



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Cost Summary Rip Tide Sale 341-06-84

District: Astoria

Date: 4/5/06

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$1,127,336.13	\$1,193.24	\$1,128,529.37
		<b>Project Work</b>	(\$79,544.00)
		<b>Advertised Value</b>	\$1,048,985.37



# Timber Sale Appraisal Timber Description Rip Tide Sale 341-06-84

"STEWARDSHIP IN FORESTRY"

**District:** Astoria

**Location:** Portions of Sections 10, 15, 16 & 18, T6N, R7W, W.M., and portions of Section 13, T6N, R8W, W.M., Clatsop County, Oregon.

**Date:** 4/5/06

**Stand Stocking:** 80%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	16	0	97
Western Hemlock / Fir	16	0	97
Sitka Spruce	16	0	97
Alder (Red)	19	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)	Total
2S	192	3,201	6	0	3,399
3S	247	1,786	40	3	2,076
4S	76	386	0	1	463
<b>Total</b>	515	5,373	46	4	5,938

**Comments:** Pond Values Used: 1st Quarter Calendar Year 2006.

Log Markets: Mist, Clatskanie, Tillamook, Forest Grove  
Additional Costs

Costs with P & R -

100% branding and painting:  $\$1/\text{MBF} \times 5,938 \text{ MBF} = \$5,938$

Payment for access easements to Weyerhaeuser Company = \$5,218

Total Cost w/ P & R - \$11,156

Costs without P & R:

Additional hauling costs for increased fuel cost = \$111,634

Total costs w/o P & R = \$111,634

Western Red Cedar Stumpage = Pond Value minus Logging Costs

$\$740/\text{MBF} = \$985/\text{MBF} - \$245/\text{MBF}$



# Timber Sale Appraisal

## Logging Conditions

### Rip Tide

### Sale 341-06-84

"STEWARDSHIP IN FORESTRY"

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**Combination#: 1**

Douglas - Fir	60.00%
Western Hemlock / Fir	60.00%
Sitka Spruce	60.00%
Alder (Red)	60.00%

**Yarding Distance:** Medium (800 ft)      **Downhill Yarding:** Yes  
**Logging System:** Track Skidder      **Process:** Manual Felling/Delimiting  
**Tree Size:** Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF  
**Loads/Day:** 6      **Bd. Ft./Load:** 4,000  
**Cost/MBF:** \$136.06  
**Machines:**  
Log Loader (B)  
Track Skidder

**Combination#: 2**

Douglas - Fir	40.00%
Western Hemlock / Fir	40.00%
Sitka Spruce	40.00%
Alder (Red)	40.00%

**Yarding Distance:** Medium (800 ft)      **Downhill Yarding:** No  
**Logging System:** Cable: Medium Tower >40 - <70      **Process:** Manual Delimiting  
**Tree Size:** Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF  
**Loads/Day:** 5      **Bd. Ft./Load:** 4,000  
**Cost/MBF:** \$165.83  
**Machines:**  
Log Loader (A)  
Tower Yarder (Medium)



# Timber Sale Appraisal

## Logging Costs

### Rip Tide

## Sale 341-06-84

"STEWARDSHIP IN FORESTRY"

Date: 4/5/06

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$79,544

Other Costs (P/R): \$11,156

Slash Disposal: \$0

Other Costs: \$111,634

Road Maintenance: \$3.50

Miles of Road			
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	2.0	4.0
Sitka Spruce	\$0.00	3.0	4.0
Alder (Red)	\$0.00	2.0	3.5



# Timber Sale Appraisal Logging Costs Breakdown Rip Tide Sale 341-06-84

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Westem Hemlock / Fir	Sitka Spruce	Alder (Red)
<b>Logging</b>	147.97	147.97	147.97	147.97
<b>Road Maintenance</b>	3.61	3.61	3.61	3.68
<b>Fire Protection</b>	0.91	0.91	0.91	0.91
<b>Hauling</b>	39.54	59.28	39.54	69.16
<b>Other (P/R appl.)</b>	1.88	1.88	1.88	1.88
<b>Profit &amp; Risk</b>	29.09	32.05	29.09	33.54
<b>Slash Disposal</b>	0.00	0.00	0.00	0.00
<b>Scaling</b>	2.00	2.00	2.00	2.00
<b>Other</b>	18.80	18.80	18.80	18.80
<b>Total</b>	243.80	266.50	243.80	277.94

<b>Amortization</b>	0.00	0.00	0.00	0.00
<b>Pond Value</b>	655.28	435.37	419.57	576.25
<b>Stumpage</b>	411.48	168.87	175.77	298.31
<b>Amortized</b>	0.00	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Summary Rip Tide Sale 341-06-84

**Amortized**

	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)
<b>MBF</b>	0.00	0.00	0.00	0.00
<b>Value</b>	0.00	0.00	0.00	0.00
<b>Total</b>	0.00	0.00	0.00	0.00

**Unamortized**

	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Alder (Red)
<b>MBF</b>	515.00	5,373.00	46.00	4.00
<b>Value</b>	411.48	168.87	175.77	298.31
<b>Total</b>	211,912.20	907,338.51	8,085.42	1,193.24

### Gross Timber Sale Value

**Recovery \$1,128,529.37**

Prepared by: Jay Morey

Date: 4/5/06

District: Astoria

Phone: (503) 325-5451

**Road Maintenance Cost Summary**

Sale: Rip Tide  
 Date: 19-Dec-05  
 By: J. Long

MBF: 5,938  
 \$\$/MBF: \$3.50

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Miles/day	Distance(miles)	Days	
Progressive Operations 1st Entry	Grader 14G	\$570	1	12	\$84	\$1,578	Grader	2.5	3.0	1.2
	Dump Truck 12CY x 2	\$119	2	16	\$59	\$2,126				
	FE Loader C966	\$570	1	8	\$79	\$1,202				
Final Road Maintenance	Grader 14G	\$570	1	60	\$84	\$5,610	Grader	1.5	9.4	6.3
	Dump Truck 12CY x 3	\$119	3	30	\$59	\$5,667				
	FE Loader C966	\$570	1	10	\$79	\$1,360	Vibratory Roller*	1.5	2.2	1.5
	Vibratory Roller	\$570	1	16	\$79	\$1,834				
	Water Truck 2,500 gallon Labor	\$139	1	16	\$70	\$1,259				
<b>Total</b>										\$20,780

\*Final Road Maintenance Only



**SUMMARY OF ALL PROJECT COSTS**

**SALE NAME:** Rip Tide

**NEW CONSTRUCTION:**

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	1A-1B, 2A-AB, 2C-2D, 2E-2F, 3A-3B, and 3C-3D.	52.80	\$51,718
	<b>TOTALS</b>	52.80	\$51,718

**ROAD IMPROVEMENT:**

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	11-12, 13-14, 15-16, and 17-18	89.70	\$15,645
	<b>TOTALS</b>	89.70	\$15,645

**SPECIAL PROJECTS:**

	<u>Description</u>	<u>Cost</u>
	Road Maintenance for project No. 1	\$1,944
	<b>TOTALS</b>	\$1,944

**MOVE IN:**

	<u>Equipment</u>	<u>Cost</u>
	Dozer (D8) x 3	\$3,090
	Dump Trucks (10 cy x 3)	\$357
	Dump Trucks (20 cy x 1)	\$140
	F E Loader (C966)	\$570
	Grader (14G)	\$570
	Vibratory Grid Roller x 2	\$1,140
	Vibratory Roller x 2	\$1,140
	Water Truck (2,500 gallon)	\$139
	Excavator (C330) x 3	\$3,090
	<b>TOTAL</b>	\$10,236

**GRAND TOTAL** **\$79,544**

Compiled By: J. Long *FL* Date: 1/4/2006

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**SUMMARY OF CONSTRUCTION COSTS**

**SALE NAME:** Rip Tide  
**ROADS:** 2A-2B(30.6) and 2C-2D (8.8) (Designed Roads)

**NEW CONSTRUCTION:** 39.40 STATIONS  
**IMPROVEMENT:** STATIONS

0.75 MILES  
 0.00 MILES

Method	Acres/amount	X	Rate	=	Cost
Scatter Outside of R/W	3.6	X	\$980.00	=	\$3,528.00
		X		=	\$0.00
		X		=	\$0.00
		X		=	\$0.00
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$3,528</b>

Material	Cy/amount/station	X	Rate	=	Cost
Common drift excavation \$\$/cy	4.006	X	\$1.28	=	\$5,127.68
Embankment compaction \$\$/cy	4.159	X	\$0.45	=	\$1,871.55
Balanced construction \$\$/sta.	8.2	X	\$89.00	=	\$729.80
Cut slope rounding \$\$/sta.	10	X	\$31.00	=	\$310.00
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$8,039</b>

Location	Dial/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
2A-2B 4+50	18"CPP	30	\$13.60	\$408.00			
2A-2B 8+00	18"CPP	30	\$13.60	\$408.00			
* 2A-2B 10+64	18"CPP	50	\$13.60	\$680.00			
2A-2B 13+85	18"CPP	30	\$13.60	\$408.00			
* 2A-2B 14+60	24"CPP	40	\$22.00	\$880.00			
2A-2B 19+40	18"CPP	40	\$13.60	\$544.00			
2A-2B 21+60	18"CPP	30	\$13.60	\$408.00			
* 2A-2B 22+60	18"CPP	50	\$13.60	\$680.00			
2A-2B 25+35	18"CPP	36	\$13.60	\$489.60			
2A-2B 27+00	18"CPP	30	\$13.60	\$408.00			
* 2C-2D 1+40	18"CPP	40	\$13.60	\$544.00			
<b>CULVERT MATERIALS AND INSTALLATION</b>							
Other/miscellaneous:		Description		Quantity	Rate	Cost	
		Bevel culvert inlet (24" diameter)		1	\$24.00	\$24.00	
		6" FIBERGLASS MARKERS		7	\$14.10	\$98.70	
		* Fills over 3' do not require culvert markers				\$0.00	
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>							<b>\$5,980</b>
					Subtotal		<b>\$17,547</b>

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Rip Tide 0.25 MILES  
 ROAD: 1A-1B (1.4), 2E-2F (4.7), 3A-3B (4.3), 3C-3D (3.0) 13.40 STATIONS  
 IMPROVEMENT: 0.00 MILES

CLEANING & GRUBBING		Acres/amount	X	Rate	=	Cost
Method						
Scatter Outside of R/W		1.4	X	\$980.00	=	\$1,372.00
						<b>\$1,372</b>

EXCAVATION		Sta/amount	X	Rate	=	Cost
Material						
Common (Drift Earth up to 200')	\$\$/sta.	8.00	X	\$139.00	=	\$1,112.00
Balanced construction	\$\$/sta.	5.40	X	\$89.00	=	\$480.60
Cut Slope Rounding	\$\$/sta.	2.00	X	\$31.00	=	\$62.00
Landing Construction	\$\$/landing	4.00	X	\$285.00	=	\$1,140.00
1B, 2F, 3B, 3D						
						<b>\$2,795</b>

