98					
HEMLEAV	55.7	27.7	140	194	248					
SNAG										
<b>TOTAL</b>	<b>56.1</b>	<b>7.1</b>	<b>124</b>	<b>134</b>	<b>143</b>	<b>125</b>	<b>31</b>	<b>14</b>		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	50.0	9.8	59	65	72					
DOUG FIR	85.3	16.7	52	63	73					
HEMLEAV	198.6	38.9	5	8	12					
SNAG	519.6	101.9	1	1	2					
<b>TOTAL</b>	<b>40.5</b>	<b>7.9</b>	<b>126</b>	<b>137</b>	<b>148</b>	<b>68</b>	<b>17</b>	<b>8</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		
DOUGLEAV	48.0	9.4	83	92	101					
DOUG FIR	89.7	17.6	51	62	73					
HEMLEAV	205.4	40.3	7	12	17					
SNAG	519.6	101.9	1	1	3					
<b>TOTAL</b>	<b>39.8</b>	<b>7.8</b>	<b>154</b>	<b>167</b>	<b>180</b>	<b>66</b>	<b>16</b>	<b>7</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		
DOUGLEAV	50.1	9.8	7,646	8,477	9,309					
DOUG FIR	93.5	18.3	4,217	5,163	6,110					
HEMLEAV	216.3	42.4	771	1,338	1,906					
SNAG	519.6	101.9	132	132	266					
<b>TOTAL</b>	<b>40.7</b>	<b>8.0</b>	<b>13,905</b>	<b>15,111</b>	<b>16,317</b>	<b>69</b>	<b>17</b>	<b>8</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RAPID		DATE 1/17/2008				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	29	AREAS345 150	00PC	372.00	85	678	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		85	678	8.0						
CRUISE		43	248	5.8	57,845		4			
DBH COUNT										
REFOREST										
COUNT		42	331	7.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	82	31.5	25.3	89		110.1	22,029	21,694	4,937	4,937
DOUG FIR	57	48.8	18.6	74		92.2	13,906	13,561	3,610	3,610
WHEMLOCK	27	38.2	13.4	46		37.2	4,084	4,030	1,165	1,165
SNAG	38	8.5	22.6	38		23.5	145	145	39	39
HEMLEAV	16	8.3	22.2	79		22.1	4,005	3,957	978	978
ALDRLEAV	13	7.4	19.1	55		14.6	1,515	1,470	466	466
R ALDER	7	8.3	14.1	37		8.9	604	585	222	222
NFIRLEAV	1	1.4	26.0	90	1	5.2	646	646	156	156
CEDLEAV	3	1.8	18.3	43		3.3	162	156	80	80
BL MAPLE	3	1.3	13.9	34		1.4	62	58	27	27
SPRUCELV	1	.1	30.0	26		.5	16	16	7	7
<b>TOTAL</b>	<b>248</b>	<b>155.5</b>	<b>19.4</b>	<b>65</b>		<b>319.1</b>	<b>47,174</b>	<b>46,317</b>	<b>11,685</b>	<b>11,685</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		
DOUGLEAV	50.4	5.6	779	825	871					
DOUG FIR	61.6	8.2	321	349	378					
WHEMLOCK	85.1	16.7	122	146	171					
SNAG	424.3	71.7	3	12	21					
HEMLEAV	57.0	14.7	481	564	647					
ALDRLEAV	47.8	13.8	186	216	246					
R ALDER	89.4	36.4	58	91	125					
NFIRLEAV										
CEDLEAV	99.3	68.7	36	117	197					
BL MAPLE	13.3	9.2	39	43	47					
SPRUCELV										
<b>TOTAL</b>	<b>97.2</b>	<b>6.2</b>	<b>404</b>	<b>431</b>	<b>457</b>	<b>377</b>	<b>94</b>	<b>42</b>		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	53.4	5.8	30	31	33					
DOUG FIR	105.0	11.4	43	49	54					
WHEMLOCK	160.2	17.4	32	38	45					
SNAG	268.1	29.1	6	8	11					
HEMLEAV	176.3	19.1	7	8	10					
ALDRLEAV	251.2	27.2	5	7	9					
R ALDER	277.2	30.0	6	8	11					
NFIRLEAV	260.9	28.3	1	1	2					
CEDLEAV	392.1	42.5	1	2	3					
BL MAPLE	922.0	99.9	0	1	3					
SPRUCELV	922.0	99.9	0	0	0					
<b>TOTAL</b>	<b>35.7</b>	<b>3.9</b>	<b>149</b>	<b>155</b>	<b>162</b>	<b>51</b>	<b>13</b>	<b>6</b>		

