



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Cost Summary Lost Fire Combination Sale 341-06-08

District: Astoria

Date: 10/7/05

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$1,657,864.90	\$664,209.00	\$2,322,073.90
		<b>Project Work</b>	(\$451,735.00)
		<b>Advertised Value</b>	\$1,870,338.90



# Timber Sale Appraisal Timber Description Lost Fire Combination Sale 341-06-08

"STEWARDSHIP IN FORESTRY"

**District:** Astoria

**Location:** Portions of Sections 9, 16, 17, & 18, T4N, R7W, W.M., Clatsop County, Oregon.

**Date:** 10/7/05

**Stand Stocking:** 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	17	0	98
Western Hemlock / Fir	15	0	97
Sitka Spruce	15	0	98
Red Cedar	19	0	95
Alder (Red)	14	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Red Cedar	Alder (Red)	Total
2S	1,571	1,394	0	0	391	3,356
3S	1,479	1,259	13	1	592	3,344
4S	248	301	4	0	1,117	1,670
<b>Total</b>	<b>3,298</b>	<b>2,954</b>	<b>17</b>	<b>1</b>	<b>2,100</b>	<b>8,370</b>

**Comments:** Pond Values Used: 3rd Quarter 2005.

Log Markets: Mist, Claskanie, Tillamook, Banks

Other Costs + P&R:

Additional Logging Costs:

100% branding and painting - \$1/MBF x 8,370 MBF = \$8,370

Additional cutting costs (direct. fell/girdle tail lift trees,ect.) \$3/MBF x 3,757 MBF = \$11,271

Skid trail/cable corridor layout - \$3/MBF x 3,757 = \$11,271

Rig intermediate supports - 8 @ \$50/each = \$400

"Loggers Choice" Dirt Spurs in Areas 3 & 5 - 6 sta. x \$125/sta. = \$750

"Loggers Choice" Landing Rock in Area 5:

100cy Pit-run X \$3.07/cy (load & haul) = \$307

Snag Creation - Area 5: Create 15 snags x \$45/snag = \$675

Total Other Costs + P&R = \$33,044.00

Other Costs No P&R:

Areas 2 & 5: Use of dump truck to haul slash to waste area - 40 hrs. x \$59/hr. = \$2,360

Additional shovel time to load slash - 20 hrs. x \$87.50 = \$1,750

Burning Slash Piles at Lost Quarry: 0.25 Ac.X\$1,980 = \$495

Pile Slash at Cable Landings Areas 1, 2, and 5: 7 landings x \$262.50 = \$1,838

Excavator Slash Piling: 123 hrs. x \$120 = \$14,760

Excavator Move in: 2 @ \$945 = \$1,890

Additional Fuel Cost - \$9/MBF x 8,370 MBF = \$75,330

Total non-P&R Costs = \$98,423.00



# Timber Sale Appraisal Logging Conditions Lost Fire Combination Sale 341-06-08

"STEWARDSHIP IN FORESTRY"

<b>Combination#: 1</b>	Douglas - Fir	22.96%		
	Western Hemlock / Fir	22.31%		
	Sitka Spruce	5.88%		
	Red Cedar	100.00%		
	Alder (Red)	25.97%		
<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding:</b> Yes	
<b>Logging System:</b>	Track Skidder		<b>Process:</b> Feller Buncher	
<b>Tree Size:</b>	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF			
<b>Loads/Day:</b>	10		<b>Bd. Ft./Load:</b> 4,000	
<b>Cost/MBF:</b>	\$87.97			
<b>Machines:</b>	Feller Buncher w/ Delimber			
	Log Loader (B)			
	Stroke Delimber (B)			
	Track Skidder			
<b>Combination#: 2</b>	Douglas - Fir	28.65%		
	Western Hemlock / Fir	30.71%		
	Alder (Red)	37.94%		
	<b>Yarding Distance:</b>	Medium (800 ft)		<b>Downhill Yarding:</b> No
	<b>Logging System:</b>	Cable: Large Tower >=70		<b>Process:</b> Stroke Delimber
<b>Tree Size:</b>	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF			
<b>Loads/Day:</b>	9		<b>Bd. Ft./Load:</b> 3,500	
<b>Cost/MBF:</b>	\$118.88			
<b>Machines:</b>	Log Loader (A)			
	Stroke Delimber (A)			
	Tower Yarder (Large)			
<b>Combination#: 3</b>	Douglas - Fir	15.49%		
	Western Hemlock / Fir	15.04%		
	Sitka Spruce	30.12%		
	Alder (Red)	11.55%		
	<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding:</b> Yes
<b>Logging System:</b>	Track Skidder		<b>Process:</b> Manual Falling/Delimiting	
<b>Tree Size:</b>	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF			
<b>Loads/Day:</b>	7		<b>Bd. Ft./Load:</b> 3,800	
<b>Cost/MBF:</b>	\$122.76			
<b>Machines:</b>	Log Loader (B)			
	Track Skidder			

<b>Combination#: 4</b>	Douglas - Fir	32.91%	
	Western Hemlock / Fir	31.95%	
	Sitka Spruce	64.00%	
	Alder (Red)	24.54%	
<b>Yarding Distance:</b>	Medium (800 ft)		<b>Downhill Yarding:</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70		<b>Process:</b> Manual Delimiting
<b>Tree Size:</b>	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
<b>Loads/Day:</b>	5		<b>Bd. Ft./Load:</b> 3,500
<b>Cost/MBF:</b>	\$189.52		
<b>Machines:</b>			
	Log Loader (A)		
	Tower Yarder (Medium)		



# Timber Sale Appraisal Logging Costs Lost Fire Combination Sale 341-06-08

"STEWARDSHIP IN FORESTRY"

Date: 10/7/05

Operating Seasons: 3.0

Profit & Risk: 18%

Project Costs: \$451,735

Other Costs (P/R): \$33,044

Slash Disposal: \$0

Other Costs: \$98,423

Road Maintenance: \$5.15

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	3.5
Sitka Spruce	\$0.00	2.0	3.5
Red Cedar	\$0.00	2.0	3.5
Alder (Red)	\$0.00	2.0	3.0



# Timber Sale Appraisal Logging Costs Breakdown Lost Fire Combination Sale 341-06-08

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Red Cedar	Alder (Red)
<b>Logging</b>	135.63	135.14	163.44	87.97	128.64
<b>Road Maintenance</b>	5.26	5.31	5.26	5.42	5.42
<b>Fire Protection</b>	0.97	0.97	0.97	0.97	0.97
<b>Hauling</b>	39.13	67.73	67.04	69.16	80.84
<b>Other (P/R appl.)</b>	3.95	3.95	3.95	3.95	3.95
<b>Profit &amp; Risk</b>	33.29	38.36	43.32	30.14	39.57
<b>Slash Disposal</b>	0.00	0.00	0.00	0.00	0.00
<b>Scaling</b>	2.00	2.00	2.00	2.00	2.00
<b>Other</b>	11.76	11.76	11.76	11.76	11.76
<b>Total</b>	231.99	265.22	297.74	211.37	273.15

<b>Amortization</b>	0.00	0.00	0.00	0.00	0.00
<b>Pond Value</b>	625.77	386.06	392.65	815.00	589.44
<b>Stumpage</b>	393.78	120.84	94.91	603.63	316.29
<b>Amortized</b>	0.00	0.00	0.00	0.00	0.00



# Timber Sale Appraisal Summary Lost Fire Combination Sale 341-06-08

"STEWARDSHIP IN FORESTRY"

**Amortized**

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

**Unamortized**

	Douglas - Fir	Westem Hemlock / Fir	Sitka Spruce	Red Cedar	Alder (Red)
<b>MBF</b>	3,298.00	2,954.00	17.00	1.00	2,100.00
<b>Value</b>	393.78	120.84	94.91	603.63	316.29
<b>Total</b>	1,298,686.44	356,961.36	1,613.47	603.63	664,209.00

**Gross Timber Sale Value**

**Recovery \$2,322,073.90**

Prepared by: Bryce Rodgers

Date: 10/7/05

District: Astoria

Phone: (503) 325-5451



**Road Maintenance Cost Summary (Interim and Post Harvest)**

Sale: Lost Fire Combination  
 Date: April 18, 2005  
 By: Bryce Rodgers

MBF: 8,370  
 \$\$/MBF: \$5.15

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Progressive Operations Entries (2)	Grader 14G	\$570	2	65	\$84	\$6,600
	Dump Truck 12CY (2 @ \$119)	\$119	<del>2</del>	50	\$59	\$3,188
	FE Loader C966	\$570	2	25	\$79	\$3,115
	Vibratory Roller	\$570	2	65	\$79	\$6,275
Final Haul Road Maintenance Haul Route	Grader 14G	\$570	1	85	\$84	\$7,710
	Dump Truck 12CY (2 @ \$119)	\$238	1	50	\$59	\$3,188
	FE Loader C966	\$570	1	25	\$79	\$2,545
	Vibratory Roller	\$570	1	85	\$79	\$7,285
	Water Truck 2,500 gallon Labor	\$139	1	40	\$70	\$2,939
				10	\$25	\$250
<b>Total</b>						<b>\$43,095</b>

**Interim Maintenance**

Production Rates

	Miles/day	Distance(miles)	Days	Hours
Grader	1.5	7.2	6.5	65.00
Vibratory Roller	1.5	7.2	6.5	65.00

**Final Road Maintenance**

Production Rates

	Miles/day	Distance(miles)	Days	Hours
Grader	1.5	14.8	8.5	85.00
Vibratory Roller	1.5	14.8	8.5	85.00

**\*Maintenance calculations were determined as follows:**

Hwy. 26. via. Quartz cr. August fire= 5.6 miles  
 Roads to Area 1= 1.2  
 Roads in Area 3= 1.5  
 Roads in Area 5= .5  
 East Lost Lake rd. 2.2  
 West Lost Lake rd.= 2.15  
 I5 to I6= 1.1  
 Quarry rd.= 0.5  
**Total Miles: 14.75**