CULVERT MATERIALS AND INSTALLATION		Lineal ft.	Rate	No. bands	Rate	Cost
Location	Dia/type					
						<b>\$0</b>
Other/miscellaneous:		Description	Quantity	Rate	Cost	
						<b>\$4,167</b>
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>						<b>\$4,167</b>

SURFACING		Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:	Description				
	Grade, Shape and Ditch 16'	52.80	x	\$18.20	\$960.96
	Subgrade Compaction	52.80	x	\$14.80	\$781.44

ROAD SEGMENT 1A to 1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 1+40	1A to 1B				
Base Rock	6"-0" Pit-run		10	station	63	stations	1.40	88	\$2.49	\$220	
Junctions	6"-0" Pit-run		10	junction	24	junctions	1	24	\$2.49	\$60	
Landings	6"-0" Pit-run		N/A	Landing	50	Landings	1	50	\$2.49	\$125	
Total Rock for Road Segment:								1A to 1B	162		

\$270

ROAD SEGMENT 2A to 2B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 30+60	2A to 2B				
Base Rock	6"-0" Pit-run		10	station	63	stations	30.60	1,928	\$2.49	\$4,800	
Surfacing	3/4"-0" Crushed	0+00 - 30+00	3	station	19	stations	30.0	570	\$2.15	\$1,226	
Turn Outs	6"-0" Pit-run		10	turnout	30	turnouts	7	210	\$2.49	\$523	
Turn Outs	3/4"-0" Crushed		3	turnout	10	turnouts	7	70	\$2.15	\$151	
Curve Widening	6"-0" Pit-run		10					150	\$2.49	\$374	
Curve Widening	3/4"-0" Crushed		3					50	\$2.15	\$108	
Culvert Bedding	3/4"-0" Crushed	fills	N/A					90	\$2.15	\$194	
Energy Dissipator	24"-6" Riprap	fills	N/A					30	\$2.49	\$75	
Fill Armor	24"-6" Riprap	fills	N/A					100	\$2.49	\$249	
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	24	\$2.49	\$60	
Junctions	6"-0" Pit-run		10	junction	30	junctions	1	30	\$2.49	\$75	
Junctions	3/4"-0" Crushed		10	junction	10	junctions	1	10	\$2.15	\$22	
Landings	6"-0" Pit-run		N/A	Landing	50	Landings	1	50	\$2.49	\$125	
Total Rock for Road Segment:								0	3,312		

\$7,978

ROAD SEGMENT 2C to 2D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 8+80	2C to 2D				
Base Rock	6"-0" Pit-run		10	station	63	stations	8.80	554	\$2.49	\$1,380	
Surfacing	3/4"-0" Crushed	0+00 - 8+50	3	station	19	stations	8.50	162	\$2.15	\$347	
Turn Outs	6"-0" Pit-run		10	turnout	30	turnouts	1	30	\$2.49	\$75	
Turn Outs	3/4"-0" Crushed		3	turnout	10	turnouts	1	10	\$2.15	\$22	
Culvert Bedding	3/4"-0" Crushed	fills	N/A					20	\$2.15	\$43	
Energy Dissipator	24"-6" Riprap	fills	N/A					10	\$2.49	\$25	
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	24	\$2.49	\$60	
Junctions	6"-0" Pit-run		10	junction	30	junctions	1	30	\$2.49	\$75	
Junctions	3/4"-0" Crushed		10	junction	10	junctions	1	10	\$2.15	\$22	
Landings	6"-0" Pit-run		N/A	Landing	50	Landings	1	50	\$2.49	\$125	
Total Rock for Road Segment:								2C to 2D	900		

\$2,172

ROAD SEGMENT 2E to 2F				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 4+70	2E to 2F				
Base Rock	6"-0" Pit-run		10	station	63	stations	4.70	296	\$2.49	\$737	
Surfacing	3/4"-0" Crushed	0+00 - 4+30	3	station	19	stations	4.30	82	\$2.15	\$176	
Turn Outs	6"-0" Pit-run		10	turnout	30	turnouts	1	30	\$2.49	\$75	
Turn Outs	3/4"-0" Crushed		3	turnout	10	turnouts	1	10	\$2.15	\$22	
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	24	\$2.49	\$60	
Junctions	6"-0" Pit-run		10	junction	30	junctions	1	30	\$2.49	\$75	
Junctions	3/4"-0" Crushed		3	junction	10	junctions	1	10	\$2.15	\$22	
Landings	6"-0" Pit-run		N/A	Landing	50	Landings	1	50	\$2.49	\$125	
Total Rock for Road Segment:								2E to 2F	532		

\$1,290

ROAD SEGMENT 3A-3B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 4+30	3A-3B				
Base Rock	6"-0" Pit-run		10	station	63	stations	4.30	271	\$2.49	\$675	
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	24	\$2.49	\$60	
Junctions	6"-0" Pit-run		10	junction	24	junctions	1	24	\$2.49	\$60	
Junctions	3/4"-0" Crushed		3	junction	20	junctions	1	20	\$2.15	\$43	
Landings	6"-0" Pit-run		N/A	Landing	50	Landings	1	50	\$2.49	\$125	
Total Rock for Road Segment:								3A-3B	389		

\$962

ROAD SEGMENT 3C-3D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 3+00	3C-3D				
Base Rock	6"-0" Pit-run		10	station	63	stations	3.00	189	\$2.49	\$471	
Junctions	6"-0" Pit-run		10	junction	24	junctions	1	24	\$2.49	\$60	
Junctions	3/4"-0" Crushed		3	junction	20	junctions	1	20	\$2.15	\$43	
Landings	6"-0" Pit-run		N/A	Landing	50	Landings	1	50	\$2.49	\$125	
Total Rock for Road Segment:								3C-3D	283		

\$698

Processing:		Description	No. sta	Rate/sta	Cost					
		Water Process & Compact Crushed Rock:	42.80	\$41.40	\$1,772					
		Compact Pit-Run Rock with Vibratory Grid Roller	52.80	\$43.40	\$2,292					
		24"-6"r	6"-0"pr	4"-0"	1 1/2"-0"	3/4"-0"	Total			
SUB TOTAL FOR SURFACING			140	4,304	0	0	1,134	5,578		\$19,184

SPECIAL PROJECTS		Description	Cost
		Develop Pit-Run	4,304 cy x \$1.90/cy = \$8,178
		Develop Riprap	140 cy x \$3.10/cy = \$434
		Riprap placement w/C330	16 hrs x \$138/hr = \$2,208
SUB TOTAL FOR SPECIAL PROJECTS			\$10,820

\$51,718

Project No. 1 Road Improvement

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rip Tide  
 ROAD: 11-12 (39.4), 13-14 (6.8), 15-16 (12.3), & 17-18 (31.2)

NEW CONSTRUCTION: 0.00 STATIONS 0.00 MILES  
 IMPROVEMENT: 89.70 STATIONS 1.70 MILES

SURFACING	11-12 (39.4), 13-14 (6.8), 15-16 (12.3), 17-18 (31.2)	Stations/amount	x	Rate/sta/amt	Cost
Subgrade prep:	Description				
	Grade, Shape and Ditch 12'	89.70	x	\$18.20	\$1,632.54
	Compact subgrade w / roller	89.70	x	\$14.80	\$1,327.56

ROAD SEGMENT 11 to 12			POINT TO POINT 11 to 12		Sta. to Sta. 0+00 to 39+40		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	Volume (CY) per	Number of				
Subgrade Leveling	3/4"-0" Crushed		N/A				100	\$2.15	\$215
Surfacing	3/4"-0" Crushed	0+00 - 39+40	3	station	19	stations	39.4	\$2.15	\$1,609
Turn Outs	3/4"-0" Crushed		3	turnout	10	turnouts	6	\$2.15	\$129
Junctions	3/4"-0" Crushed		3	junction	10	junctions	3	\$2.15	\$65
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	\$2.49	\$60
Landings	6"-0" Pit-run		N/A	Landing	40	Landings	1	\$2.49	\$100
Total Rock for Road Segment: 11 to 12							1,003		\$2,177

ROAD SEGMENT 13 to 14			POINT TO POINT 13 to 14		Sta. to Sta. 0+00 to 6+80		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	Volume (CY) per	Number of				
Base Rock	6"-0" Pit-run		8	station	50	stations	6.80	\$2.49	\$847
Turn Outs	6"-0" Pit-run		8	turnout	22	turnouts	1	\$2.49	\$55
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	\$2.49	\$60
Landings	6"-0" Pit-run		N/A	Landing	30	Landings	1	\$2.49	\$75
Total Rock for Road Segment: 13 to 14							416		\$1,036

ROAD SEGMENT 15 to 16			POINT TO POINT 15 to 16		Sta. to Sta. 0+00 to 12+30		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	Volume (CY) per	Number of				
Base Rock	6"-0" Pit-run		8	station	50	stations	12.30	\$2.49	\$1,531
Turn Outs	6"-0" Pit-run		8	turnout	22	turnouts	3	\$2.49	\$164
Junctions	6"-0" Pit-run		8	junction	30	junctions	1	\$2.49	\$75
Turn-Around	6"-0" Pit-run		N/A	TA	24	TA	1	\$2.49	\$60
Landings	6"-0" Pit-run		N/A	Landing	30	Landings	1	\$2.49	\$75
Total Rock for Road Segment: 15 to 16							765		\$1,905

ROAD SEGMENT 17 to 18			POINT TO POINT 17 to 18		Sta. to Sta. 0+00 to 31+20		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	Volume (CY) per	Number of				
Subgrade Leveling	1"-0" Crushed		N/A				100	\$2.15	\$215
Surfacing	1"-0" Crushed	0+00 - 28+00	2	station	13	stations	31.2	\$2.15	\$672
Turn Outs	1"-0" Crushed		2	turnout	10	turnouts	5	\$2.15	\$108
Junctions	1"-0" Crushed		2	junction	20	junctions	2	\$2.15	\$86
Total Rock for Road Segment: 17 to 18							596		\$1,281

Processing:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact Crushed Rock:	70.60	\$41.40	\$2,923
	Compact Pit-Run Rock with Vibratory Grid Roller	19.10	\$43.40	\$829

SUB TOTAL FOR SURFACING	24"-6"rr	6"-0"pr	4"-0"	1"-0"	3/4"-0"	Total	
	0	1,245	0	596	939	2,780	\$13,110

SPECIAL PROJECTS		Description	Cost
		Develop Pit-Run Rock 1,245 cy x \$1.90/cy	\$2,366
		Installing Culvert Markers 12 Markers x \$14.10	\$169
SUB TOTAL FOR SPECIAL PROJECTS			\$2,535

<b>GRAND TOTAL</b>	<b>Cost per Mile</b>	<b>\$61,648</b>	<b>\$15,645</b>
--------------------	----------------------	-----------------	-----------------

Compiled By: J. Long Date: 12/20/2005

SALE NAME: Rip Tide DATE: 12/15/2005  
 PROJECT: No. 1 Road Construction and Improvement ROCK TYPE: 1" and 3/4" Crushed  
 QUARRY: West Tidewater BY: J. Long