TC TSTATS		STATISTICS						PAGE	2	
		PROJECT RAPID						DATE	1/17/2008	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	29	AREAS345 150	00PC	372.00	85	678	1	W	
CL:	68.1%	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1%	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		49.2	5.3	104	110	116				
DOUG FIR		102.6	11.1	82	92	102				
WHEMLOCK		165.0	17.9	31	37	44				
SNAG		226.1	24.5	18	24	29				
HEMLEAV		179.8	19.5	18	22	26				
ALDRLEAV		249.8	27.1	11	15	19				
R ALDER		261.7	28.4	6	9	11				
NFIRLEAV		260.9	28.3	4	5	7				
CEDLEAV		384.5	41.7	2	3	5				
BL MAPLE		922.0	99.9	0	1	3				
SPRUCELV		922.0	99.9	0	0	1				
<b>TOTAL</b>		<b>24.3</b>	<b>2.6</b>	<b>311</b>	<b>319</b>	<b>327</b>	<b>24</b>	<b>6</b>	<b>3</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	
DOUGLEAV		49.8	5.4	20,523	21,694	22,864				
DOUG FIR		104.0	11.3	12,033	13,561	15,088				
WHEMLOCK		187.8	20.3	3,210	4,030	4,850				
SNAG		704.0	76.3	34	145	255				
HEMLEAV		189.5	20.5	3,145	3,957	4,770				
ALDRLEAV		252.1	27.3	1,069	1,470	1,872				
R ALDER		266.6	28.9	416	585	754				
NFIRLEAV		260.9	28.3	463	646	828				
CEDLEAV		396.4	43.0	89	156	222				
BL MAPLE		922.0	99.9	0	58	115				
SPRUCELV		922.0	99.9	0	16	33				
<b>TOTAL</b>		<b>40.4</b>	<b>4.4</b>	<b>44,289</b>	<b>46,317</b>	<b>48,344</b>	<b>65</b>	<b>16</b>	<b>7</b>	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RAPID		DATE 1/17/2008				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	19	TAKE 100	00PC	52.00	27	42	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		27	42	1.6						
CRUISE		9	20	2.2	3,253		.6			
DBH COUNT										
REFOREST										
COUNT		10	22	2.2						
BLANKS		8								
100 %										
STAND SUMMARY										
	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	20	62.6	13.5	45		62.2	5,274	5,163	1,654	1,654
<b>TOTAL</b>	<b>20</b>	<b>62.6</b>	<b>13.5</b>	<b>45</b>		<b>62.2</b>	<b>5,274</b>	<b>5,163</b>	<b>1,654</b>	<b>1,654</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	43.6	10.0	81	90	98					
<b>TOTAL</b>	<b>43.6</b>	<b>10.0</b>	<b>81</b>	<b>90</b>	<b>98</b>	<b>80</b>	<b>20</b>	<b>9</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	85.3	16.7	52	63	73					
<b>TOTAL</b>	<b>85.3</b>	<b>16.7</b>	<b>52</b>	<b>63</b>	<b>73</b>	<b>302</b>	<b>75</b>	<b>34</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	89.7	17.6	51	62	73					
<b>TOTAL</b>	<b>89.7</b>	<b>17.6</b>	<b>51</b>	<b>62</b>	<b>73</b>	<b>334</b>	<b>84</b>	<b>37</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	93.5	18.3	4,217	5,163	6,110					
<b>TOTAL</b>	<b>93.5</b>	<b>18.3</b>	<b>4,217</b>	<b>5,163</b>	<b>6,110</b>	<b>363</b>	<b>91</b>	<b>40</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT		RAPID		DATE	1/17/2008	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	29	AREAS345 150	TAKE	372.00	85	297	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	85	297	3.5							
CRUISE	26	94	3.6	35,954			3			
DBH COUNT										
REFOREST										
COUNT	50	198	4.0							
BLANKS	9									
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	57	48.8	18.6	74		92.2	13,906	13,561	3,610	3,610
WHEMLOCK	27	38.2	13.4	46		37.2	4,084	4,030	1,165	1,165
R ALDER	7	8.3	14.1	37		8.9	604	585	222	222
BL MAPLE	3	1.3	13.9	34		1.4	62	58	27	27
<b>TOTAL</b>	<b>94</b>	<b>96.7</b>	<b>16.3</b>	<b>59</b>		<b>139.8</b>	<b>18,656</b>	<b>18,233</b>	<b>5,024</b>	<b>5,024</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	61.6	8.2	321	349	378					
WHEMLOCK	85.1	16.7	122	146	171					
R ALDER	89.4	36.4	58	91	125					
BL MAPLE	13.3	9.2	39	43	47					
<b>TOTAL</b>	<b>80.9</b>	<b>8.3</b>	<b>240</b>	<b>262</b>	<b>284</b>	<b>261</b>	<b>65</b>	<b>29</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	105.0	11.4	43	49	54					
WHEMLOCK	160.2	17.4	32	38	45					
R ALDER	277.2	30.0	6	8	11					
BL MAPLE	922.0	99.9	0	1	3					
<b>TOTAL</b>	<b>68.3</b>	<b>7.4</b>	<b>89</b>	<b>97</b>	<b>104</b>	<b>186</b>	<b>47</b>	<b>21</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	102.6	11.1	82	92	102					
WHEMLOCK	165.0	17.9	31	37	44					
R ALDER	261.7	28.4	6	9	11					
BL MAPLE	922.0	99.9	0	1	3					
<b>TOTAL</b>	<b>68.1</b>	<b>7.4</b>	<b>129</b>	<b>140</b>	<b>150</b>	<b>185</b>	<b>46</b>	<b>21</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	104.0	11.3	12,033	13,561	15,088					
WHEMLOCK	187.8	20.3	3,210	4,030	4,850					
R ALDER	266.6	28.9	416	585	754					
BL MAPLE	922.0	99.9	0	58	115					
<b>TOTAL</b>	<b>77.2</b>	<b>8.4</b>	<b>16,707</b>	<b>18,233</b>	<b>19,759</b>	<b>238</b>	<b>60</b>	<b>26</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RAPID				DATE 1/17/2008		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	19	100 LEAVE	00PC	52.00	27	70	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		27	70	2.6						
CRUISE		14	42	3.0	3,820		1.1			
DBH COUNT										
REFOREST										
COUNT		13	28	2.2						
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
DOUGLEAV	37	65.2	16.1	51		91.9	8,563	8,477	2,562	2,562
HEMLEAV	5	8.3	16.2	59		11.9	1,338	1,338	398	398
<b>TOTAL</b>	<b>42</b>	<b>73.5</b>	<b>16.1</b>	<b>52</b>		<b>103.7</b>	<b>9,902</b>	<b>9,816</b>	<b>2,960</b>	<b>2,960</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		
DOUGLEAV	50.7	8.3	137	149	162					
HEMLEAV	55.7	27.7	140	194	248					
<b>TOTAL</b>	<b>51.7</b>	<b>8.0</b>	<b>142</b>	<b>155</b>	<b>167</b>		<b>107</b>	<b>27</b>	<b>12</b>	
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	50.0	9.8	59	65	72					
HEMLEAV	198.6	38.9	5	8	12					
<b>TOTAL</b>	<b>38.5</b>	<b>7.5</b>	<b>68</b>	<b>73</b>	<b>79</b>		<b>61</b>	<b>15</b>	<b>7</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		
DOUGLEAV	48.0	9.4	83	92	101					
HEMLEAV	205.4	40.3	7	12	17					
<b>TOTAL</b>	<b>34.3</b>	<b>6.7</b>	<b>97</b>	<b>104</b>	<b>111</b>		<b>49</b>	<b>12</b>	<b>5</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		
DOUGLEAV	50.1	9.8	7,646	8,477	9,309					
HEMLEAV	216.3	42.4	771	1,338	1,906					
<b>TOTAL</b>	<b>38.8</b>	<b>7.6</b>	<b>9,070</b>	<b>9,816</b>	<b>10,562</b>		<b>62</b>	<b>16</b>	<b>7</b>	