**SUMMARY OF ALL PROJECT COSTS**

SALE NAME: Lost Fire Combination

**NEW CONSTRUCTION:**

Project No.	Road segment	Length/Sta	Cost
Project No. 1	1A-1B, 1C-1D, 1E-1F, 2A-2B, 3A-3B, 3C-3D, 3E-3F, 3G-3H 3I-3J, 5A-5B	137.86	\$107,860
<b>TOTALS</b>	2.61 miles	137.86 Stations	\$107,860

**ROAD IMPROVEMENT:**

Project No.	Road segment	Length/Sta	Cost
Project No. 2	I1-I2, I3-I4, I5-I6, I7-I8, I9-I10	118.70	\$36,648
Project No. 3	L1-L2 L3-L4	86.67 63.28	\$59,826 \$72,719
<b>TOTALS</b>	5.09 miles	268.65 Stations	\$169,193

**SPECIAL PROJECTS:**

Project No.	Description	Cost
Project No. 4	Lost Quarry Development and Rock Crushing	\$144,177
Project No. 5	Road Vacating	\$8,624
Project No. 6	Road Stabilization Application	\$11,492
	Project Road Maintenance	\$5,930
<b>TOTALS</b>		\$170,223

**MOVE IN:**

Equipment	Cost
518 Rubber Tired Skidder	\$525
D-8 Dozer	\$1,030
12cy Dump Truck (5 @ \$119 each)	\$595
Grader (14G)	\$570
Vibratory Roller	\$570
Water Truck (2,500 gal.)	\$139
Excavator (large C330)	\$1,030
<b>TOTAL</b>	\$4,459

**GRAND TOTAL** **\$451,735**

Compiled By: Bryce Rodgers/Dan Goody

Date: 5/20/2005

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Lost Fire Combination  
 ROAD: 1A-1B(31.65), 1C-1D(1.85), 1E-1F(16.45), 2A-2B(1.34), 3A-3B(21.82), 3C-3D(15.64), 3E-3F(10.0), 3G-3H(27.08), 3I-3J(10.85), 5A-5B(1.17)

NEW CONSTRUCTION: 137.86 STATIONS 2.61 MILES  
 IMPROVEMENT:            STATIONS            MILES

<b>CLEARING &amp; GRUBBING</b>						
Method	Acres/amount	x	Rate/Acre	=	Cost	
Scatter Debris Outside R/W	12.00	x	\$980.00	=	\$11,760.00	
Haul Clearing Debris (\$\$/hr) 12 cy Dump Truck	16.00	x	\$59.00	=	\$944.00	
		x		=		
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>						
					<b>\$12,704</b>	

<b>EXCAVATION</b>						
Material	Cy/amount	x	Rate	=	Cost	
1A-1B, 1E-1F Common Drift \$\$/cy	4,400.00	x	\$1.48	=	\$6,512.00	
1E-1F End Haul \$\$/cy	4,620.00	x	\$2.90	=	\$13,398.00	
1A-1B, 1E, 1F Embankment Compaction \$\$/cy	4,282.00	x	\$0.45	=	\$1,926.90	
1A-1B, 1E, 1F Cut Slope Rounding \$\$/sta.	10.10	x	\$31.00	=	\$313.10	
1C-1D, 2A-2B, 5A-5B Low Standard Design \$\$/cy	4.36		\$139.00	=	\$606.04	
Common Drift \$\$/cy	8,315.00	x	\$1.48	=	\$12,308.20	
3A-3B, 3C-3D, 3E-3F, 3G-3H, 3I-3J End Haul \$\$/cy	1,985.00	x	\$2.90	=	\$5,756.50	
Embankment Compaction \$\$/cy	7,705.0	x	\$0.45	=	\$3,467.25	
Cut Slope Rounding \$\$/sta.	11	x	\$31.00	=	\$341.00	
1D, 2B, 14+70 on 3A-3B, 21+10 on 3G-3H, 5B Landing Construction \$\$/ Landing	5	x	\$287.00	=	\$1,435.00	
<b>SUB TOTAL FOR EXCAVATION</b>						
					<b>\$46,062</b>	

<b>CULVERT MATERIALS AND INSTALLATION</b>								
Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost	
1A-1B 1+90	18"CPP	30	\$12.25	\$367.50				
1A-1B 5+00	18"CPP	30	\$12.25	\$367.50				
1A-1B 5+60	24"CPP	40	\$21.00	\$840.00				
1A-1B 8+60	18"CPP	40	\$12.25	\$490.00				
1A-1B 15+90	18"CPP	30	\$12.25	\$367.50				
1E-1F 3+70	18"CPP	35	\$12.25	\$428.75				
1E-1F 8+60	18"CPP	30	\$12.25	\$367.50				
1E-1F 11+89	18"CPP	30	\$12.25	\$367.50				
3A-3B 0+30	18"CPP	30	\$12.25	\$367.50				
3A-3B 4+00	18"CPP	30	\$12.25	\$367.50				
3A-3B 13+85	18"CPP	30	\$12.25	\$367.50				
3A-3B 17+35	18"CPP	30	\$12.25	\$367.50				
3A-3B 20+25	18"CPP	30	\$12.25	\$367.50				
3C-3D 0+50	18"CPP	50	\$12.25	\$612.50				
3C-3D 8+60	18"CPP	30	\$12.25	\$367.50				
3C-3D 12+24	18"CPP	30	\$12.25	\$367.50				
3E-3F 5+72	18"CPP	30	\$12.25	\$367.50				
3G-3H 1+65	18"CPP	30	\$12.25	\$367.50				
3G-3H 3+50	18"CPP	30	\$12.25	\$367.50				
3G-3H 6+00	18"CPP	30	\$12.25	\$367.50				
3G-3H 13+50	18"CPP	30	\$12.25	\$367.50				
3G-3H 18+00	18"CPP	30	\$12.25	\$367.50				
3I-3J 5+50	18"CPP	30	\$12.25	\$367.50				
Other/miscellaneous:	Description	Quantity/Hrs.	Rate	Cost				
	Bevel inlet on 24" culvert	1	\$35.00	\$35.00				
Culvert stakes & markers:	6" FIBERGLASS MARKERS	23	\$14.10	\$324.30				
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>								
							<b>\$9,713</b>	

**Subtotal \$68,479**

Compiled by: Bryce Rodgers

Date: 5/20/2005

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Lost Fire Combination

SURFACING:		Description	Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:		Grade, Shape and Ditch 16'	122.31	x	\$18.20	\$2,226.04
		Subgrade Compaction	122.31	x	\$14.80	\$1,810.19
		Grade, Shape and Ditch 14'	15.55	x	\$13.45	\$209.15

\$4,245

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)	1A to 1B Volume (CY) per	0+00 to 17+95 Number of					
Base Rock	4"-0" Crushed	0+00 to 17+95	10	station 63	stations 17.95	1,131	\$2.75	\$3,110		
Turnouts	4"-0" Crushed	2+29, 11+90	10	turnout 28	turnouts 2	56	\$2.75	\$154		
Junction	4"-0" Crushed	7+71	10	junction 12	junction 1	12	\$2.75	\$33		
Curve Widening	4"-0" Crushed	0+54 to 3+11	10	40	1	40	\$2.75	\$110		
Curve Widening	4"-0" Crushed	5+05 to 7+14	10	13	1	13	\$2.75	\$36		
Ditch Armor	24"-6"	11+90 to 14+90	N/A			48	\$2.58	\$124		
Culvert Bedding Rock	1 1/2"-0" Crushed	5+60	N/A			36	\$2.75	\$99		
Traction Rock	3/4"-0" Crushed	2+29 to 5+86	2	station 13	stations 3.57	46	\$2.75	\$128		
Traction Rock	3/4"-0" Crushed	7+14 to 9+21	2	station 13	stations 2.07	27	\$2.75	\$74		
Traction Rock	3/4"-0" Crushed	13+82 to 17+95	2	station 13	stations 4.13	54	\$2.75	\$148		
Total Rock for Road Segment:			1A to 1B			1,463				

\$4,015

ROAD SEGMENT	1E to 1F			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	1E to 1F Volume (CY) per	0+00 to 16+45 Number of					
Base Rock	4"-0" Crushed	0+00 to 16+45	8	station 50	stations 16.45	823	\$2.75	\$2,262		
Junction	4"-0" Crushed	0+00	8	junction 50	junction 1.00	50	\$2.75	\$138		
Turnout	4"-0" Crushed	8+30	8	turnout 22	turnouts 1	22	\$2.75	\$61		
Turnaround	4"-0" Crushed	15+00	8	turnaround 24	T/A 1	24	\$2.75	\$66		
Curve Widening	4"-0" Crushed	0+00 to 2+00	8	34	1	34	\$2.75	\$94		
Junction	3/4"-0" Crushed	0+00	N/A	junction 24	junction 1	24	\$2.75	\$66		
Traction Rock	3/4"-0" Crushed	2+02 to 10+27	2	station 13	stations 8.25	107	\$2.75	\$295		
Landing	6"-0" Pit-run	16+45	N/A	landing 60	landings 1	60	\$3.07	\$184		
Total Rock for Road Segment:			1E to 1F			1,144				

\$3,165

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)	2A to 2B Volume (CY) per	0+00 to 1+34 Number of					
Base Rock	4"-0" Crushed	0+00 to 1+34	8	station 50	stations 1.34	67	\$2.75	\$184		
Junction	4"-0" Crushed	0+00	8	junction 24	junction 1	24	\$2.75	\$66		
Junction	3/4"-0" Crushed	0+00	2	12	1	12	\$2.75	\$33		
Landing	6"-0" Pit-run	1+34	N/A	landing 60	landings 1	60	\$3.07	\$184		
Total Rock for Road Segment:			2A to 2B			163				