		Cubic Yards								
Segment	Stations	Base	Surfacing	Turnout	Turnaround	Junction	Curves	Misc	Total	
2A-2B	30.60		570	70		10	50	90	790	
2C-2D	8.80		162	10		10		20	202	
2E-2F	4.70		82	10		10			102	
3A-3B	4.30					20			20	
3C-3D	3.00					20			20	
I1-12	39.40		749	60		30		100	939	
I7-18	31.20		406	50		40		100	596	
Grand Total	122.00	0	1,969	200	0	140	50	310	2,669	

		ONE WAY HAUL IN MILES										
Road Segment	Stations	Cubic Yards	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul		
2A-2B	30.60	790				0.20	0.25	0.15	0.05	0.65		
2C-2D	8.80	202				0.20	0.25	0.30	0.05	0.80		
2E-2F	4.70	102				0.20	0.25	0.15	0.05	0.65		
3A-3B	4.30	20			2.50	0.80	0.50	0.15	0.05	4.00		
3C-3D	3.00	20			2.50	0.90	0.50	0.15	0.05	4.10		
I1-12	39.40	939					0.20	0.15	0.05	0.40		
I7-18	31.20	596		0.50	0.40	0.20	0.30	0.15	0.05	1.60		
TOTAL	122.00	2,669								AVERAGE HAUL 0.84		
CUBIC YARD WEIGHTED HAUL			0.00	0.11	0.13	0.14	0.25	0.16	0.05			

Average Round Trip Distance (miles) 1.67

ROCK HAUL:

Truck type: <u>D20</u>	No. trucks: <u>1</u>	Ave haul: <u>\$1.10 /cy</u>
Delay min.: <u>8</u>	Efficiency: <u>85%</u>	Load: <u>\$0.40 /cy</u>
Truck type: <u>D12</u>	No. trucks: <u>0</u>	Spread: <u>\$0.65 /cy</u>
Delay min.: <u>6</u>	Efficiency: <u>85%</u>	
Truck type: <u>D10</u>	No. trucks: <u>2</u>	Production: cy/day = <u>1,315</u>
Delay min.: <u>5</u>	Efficiency: <u>85%</u>	

CRUSHED ROCK HAUL COSTS      2,669 cy @      \$2.15 /cy

SALE NAME: Rip Tide DATE: 12/15/2005  
 PROJECT: No. 1 Road Construction and Improvement ROCK TYPE: 6"-0" Pit Run & Riprap  
 QUARRY: West Tidewater BY: J. Long

		Cubic Yards								
Segment	Stations	Base	Curve Widden	Turnout	Turnaround	Junction	Landings	Misc	Total	
1A-1B	1.40	88				24	50		162	
2A-2B	30.60	1,928	150	210	24	30	50	130	2,522	
2C-2D	8.80	554		30	24	30	50	10	698	
2E-2F	4.70	296		30	24	30	50		430	
3A-3B	4.30	271			24	24	50		369	
3C-3D	3.00	189				24	50		263	
I1-I2	39.40				24		40		64	
I3-I4	6.80	340		22	24		30		416	
I5-I6	12.30	615		66	24	30	30		765	
Grand Total	111.30	4,281	150	358	168	192	400	140	5,689	

		ONE WAY HAUL IN MILES									
Road Segment	Stations	Cubic Yards	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul	
1A-1B	1.40	162			2.60	1.00	0.20	0.15	0.05	4.00	
2A-2B	30.60	2,522				0.20	0.25	0.15	0.05	0.65	
2C-2D	8.80	698				0.20	0.25	0.30	0.05	0.80	
2E-2F	4.70	430				0.20	0.25	0.15	0.05	0.65	
3A-3B	4.30	369			2.50	0.80	0.50	0.15	0.05	4.00	
3C-3D	3.00	263			2.50	0.90	0.50	0.15	0.05	4.10	
I1-I2	39.40	64					0.20	0.15	0.05	0.40	
I3-I4	6.80	416					0.40	0.15	0.05	0.60	
I5-I6	12.30	765					0.15	0.15	0.05	0.35	
TOTAL	111.30	5,689								AVERAGE HAUL	
CUBIC YARD WEIGHTED HAUL		STA./NO.	CU. YD.	0.00	0.00	0.35	0.25	0.27	0.17	0.05	1.09
Average Round Trip Distance (miles)										2.19	

ROCK HAUL:

Truck type: <u>D20</u>	No. trucks: <u>0</u>	Ave haul: \$1.44 /cy Load: \$0.40 /cy Spread: \$0.65 /cy
Delay min.: <u>8</u>	Efficiency: <u>85%</u>	
Truck type: <u>D12</u>	No. trucks: <u>0</u>	Production: cy/day = 952
Delay min.: <u>6</u>	Efficiency: <u>85%</u>	
Truck type: <u>D10</u>	No. trucks: <u>3</u>	
Delay min.: <u>5</u>	Efficiency: <u>85%</u>	

CRUSHED ROCK HAUL COSTS 5,689 cy @ \$2.49 /cy

**Road Maintenance after completion of Project Work (New Construction & Improvement)**

**Sale:** Rip Tide  
**Date:** 16-Dec-05  
**By:** J. Long

Type	Equipment/Rationale	Hours	Rate	Cost
Final Haul Road Maintenance Haul Route	Grader 14G Dump Truck 12CY FE Loader C966	10 8 8	\$84 \$59 \$79	\$840 \$472 \$632
<b>Total</b>				<b>\$1,944</b>

Miles/day	Distance(miles)	Days
1.5	1.5	1.0

Production Rates  
Grader



# TIMBER CRUISE REPORT

Rip Tide

FY 2006

1. **Sale Area Location:** Areas 1, 2, 3, and 4 (R/W) are located in Portions of Sections 10, 15, 16, and 18, T6N, R7W; and Portions of Section 13, T6N, R8W, 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	Stream Buffer	Non-Thinable acres	Net Acres	Survey Method
1	Partial Cut	42	3.8	0.3	1	17.3	20	GIS
2	Partial Cut	186	8.8	3.6	9.2	15.4	149	GIS
3	Partial Cut	58	5	1.1	1.6	0.7	50	GIS
4 R/W	Road Const.		0	5.0	0		5	RoadEng / LxW
<b>TOTALS</b>		<b>286</b>		<b>5.0</b>			<b>224</b>	

4. **Cruisers and Cruise Dates:** Areas 1 - 3 were cruised by Derek Bangs, Lanny Freeman, Jon Long, Jay Morey, Jasen McCoy, and Tara Carlson, in November, 2005.

#### 5. Cruise Method and Computation:

AREAS 1, 2, and 3 were variable plot cruised using a 40 BAF. These plots are located on a 4 chain by 9 chain grid, with every third plot graded. A total of 59 plots were sampled, with 21 graded plots and 38 count plots. Cedar and alder are reserve species, and were recorded as "leave" trees. The "biggest and best" trees were recorded as "leave" trees (4 trees per plot) to meet a target residual basal area of 160 ft<sup>2</sup>/acre.

Hardwoods were not counted towards the residual basal area.

Plots taken in Area 3 were taken out and run separately with a target residual basal area of 160 ft<sup>2</sup>/acre. The target residual basal area for Areas 1 and 2 was re-calculated using 200 ft<sup>2</sup>/acre.

AREA 4 In-Sale R/W. The Right-of-Way volume was calculated by multiplying the R/W acreage from the new road construction in the sale areas and the average volume per acre from the plots in Areas 1-3. In-sale right-of-way totals 5 acres.

All cruises used Corvallis MicroTechnology (CMT) 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.

<u>AREA</u>	<u>CRUISE</u>	<u>CRUISE TYPE</u>
1 & 2	Automark Thinning	06N07W SEC18 TYPE: 0001
3	Automark Thinning	06N07W SEC15 TYPE: 0001
4R/W	In-Sale Right-of-way	06N07W SEC01 TYPE: A4RW

#### 6. Timber Description:

Areas 1 and 2 are approximately 70 year old stands of mostly hemlock with scattered Douglas-fir and spruce. Areas 1 and 2 will be thinned to 200 ft<sup>2</sup>/acre, removing approximately 117 trees per acre and 26 MBF/acre. The average conifer "take" tree size is 16" DBH and 64 feet to a merchantable top (6" d.i.b.).

Area 3 is approximately 65 year old and consists of mostly hemlock and Douglas-fir. Area 3 will be thinned to 160 ft<sup>2</sup>/acre, removing approximately 144 trees per acre and 25 MBF/acre. The average conifer "take" tree size is 16" DBH and 65 feet to a merchantable top (6" d.i.b.).

Area 4 In-Sale R/W is similar to the timber description mentioned above for Areas 1-3. The average volume (net) is 57 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	45%	7%	36%	5.4%
3	45%	7%	23%	6.2%

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

**8. Volumes by Species and Log Grade:** (See "Species, Sort, Grade - Type and Project Reports) 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	% D & B	% Sale
Hemlock	16"	5,373	3,201	1,786	386	1.4	90
Douglas-fir	16"	515	192	247	76	3.2	9
Spruce	16"	46	6	40	0	0.1	1
Alder	19"	4	0	3	1	0	>1
<b>TOTALS</b>		<b>5,938</b>	<b>3,399</b>	<b>2,076</b>	<b>463</b>		