TC TSTATS		STATISTICS PROJECT RAPID							PAGE 1	DATE 1/17/2008
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	06W	29	AREAS345 150	LEAV	372.00	85	331	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		85	331	3.9						
CRUISE		33	116	3.5	18,740	.6				
DBH COUNT										
REFOREST										
COUNT		52	203	3.9						
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
DOUGLEAV	82	31.5	25.3	89		110.1	22,029	21,694	4,937	4,937
HEMLEAV	16	8.3	22.2	79		22.1	4,005	3,957	978	978
ALDRLEAV	13	7.4	19.1	55		14.6	1,515	1,470	466	466
NFIRLEAV	1	1.4	26.0	90	1	5.2	646	646	156	156
CEDLEAV	3	1.8	18.3	43		3.3	162	156	80	80
SPRUCELV	1	.1	30.0	26		.5	16	16	7	7
<b>TOTAL</b>	<i>116</i>	<i>50.4</i>	<i>23.8</i>	<i>81</i>		<i>155.8</i>	<i>28,373</i>	<i>27,939</i>	<i>6,622</i>	<i>6,622</i>
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		
DOUGLEAV	50.4	5.6	779	825	871					
HEMLEAV	57.0	14.7	481	564	647					
ALDRLEAV	47.8	13.8	186	216	246					
NFIRLEAV										
CEDLEAV	99.3	68.7	36	117	197					
SPRUCELV										
<b>TOTAL</b>	<i>62.6</i>	<i>5.8</i>	<i>653</i>	<i>693</i>	<i>734</i>	<i>156</i>	<i>39</i>	<i>17</i>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	53.4	5.8	30	31	33					
HEMLEAV	176.3	19.1	7	8	10					
ALDRLEAV	251.2	27.2	5	7	9					
NFIRLEAV	260.9	28.3	1	1	2					
CEDLEAV	392.1	42.5	1	2	3					
SPRUCELV	922.0	99.9	0	0	0					
<b>TOTAL</b>	<i>12.2</i>	<i>1.3</i>	<i>50</i>	<i>50</i>	<i>51</i>	<i>6</i>	<i>1</i>	<i>1</i>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	49.2	5.3	104	110	116					
HEMLEAV	179.8	19.5	18	22	26					
ALDRLEAV	249.8	27.1	11	15	19					
NFIRLEAV	260.9	28.3	4	5	7					
CEDLEAV	384.5	41.7	2	3	5					
SPRUCELV	922.0	99.9	0	0	1					
<b>TOTAL</b>			<i>156</i>	<i>156</i>	<i>156</i>					
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	49.8	5.4	20,523	21,694	22,864					
HEMLEAV	189.5	20.5	3,145	3,957	4,770					
ALDRLEAV	252.1	27.3	1,069	1,470	1,872					
NFIRLEAV	260.9	28.3	463	646	828					

TC TSTATS				<b>STATISTICS</b>			PAGE 2		
				<b>PROJECT RAPID</b>			DATE 1/17/2008		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>
05N	06W	29	AREAS345 150	LEAV	372.00	85	331	1	W
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
CEDLEAV		396.4	43.0	89	156	222			
SPRUCELV		922.0	99.9	0	16	33			
<b>TOTAL</b>		23.5	2.6	27,226	27,939	28,652	22	6	2



Stand Table Summary																
TC TSTNDSUM																
Project <b>RAPID</b>																
T05N R06W S19 T00PC										T05N R06W S19 T00PC						
Page: 1																
Date: 01/17/2011																
Time: 10:38:50AM																
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees									
05N	06W	19	100_LEAVE	00PC	52.00	27	42									
Spc	S T	DBH	Sample Trees	Av FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DL		11	1	91	81	4.128	2.48	4.13	15.0	60.0		62	248		32	13
DL		12	1	83	35	3.161	2.48	3.16	12.0	30.0		38	95		20	5
DL		13	3	90	77	8.519	7.45	14.13	15.8	54.1		224	765		116	40
DL		14	3	89	76	7.317	7.45	14.63	15.1	51.6		221	755		115	39
DL		15	4	86	66	8.375	9.93	12.56	21.2	65.2		267	819		139	43
DL		16	3	87	68	5.450	7.45	10.90	19.0	65.1		207	710		108	37
DL		17	2	85	45	3.150	4.96	6.30	16.0	57.5		101	362		52	19
DL		18	8	85	72	11.401	19.86	24.29	23.4	75.8		569	1,842		296	96
DL		19	6	86	80	7.634	14.89	15.27	31.0	102.5		473	1,565		246	81
DL		20	1	86	71	1.138	2.48	2.28	32.0	100.0		73	228		38	12
DL		21	2	82	71	2.064	4.96	3.10	32.7	103.3		101	320		53	17
DL		22	3	85	75	2.821	7.45	5.64	40.0	136.7		226	771		117	40
DL		Totals	37	87	70	65.160	91.85	116.38	22.0	72.8		2,562	8,477		1,332	441
HL		14	2	89	63	4.602	4.74	6.82	19.5	57.0		133	389		69	20
HL		17	1	91	79	1.596	2.37	3.19	27.5	100.0		88	319		46	17
HL		19	1	86	99	1.204	2.37	2.41	43.0	150.0		104	361		54	19
HL		22	1	82	108	.898	2.37	1.80	41.0	150.0		74	269		38	14
HL		Totals	5	88	76	8.300	11.85	14.22	28.0	94.2		398	1,338		207	70
Totals			42	87	71	73.460	103.70	130.60	22.7	75.2		2960	9,816		1,539	510