\$467

ROAD SEGMENT	3A to 3B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	3A to 3B Volume (CY) per	0+00 to 21+83 Number of					
Base Rock	4"-0" Crushed	0+00 to 21+83	8	station 50	stations 21.83	1,092	\$2.75	\$3,002		
Turnouts	4"-0" Crushed	3+35, 13+85	8	turnout 22	turnouts 2.00	44	\$2.75	\$121		
Turnouts	4"-0" Crushed	14+70, 18+72	8	turnout 22	turnouts 2	44	\$2.75	\$121		
Curve Widening	4"-0" Crushed	6+57 to 8+94	8	12	1	12	\$2.75	\$33		
Traction Rock	3/4"-0" Crushed	1+79 to 8+30	2	station 13	stations 6.51	85	\$2.75	\$233		
Traction Rock	3/4"-0" Crushed	10+85 to 21+83	2	station 13	stations 10.98	143	\$2.75	\$393		
Landing	6"-0" Pit-run	14+70	N/A	landing 60	Landings 1.00	60	\$3.07	\$184		
Total Rock for Road Segment:			3A to 3B			1,479				

\$4,086

ROAD SEGMENT	3C to 3D			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	3C to 3D Volume (CY) per	0+00 to 15+64 Number of					
Base Rock	4"-0" Crushed	0+00 to 15+64	8	station 50	stations 15.64	782	\$2.75	\$2,151		
Turnouts	4"-0" Crushed	4+20, 11+04	8	turnout 22	turnouts 2	44	\$2.75	\$121		
Turnaround	4"-0" Crushed	14+24	8	turnaround 24	T/A 1	24	\$2.75	\$66		
Traction Rock	3/4"-0" Crushed	1+15 to 4+65	2	station 13	stations 3.50	46	\$2.75	\$128		
Landing	6"-0" Pit-run	15+64	N/A	landing 60	landings 1	60	\$3.07	\$184		
Total Rock for Road Segment:			3C to 3D			956				

\$2,647

ROAD SEGMENT	3E to 3F			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	3E to 3F Volume (CY) per	0+00 to 10+00 Number of					
Base Rock	4"-0" Crushed	0+00 to 10+00	8	station 50	stations 10.00	500	\$2.75	\$1,375		
Junction	4"-0" Crushed	0+00	8	48	1	48	\$2.75	\$132		
Turnouts	4"-0" Crushed	3+60, 9+40	8	turnout 22	turnouts 2	44	\$2.75	\$121		
Turnaround	4"-0" Crushed	7+70	8	turnaround 24	T/A 1	24	\$2.75	\$66		
Traction Rock	3/4"-0" Crushed	0+00 to 3+60	2	station 13	stations 3.6	47	\$2.75	\$129		
Landing	6"-0" Pit-run	10+00	N/A	landing 60	landings 1	60	\$3.07	\$184		
Total Rock for Road Segment:			3E to 3F			723				

\$2,007

ROAD SEGMENT	3G to 3H			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	3G to 3H Volume (CY) per	0+00 to 27+08 Number of					
Base Rock	4"-0" Crushed	0+00 to 27+08	8	station 50	stations 27.08	1,354	\$2.75	\$3,724		
Turnouts	4"-0" Crushed	8+50, 21+10	8	turnout 22	turnouts 2.00	44	\$2.75	\$121		
Turnaround	4"-0" Crushed	26+50	8	turnaround 24	T/A 1	24	\$2.75	\$66		
Curve Widening	4"-0" Crushed	19+77 to 21+91	8	32	1	32	\$2.75	\$88		
Traction Rock	3/4"-0" Crushed	13+57 to 22+71	2	station 13	stations 9.14	119	\$2.75	\$327		
Landing	6"-0" Pit-run	21+10, 27+08	N/A	landing 60	landings 2	120	\$3.07	\$368		
Total Rock for Road Segment:			3G to 3H			1,693				

\$4,694

ROAD SEGMENT	3I to 3J			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
	Application	Rock Size and Type	Location	Depth of Rock (inches)	3I to 3J		0+00 to 10+85				
					Volumes (CY) per	Number of	Number of				Number of
Base Rock	4"-0" Crushed	0+00 to 10+85	8	station	50	stations	10.85	543	\$2.75	\$1,492	
Junction	4"-0" Crushed	0+00	8	junction	36	junctions	1	36	\$2.75	\$99	
Turnout	4"-0" Crushed	6+50	8	turnout	22	turnouts	1.00	22	\$2.75	\$61	
Turnaround	4"-0" Crushed	9+90	8	turnaround	24	T/A	1	24	\$2.75	\$66	
Traction Rock	3/4"- 0" Crushed	2+11 to 7+49	2	station	13	stations	5.38	70	\$2.75	\$192	
Landing	6"-0" Pit-run	10+85	N/A	landing	60	landings	1	60	\$3.07	\$184	
Total Rock for Road Segment: 3I to 3J								754			\$2,094
Processing:											
Description				No. sta.	Rate/sta.	Cost					
Water, Process & Compact Crushed Rock, 4"-0" (10" road in 2 lifts)				17.95	\$82.80	\$1,486					
( 8" roads in 1 lift)				104.36	\$41.40	\$4,321					
Water, Process & Compact 3/4"-0" Traction Rock				57.13	\$41.40	\$2,365					
SUB TOTAL FOR SURFACING											
				48	480	7,031	36	779	8,374	8,374	\$35,591
SPECIAL PROJECTS:											
Waste Areas Seeding and Mulching (acres)								No. sta./ft./cy.	Rate per sta./ft./cy.	Cost	
Straw bales								0.5	\$1,315.00	\$657	
Fill Armor Placement with Excavator (cy)								90	\$4.25	\$382	
Fabric 61/2 oz. woven x 12.5' wide								36	\$2.00	\$72	
								2820	\$0.95	\$2,679	
SUB TOTAL FOR SPECIAL PROJECTS											
										\$3,790	\$3,790
GRAND TOTAL											\$107,860

Compiled By: Bryce Rodgers

Date: 5/20/2005

## SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Lost Fire Combination  
 ROAD: 11-12(17.9), 13-14(15.2), 15-16(58.2), 17-18(6.8), 19-110(20.6)

NEW CONSTRUCTION: \_\_\_\_\_ STATIONS \_\_\_\_\_ MILES  
 IMPROVEMENT: 118.70 STATIONS 2.25 MILES

### CLEARING & GRUBBING

Method	Acres/amount	x	Rate/Acre	=	Cost
11-12, 15-16, 17-18 Scatter Debris Outside R/W	0.20	x	\$980.00	=	\$196.00
		x		=	

**SUB TOTAL FOR CLEARING & GRUBBING**

**\$196**

### EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
15-16 End Haul \$\$/cy	3,059	x	\$2.90	=	\$8,871.10
15-16 Embankment Compaction \$\$/cy	3,059	x	\$0.45	=	\$1,376.55
12, 18 Construct Landings \$\$/Landing	2	x	\$287.00	=	\$574.00
17-18 End Haul \$\$/cy	425	x	\$2.90	=	\$1,232.50
17-18 Embankment Compaction \$\$/cy	425	x	\$0.45	=	\$191.25

**SUB TOTAL FOR EXCAVATION**

**\$12,245**

### CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
11-12 2+20	18"CPP	25	\$12.25	\$306.25			
11-12 8+00	18"CPP	30	\$12.25	\$367.50			
13-14 3+90	18"CPP	30	\$12.25	\$367.50			
13-14 5+15	24"CPP	40	\$21.00	\$840.00			
13-14 8+50	24"CPP	40	\$21.00	\$840.00			
13-14 11+30	18"CPP	30	\$12.25	\$367.50			
13-14 15+00	18"CPP	35	\$12.25	\$428.75			
15-16 2+35	18"CCP	30	\$12.25	\$367.50			
15-16 8+00	18"CCP	30	\$12.25	\$367.50			
15-16 12+30	18"CCP	30	\$12.25	\$367.50			
15-16 30+25	18"CCP	30	\$12.25	\$367.50			
15-16 34+35	18"CCP	30	\$12.25	\$367.50			
15-16 40+45	18"CCP	30	\$12.25	\$367.50			
15-16 46+90	24"CCP	40	\$21.00	\$840.00			
15-16 54+40	18"CCP	30	\$12.25	\$367.50			
15-16 55+35	24"CCP	40	\$21.00	\$840.00			
15-16 57+75	18"CCP	30	\$12.25	\$367.50			

Other/miscellaneous:	Description	Quantity/Hrs.	Rate	Cost
Culvert stakes & markers:	Beveling 24" culverts	4	\$35.00	\$140.00
	6" FIBERGLASS MARKERS	17	\$14.10	\$239.70
	Additional markers for existing culverts	2	\$14.10	\$28.20

**SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION**

**\$8,545**

**Subtotal**

**\$20,987**

Compiled by: Bryce Rodgers

Date: 5/20/2005

**SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Lost Fire Combination

SURFACING:		Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:	Description				
	Grade, Shape and Ditch 16'	118.70	x	\$18.20	\$2,160.34
	Subgrade Compaction ( For Segment I1 to I2 only.	2.50	x	\$14.80	\$37.00
Note ( other road segments require level rock/misc. rock).					
See Processing for costs.					