**9. Approvals:**

Prepared by: Jon Long Date: December 13, 2005

Reviewed by:  Date: 12/20/05

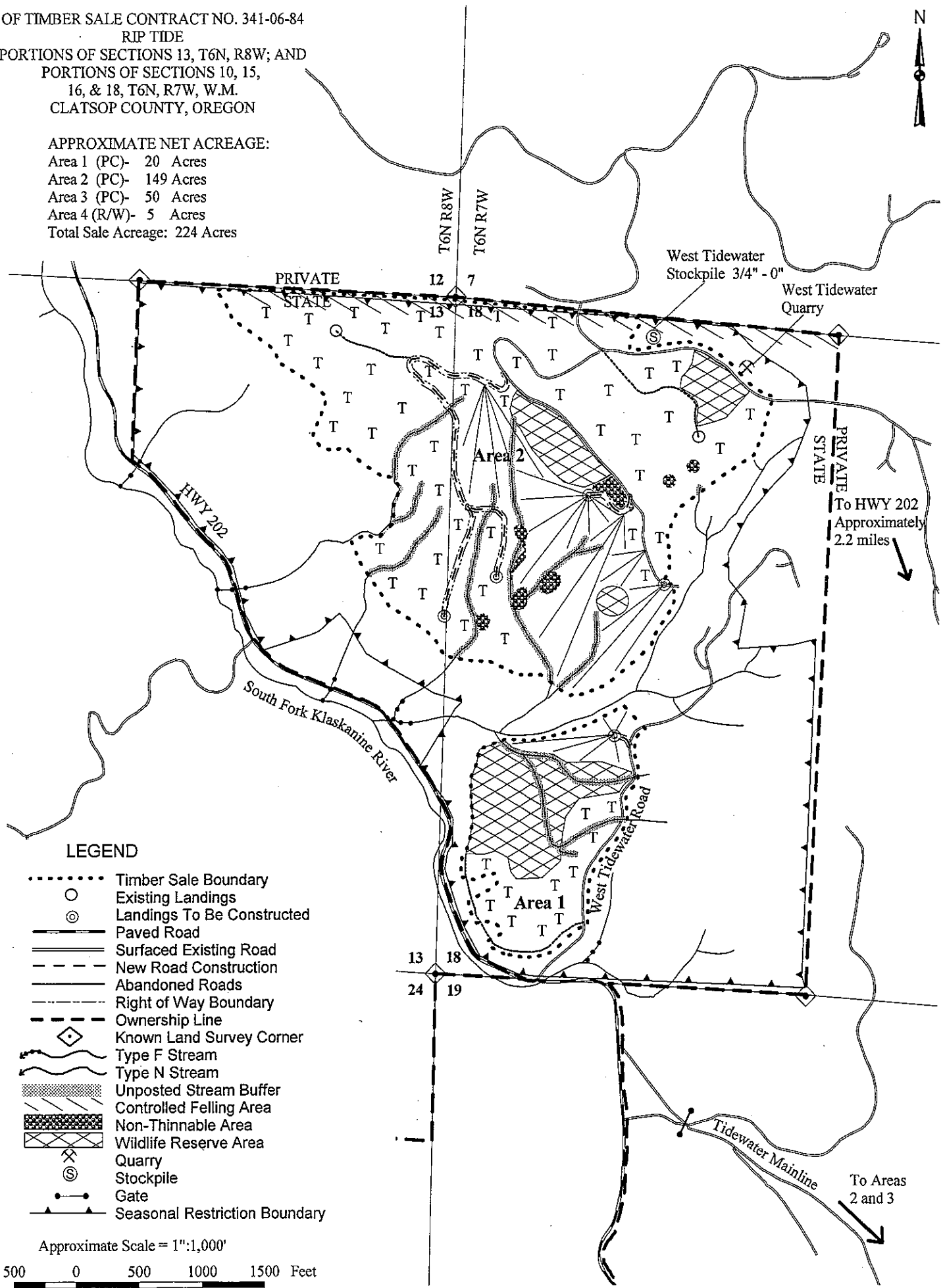
- 10. Attachments:**
- Cruise Design – 2 pages
  - Cruise Maps – 2 pages
  - Volume Reports - 4 pages
  - Statistics Reports - 8 pages
  - Stand Tables - 3 page
  - Log Stock Tables – 2 pages

# LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-06-84  
 RIP TIDE  
 PORTIONS OF SECTIONS 13, T6N, R8W; AND  
 PORTIONS OF SECTIONS 10, 15,  
 16, & 18, T6N, R7W, W.M.  
 CLATSOP COUNTY, OREGON

## APPROXIMATE NET ACREAGE:

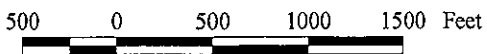
- Area 1 (PC)- 20 Acres
- Area 2 (PC)- 149 Acres
- Area 3 (PC)- 50 Acres
- Area 4 (R/W)- 5 Acres
- Total Sale Acreage: 224 Acres



## LEGEND

- Timber Sale Boundary
- Existing Landings
- ⊙ Landings To Be Constructed
- ==== Paved Road
- ==== Surfaced Existing Road
- New Road Construction
- Abandoned Roads
- Right of Way Boundary
- Ownership Line
- ◇ Known Land Survey Corner
- ~ Type F Stream
- ~ Type N Stream
- ▨ Unposted Stream Buffer
- ▩ Controlled Felling Area
- ▩ Non-Thinnable Area
- ▩ Wildlife Reserve Area
- ⊙ Quarry
- ⊙ Stockpile
- Gate
- ▲ Seasonal Restriction Boundary

Approximate Scale = 1":1,000'

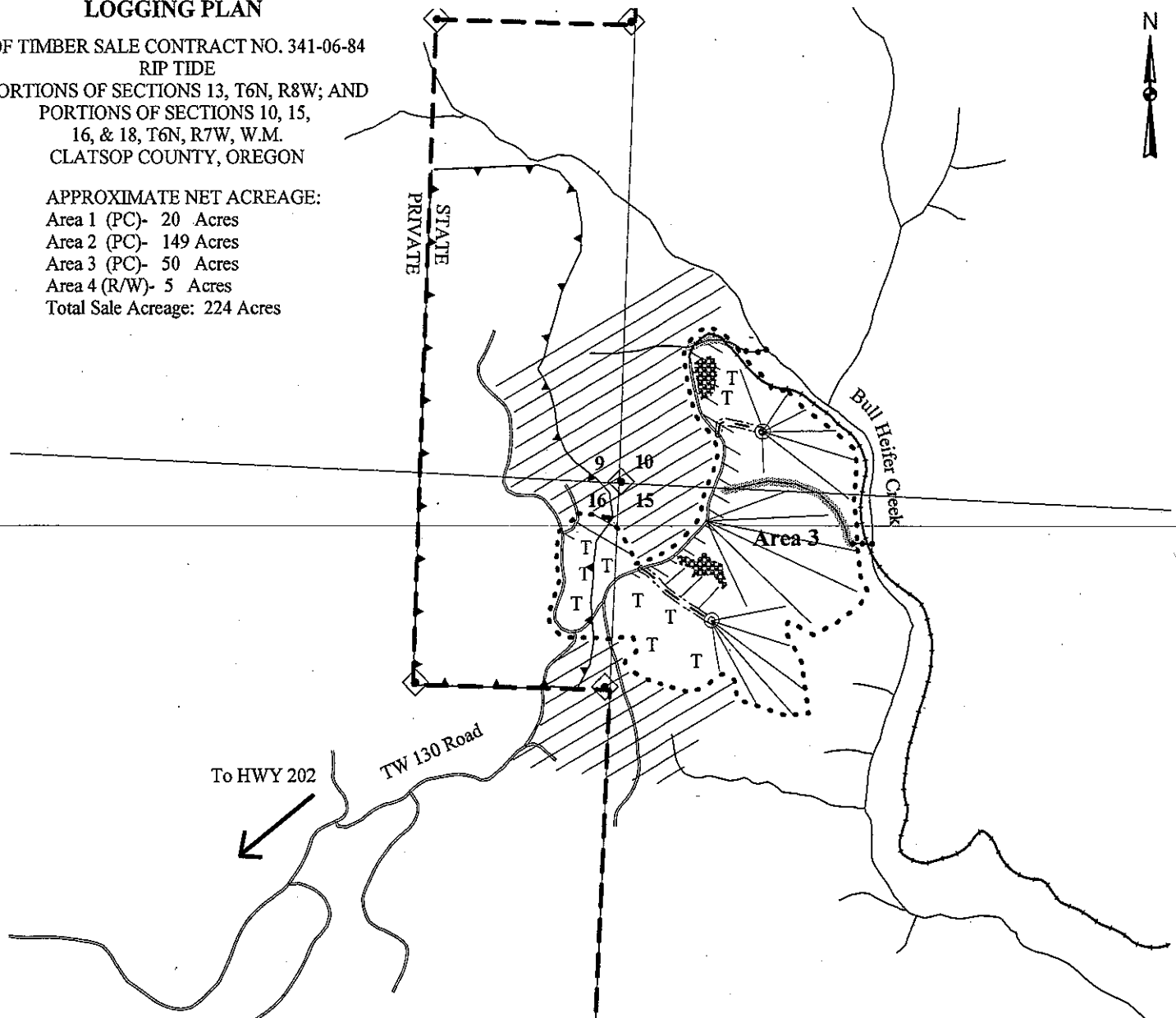


# LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-06-84  
 RIP TIDE  
 PORTIONS OF SECTIONS 13, T6N, R8W; AND  
 PORTIONS OF SECTIONS 10, 15,  
 16, & 18, T6N, R7W, W.M.  
 CLATSOP COUNTY, OREGON

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## LEGEND

- ..... Timber Sale Boundary
- Existing Landings
- ⊙ Landings To Be Constructed
- Paved Road
- Surfacd Existing Road
- - - New Road Construction
- Vacated Roads
- - - Right of Way Boundary
- - - Ownership Line
- ◊ Known Land Survey Corner
- ~ Type F Stream
- ~ Type N Stream
- ▨ Unposted Stream Buffer
- ▧ Reforestation Area
- ▩ Controlled Felling Area
- ▩ Non-Thinnable Area
- ▲ Seasonal Restriction Boundary

Approximate Scale = 1":1,000'

500 0 500 1000 1500 Feet

16 15  
 21 22

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Rip Tide Area(s) 1-3

**Harvest Type:** CC PC CT "Automark Thinning" (circle one)

**Approx. Cruise Acres:** 220 **Estimated CV%** 45 Net BF or **SE% Objective** 7 Net BF or  
BA/Acre BA/Acre

**Planned Sale Volume:** 3,945 MMBF **Estimated Sale Area Value/Acre:** \$ 3,130/Ac  
(All Areas) (12 MBF/Ac)

**A. Cruise Goals:** (a) Grade minimum 100 conifer and \_\_\_\_\_ hardwood trees:  
(b) Sample 63 cruise plots (1 grade/ 2 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) See Map  
Cruise Line Spacing 9 (chains) (feet)  
Cruise Plot Spacing 4 (chains) (feet)  
Grade/Count Ratio 1/2

All cedar and hardwoods and all trees over 30" DBH are leave trees and are recorded as leave trees. Hardwoods do not count towards residual stand basal area. Leave tree stand 160 sq. ft. (4 trees with 40 BAF).

**C. Tree Measurements:**

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods.  
Record dbh to nearest 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 8" 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:**

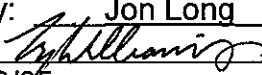
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: 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; R = Camp Run; 0 = Cull  
Hardwoods: #3 Sawmill = 10" +; #4 Sawmill = 8 and 9"

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 intervisible 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, north arrow, and scale.