TC		TSTNDSUM		Stand Table Summary												
Project														RAPID		
T05N R06W S29 TLEAV										T05N R06W S29 TLEA						
Twp	Rge	Sec	Tract		Type	Acres	Plots	Sample Trees		Page:	1					
05N	06W	29	AREAS345_150		LEAV	372.00	85	116		Date:	01/17/200					
										Time:	10:38:19AM					
Spc	S T	Sample		Av		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DL		14	1	89	67	1.256	1.34	1.26	26.0	70.0		33	88		121	33
DL		18	2	88	81	1.520	2.69	3.04	29.0	100.0		88	304		328	113
DL		19	2	86	99	1.364	2.69	2.73	38.0	120.0		104	327		386	122
DL		20	3	92	96	1.847	4.03	3.69	43.3	161.7		160	597		595	222
DL		21	1	86	121	.558	1.34	1.67	36.7	153.3		61	257		228	96
DL		22	4	89	126	2.035	5.37	6.10	43.7	188.3		267	1,150		992	428
DL		23	6	87	106	2.793	8.06	6.52	51.6	199.3		337	1,299		1,252	483
DL		24	2	90	107	.855	2.69	2.14	52.4	212.0		112	453		417	169
DL		25	18	87	116	7.091	24.17	20.09	53.9	225.9		1,084	4,538		4,032	1,688
DL		26	6	87	116	2.185	8.06	6.19	57.5	241.8		356	1,497		1,324	557
DL		27	6	89	119	2.026	8.06	6.08	62.4	292.8		380	1,780		1,412	662
DL		28	4	89	118	1.256	5.37	3.77	65.3	300.0		246	1,131		916	421
DL		29	7	88	123	2.049	9.40	6.44	69.8	329.1		450	2,120		1,673	788
DL		30	2	89	129	.547	2.69	1.64	82.3	391.7		135	643		503	239
DL		31	5	88	116	1.281	6.71	3.33	86.1	407.7		287	1,358		1,067	505
DL		32	6	88	131	1.443	8.06	4.33	91.6	450.0		396	1,948		1,474	725
DL		34	3	86	119	.639	4.03	1.92	93.6	441.1		179	846		667	315
DL		36	2	89	127	.380	2.69	1.14	115.7	605.0		132	690		490	257
DL		38	1	92	116	.171	1.34	.51	124.0	623.3		63	319		236	119
DL		39	1	88	129	.162	1.34	.49	139.7	723.3		68	351		252	131
DL	Totals		82	88	112	31.458	110.12	83.08	59.4	261.1		4,937	21,694		18,364	8,070
HL		18	2	86	90	1.565	2.76	3.13	34.7	115.0		109	360		404	134
HL		19	1	86	38	.702	1.38	.70	33.0	40.0		23	28		86	10
HL		20	2	88	95	1.267	2.76	2.53	47.8	172.5		121	437		450	163
HL		21	2	89	104	1.149	2.76	2.87	45.4	186.0		130	534		485	199
HL		22	1	88	99	.524	1.38	1.05	57.5	215.0		60	225		224	84
HL		24	3	89	101	1.320	4.15	3.08	60.3	241.4		186	744		691	277
HL		25	1	88	116	.406	1.38	1.22	58.0	246.7		71	300		262	112
HL		27	2	89	113	.695	2.76	2.09	65.2	311.7		136	650		506	242
HL		28	1	87	113	.323	1.38	.97	69.3	330.0		67	320		250	119
HL		29	1	88	127	.301	1.38	.90	83.0	396.7		75	359		279	133
HL	Totals		16	88	96	8.252	22.12	18.54	52.7	213.4		978	3,957		3,638	1,472
AL		16	2	87	54	1.607	2.24	2.41	24.3	66.7		59	161		218	60
AL		17	2	87	70	1.424	2.24	2.85	26.2	85.0		75	242		278	90
AL		18	1	86	75	.635	1.12	1.27	31.0	105.0		39	133		146	50
AL		19	2	87	77	1.140	2.24	2.28	34.5	112.5		79	256		293	95
AL		21	1	83	43	.467	1.12	.47	46.0	50.0		21	23		80	9
AL		22	4	86	78	1.700	4.49	3.40	46.5	165.0		158	561		588	209
AL		23	1	83	66	.389	1.12	.78	44.5	120.0		35	93		129	35
AL	Totals		13	86	68	7.362	14.59	13.45	34.6	109.3		466	1,470		1,732	547
NFL		26	1	91	102	1.404	5.18	2.81	55.5	230.0		156	646		580	240
NFL	Totals		1	91	102	1.404	5.18	2.81	55.5	230.0		156	646		580	240
CL		16	1	84	50	.786	1.10	.79	30.0	60.0		24	47		88	18
CL		17	1	86	49	.697	1.10	.70	29.0	40.0		20	28		75	10
CL		25	1	77	90	.322	1.10	.64	55.5	125.0		36	81		133	30
CL	Totals		3	84	57	1.805	3.29	2.13	37.4	73.1		80	156		296	58
SL		30	1	89	28	.096	.47	.10	70.0	170.0		7	16		25	6
SL	Totals		1	89	28	.096	.47	.10	70.0	170.0		7	16		25	6

TC TSTNDSUM

**Stand Table Summary**

Project **RAPID**

**T05N R06W S29 TLEAV**

**T05N R06W S29 TLEA**

Twp Rge Sec Tract Type Acres Plots Sample Trees  
**05N 06W 29 AREAS345\_150 LEAV 372.00 85 116**

Page: **2**  
 Date: **01/17/200**  
 Time: **10:38:19AM**

S Spc	T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
Totals			116	88	100	50.377	155.76	120.10	55.1	232.6		6622	27,939	24,636	10,393	



Log Stock Table - MBF

T05N R06W S19 Ty00PC	52.00
T05N R06W S29 TyTAKE	372.00
T05N R06W S29 TyROW	12.00

Project: **RAPID**  
Acres **436.00**

Spp	S T	So Gr rt 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+
D		DO 4S	21	0		0	.0				0								
D		DO 4S	22	23		23	.4			23	1								
D		DO 4S	23	0		0	.0				0								
D		DO 4S	24	17		17	.3			9	8								
D		DO 4S	25	0		0	.0			0									
D		DO 4S	26	53		53	.9			52	0								
D		DO 4S	27	15		15	.3			15									
D		DO 4S	28	47		47	.8			47		0							
D		DO 4S	29	0		0	.0			0									
D		DO 4S	30	36		36	.6			36									
D		Totals		5,884	2.4	5,742	75.4			889	487	945	1219	835	1025	321	21		
A		DO CR	13	1		1	.3			0		0							
A		DO CR	15	0		0	.1			0									
A		DO CR	16	0		0	.1			0									
A		DO CR	18	19		19	7.7			19									
A		DO CR	20	7		7	3.0			7									
A		DO CR	23	0		0	.1			0									
A		DO CR	24	0		0	.2			0	0								
A		DO CR	25	9		9	3.7			9									
A		DO CR	30	99		99	40.7					47	1	51					
A		DO CR	32	45	16.5	37	15.4			37									
A		DO CR	35	11		11	4.4		11										
A		DO CR	37	0	16.7	0	.1			0									
A		DO CR	38	0		0	.2			0									
A		DO CR	40	59		59	24.1			50		4	3	2					
A		Totals		251	3.2	243	3.2		11	124	0	51	4	53					
H		DO 2S	24	0		0	.0					0							
H		DO 2S	32	251	4.0	241	15.1					37	57	137	6	5			
H		DO 2S	34	1	14.3	1	.1						1						
H		DO 2S	40	360		357	22.4						333	11	7	6			
H		DO 3S	20	0		0	.0				0								
H		DO 3S	21	0		0	.0					0							
H		DO 3S	24	10		10	.6			10									
H		DO 3S	25	0		0	.0				0								
H		DO 3S	26	0		0	.0				0								
H		DO 3S	31	0		0	.0			0									
H		DO 3S	32	330		330	20.7			96	44	190							