\$2,197

ROAD SEGMENT	I1 to I2			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Application	Rock Size and Type	Location	Depth of Rock (inches)	I1 to I2	Sta. to Sta.				
					I1 to I2	0+00 to 17+90				
					Volume (CY) per	Number of				
Surface Rock	1 1/2"-0" Crushed	0+00 to 2+50	3	station	19	stations	2.5	48	\$2.75	\$131
Junctions	3/4"-0" Crushed	0+00	N/A	junction	12	junction	1.00	12	\$2.75	\$33
Leveling Rock	4"-0" Crushed	0+00 to 17+90	N/A					200	\$2.75	\$550
Culvert Backfill Rock	1 1/2"-0" Crushed	2+20	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	8+00	N/A					24	\$2.75	\$66
Landing Rock	6"-0" pitrun	17+90	N/A					60	\$3.07	\$184
Total Rock for Road Segment:								368		

\$1,030

ROAD SEGMENT	I3 to I4			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Application	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4	Sta. to Sta.				
					I3 to I4	0+00 to 15+20				
					Volume (CY) per	Number of				
Junction	4"-0" Crushed	0+00	N/A	junction	20	junctions	1.00	20	\$2.75	\$55
Junction	3/4"-0" Crushed	0+00	N/A	junction	12	junctions	1.00	12	\$2.75	\$33
Culvert Backfill Rock	1 1/2"-0" Crushed	3+90	N/A					12	\$2.75	\$33
Culvert Bedding Rock	1 1/2"-0" Crushed	5+15	N/A					36	\$2.75	\$99
Dissipator	24"-6" Rip Rap	5+15	N/A					12	\$2.58	\$31
Fill Armor	24"-6" Rip Rap	5+15	N/A					36	\$2.58	\$93
Base Rock Restoration	4"-0" Crushed	5+15	N/A					36	\$2.75	\$99
Culvert Bedding Rock	1 1/2"-0" Crushed	8+50	N/A					40	\$2.75	\$110
Dissipator	24"-6" Rip Rap	6+50	N/A					12	\$2.58	\$31
Fill Armor	24"-6" Rip Rap	6+50	N/A					24	\$2.58	\$62
Base Rock Restoration	4"-0" Crushed	6+50	N/A					36	\$2.75	\$99
Culvert Backfill Rock	1 1/2"-0" Crushed	11+30	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	15+00	N/A					24	\$2.75	\$66
Leveling Rock	4"-0" Crushed	15+20	N/A					36	\$2.75	\$99
Leveling Rock	1 1/2"-0" Crushed	0+00 to 15+20	N/A					150	\$2.75	\$413
Surface Rock	1 1/2"-0" Crushed	0+00 to 15+20	3	station	19	stations	15	289	\$2.75	\$794
Total Rock for Road Segment:								799		

\$2,182

ROAD SEGMENT	I5 to I6			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Application	Rock Size and Type	Location	Depth of Rock (inches)	I5 to I6	Sta. to Sta.				
					I5 to I6	0+00 to 58+20				
					Volume (CY) per	Number of				
Leveling Rock	1 1/2"-0" Crushed	0+00 to 58+20	N/A					300	\$2.75	\$825
Base Rock for Alignment	4"-0" Crushed	2+97 to 4+76	8					24	\$2.75	\$66
Base Rock for Alignment	4"-0" Crushed	5+76 to 10+41	8					24	\$2.75	\$66
Base Rock for Alignment	4"-0" Crushed	13+90 to 15+70	8					24	\$2.75	\$66
Base Rock for Alignment	4"-0" Crushed	23+90 to 25+95	8					24	\$2.75	\$66
Junctions	3/4"-0" Crushed	0+00	N/A	junction	24	Junctions	1	24	\$2.75	\$66
Junctions	1 1/2"-0" Crushed	26+95	N/A	junction	24	Junctions	1	24	\$2.75	\$66
Junctions	1 1/2"-0" Crushed	28+50	N/A	junction	24	Junctions	1	24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	2+35	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	8+00	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	12+30	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	30+25	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	34+35	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	40+25	N/A					36	\$2.75	\$99
Culvert Backfill Rock	1 1/2"-0" Crushed	40+45	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	54+40	N/A					24	\$2.75	\$66
Culvert Backfill Rock	1 1/2"-0" Crushed	57+75	N/A					24	\$2.75	\$66
Culvert Bedding Rock	1 1/2"-0" Crushed	48+90	N/A					36	\$2.75	\$99
Dissipator	24"-6" Rip Rap	46+90	N/A					12	\$2.58	\$31
Fill Armor	24"-6" Rip Rap	46+90	N/A					36	\$2.58	\$93
Base Rock Restoration	4"-0" Crushed	46+90	N/A					36	\$2.75	\$99
Surface Rock	1 1/2"-0" Crushed	48+90	N/A					24	\$2.75	\$66
Culvert Bedding Rock	1 1/2"-0" Crushed	55+35	N/A					36	\$2.75	\$99
Dissipator	24"-6" Rip Rap	55+35	N/A					12	\$2.58	\$31
Fill Armor	24"-6" Rip Rap	55+35	N/A					36	\$2.58	\$93
Base Rock Restoration	4"-0" Crushed	55+35	N/A					36	\$2.75	\$99
Surface Rock	1 1/2"-0" Crushed	55+35	N/A					24	\$2.75	\$66
Turnaround	4"-0" Crushed	55+70	N/A					24	\$2.75	\$66
Total Rock for Road Segment:								1,008		

\$2,756

ROAD SEGMENT	17 to 18			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Application	Rock Size and Type	Location	Depth of Rock (inches)	17 to 18 Volume (CY) per	0+00 to 6+80 Number of	Stations			
Junction	4"-0" Crushed	0+00	8"	junction	36	junctions	1.00	36	\$2.75	\$99
Junction	1 1/2"-0" Crushed	0+00	N/A	junction	12	junctions	1	12	\$2.75	\$33
Base Rock	4"-0" Crushed	0+00 to 0+60	8"	station	50	stations	0.6	30	\$2.75	\$83
Base Rock for alignment	4"-0" Crushed	0+60 to 2+10	8"					24	\$2.75	\$66
Culvert Backfill Rock	4"-0" Crushed	0+75						24	\$2.75	\$66
Leveling Rock	1 1/2"-0" Crushed	0+60 to 2+53						36	\$2.75	\$99
Leveling Rock	4"-0" Crushed	2+53 to 6+80						120	\$2.75	\$330
Turnout	4"-0" Crushed	5+00	8"					24	\$2.75	\$66
Armor Rock	24"-6" Rip Rap	0+60 to 1+85						60	\$2.58	\$155
Landing Rock	6"-0" Pit Run	6+80						60	\$3.07	\$184
Total Rock for Road Segment				17 to 18				426		

\$1,181

ROAD SEGMENT	18 to 110			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Application	Rock Size and Type	Location	Depth of Rock (inches)	18 to 110 Volume (CY) per	0+00 to 20+60 Number of	Stations			
Leveling Rock	3/4"-0" Crushed	0+00 to 20+60		station	10	stations	20.60	206	\$2.75	\$567
Total Rock for Road Segment				18 to 110				206		

\$567

Processing:	Description	No. sta.	Rate/sta	Cost
	Water, Process & Compact Crushed Rock	118.70	\$41.40	\$4,914

\$4,914

	2 1/2"-0"	6"-0"	4"-0"	1 1/2"-0"	3/4"-0"	Total		
SUB TOTAL FOR SURFACING	240	120	778	1,414	254	2,806	2,806	\$14,826

SPECIAL PROJECTS:			No. sta./ft./cy.	Rate per sta./ft./cy.	Cost
Dissipator Placement with Excavator (cy)			48	\$2.00	\$96
Armor Rock Placement with Excavator (cy)			174	\$2.00	\$348
Seeding and Mulching (acres)			0.2	\$1,315.00	\$263
Straw (bales)			30	\$4.25	\$128

SUB TOTAL FOR SPECIAL PROJECTS \$835 \$935

GRAND TOTAL \$36,648

Compiled By: Bryce Rodgers Date: 5/20/2005



**SUMMARY OF CONSTRUCTION COSTS**

**PROJECT NO. 3 LOST LAKE ROAD IMPROVEMENT**

SALE NAME: Lost Fire Combination  
 ROAD: L1 to L2 (Lost Lake Road)

NEW CONSTRUCTION: \_\_\_\_\_ STATIONS \_\_\_\_\_  
 IMPROVEMENT: 86.67 STATIONS \_\_\_\_\_

MILES \_\_\_\_\_  
 MILES 1.64

<b>CLEARING &amp; GRUBBING</b>						
Method	Acres/amount		x	Rate	=	Cost
Hauling Clearing Debris \$/ac.	0.27		x	\$790	=	\$213.30
Pile and Burn (acres)	0.27		x	\$1,980	=	\$534.60
			x		=	
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>						<b>\$748</b>

<b>EXCAVATION</b>						
Material	Cy/amount		x	Rate	=	Cost
Shot rock end haul to fills (cy)	554		x	\$6.02	=	\$3,335.08
Shot rock end haul to waste area (cy)	1,637		x	\$6.02	=	\$9,854.74
Dug Exec. End hauled to waste area (cy)	3,034		x	\$1.97	=	\$5,976.98
Embankment Compaction (cy)	554		x	\$0.45	=	\$249.30
Shooting exposed boulders in subgrade			x		=	\$500.00
Cut Slope Rounding (stations)	8.62		x	\$31	=	\$287.22
Remove designated stumps (C325) (hrs)	8		x	\$120	=	\$960.00
			x		=	
<b>SUB TOTAL FOR EXCAVATION</b>						<b>\$21,143</b>

<b>CULVERT MATERIALS AND INSTALLATION</b>							
Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
4+56	18" cpp	32	\$12.25	\$392.00			
7+33	18" cpp	40	\$12.25	\$490.00			
13+23	18" cpp	48	\$12.25	\$588.00			
17+39	18" cpp	42	\$12.25	\$514.50			
20+03	18" cpp	34	\$12.25	\$416.50			
30+54	18" cpp	44	\$12.25	\$539.00			
35+72	18" cpp	40	\$12.25	\$490.00			
47+29	18" cpp	32	\$12.25	\$392.00			
52+55	18" cpp	32	\$12.25	\$392.00			
76+24	18" cpp	44	\$12.25	\$539.00			
82+28	18" cpp	42	\$12.25	\$514.50			
<b>Other/miscellaneous:</b>					<b>Quantity</b>	<b>Rate</b>	<b>Cost</b>
	<b>Description</b>						
	Drill & Shoot Culvert beds			42.00	\$10.00	\$420.00	
	Disposal of old culverts: \$25 fee,						
	3 hrs C325 @ \$120/hr, 6 hrs D. trk @ \$59					\$739.00	
<b>Culvert stakes &amp; markers:</b>	6' Carsonite Markers			16	\$14.10	\$225.60	
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>						<b>\$6,652</b>	