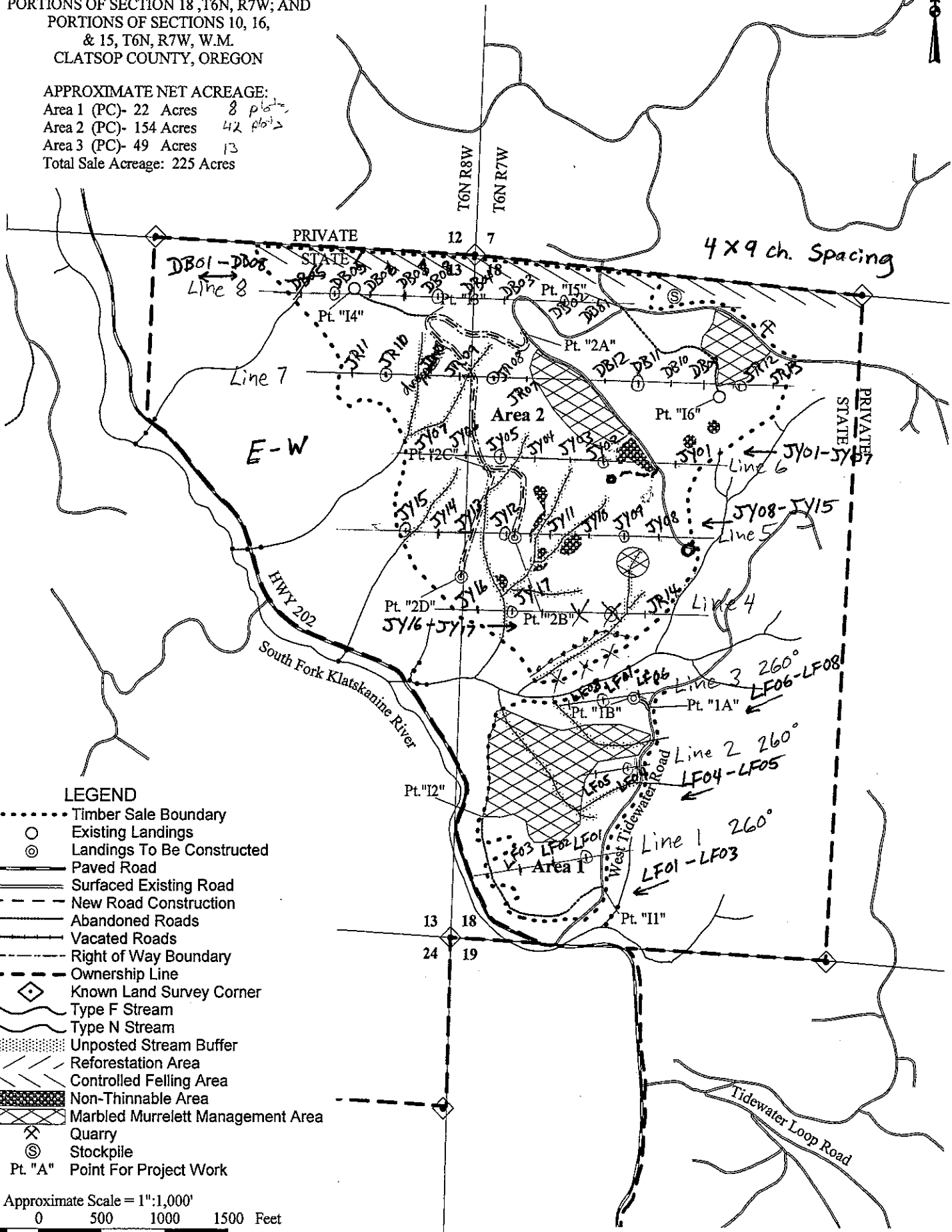
Cruise Design by: Jon Long  
Approved by:  11/9/05  
Date: 11/9/05

OF TIMBER SALE CONTRACT NO.  
RIP TIDE

PORTIONS OF SECTIONS 13, T6N, R8W; AND  
PORTIONS OF SECTION 18, T6N, R7W; AND  
PORTIONS OF SECTIONS 10, 16,  
& 15, T6N, R7W, W.M.  
CLATSOP COUNTY, OREGON

APPROXIMATE NET ACREAGE:

- Area 1 (PC)- 22 Acres 8 plots
- Area 2 (PC)- 154 Acres 42 plots
- Area 3 (PC)- 49 Acres 13
- Total Sale Acreage: 225 Acres



LEGEND

- ..... Timber Sale Boundary
- Existing Landings
- ⊙ Landings To Be Constructed
- Paved Road
- Surfaced Existing Road
- - - New Road Construction
- Abandoned Roads
- Vacated Roads
- - - Right of Way Boundary
- - - Ownership Line
- ◇ Known Land Survey Corner
- ~ Type F Stream
- ~ Type N Stream
- ▨ Unposted Stream Buffer
- ▨ Reforestation Area
- ▨ Controlled Felling Area
- ▨ Non-Thinnable Area
- ▨ Marbled Murrelett Management Area
- ⊗ Quarry
- ⊙ Stockpile
- Pt. "A" Point For Project Work

Approximate Scale = 1":1,000'



**EXHIBIT "A"**

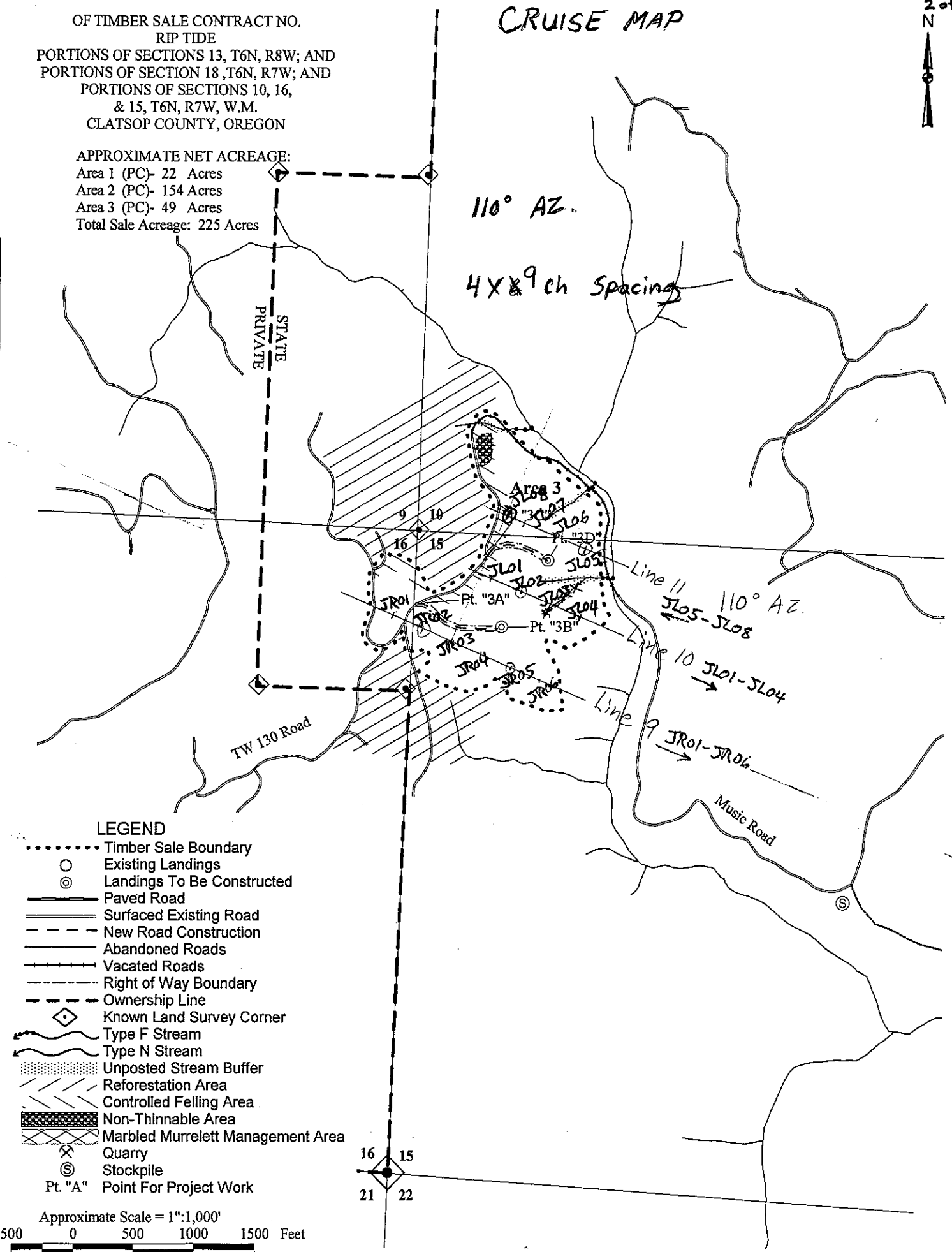
**CRUISE MAP**



OF TIMBER SALE CONTRACT NO.  
RIP TIDE  
PORTIONS OF SECTIONS 13, T6N, R8W; AND  
PORTIONS OF SECTION 18, T6N, R7W; AND  
PORTIONS OF SECTIONS 10, 16,  
& 15, T6N, R7W, W.M.  
CLATSOP COUNTY, OREGON

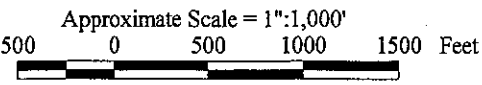
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Area 3 (PC)- 49 Acres  
Total Sale Acreage: 225 Acres

110° AZ.  
4x8 & 9 ch Spacing



**LEGEND**

- ..... Timber Sale Boundary
- Existing Landings
- ⊙ Landings To Be Constructed
- Paved Road
- Surfacd Existing Road
- - - New Road Construction
- Abandoned Roads
- Vacated Roads
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- - - Ownership Line
- ◇ Known Land Survey Corner
- ~ Type F Stream
- ~ Type N Stream
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- ..... Marbled Murrelett Management Area
- ⊗ Quarry
- ⊙ Stockpile
- ⊙ Pt. "A" Point For Project Work





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

T06N R07W S15 TyTAKE 50.00  
 T06N R07W S18 TyA4RW 5.00  
 T06N R07W S18 TyTAKE 169.00

**Project: RIPTIDE2**  
**Acres 224.00**

**Page 1**  
**Date 12/19/2005**  
**Time 1:31:50PM**

Spp	S T	So rt	Gr 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					
H		DO0															13		0.00	17.2	
H		DO2		54	.8	14,402	14,289	3,201		4	75	21		0	2	18	80	38	258	1.63	55.5
H		DO3		30	2.2	8,148	7,972	1,786			88	12	0		0	2	32	66	91	0.74	87.7
H		DO4		6	2.3	1,762	1,722	386	8	92				49	48		2	20	28	0.47	61.8
<b>H Totals</b>				90	1.4	24,312	23,983	5,372	1	38	49	13	4	5	22	70	31	108	0.94	222.2	
D		DO0															5		0.00	4.6	
D		DO2		3	1.2	870	859	192		25	20	55				47	53	34	243	1.83	3.5
D		DO3		4	3.1	1,138	1,104	247		100	0			0	43	32	25	33	82	0.71	13.4
D		DO4		1	8.1	370	341	76		100				24	6	70		28	50	0.64	6.8
<b>D Totals</b>				9	3.2	2,379	2,304	516		72	8	21	4	22	33	42	27	81	0.85	28.4	
A		DO0															4		0.00	.0	
A		DO3		0		15	15	3		42	17	42		11	47		42	30	180	1.62	.1
A		DO4		0		2	2	0		100				11	13		76	30	51	0.73	.0
<b>A Totals</b>				0		17	17	4		48	15	37	11	43		46	25	109	1.28	.2	
S		DO0															39		0.00	.8	
S		DO2		0		25	25	6			28	72			12	15	73	37	618	3.90	.0
S		DO3		1	.1	177	177	40		96	3	1		0	0	26	74	37	103	0.75	1.7
S		DO4		0		1	1	0		100				26	74			21	37	0.79	.0
<b>S Totals</b>				1	.1	202	202	45		85	6	10	0	2	24	74	37	80	0.57	2.5	
<b>Totals</b>					1.5	26,910	26,506	5,937	1	42	45	13	4	7	23	67	30	105	0.93	253.2	