Log Stock Table - MBF

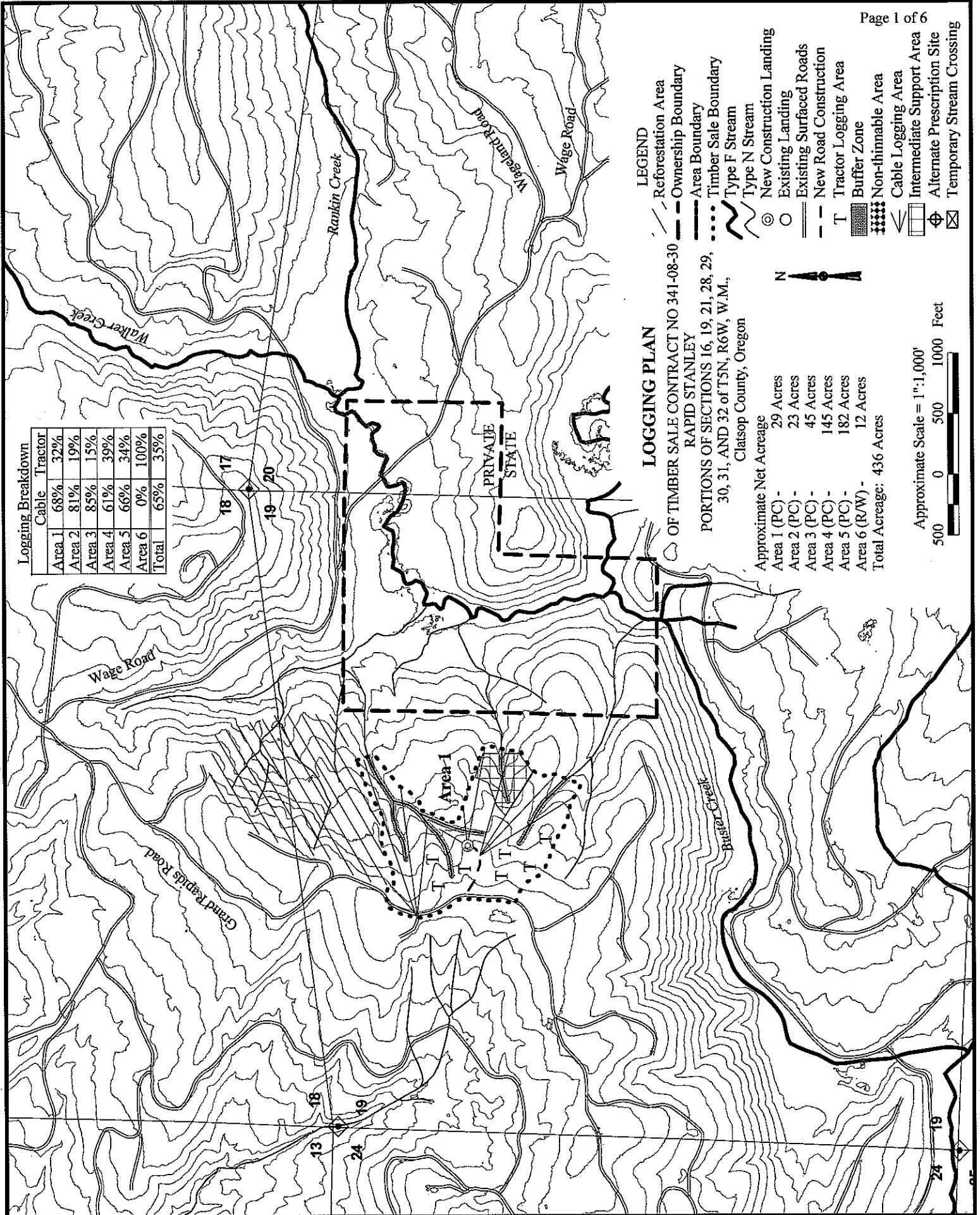
T05N R06W S19 Ty00PC	52.00
T05N R06W S29 TyTAKE	372.00
T05N R06W S29 TyROW	12.00

Project: RAPID  
Acres 436.00

Spp	S T	So Gr rt 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
H		DO 3S	34	87		87	5.4			22		65					
H		DO 3S	35	34		34	2.1			34							
H		DO 3S	39	0		0	.0			0							
H		DO 3S	40	289		289	18.2			238	52						
H		DO 3S	41	40		40	2.5			40							
H		DO 4S	16	10		10	.6			10	0						
H		DO 4S	18	31		31	1.9			31	0						
H		DO 4S	20	7		7	.5			7							
H		DO 4S	21	7		7	.5			7							
H		DO 4S	24	68		68	4.2		11	56							
H		DO 4S	26	11		11	.7			11							
H		DO 4S	27	24		24	1.5			24							
H		DO 4S	28	0		0	.0			0							
H		DO 4S	30	12		12	.8			12							
H		DO 4S	32	41	20.1	33	2.0		0	32							
H		Totals		1,615	1.3	1,594	20.9		12	631	97	291	392	148	13	10	
C		DO 2S	40	1	8.3	1	45.5					1					
C		DO 3S	28	0		0	6.2			0							
C		DO 3S	34	1		1	30.3			1							
C		DO 4S	38	0		0	17.9		0								
C		Totals		2	4.0	2	.0		0	1		1					
M		DO CR	31	8		8	35.3			8							
M		DO CR	35	16	9.3	14	64.7			14							
M		Totals		24	6.2	22	.3			22							
NF		DO 2S	40	7		7	87.0							7			
NF		DO 3S	32	1		1	13.0			1							
NF		Totals		8		8	.1			1				7			
Total		All Species		7,783	2.2	7,610	100.0		23	1668	584	1288	1615	1036	1044	331	21

**Logging Breakdown**

	Cable	Tractor
Area 1	68%	32%
Area 2	81%	19%
Area 3	85%	15%
Area 4	61%	39%
Area 5	66%	34%
Area 6	0%	100%
<b>Total</b>	<b>65%</b>	<b>35%</b>



**LOGGING PLAN**

OF TIMBER SALE CONTRACT NO 341-08-30  
 RAPID STANLEY  
 PORTIONS OF SECTIONS 16, 19, 21, 28, 29,  
 30, 31, AND 32 of T5N, R6W, W.M.,  
 Clatsop County, Oregon