Subtotal **\$28,543**

SURFACING		Stations/amount	x	Rate/sta/amt	Cost
Subgrade prep.	Description				
	Grade, Shape and Ditch 16'	86.67	x	\$18.20	\$1,577
	Subgrade Compaction	86.67	x	\$14.80	\$1,283

ROAD SEGMENT	Segment 1		Depth of Rock (Inches)	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Application	Rock Size and Type		Location	L1 to L2 Volume (CY) per	0+00 to 86+67 Number of				
Base Rock (partial appl)	4"-0" Crushed	2+40 - 7+30	8	station	24	stations	4.90	118	\$2.75	\$323.40
Base Rock (full appl)	4"-0" Crushed	11+58 - 13+65	8	station	50	stations	2.07	104	\$2.75	\$284.63
Base Rock (partial appl)	4"-0" Crushed	31+56 - 39+59	8	station	13	stations	8.03	104	\$2.75	\$287.07
Base Rock (partial appl)	4"-0" Crushed	40+64 - 55+40	8	station	29	stations	14.76	428	\$2.75	\$1,177.11
Base Rock (full appl)	4"-0" Crushed	55+40 - 56+81	8	station	50	stations	1.41	71	\$2.75	\$193.88
Base Rock (partial appl)	4"-0" Crushed	56+81 - 57+92	8	station	11	stations	1.11	12	\$2.75	\$33.58
Base Rock (full appl)	4"-0" Crushed	60+09 - 63+31	8	station	50	stations	3.22	161	\$2.75	\$442.75
Base Rock (partial appl)	4"-0" Crushed	65+99 - 68+41	8	station	5	stations	2.42	12	\$2.75	\$33.28
Base Rock (partial appl)	4"-0" Crushed	72+26 - 73+29	8	station	11	stations	1.03	11	\$2.75	\$31.16
Base Rock (partial appl)	4"-0" Crushed	78+50 - 81+27	8	station	17	stations	2.77	47	\$2.75	\$129.50
Fill Widening	4"-0" Crushed	55+40 - 56+81	8	station	8	stations	1.41	11	\$2.75	\$31.02
Fill Widening	4"-0" Crushed	60+09 - 63+31	8	station	8	stations	3.22	26	\$2.75	\$70.84
Turnouts (50')	4"-0" Crushed	2+00, 5+10	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (50')	4"-0" Crushed	25+75, 28+17	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (50')	4"-0" Crushed	30+57, 41+14	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (50')	4"-0" Crushed	48+45, 72+48	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (50')	4"-0" Crushed	79+07	8	turnout	22	turnouts	1	22	\$2.75	\$60.50
Turnouts (100')	4"-0" Crushed	66+03,	8	turnout	37	turnouts	1	37	\$2.75	\$101.75
Turnout/Shoulder Imp	4"-0" Crushed	57+96 - 59+40	8	n/a		n/a	1	100	\$2.75	\$275.00
Curve Widening	4"-0" Crushed	2+60 - 3+63	8	curve	12	curves	1	12	\$2.75	\$33.00
Curve Widening	4"-0" Crushed	3+80 - 7+06	8	curve	24	curves	1	24	\$2.75	\$66.00
Surface Course	3/4"-0" Crushed		4	station	25	stations	86.67	2,167	\$2.75	\$5,958.56
Turnouts (50')	3/4"-0" Crushed		4	turnout	11	turnouts	21	231	\$2.75	\$635.25
Turnouts (100')	3/4"-0" Crushed	66+03, 85+23	4	turnout	19	turnouts	2	38	\$2.75	\$104.50
Turnouts (150')	3/4"-0" Crushed	57+96	4	turnout	23	turnouts	1	23	\$2.75	\$63.25
Curve Widening	3/4"-0" Crushed		4	curve		curves	23	144	\$2.75	\$396.00
Junctions	3/4"-0" Crushed		4	junction	25	junctions	3	75	\$2.75	\$206.25
Fill Widening	3/4"-0" Crushed	55+40 - 56+81	4	station	4	stations	1.41	6	\$2.75	\$15.51
Fill Widening	3/4"-0" Crushed	60+09 - 63+31	4	station	4	stations	3.22	13	\$2.75	\$35.42
Culvert Bedding	3/4"-0" Crushed	4+56, 7+33		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	13+23, 17+39		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	20+03, 30+54		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	35+72, 47+29		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	52+55, 76+24		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	82+28		culvert	20	culverts	1	20	\$2.75	\$55.00
Leveling Rock	3/4"-0" Crushed							192	\$2.75	\$528.00
Energy Dissipators	24"-6" Riprap			culvert	10	culverts	11	110	\$2.58	\$283.80
								0		
Total Rock for Road Segment:			L1 to L2					4,694		\$12,890

Processing:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact (4"-0" crushed) (two lifts):	21.33	\$82.80	\$1,766
	Water, Process & Compact (3/4"-0" crushed) (one lift):	86.67	\$41.40	\$3,588
	Additional Watering during rock haul (water truck hours):	24	\$70.00	\$1,680

**SUB TOTAL FOR SURFACING**

2 1/2"	3"-0" pr	4"-0"	1 1/2"-0"	3/4"-0"	Total
110		1,476		3,108	4,694

\$22,784

**SPECIAL PROJECTS**

Description	Cost
Seed and mulch 2.6 acres @\$540/acre	\$1,404
Palliative application and purchase (38 tons @ \$169/ton)	\$6,422
Palliative caused time delays in processing	\$672

**SUB TOTAL FOR SPECIAL PROJECTS**

\$8,498

**GRAND TOTAL**

\$59,826

Compiled By: d.mellison

Date: 5/20/2005

**SUMMARY OF CONSTRUCTION COSTS**

**PROJECT NO. 3 LOST LAKE ROAD IMPROVEMENT**

SALE NAME: Lost Fire Combination  
 ROAD: L3 - L4 (Lost Lake Road)

NEW CONSTRUCTION: \_\_\_\_\_ STATIONS \_\_\_\_\_ MILES  
 IMPROVEMENT: 63.28 STATIONS 1.20 MILES

**CLEARING & GRUBBING**

Method	Acres/amount	x	Rate	=	Cost
Pile and Burn (acres)	1.86	x	\$1,980	=	\$3,682.80
Hauling Clearing Debris \$/ac.	1.86	x	\$790	=	\$1,469.40
		x		=	

**SUB TOTAL FOR CLEARING & GRUBBING**

**\$5,152**

**EXCAVATION**

Material	Cy/amount	x	Rate	=	Cost
Common Excavation (200' drift) (cy)	2,426	x	\$1.48	=	\$3,590.48
Common haul to waste area (cy)	6,729	x	\$2.48	=	\$16,687.92
Ripable haul to waste area (cy)	794	x	\$3.74	=	\$2,969.56
Ripable haul to fill @ 184+12	437	x	\$3.42	=	\$1,494.54
Embankment Compaction (cy)	2,863	x	\$0.45	=	\$1,288.35
Cut Slope Rounding (stations)	33.82	x	\$31	=	\$1,048.42
Remove painted stumps (C325) (hrs)	16	x	\$120	=	\$1,920.00
Fill in stump holes w/dirt (C325) (hrs)	2	x	\$120	=	\$240.00
		x		=	
		x		=	
		x		=	

**SUB TOTAL FOR EXCAVATION**

**\$29,239**

**CULVERT MATERIALS AND INSTALLATION**

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
174+22	18" cpp	42	\$12.25	\$514.50			
177+59	18" cpp	42	\$12.25	\$514.50			
181+44	18" cpp	36	\$12.25	\$441.00			
184+12	18" cpp	58	\$12.25	\$710.50			
187+13	18" cpp	32	\$12.25	\$392.00			
196+44	18" cpp	32	\$12.25	\$392.00			
203+00	18" cpp	36	\$12.25	\$441.00			
207+23	18" cpp	44	\$12.25	\$539.00			
211+90	18" cpp	34	\$12.25	\$416.50			
217+55	18" cpp	40	\$12.25	\$490.00			
221+16	18" cpp	44	\$12.25	\$539.00			
226+18	18" cpp	32	\$12.25	\$392.00			

	Description	Quantity	Rate	Cost
Other/miscellaneous:	Disposal of old culverts: \$25 fee, 3 hrs C325			
	at \$120/hr, 6 hrs dump trk at \$59/hr			\$739.00
Culvert stakes & markers:	Carsonite Culvert Markers	13	\$14.10	\$183.30

**SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION**

**\$6,704**

Subtotal

**\$41,096**

SURFACING		Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:	Description				
	Grade, Shape and Ditch 16'	63.28	x	\$18.20	\$1,152
	Subgrade Compaction	63.28	x	\$14.80	\$937