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

Project: **RIPTIDE**

**T06N R07W S18 TTAKE**

**T06N R07W S18 TTAKE**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt
06N	07W	18	AREAS 1&2	TAKE	169.00	45	59	1

**BdFt  
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				
H		DO	0														11		0.00	9.4
H		DO	2	66	.8	16,906	16,775	2,835		4	77	19		2	18	80	38	256	1.61	65.7
H		DO	3	27	.8	7,025	6,969	1,178		91	9			0	38	61	37	84	0.71	82.6
H		DO	4	7		1,812	1,812	306	10	90			49	51			19	29	0.46	62.9
<b>H</b>	<b>Totals</b>			98	.7	25,744	25,557	4,319	1	34	53	13	4	5	22	69	31	116	0.98	220.6
D		DO	3	87	5.7	296	279	47		100					100		32	87	0.78	3.2
D		DO	4	13		42	42	7		100			40	60			23	25	0.48	1.7
<b>D</b>	<b>Totals</b>			1	5.0	339	322	54		100			5	8	87		29	66	0.70	4.9
S		DO	0														39		0.00	1.0
S		DO	3	100		217	217	37		100				25	75		37	100	0.73	2.2
<b>S</b>	<b>Totals</b>			1		217	217	37		100				25	75		38	69	0.50	3.1
<b>Type Totals</b>					.8	26,300	26,096	4,410	1	35	52	12	3	5	23	68	31	114	0.97	228.6

T06N R07W S15 TTAKE	T06N R07W S15 TTAKE
Twp 06N Rge 07W Sec 15 Tract AREA 3 Type TAKE Acres 50.00 Plots 14 Sample Trees 22 CuFt 1	BdFt 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	
									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					
H		DO	0														14		0.00	42.6	
H		DO	2	25		4,057	4,057	203			71	29			21	79	38	249	1.63	16.3	
H		DO	3	67	4.8	11,526	10,968	548		82	18			5	18	77	37	109	0.83	100.8	
H		DO	4	8	11.2	1,549	1,376	69		100				47	40	13	22	24	0.48	56.6	
<b>H</b>	<b>Totals</b>			66	4.3	17,132	16,401	820		63	29	7		4	7	17	72	29	76	0.76	216.3
D		DO	0														5		0.00	20.1	
D		DO	2	39	1.2	3,325	3,286	164		28	19	53			47	53	34	228	1.77	14.4	
D		DO	3	45	2.4	3,902	3,807	190		100				55	14	31	33	81	0.69	46.9	
D		DO	4	16	8.9	1,478	1,345	67		100				21		79	29	57	0.67	23.8	
<b>D</b>	<b>Totals</b>			34	3.0	8,704	8,439	422		72	7	21		3	25	25	47	27	80	0.85	105.2
<b>Type Totals</b>					3.9	25,836	24,840	1,242		66	22	12		4	13	20	63	28	77	0.79	321.4

Species, Sort Grade - Board Foot Volumes (Type)

Project: RIPTIDE2

T06N R07W S18 TA4RW  
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
06N 07W 18 A4 R/W A4RW 5.00 59 180 1 W

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					
H	DO	0														15		0.00	27.4	
H	DO	2	70	2.0	33,214	32,563	163		2	55	42		0	2	19	79	38	315	1.94	103.3
H	DO	3	26	3.3	12,323	11,921	60		86	11	3		1	4	36	59	36	94	0.81	127.2
H	DO	4	5	2.2	2,192	2,145	11	6	94				57	41		2	19	28	0.47	77.6
<b>H</b>	<b>Totals</b>		82	2.3	47,729	46,629	233	0	28	41	30		3	4	22	70	31	139	1.15	335.5
D	DO	0															6		0.00	5.5
D	DO	2	71	1.5	5,721	5,635	28		2	30	68				43	57	36	382	2.35	14.8
D	DO	3	24	2.3	1,979	1,934	10		96	4			1	21	51	27	33	86	0.79	22.4
D	DO	4	5	4.5	384	367	2	100					48	14		37	22	36	0.55	10.2
<b>D</b>	<b>Totals</b>		14	1.8	8,084	7,935	40		29	22	48		2	6	43	49	29	150	1.28	52.9
S	DO	0															27		0.00	1.3
S	DO	2	64		1,106	1,106	6			28	72				12	15	37	618	3.90	1.8
S	DO	3	34	.9	586	580	3		49	38	12		2	3	34	61	36	150	1.13	3.9
S	DO	4	2		30	30	0	100					26	74			21	37	0.79	.8
<b>S</b>	<b>Totals</b>		3	.3	1,721	1,716	9		18	31	50		1	10	21	68	33	220	1.65	7.8
A	DO	0															4		0.00	1.4
A	DO	3	88		654	654	3		42	17	42		11	47		42	30	180	1.62	3.6
A	DO	4	12		87	87	0	100					11	13		76	30	51	0.73	1.7
<b>A</b>	<b>Totals</b>		1		741	741	4		48	15	37		11	43		46	25	109	1.28	6.8
<b>Type Totals</b>				2.2	58,275	57,021	285	0	28	38	34		3	5	25	67	31	141	1.18	403.0

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RIPTIDE				DATE 12/13/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	18	AREAS 1&2	0001	169.00	45	416	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES		TREES	TREES				
TOTAL		45	416	9.2						
CRUISE		16	137	8.6	31,147		.4			
DBH COUNT										
REFOREST										
COUNT		29	279	9.6						
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
HEMLEAV	55	57.1	23.0	77		164.4	29,140	28,285	6,841	6,841
WHEMLOCK	54	106.7	16.5	64		158.2	24,637	24,457	6,430	6,430
DOUGLEAV	9	6.5	20.1	57		14.2	2,467	2,455	561	561
SPRUCELV	7	2.7	28.1	82		11.6	2,089	2,081	510	510
ALDRLEAV	6	4.6	18.9	48		8.9	898	898	258	258
SNAG	1	1.6	27.0	71		6.2				
DOUG FIR	3	3.2	14.3	46		3.6	339	322	99	99
S SPRUCE	2	2.0	15.5	59		2.7	217	217	59	59
<b>TOTAL</b>	<b>137</b>	<b>184.3</b>	<b>19.2</b>	<b>68</b>		<b>369.8</b>	<b>59,786</b>	<b>58,715</b>	<b>14,757</b>	<b>14,757</b>
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
HEMLEAV	159.4	13.6	237	274	312					
WHEMLOCK	166.5	14.2	111	129	147					
DOUGLEAV	489.0	41.8	31	53	75					
SPRUCELV	511.2	43.7	30	53	76					
ALDRLEAV	533.7	45.6	6	12	17					
SNAG										
DOUG FIR	722.8	61.7	1	2	4					
S SPRUCE	1170.5	100.0		1	3					
<b>TOTAL</b>	<b>85.8</b>	<b>7.3</b>	<b>486</b>	<b>524</b>	<b>562</b>	<b>294</b>	<b>150</b>	<b>51</b>		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
HEMLEAV	37.9	5.7	54	57	60					
WHEMLOCK	73.8	11.0	95	107	118					
DOUGLEAV	245.7	36.6	4	6	9					
SPRUCELV	249.3	37.2	2	3	4					
ALDRLEAV	257.3	38.4	3	5	6					
SNAG	305.1	45.5	1	2	2					
DOUG FIR	526.7	78.5	1	3	6					
S SPRUCE	379.0	56.5	1	2	3					
<b>TOTAL</b>	<b>45.1</b>	<b>6.7</b>	<b>172</b>	<b>184</b>	<b>197</b>	<b>82</b>	<b>42</b>	<b>14</b>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
HEMLEAV	27.6	4.1	158	164	171					
WHEMLOCK	70.7	10.5	142	158	175					
DOUGLEAV	191.1	28.5	10	14	18					
SPRUCELV	291.7	43.5	7	12	17					
ALDRLEAV	251.8	37.5	6	9	12					
SNAG	305.1	45.5	3	6	9					
DOUG FIR	526.7	78.5	1	4	6					
S SPRUCE	378.4	56.4	1	3	4					
<b>TOTAL</b>	<b>33.4</b>	<b>5.0</b>	<b>351</b>	<b>370</b>	<b>388</b>	<b>44</b>	<b>23</b>	<b>8</b>		

TC TSTATS		STATISTICS						PAGE 2	
		PROJECT RIPTIDE						DATE 12/13/2005	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	07W	18	AREAS 1&2	0001	169.00	45	416	1	W
SD: 1		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
		VAR.	S.E.%	LOW	AVG	HIGH	5	7	12
SD: 1		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
		VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12
HEMLEAV		26.3	3.9	27,175	28,285	29,396			
WHEMLOCK		73.6	11.0	21,773	24,457	27,142			
DOUGLEAV		195.9	29.2	1,738	2,455	3,172			
SPRUCELV		299.8	44.7	1,151	2,081	3,011			
ALDRLEAV		260.8	38.9	549	898	1,246			
SNAG									
DOUG FIR		526.7	78.5	69	322	574			
S SPRUCE		495.4	73.9	57	217	378			
<b>TOTAL</b>		36.0	5.4	55,567	58,715	61,863	52	26	9