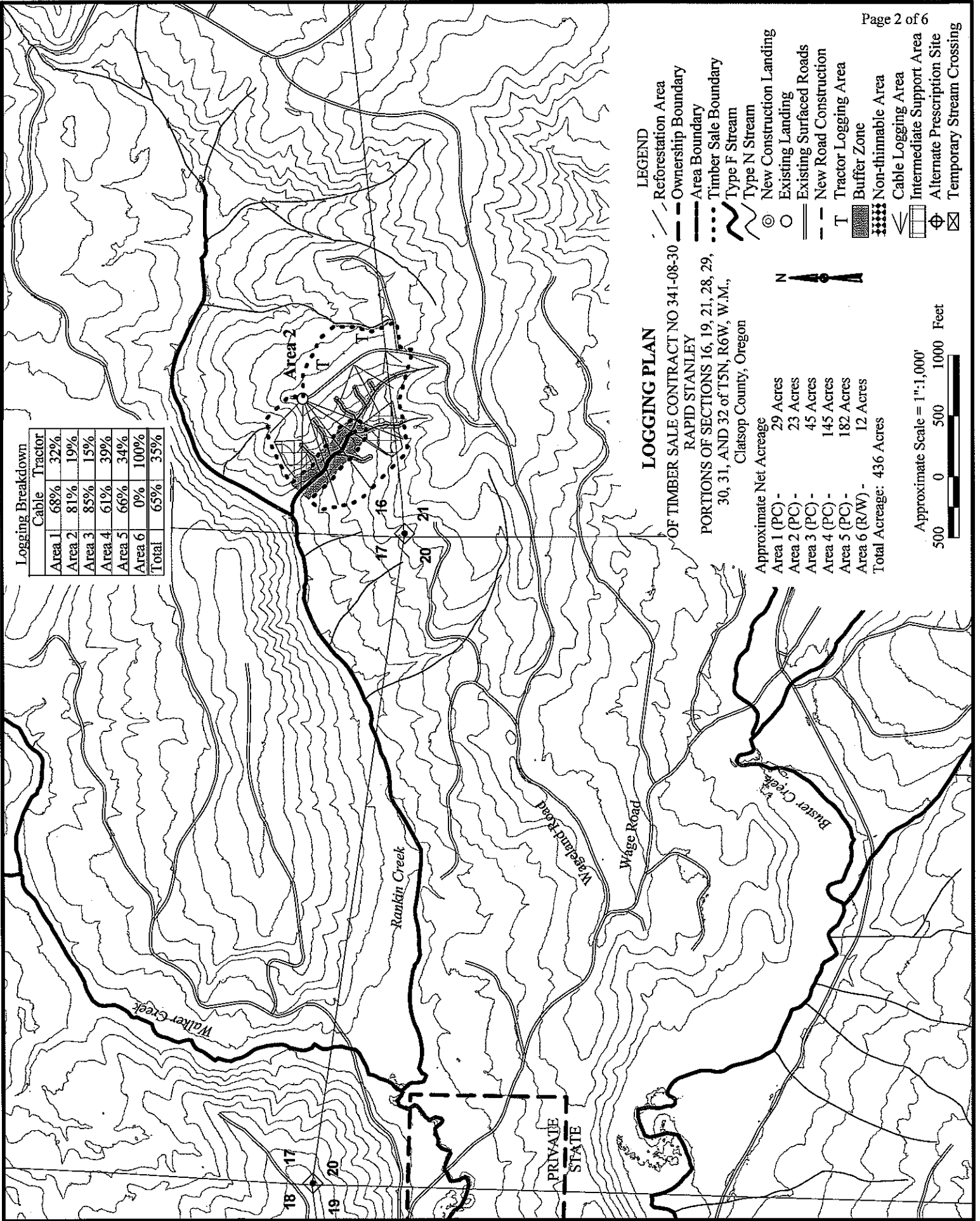
**Approximate Net Acreage**

Area 1 (PC) -	29 Acres
Area 2 (PC) -	23 Acres
Area 3 (PC) -	45 Acres
Area 4 (PC) -	145 Acres
Area 5 (PC) -	182 Acres
Area 6 (R/W) -	12 Acres
<b>Total Acreage:</b>	<b>436 Acres</b>

- LEGEND**
- /— Reforestation Area
  - - - Ownership Boundary
  - Area Boundary
  - · · · · Timber Sale Boundary
  - ~ Type F Stream
  - ~ Type N Stream
  - ⊙ New Construction Landing
  - Existing Landing
  - Existing Surfaced Roads
  - - - New Road Construction
  - T Tractor Logging Area
  - ▨ Buffer Zone
  - ▩ Non-flammable Area
  - ∠ Cable Logging Area
  - ▭ Intermediate Support Area
  - ⊕ Alternate Prescription Site
  - ⊗ Temporary Stream Crossing



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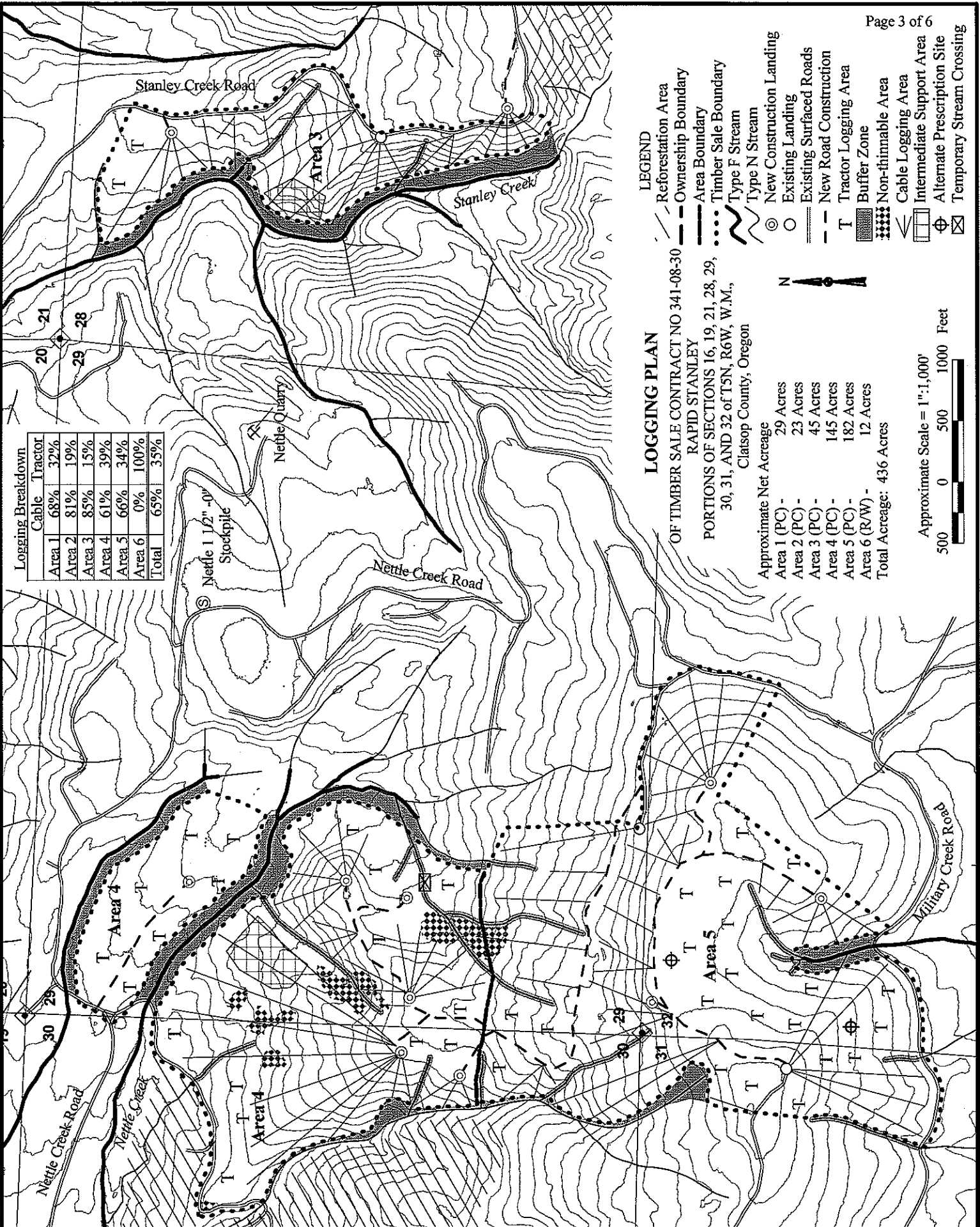
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Approximate Scale = 1"=1,000'