ROAD SEGMENT	L3 to L4		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (Inches)	L3 to L4 Volume (CY) per	167+66 to 230+94 Number of					
Base Course	4"-0" Crushed	169+00-170+20	8	station	21	stations	1.20	25	\$2.75	\$69.30
Base Course	4"-0" Crushed	175+15-184+63	8	station	50	stations	9.48	474	\$2.75	\$1,303.50
Base Course	4"-0" Crushed	185+50-189+64	8	station	15	stations	4.14	62	\$2.75	\$170.78
Base Course	4"-0" Crushed	192+33-196+44	8	station	50	stations	4.11	206	\$2.75	\$565.13
Base Course	4"-0" Crushed	205+90-228+45	8	station	50	stations	22.55	1,128	\$2.75	\$3,100.63
Turnouts (50')	4"-0" Crushed	170+80,176+26	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (50')	4"-0" Crushed	212+81,220+07	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (50')	4"-0" Crushed	224+56,226+56	8	turnout	22	turnouts	2	44	\$2.75	\$121.00
Turnouts (100')	4"-0" Crushed	178+25,182+93	8	turnout	37	turnouts	2	74	\$2.75	\$203.50
Turnouts (100')	4"-0" Crushed	209+80	8	turnout	37	turnouts	1	37	\$2.75	\$101.75
Curve Widening	4"-0" Crushed	176+18-177+41	8	curve	48	curves	1	48	\$2.75	\$132.00
Curve Widening	4"-0" Crushed	179+92-181+94	8	curve	24	curves	1	24	\$2.75	\$66.00
Curve Widening	4"-0" Crushed	187+67-188+60	8	curve	12	curves	1	12	\$2.75	\$33.00
Curve Widening	4"-0" Crushed	207+15-208+22	8	curve	48	curves	1	48	\$2.75	\$132.00
Curve Widening	4"-0" Crushed	210+11-211+00	8	curve	24	curves	1	24	\$2.75	\$66.00
Curve Widening	4"-0" Crushed	211+70-212+23	8	curve	24	curves	1	24	\$2.75	\$66.00
Curve Widening	4"-0" Crushed	217+14-218+18	8	curve	48	curves	1	48	\$2.75	\$132.00
Curve Widening	4"-0" Crushed	218+32-218+74	8	curve	12	curves	1	12	\$2.75	\$33.00
Curve Widening	4"-0" Crushed	219+87-220+64	8	curve	12	curves	1	12	\$2.75	\$33.00
Curve Widening	4"-0" Crushed	220+93-221+46	8	curve	12	curves	1	12	\$2.75	\$33.00
Curve Widening	4"-0" Crushed	223+79-224+51	8	curve	12	curves	1	12	\$2.75	\$33.00
Curve Widening	4"-0" Crushed	224+81-225+75	8	curve	24	curves	1	24	\$2.75	\$66.00
Curve Widening	4"-0" Crushed	226+58-227+07	8	curve	12	curves	1	12	\$2.75	\$33.00
Fill in Stump Holes	4"-0" Crushed			hole	12	holes	4	48	\$2.75	\$132.00
Surface Course	3/4"-0" Crushed		4	station	25	stations	63.28	1,582	\$2.75	\$4,350.50
Turnouts (50')	3/4"-0" Crushed		4	turnout	11	turnouts	8	88	\$2.75	\$242.00
Turnouts (75')	3/4"-0" Crushed		4	turnout	15	turnouts	1	15	\$2.75	\$41.25
Turnouts (100')	3/4"-0" Crushed		4	turnout	19	turnouts	4	76	\$2.75	\$209.00
Curve Widening	3/4"-0" Crushed		4					168	\$2.75	\$462.00
Culvert Bedding	3/4"-0" Crushed	174+22,177+59		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	181+44,184+12		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	187+13,196+44		culvert	20	culverts	2	40	\$2.75	\$110.00
Culvert Bedding	3/4"-0" Crushed	203+00,207+23		culvert	20	culverts	2	40	\$2.75	\$110.00
Junctions	3/4"-0" Crushed		4	junction	25	junctions	1	25	\$2.75	\$68.75
Leveling Rock	3/4"-0" Crushed							96	\$2.75	\$264.00
Energy Dissipators	24"-6" Riprap			culvert	10	culverts	7	70	\$2.58	\$180.60
Fill Armor	24"-6" Riprap			fill	20	fills	1	20	\$2.58	\$51.60

Total Rock for Road Segment: L3 to L4 4,797 \$13,177

Processing:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact (4"-0" crushed) (two lifts) full application:	36.14	\$82.80	\$2,992
	Water, Process & Compact (4"-0" crushed)(two lifts) partial application	5.34	\$41.40	\$221
	Water, Process, and Compact (3/4"-0" crushed) (one lift)	63.28	\$41.40	\$2,620
	Additional Watering during rock haul (water truck hours):	16.00	\$70.00	\$1,120

SUB TOTAL FOR SURFACING	24"-6"	8"-6" pr	4"-0"	1 1/2"-0"	3/4"-0"	Total		
	90		2,497		2,210	4,797	4,797	\$22,219

SPECIAL PROJECTS		Description	Cost
		Side cast pull back (3+41 sta) @ \$408/sta	\$1,391
		Seed and mulch 1.72 acres @ \$540/acre	\$929
		Remove 3 culverts on vacated seg (C325-2 hrs @ \$120/hr	\$240
		Subg ripping/tilling (C325-12hrs @ \$120/hr (23+61 sta)	\$1,440
Dust Abatement		Palliative application \$ Purchase (28 tons @ \$169/ton)	\$4,732
Dust Abatement		Palliative caused time delays	\$672

SUB TOTAL FOR SPECIAL PROJECTS \$9,404

GRAND TOTAL \$72,719

Compiled By: d.mellison Date: 5/20/2005





RIP RAP ROCK COST

SALE NAME: Lost Fire Combination  
 PROJECT: Dissipator/ Fill Armor  
 QUARRY: Lost Quarry

ROCK TYPE: Riprap

DATE: 5/20/2005  
 BY: Bryce Rodgers

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-1B	17.95	48				2.80	0.10	0.47	0.08	3.45	
13-14	15.20	84				1.19	0.14	0.10	0.10	1.53	
15-16	58.20	96				1.51	0.55	0.10	0.10	2.26	
17-18	6.80	60				1.78	0.10	0.06	0.10	2.04	
L1-L2	86.67	110				1.32	0.15	0.15	0.15	1.77	
L2-L3	63.28	90			1	0.20	0.20	0.20	0.20	1.80	
TOTAL	248.10	488									
	STA./NO.	CU. YD.									
<b>CUBIC YARD WEIGHTED HAUL</b>						<b>0.18</b>	<b>1.33</b>	<b>0.23</b>	<b>0.16</b>	<b>0.13</b>	<b>AVERAGE HAUL</b>
									<b>2.03</b>		
Average Round Trip Distance (miles)									<b>4.06</b>		

ROCK HAUL:

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

Truck type: D12 No. trucks: 3  
 Delay min.: 6 Efficiency: 85%

Ave haul: \$1.93 /cy  
 Load: \$0.65 /cy  
 Develop:      /cy

Production: cy/day = 707

RIP RAP ROCK HAUL COSTS      488 cy @      **\$2.58 /cy**

SALE NAME: Lost Fire Combination  
 PROJECT: L1 to L2  
 QUARRY: \_\_\_\_\_

ROCK TYPE: waste haul

DATE: 2/16/05  
 BY: d.mellison

		Cubic Yards								
Segment	Stations	Base	Running	Turnout	Waste	Stockpile	Curves	F.Widen	Total	
Dug Exc					3,034				3,034	0
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
Grand Total	0.00	0	0	0	3,034	0	0	0	3,034	

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		
Dug Exc	0.00	3,034						0.14	0.07	0.07	0.28
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
TOTAL	0.00	3,034						0.14	0.07	0.07	AVERAGE HAUL 0.28
CUBIC YARD WEIGHTED HAUL			0.00	0.00	0.00	0.00	0.00	0.14	0.07	0.07	

Average Round Trip Distance (miles) 0.56

ROCK HAUL:

Truck type: D20 No. trucks: 2  
 Delay min.: 8 Efficiency: 85%

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

Truck type: D10 No. trucks: \_\_\_\_\_  
 Delay min.: 10 Efficiency: 85%

Ave haul: \$0.69 /cy  
 Load: \$0.61 /cy \*  
 Spread: \$0.67 /cy \*\*

Production: cy/day = 1,563

CRUSHED ROCK HAUL COSTS 3,034 cy @ \$1.97 /cy

\* 1,563 cy/8 hrs = 195.4 cy/hr @ \$120/hr = \$0.61  
 \*\* Knock down only w/D8 @ \$126/hr \* 3 hrs = \$378/568 cy = \$0.67



SALE NAME: Lost Fire Combination  
 PROJECT: L1 to L2  
 QUARRY: \_\_\_\_\_

ROCK TYPE: Shot waste rock

DATE: 2/16/05  
 BY: d.mellison

		Cubic Yards								
Segment	Stations	Base	Running	Turnout	Fills	Stockpile	Curves	F.Widen	Total	
SR to fills					554				554	0
SR to Waste					1,637				1,637	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
									0	
Grand Total	0.00	0	0	0	2,191	0	0	0	2,191	

		ONE WAY HAUL IN MILES								Total Haul	
Road Segment	Stations	Cubic Yards	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH		
SR to fills	0.00	554						0.14	0.07	0.07	0.28
SR to Waste	0.00	1,637						0.14	0.07	0.07	0.28
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
0	0.00	0									0.00
TOTAL	0.00	2,191									
CUBIC YARD WEIGHTED HAUL		STA./NO.	CU. YD.	0.00	0.00	0.00	0.00	0.14	0.07	0.07	AVERAGE HAUL
										0.28	
Average Round Trip Distance (miles)										0.56	

ROCK HAUL:

Truck type: D20 No. trucks: 2  
 Delay min.: 8 Efficiency: 85%

Ave haul: \$0.69 /cy  
 Load: \$0.61 /cy \*  
 Spread: \$0.67 /cy \*\*  
 Drilling \$4.05 /cy

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

Truck type: D10 No. trucks: \_\_\_\_\_  
 Delay min.: 10 Efficiency: 85%

Production: cy/day = 1,563

CRUSHED ROCK HAUL COSTS 2,191 cy @ \$6.02 /cy

\* 1,563 cy/8 hrs = 195.4 cy/hr @ \$120/hr = \$0.61  
 \*\* Knock down only w/D8 @ \$126/hr \* 3 hrs = \$378/568 cy = \$0.67

**SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS**

PROJECT NO. 4

Timber Sale Name: **Lost Fire Combination**

Quarry: Lost Quarry  
 Location: SW1/4,SW1/4 S17, T4N R7W  
 County: Clatsop  
 By: d.mellison  
 Date: 5/20/2005

Swell: \_\_\_\_\_  
 Shrink: 16%

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"	2%	CR	3,000	6,351	9,831
1-1/2"-0"	2%	CR		1,450	1,450
4"-0"		CR		11,782	11,782
6"-0"		PR		600	600
24"-6"		RR		488	488
36"		RR			
<b>TOTAL CUBIC YARDS OF ROCK:</b>			<b>3,000</b>	<b>20,671</b>	<b>24,151</b>