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RIPTIDE		DATE 12/13/2005				
TWP	RGE	SECT.	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	15	AREA 3	0001	50.00	14	131	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	14	131	9.4							
CRUISE	5	45	9.0	10,406		.4				
DBH COUNT										
REFOREST										
COUNT	9	86	9.6							
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
WHEMLOCK	17	100.3	15.8	64		137.1	17,132	16,401	4,750	4,750
DOUGLEAV	12	27.9	23.7	92		85.7	15,913	15,591	3,742	3,742
HEMLEAV	8	33.2	20.3	81		74.3	12,158	11,600	3,078	3,078
DOUG FIR	5	43.9	16.6	66		65.7	8,704	8,439	2,405	2,405
ALDRLEAV	2	2.5	20.4	38		5.7	350	350	104	104
SNAG	1	.3	60.0	35		5.7	172	172	92	92
<b>TOTAL</b>	<b>45</b>	<b>208.1</b>	<b>18.2</b>	<b>71</b>		<b>374.3</b>	<b>54,429</b>	<b>52,553</b>	<b>14,170</b>	<b>14,170</b>
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK	179.9	26.8	55	75	95					
DOUGLEAV	192.8	28.7	133	187	241					
HEMLEAV	247.1	36.8	49	78	107					
DOUG FIR	370.9	55.3	13	29	45					
ALDRLEAV	544.2	81.1	1	7	13					
SNAG	670.8	100.0		13	26					
<b>TOTAL</b>	<b>81.2</b>	<b>12.1</b>	<b>342</b>	<b>389</b>	<b>436</b>	<b>264</b>	<b>135</b>	<b>46</b>		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK	55.8	14.9	85	100	115					
DOUGLEAV	61.6	16.5	23	28	33					
HEMLEAV	54.9	14.7	28	33	38					
DOUG FIR	81.1	21.7	34	44	53					
ALDRLEAV	374.2	100.0		3	5					
SNAG	254.2	67.9	0	0	0					
<b>TOTAL</b>	<b>28.5</b>	<b>7.6</b>	<b>192</b>	<b>208</b>	<b>224</b>	<b>32</b>	<b>17</b>	<b>6</b>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK	63.4	16.9	114	137	160					
DOUGLEAV	47.9	12.8	75	86	97					
HEMLEAV	55.3	14.8	63	74	85					
DOUG FIR	77.8	20.8	52	66	79					
ALDRLEAV	374.2	100.0		6	11					
SNAG	254.2	67.9	2	6	10					
<b>TOTAL</b>	<b>25.0</b>	<b>6.7</b>	<b>349</b>	<b>374</b>	<b>399</b>	<b>25</b>	<b>13</b>	<b>4</b>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK	69.7	18.6	13,346	16,401	19,455					
DOUGLEAV	47.7	12.7	13,604	15,591	17,578					
HEMLEAV	56.0	15.0	9,862	11,600	13,338					
DOUG FIR	75.3	20.1	6,741	8,439	10,138					
ALDRLEAV	374.2	100.0	0	350	699					
SNAG	254.2	67.9	55	172	288					
<b>TOTAL</b>	<b>23.2</b>	<b>6.2</b>	<b>49,299</b>	<b>52,553</b>	<b>55,806</b>	<b>21</b>	<b>11</b>	<b>4</b>		

TC PSTATS		PROJECT STATISTICS						PAGE 1			
JLONG		PROJECT		RIPTIDE2		DATE 12/13/2005					
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	07W	15	AREA 3	TAKE	225.00	118	802	1	W		
06N	07W	18	A4 R/W	A4RW							
06N	07W	18	AREAS 1&2	TAKE							
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		118	802	6.8							
CRUISE		39	261	6.7	28,083	.9					
DBH COUNT											
REFOREST											
COUNT		75	541	7.2							
BLANKS		4									
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
WHEMLOCK		205	110.3	16.4	65		162.6	24,416	24,084	6,420	6,420
DOUG FIR		37	12.8	16.3	62		18.6	2,404	2,329	661	661
S SPRUCE		11	1.6	16.0	59		2.3	209	209	55	55
R ALDER		8	.1	19.2	46		.2	20	20	6	6
<b>TOTAL</b>		<b>261</b>	<b>124.8</b>	<b>16.4</b>	<b>64</b>		<b>183.7</b>	<b>27,049</b>	<b>26,641</b>	<b>7,142</b>	<b>7,142</b>
		COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.			
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK		108.3	6.7	297	319	340					
DOUG FIR		347.5	21.5	57	72	88					
S SPRUCE		675.4	41.8	17	29	41					
R ALDER		652.0	40.4	4	7	10					
<b>TOTAL</b>		<b>90.0</b>	<b>5.6</b>	<b>404</b>	<b>428</b>	<b>451</b>	<b>324</b>	<b>165</b>	<b>56</b>		
		COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK		134.4	12.4	97	110	124					
DOUG FIR		309.7	28.5	9	13	16					
S SPRUCE		583.5	53.7	1	2	3					
R ALDER		399.8	36.8	0	0	0					
<b>TOTAL</b>		<b>126.2</b>	<b>11.6</b>	<b>110</b>	<b>125</b>	<b>139</b>	<b>637</b>	<b>325</b>	<b>111</b>		
		COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK		131.8	12.1	143	163	182					
DOUG FIR		295.7	27.2	14	19	24					
S SPRUCE		544.0	50.1	1	2	3					
R ALDER		394.0	36.3	0	0	0					
<b>TOTAL</b>		<b>122.5</b>	<b>11.3</b>	<b>163</b>	<b>184</b>	<b>204</b>	<b>600</b>	<b>306</b>	<b>104</b>		
		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
WHEMLOCK		137.1	12.6	21,044	24,084	27,123					
DOUG FIR		287.4	26.5	1,712	2,329	2,945					
S SPRUCE		636.2	58.6	87	209	331					
R ALDER		407.8	37.5	12	20	27					
<b>TOTAL</b>		<b>126.7</b>	<b>11.7</b>	<b>23,535</b>	<b>26,641</b>	<b>29,748</b>	<b>642</b>	<b>327</b>	<b>111</b>		



TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RIPTIDE		DATE 12/13/2005				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	18	AREAS 1&2	TAKE	169.00	45	193	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		45	193	4.3						
CRUISE		13	59	4.5	19,733	3				
DBH COUNT										
REFOREST										
COUNT		28	134	4.8						
BLANKS		4								
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
WHEMLOCK	54	111.5	16.5	64		165.3	25,744	25,557	6,719	6,719
DOUG FIR	3	3.2	14.3	46		3.6	339	322	99	99
S SPRUCE	2	2.0	15.5	59		2.7	217	217	59	59
<b>TOTAL</b>	<b>59</b>	<b>116.8</b>	<b>16.4</b>	<b>64</b>		<b>171.6</b>	<b>26,300</b>	<b>26,096</b>	<b>6,876</b>	<b>6,876</b>
SD:	1	COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.	
				LOW	AVG	HIGH	5	7	12	
WHEMLOCK		79.1	10.3	269	299	330				
DOUG FIR		470.5	61.3	2	6	9				
S SPRUCE		768.1	100.0		3	7				
<b>TOTAL</b>		<b>73.9</b>	<b>9.6</b>	<b>279</b>	<b>309</b>	<b>338</b>	<b>218</b>	<b>111</b>	<b>38</b>	
SD:	1	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	7	12	
WHEMLOCK		74.9	11.2	99	112	124				
DOUG FIR		526.7	78.5	1	3	6				
S SPRUCE		379.0	56.5	1	2	3				
<b>TOTAL</b>		<b>71.3</b>	<b>10.6</b>	<b>104</b>	<b>117</b>	<b>129</b>	<b>203</b>	<b>104</b>	<b>35</b>	
SD:	1	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	7	12	
WHEMLOCK		72.1	10.8	148	165	183				
DOUG FIR		526.7	78.5	1	4	6				
S SPRUCE		378.4	56.4	1	3	4				
<b>TOTAL</b>		<b>69.0</b>	<b>10.3</b>	<b>154</b>	<b>172</b>	<b>189</b>	<b>190</b>	<b>97</b>	<b>33</b>	
SD:	1	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	7	12	
WHEMLOCK		74.8	11.1	22,707	25,557	28,406				
DOUG FIR		526.7	78.5	69	322	574				
S SPRUCE		495.4	73.9	57	217	378				
<b>TOTAL</b>		<b>72.5</b>	<b>10.8</b>	<b>23,275</b>	<b>26,096</b>	<b>28,916</b>	<b>210</b>	<b>107</b>	<b>37</b>	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RIPTIDE		DATE 12/13/2005				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	15	AREA 3	TAKE	50.00	14	71	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	14	71	5.1							
CRUISE	5	22	4.4		7,211		3			
DBH COUNT										
REFOREST										
COUNT	9	49	5.4							
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
WHEMLOCK	17	100.3	15.8	64		137.1	17,132	16,401	4,750	4,750
DOUG FIR	5	43.9	16.6	66		65.7	8,704	8,439	2,405	2,405
<b>TOTAL</b>	<b>22</b>	<b>144.2</b>	<b>16.1</b>	<b>65</b>		<b>202.9</b>	<b>25,836</b>	<b>24,840</b>	<b>7,154</b>	<b>7,154</b>
SD:	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			
WHEMLOCK	104.2	22.2	119	153	187					
DOUG FIR	252.1	53.7	27	59	91					
<b>TOTAL</b>	<b>79.8</b>	<b>17.0</b>	<b>176</b>	<b>212</b>	<b>248</b>	<b>255</b>	<b>130</b>	<b>44</b>		
SD:	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			
WHEMLOCK	55.8	14.9	85	100	115					
DOUG FIR	81.1	21.7	34	44	53					
<b>TOTAL</b>	<b>39.6</b>	<b>10.6</b>	<b>129</b>	<b>144</b>	<b>159</b>	<b>63</b>	<b>32</b>	<b>11</b>		
SD:	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			
WHEMLOCK	63.4	16.9	114	137	160					
DOUG FIR	77.8	20.8	52	66	79					
<b>TOTAL</b>	<b>42.0</b>	<b>11.2</b>	<b>180</b>	<b>203</b>	<b>226</b>	<b>70</b>	<b>36</b>	<b>12</b>		
SD:	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			
WHEMLOCK	69.7	18.6	13,346	16,401	19,455					
DOUG FIR	75.3	20.1	6,741	8,439	10,138					
<b>TOTAL</b>	<b>46.5</b>	<b>12.4</b>	<b>21,752</b>	<b>24,840</b>	<b>27,928</b>	<b>87</b>	<b>44</b>	<b>15</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RIPTIDE		DATE 12/13/2005				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	18	AREAS 1&2	LEAV	169.00	45	231	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		45	231	5.1						
CRUISE		16	78	4.9	12,225	.6				
DBH COUNT										
REFOREST										
COUNT		29	153	5.3						
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
HEMLEAV	55	57.1	23.0	77		164.4	29,190	28,335	6,843	6,843
DOUGLEAV	9	6.5	20.1	57		14.2	2,467	2,455	561	561
SPRUCELV	7	2.7	28.1	82		11.6	2,089	2,081	510	510
ALDRLEAV	6	4.6	18.9	48		8.9	898	898	258	258
SNAG	1	1.6	27.0	71		6.2				
<b>TOTAL</b>	<b>78</b>	<b>72.3</b>	<b>22.8</b>	<b>74</b>		<b>205.3</b>	<b>34,643</b>	<b>33,769</b>	<b>8,173</b>	<b>8,173</b>
SD:	COEFF VAR.%	S.E.%	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
1			LOW	AVG	HIGH	5	7	12		
HEMLEAV	100.8	11.4	427	482	537					
DOUGLEAV	364.0	41.2	54	92	130					
SPRUCELV	381.1	43.2	53	93	133					
ALDRLEAV	398.4	45.1	11	20	29					
SNAG										
<b>TOTAL</b>	<b>73.5</b>	<b>8.3</b>	<b>630</b>	<b>687</b>	<b>745</b>	<b>216</b>	<b>110</b>	<b>38</b>		
SD:	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
1			LOW	AVG	HIGH	5	7	12		
HEMLEAV	37.9	5.7	54	57	60					
DOUGLEAV	245.7	36.6	4	6	9					
SPRUCELV	249.3	37.2	2	3	4					
ALDRLEAV	257.3	38.4	3	5	6					
SNAG	305.1	45.5	1	2	2					
<b>TOTAL</b>	<b>35.6</b>	<b>5.3</b>	<b>68</b>	<b>72</b>	<b>76</b>	<b>51</b>	<b>26</b>	<b>9</b>		
SD:	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
1			LOW	AVG	HIGH	5	7	12		
HEMLEAV	27.6	4.1	158	164	171					
DOUGLEAV	191.1	28.5	10	14	18					
SPRUCELV	291.7	43.5	7	12	17					
ALDRLEAV	251.8	37.5	6	9	12					
SNAG	305.1	45.5	3	6	9					
<b>TOTAL</b>	<b>16.9</b>	<b>2.5</b>	<b>200</b>	<b>205</b>	<b>211</b>	<b>11</b>	<b>6</b>	<b>2</b>		
SD:	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
1			LOW	AVG	HIGH	5	7	12		
HEMLEAV	26.3	3.9	27,223	28,335	29,447					
DOUGLEAV	195.9	29.2	1,738	2,455	3,172					
SPRUCELV	299.8	44.7	1,151	2,081	3,011					
ALDRLEAV	260.8	38.9	549	898	1,246					
SNAG										
<b>TOTAL</b>	<b>17.0</b>	<b>2.5</b>	<b>32,914</b>	<b>33,769</b>	<b>34,623</b>	<b>12</b>	<b>6</b>	<b>2</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RIPTIDE		DATE 12/13/2005				
FWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	07W	15	AREA 3	LEAV	50.00	14	60	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	14	60	4.3							
CRUISE	5	23	4.6	3,195			.7			
DBH COUNT										
REFOREST										
COUNT	9	37	4.1							
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	12	27.9	23.7	92		85.7	15,913	15,591	3,742	3,742
HEMLEAV	8	33.2	20.3	81		74.3	12,158	11,600	3,078	3,078
ALDRLEAV	2	2.5	20.4	38		5.7	350	350	104	104
SNAG	1	.3	60.0	35		5.7	172	172	92	92
TOTAL	23	63.9	22.2	84		171.4	28,593	27,713	7,015	7,015
	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
DOUGLEAV	119.6	24.9	274	366	457					
HEMLEAV	163.7	34.1	101	153	205					
ALDRLEAV	386.8	80.7	3	14	26					
SNAG	479.6	100.0		26	51					
TOTAL	59.6	12.4	489	559	628	142	73	25		
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
DOUGLEAV	61.6	16.5	23	28	33					
HEMLEAV	54.9	14.7	28	33	38					
ALDRLEAV	374.2	100.0		3	5					
SNAG	254.2	67.9	0	0	0					
TOTAL	22.5	6.0	60	64	68	20	10	4		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
DOUGLEAV	47.9	12.8	75	86	97					
HEMLEAV	55.3	14.8	63	74	85					
ALDRLEAV	374.2	100.0		6	11					
SNAG	254.2	67.9	2	6	10					
TOTAL	14.3	3.8	165	171	178	8	4	1		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	12		
DOUGLEAV	47.7	12.7	13,604	15,591	17,578					
HEMLEAV	56.0	15.0	9,862	11,600	13,338					
ALDRLEAV	374.2	100.0	0	350	699					
SNAG	254.2	67.9	55	172	288					
TOTAL	9.6	2.6	26,998	27,713	28,427	4	2	1		