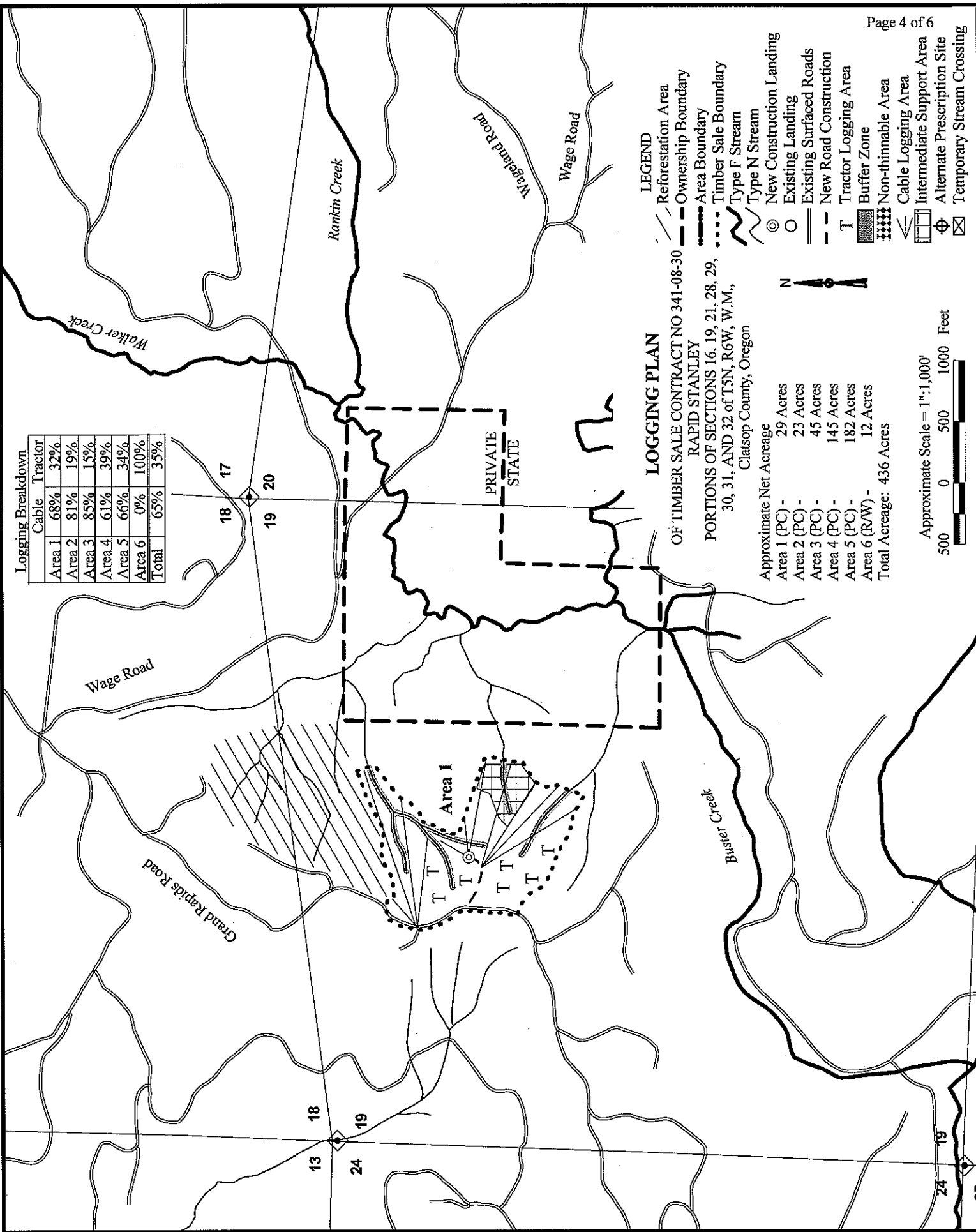
**LEGEND**

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Approximate Net Acreage

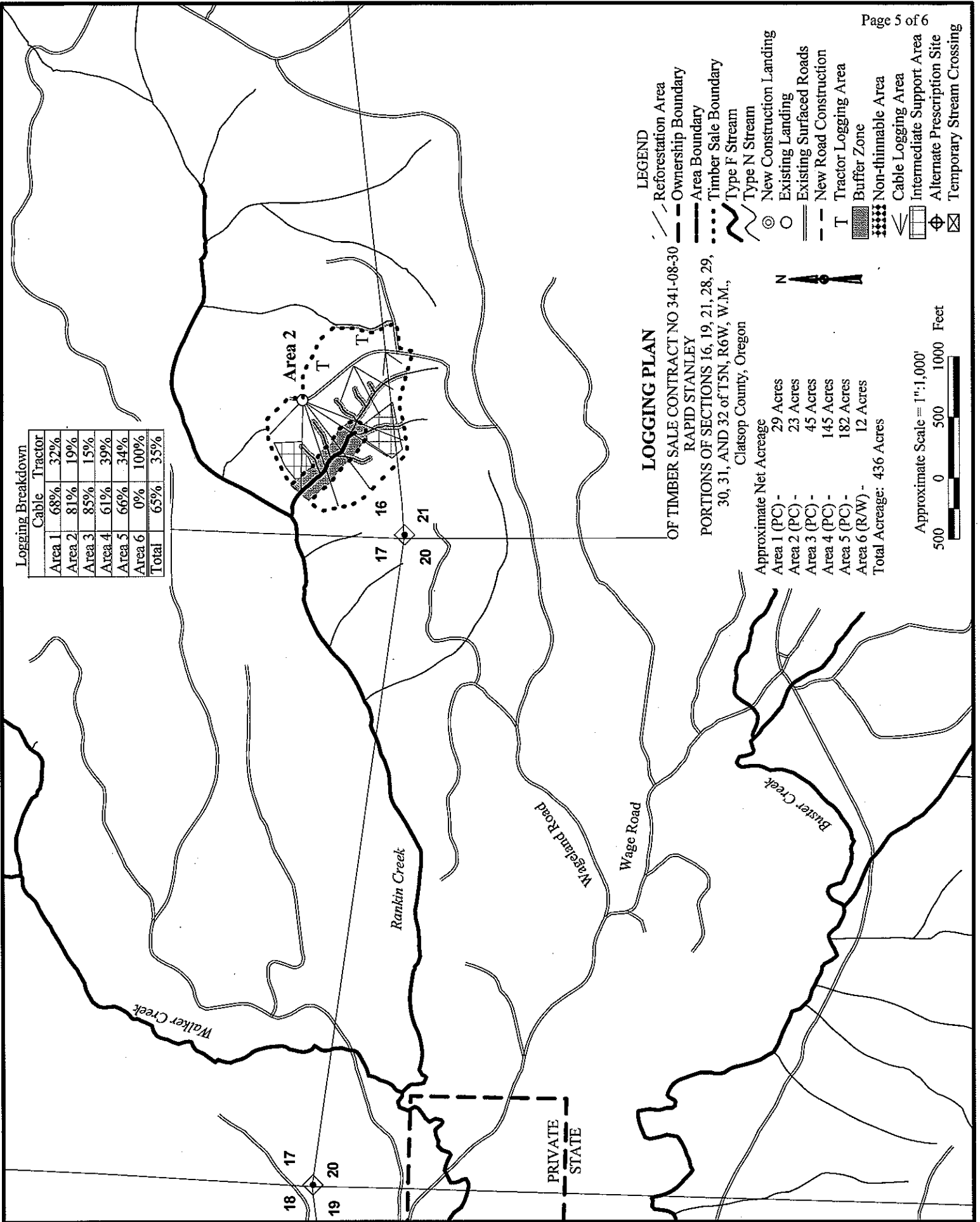
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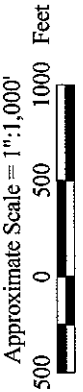