**1) MOBILIZATION & SET UP:**

EQUIPMENT MOBILIZATION	DISTANCE IN MILES	DIST. FACTOR	BASE RATE	COST
3 Stage Crusher	75	1.40	\$2,220	\$3,108
Screening Plants (2)	75	1.40	\$900	\$1,260
D8 Cat	75	1.40	\$1,080	\$1,512
Loader	75	1.40	\$590	\$826
Drill & Compressor (2)	75	1.40	\$1,080	\$1,512
Powder	75	1.40	\$270	\$378
Fire Truck	75	1.40	\$139	\$195
3 Dump Trucks	75	1.40	\$357	\$500
Excavator	75	1.40	\$945	\$1,323
<b>SUB TOTAL FOR MOBILIZATION</b>				<b>\$10,613</b>

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$2,530	\$2,530
Screening Plants (2)	1	\$425	\$425
Change Gradation	2	\$400	\$800
<b>SUB TOTAL FOR SET UP COSTS</b>			<b>\$3,755</b>

**TOTAL MOBILIZATION & SET UP COSTS** **\$14,368**

**2) CLEARING & GRUBBING**

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Pile and Burn Rock Source	0.26	acre	\$1,980	\$515

**TOTAL CLEARING & GRUBBING COSTS** **\$515**

**3) EXCAVATION**

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread)	840	bcy	\$3.00	\$2,520
Quarry access road improvement				
D8 Cat	4	hours	\$126	\$504
Crushed Surface course	125	cy	\$7.50	\$938

**TOTAL EXCAVATION COSTS**

**\$3,962**

**4) DEVELOP ROCK**

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd.	Vol. Weight	Ripping		24,377	\$1.95	\$47,534
crushed	23,063	95%	Drill & shoot	100%		\$1.95	
pit run	600	2%	Oversize red			\$5.04	
rip rap	488	2%	Other				
Total	24,151						
reject	226	0.9%					

**TOTAL ROCK DEVELOPMENT COSTS**

**\$47,534**

**5) CALIBRATION & TESTING**

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	3	\$400	\$1,200
Calibrate			
Test	11	\$50	\$550
Test			

**TOTAL CALIBRATION & TESTING COSTS**

**\$1,750**

**6) FEEDING & LOADING**

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	23,289	\$0.71	\$16,641

**TOTAL FEEDING & LOADING COSTS**

**\$16,641**

**7) ROCK CRUSHING**

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTIO	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed	9,831	3 stage w/s	110	\$2.95	\$29,046
1-1/2"-0"	crushed	1,450	3 stage w/s	120	\$2.71	\$3,927
4"-0"	crushed	11,782	2 stage	140	\$1.71	\$20,198

**TOTAL ROCK CRUSHING COSTS**

**\$53,171**

**8) STOCKPILING**

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

SUB TOTAL

HAUL & STOCKPILE STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. Lost Quarry Stockpile Site	3/4"-0"	3	3,480	\$1.65	\$5,737
2.					
3.					
4.					
5.					
6.					

SUB TOTAL \$5,737

**TOTAL STOCKPILING COSTS \$5,737**

**9) MISCELLANEOUS COSTS**

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	
\$1.10 /CY                      226 CY	\$248
Waterbarring, Drainage,	
D8 cat 2hrs @ \$126/hr = \$252	\$252

**TOTAL MISCELLANEOUS COSTS \$500**

**10) GRAND TOTAL: \$144,177**

\$/Cubic Yard \$6.25

**Footnotes:**

Construct/Reconstruct Stockpile Floor

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$75.00	
Grader		\$80.00	
Excavator		\$130.00	

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

Total Construct Stockpile Floor



Lost Fire Combination

Project No. 5 Vacating

5/20/2005

Description	Station	Qty	Unit	C325	Unit	D-7 CAT	Truck	Unit	Seeding	Unit	Total
<b>V1 - V2</b>											
W.Bars	0+00 - 27+30					3 hrs.					
SPB	5+02 - 6+64	480	bcy	8	hrs.	1 hr.	8	hrs.	0.16	acres	
Fill	5+82	68	bcy	1.5	hrs.				0.02	acres	
SPB	11+67 - 14+65	441	bcy	10	hrs.				0.28	acres	
Fill	13+26	800	bcy	12	hrs.	2 hrs.	12	hrs.	0.12	acres	
Fill	14+29	83	bcy	2	hrs.		1	hr.	0.02	acres	
SPB	18+70 - 19+16	68	bcy	1	hr.	0.5 hrs.			0.04	acres	
Fill	19+16	48	bcy	1	hr.	0.5 hrs.	1	hr.	0.02	acres	
Fill	22+36	150	bcy	1.5	hrs.		1.5	hrs.	0.12	acres	
Waste Areas									0.25	acres	
<b>V3</b>											
Fill		100	cy	2.5	hrs.				0.02	acres	
<b>V4 - V5</b>											
W.Bars	0+00 - 22+74					2 hrs.					
Ditch line	0+00					1 hr.					
Block road	0+00			0.5	hrs.		1	hrs.			
Total		2,238	bcy	40	hrs.	10 hrs.	24.5	hrs.	1.05	acres	
Rate				\$120	/hr	\$94	/hr	\$59	/hr	\$1,370	acre
Cost				\$4,800		\$940	\$1,446		\$1,439		\$8,624

\*Cost for straw mulching includes bales of straw, labor, grass seed @ 100 lbs/ac, and fertil.

**Lost Fire Combination  
Project No. 6 (Dust Palliative Maintenance Costs)**

Work	Grader	Roller	Water Truck	Palliative	Total
Windrowing top 2"	16		8		
Water prior to pall. appl.			8		
Grading windrow/palliative	16		8		
Palliative Purchase/App.				30	
Compaction		16	4		
<b>Total Quantity</b>	<b>32</b>	<b>16</b>	<b>28</b>	<b>30</b>	
<b>Item Rate</b>	<b>\$84.00</b>	<b>\$79.00</b>	<b>\$70.00</b>	<b>\$186</b>	
<b>Total Cost</b>	<b>\$2,688</b>	<b>\$1,264</b>	<b>\$1,960</b>	<b>\$5,580</b>	<b>\$11,492</b>

By: d.mellison

date: 5/20/2005

Note: Typical final maintenance prior to palliative application is costed in another spreadsheet.

## Project Work Road Maintenance Cost Summary

**Sale:** Lost Fire Combination  
**Date:** May 20, 2005  
**By:** Bryce Rodgers

Type	Equipment/Rationale	Hours	Rate	Cost
Post-Projects Road	Grader 14G	20	\$84	\$1,680
	Dump Truck 12CY (2 trucks)	20	\$59	\$1,180
	FE Loader C966	10	\$79	\$790
	Vibratory Roller	20	\$79	\$1,580
	Water Truck 2500 gallon	10	\$70	\$700
<b>Total</b>				<b>\$5,930</b>

Production Rates  
 Grader - Processing  
 Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
1.50	1.87	1.2	12.5
1.50	1.87	1.2	12.5



# TIMBER CRUISE REPORT

## LOST FIRE COMBINATION

### FY 2005

1. **Sale Area Location:** Area 1 is located in portions of the SW¼ of Section 9, Area 2 is located in portions of the E½ of Section 16, Area 3 is located in portions of Section 17, and Area 5 is located in portions of Sections 17 and 18, T4N, R7W, W.M., Clatsop County, Oregon.

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

3. **Sale Acreage and Treatments by Area:**

Area	Harvest Type	Gross	New R/W	Existing R/W	Non-Thinnable	Riparian Buffer	Net	Survey Method
1	MC	90.1		0.7		1.3	88.1	GIS
2	MC	43.0		2.4		2.6	38.0	GIS
3	PC	285.6	7.7	11.1	3.0	26.6	237.2	GIS
4(R/W)	R/W	*1.8					9.5	L X W
5	MC	37.7		1.7		2.2	33.8	GIS
<b>TOTALS</b>		<b>458.2</b>		<b>15.9</b>	<b>3.0</b>	<b>32.7</b>	<b>406.6</b>	

\*Outside of harvest units.

4. **Cruisers and Cruise Dates:**

Areas 1, 2, and 5 were cruised by Kevin Berry and John Tillotson, and Area 3 was cruised by Dave Horning, Dave Wolfram and Alan Kelso in February, 2005.

5. **Cruise Method and Computation:**

Areas 1, 2, and 5 (modified-clearcuts) were designed for a variable plot cruise using a 40 BAF for conifer and 33.61 BAF for hardwoods. 37 plots were sampled on a 5 x 10 chain grid, with a count to cruise plot ratio of 2:1.

Area 3 (partial cut) was designed for a variable plot cruise using a 33.61 BAF. 36 plots were sampled on a 8 x 8 chain grid, with a count to cruise plot ratio of 2:1. All "take" and "leave" trees were measured and graded on cruise plots.

Area 4 R/W volumes were calculated by multiplying the average total MBF/Acre from Area 3 and the R/W acreage.

All cruises used data collectors, and were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Designs for more details on the cruise method.

<u>AREAS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1, 2, 5	LOSTFIRE	AREA125	00CC
3	LOSTFIRE	AREA3	THIN
4(R/W)	LOSTFIRE	R/W	THIN

6. **Timber Description:**

Areas 1, 2, and 5 (MC) - These stands are composed of 53 to 57 year old, mixed hardwood and conifer stands. The conifer portions consist primarily of Douglas-fir and hemlock. There are approximately 3 snags per acre, 15 inches or larger. The harvest will remove approximately 134 trees per acre with an average DBH of 16 inches, 52 feet to a merchantable top, and approximately 26.7 MBF per acre.

Area 3 (PC) - This stand is an "auto-mark" thinning unit, about 60 years old, consisting of a Douglas-fir dominated, mixed conifer stand with stringers and patches of alders. The stand will be harvested to an SDI of 30% with a target residual basal area of approximately 130 square feet, while removing approximately 141 trees and 15.8 MBF per acre. The average "take" tree size is about 14 inches DBH and 46 feet to a merchantable top. The average "Leave" tree or residual tree size is 20 inches DBH and 72 feet to a merchantable top.