TC TSTNDSUM

**Stand Table Summary**

**Project RIPTIDE**

**T06N R07W S18 TLEAV**

**T06N R07W S18**

**Twp Rge Sec Tract**  
**06N 07W 18 AREAS 1&2**

**Type**  
**LEAV**

**Acres**  
 169.00

**Plots**  
 45

**Sample Trees**  
 78

**Page: 2**  
**Date: 12/13/201**  
**Time: 9:07:47AM**

S Spc T	Sample DBH	FF Trees	Av Ht 16'	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
Totals	78	87	89	72.338	205.33	142.82	57.2	236.4	8173	33,769		13,812	5,707	

TC TSTNDSUM		Stand Table Summary												
Project RIPTIDE										T06N R07W S15				
T06N R07W S15 TLEAV										Page: 1				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Date:	Time:	12/13/200				
06N	07W	15	AREA 3	LEAV	50.00	14	23		11:46:45AM					
S Spec	T	Sample		Av	Trees/ BA/ Logs			Average Log		Net	Net	Totals		
		DBH	Trees	FF	Ht	16'	Tot	Acres	Acres	Acres	Net	Net	Tons	Cunits
DL		16	1	85	104	5.116	7.14	10.23	27.0	110.0	276	1,125	138	56
DL		18	1	86	113	4.042	7.14	8.08	38.0	130.0	307	1,051	154	53
DL		21	1	79	115	2.970	7.14	5.94	45.0	145.0	267	861	134	43
DL		24	1	85	114	2.274	7.14	6.82	46.0	190.0	314	1,296	157	65
DL		25	1	86	115	2.095	7.14	6.29	49.0	206.7	308	1,299	154	65
DL		26	3	85	120	5.812	21.43	17.44	54.7	231.1	953	4,030	477	201
DL		28	2	85	130	3.341	14.29	10.02	67.8	303.3	680	3,040	340	152
DL		34	2	85	118	2.266	14.29	6.80	93.7	425.0	637	2,889	318	144
DL	Totals	12	85	116		27.915	85.71	71.62	52.3	217.7	3,742	15,591	1,871	780
HL		15	1	92	86	7.567	9.29	15.13	23.5	95.0	356	1,438	178	72
HL		17	1	86	110	5.891	9.29	11.78	38.0	135.0	448	1,591	224	80
HL		18	1	85	108	5.255	9.29	15.76	27.3	93.3	431	1,471	215	74
HL		19	1	85	112	4.716	9.29	14.15	31.3	116.7	443	1,651	222	83
HL		24	2	84	92	5.911	18.57	14.78	48.2	184.0	712	2,719	356	136
HL		26	1	82	104	2.518	9.29	7.56	49.7	206.7	375	1,561	188	78
HL		36	1	78	125	1.314	9.29	3.94	79.3	296.7	313	1,169	156	58
HL	Totals	8	86	101		33.172	74.29	83.10	37.0	139.6	3,078	11,600	1,539	580
AL		18	1	86	41	1.617	2.86	1.62	31.0	70.0	50	113	25	6
AL		24	1	86	59	.909	2.86	1.82	29.5	130.0	54	236	27	12
AL	Totals	2	86	47		2.526	5.71	3.44	30.2	101.8	104	350	52	17
SN		60	1	88	41	.291	5.71	.29	315.0	590.0	92	172	46	9
SN	Totals	1	88	41		.291	5.71	.29	315.0	590.0	92	172	46	9
Totals		23	85	105		63.904	171.43	158.45	44.3	174.9	7015	27,713	3,508	1,386

TC TLOGSTVB

JLONG

**Log Stock Table - MBF**

Project: **RIPTIDE2**

**T06N R07W S18 TTAKE**

**T06N R07W S18**

**Twp Rge Sec Tract**  
**06N 07W 18 AREAS 1&2**

**Type Acres Plots Sample Trees**  
**TAKE 169.00 45 59**

**Page 1**  
**Date 12/13/2005**  
**Time 11:01:53AM**

Spp	T	S	So	Gr	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
H		DO	0		4																
H		DO	0		8																
H		DO	0		13																
H		DO	0		16																
H		DO	0		40																
H		DO	2		24		49		49	1.1					49						
H		DO	2		32		522	.7	518	12.0				52	186		206	74			
H		DO	2		40		2,286	.8	2,268	52.5				67	1118	599	397	86			
H		DO	3		22		6		6	.1					6						
H		DO	3		32		388		388	9.0			105	152	28	102					
H		DO	3		34		48		48	1.1			48								
H		DO	3		35		14		14	.3			14								
H		DO	3		36		20		20	.5			20								
H		DO	3		37		16	16.7	13	.3			13								
H		DO	3		40		669	1.0	662	15.3			235	181	247						
H		DO	3		41		26		26	.6			26								
H		DO	4		11		2		2	.1					2						
H		DO	4		12		8		8	.2			4	4							
H		DO	4		13		7		7	.2			7								
H		DO	4		14		7		7	.2			7								
H		DO	4		16		65		65	1.5			65								
H		DO	4		18		7		7	.2			7								
H		DO	4		20		55		55	1.3		30	26								
H		DO	4		21		16		16	.4				16							
H		DO	4		22		35		35	.8			7	7	21						
H		DO	4		24		58		58	1.3			58								
H		DO	4		25		29		29	.7			5		24						
H		DO	4		26		8		8	.2			8								
H		DO	4		28		9		9	.2			9								
H		Totals					4,351		4,319	97.9		30	664	368	439	1457	599	603	160		
D		DO	3		32		50	5.7	47	86.8			13		34						
D		DO	4		20		3		3	5.3			3								
D		DO	4		26		4		4	7.9			4								
D		Totals					57	5.0	54	1.2			20		34						
S		DO	0		39																
S		DO	3		34		9		9	25.0			9								
S		DO	3		40		28		28	75.0				28							
S		Totals					37		37	.8			9		28						
Total All Species							4,445		4,410	100.0		30	693	368	501	1457	599	603	160		



**Log Stock Table - MBF**  
**Project: RIPTIDE**

T06N R07W S15 TTAKE

T06N R07W S15

Twp 06N Rge 07W Sec 15 Tract AREA 3 Type TAKE Acres 50.00 Plots 14 Sample Trees 22  
 Page 1  
 Date 12/13/2005  
 Time 11:49:20AM

S Spp	So rt	Gr de	Log Len	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
H	DO	0	4																
H	DO	0	5																
H	DO	0	8																
H	DO	0	10																
H	DO	0	20																
H	DO	0	24																
H	DO	2	32	43		43	5.3					43							
H	DO	2	40	159		159	19.4					100		59					
H	DO	3	26	35	15.8	30	3.6							30					
H	DO	3	32	70	9.3	64	7.8				64								
H	DO	3	33	11		11	1.4				11								
H	DO	3	34	22		22	2.7							22					
H	DO	3	36	46		46	5.6							46					
H	DO	3	40	392	4.0	376	45.8				101		275						
H	DO	4	14	5		5	.6				5								
H	DO	4	15	6		6	.7				6								
H	DO	4	18	22		22	2.7				22								
H	DO	4	23	4		4	.5				4								
H	DO	4	24	6		6	.7				6								
H	DO	4	28	18		18	2.2				18								
H	DO	4	40	17	50.0	9	1.1				9								
H	Totals			857	4.3	820	66.0				181	64	275	212	30	59			
D	DO	0	4																
D	DO	0	5																
D	DO	2	32	78		78	18.4					47	31						
D	DO	2	40	89	2.2	87	20.6								87				
D	DO	3	28	110	4.3	105	25.0					105							
D	DO	3	35	27		27	6.3				27								
D	DO	3	36	28		28	6.7				28								
D	DO	3	40	30		30	7.1												
D	DO	4	14	7		7	1.6				7								
D	DO	4	20	8		8	1.8												
D	DO	4	40	59	11.1	53	12.5												
D	Totals			435	3.0	422	34.0				62	91	152	31		87			
Total All Species				1,292	3.9	1,242	100.0				243	154	427	243	30	146			