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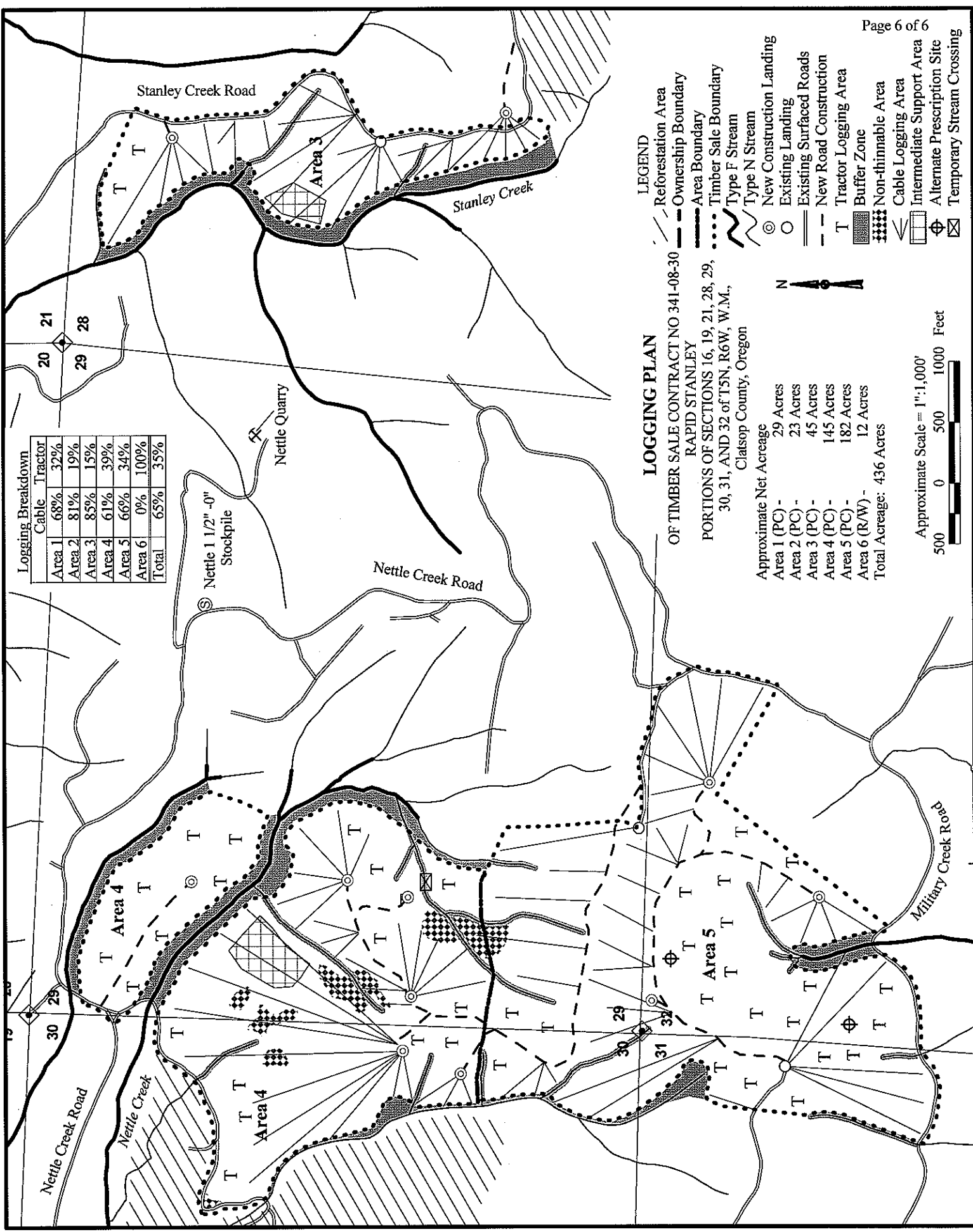
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Area 5	15%
Area 6	61%
Area 7	39%
Area 8	66%
Area 9	34%
Area 10	0%
Area 11	100%
Total	65%

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