7. Statistical Analysis: (See also "Statistics Reports," attached.)

Area	Target CV%	Target SE%	Actual CV%	Actual SE%
1, 2, 5	45	11	54.2	8.9
3	40	7	42.6	7.1

Statistics for Area 3 reflect the combined "Take" and "Leave" stands. Statistics for Areas 1, 2, and 5 reflect the "Take" stand.

8. Volumes by Species and Log Grades for All Sale Areas by MBF: (See the Species, Sort, Grade, and the Log Stock Table attached.) Volumes do not include "in-growth". The majority of defect and breakage was culled during the cruise. The total net MBF volumes by species and grade are as follows:

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	D&B	Sale %
Douglas-fir	17.0"	3,298	1,571	1,479	248	38	39%
Hemlock/True fir	14.7"	2,954	1,394	1,259	301	35	35%
Alder/Maple*	13.5"	2,100	391	592	1,117	23	25%
Spruce	15.0"	17		13	4		1%
Cedar	19.4"	1		1			
<b>TOTAL</b>		<b>8,370</b>					<b>100%</b>

\*Approximately 13 MBF of the hardwood volume is composed of bigleaf maple.

9. Approvals:

Prepared by: Kevin Berry

Date: March 31, 2005

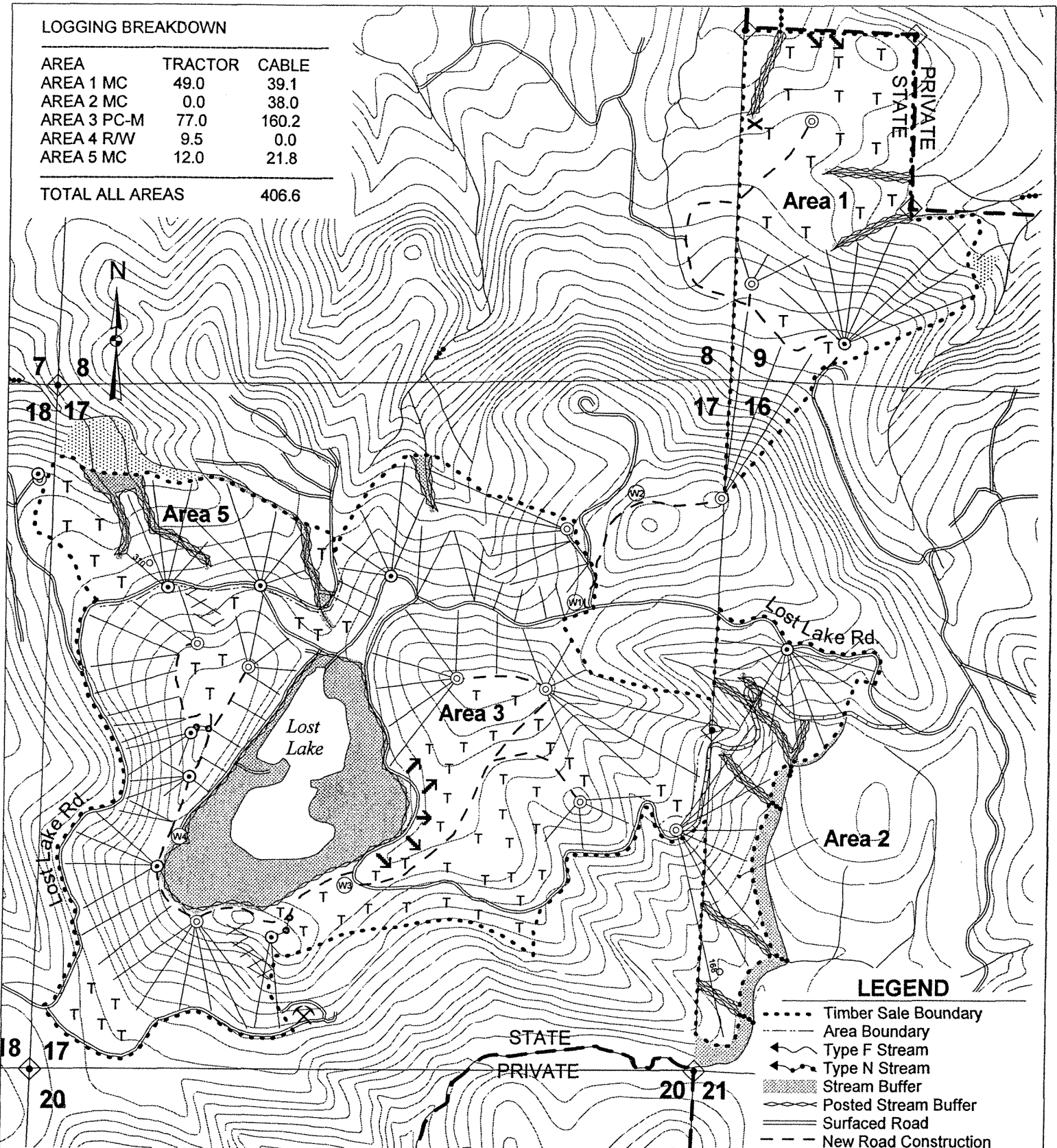
Approved by: Dan Goody  
Unit Forester

Date: 3/31/05

10. Attachments:
- Species, Sort, Grade Reports (4 pages)
  - Statistics Reports (9 pages)
  - Stand Table Report (2 pages)
  - Log Stock Table (3 pages)
  - Cruise Plans & Maps (4 pages)

**LOGGING BREAKDOWN**

AREA	TRACTOR	CABLE
AREA 1 MC	49.0	39.1
AREA 2 MC	0.0	38.0
AREA 3 PC-M	77.0	160.2
AREA 4 R/W	9.5	0.0
AREA 5 MC	12.0	21.8
<b>TOTAL ALL AREAS</b>		<b>406.6</b>



**LEGEND**

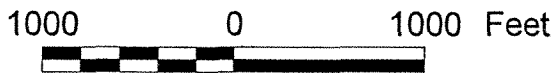
- ..... Timber Sale Boundary
- Area Boundary
- ← Type F Stream
- ↔ Type N Stream
- ▨ Stream Buffer
- ▨ Posted Stream Buffer
- == Surfaced Road
- - - New Road Construction
- ⊙ Landing to Construct
- ⊙ Logger Choice Landing
- ⊙ Logger Choice Road
- ⊙ Cable Yarding
- T T T Tractor Yarding
- ◆ Known Survey Corner
- - - Ownership Boundary
- × Non-thinnable
- Road to be Vacated
- ▨ Green Tree Retention Area
- ⊗ Rock Quarry
- ↑↑↑ Line Pull
- × Temp. Seas. Stream Crossing

**APPROXIMATE ACREAGE**

AREA	MC ACRES	PC ACRES
AREA 1	88.1	
AREA 2	38.0	
AREA 3		237.2
AREA 5	33.8	
<b>TOTAL</b>	<b>159.9</b>	<b>237.2</b>
AREA 4 (R/W)	9.5	
<b>TOTAL ALL AREAS</b>		<b>406.6</b>

**LOGGING PLAN**

OF TIMBER SALE CONTRACT NO. 341-06-08  
 LOST FIRE COMBINATION  
 PORTIONS OF SECTIONS 9, 16, 17, AND 18,  
 T4N, R7W, W.M.,  
 CLATSOP COUNTY, OREGON  
 Approximate Scale 1" = 1000'



TC P5PCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																				
T04N R07W S09 Ty00CC 159.90		Project: LOSTFIRE										Page 1										
T04N R07W S17 TyTHIN 9.50		Acres 406.60										Date 3/28/2005										
T04N R07W S17 TyTHIN 237.20														Time 4:00:43PM								
S 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	?	?																				
D	?	2S	19	1.2	3,913	3,865	1,571		1	58	41		1	5	31	63	12		0.00			2.8
D	?	3S	18	1.3	3,683	3,637	1,479		94	6			3	5	51	41	36	336	2.17			11.5
D	?	4S	3		611	611	248		100				16	29	40	15	34	91	0.75			40.0
<b>D Totals</b>			39	1.2	8,207	8,113	3,299		50	30	20		3	7	41	49	28	40	0.40			15.2
<b>D Totals</b>			39	1.2	8,207	8,113	3,299		50	30	20		3	7	41	49	32	117	0.94			69.6
H	?	?															16		0.00			8.3
H	?	2S	14	1.1	2,988	2,954	1,201				63	37	6	4	39	52	34	288	1.88			10.2
H	?	3S	15	1.5	3,104	3,056	1,243			94	5	0		2	57	42	35	95	0.80			32.2
H	?	4S	4	.7	738	733	298		3	96	0		59	32	3	6	21	27	0.47			27.3
<b>H Totals</b>			33	1.3	6,830	6,743	2,742		0	53	30	17	9	6	43	42	28	86	0.84			78.0
A	?	?															10		0.00			5.4
A	?	2S	5	1.4	976	962	391			8	92	0	30	25	28	17	25	146	1.45			6.6
A	?	3S	7	.6	1,463	1,455	592		100				8	40	20	32	31	98	0.86			14.8
A	?	4S	13	1.2	2,750	2,716	1,104		100				21	26	15	38	28	59	0.66			46.0
<b>A Totals</b>			25	1.1	5,189	5,133	2,087		83	17	0		19	29	19	32	27	71	0.76			72.8
SF	?	2S	2		475	475	193				40	60			75	25	33	389	2.35			1.2
SF	?	3S	0		39	39	16		100						67	33	34	86	0.94			.4
SF		DO4S	0		6	6	3		100					100			26	40	0.62			.2
<b>SF Totals</b>			3		520	520	212		9	36	55		1	74	25		33	284	1.87			1.8
C		DOCU															10		0.00			.0
C		DO3S	0		2	2	1		100						100		40	67	1.49			.0
C		DO4S	0		1	1	0		100				100				16	30	0.75			.0
<b>C Totals</b>			0		3	3	1		100				30		70		22	33	1.09			.1
M	?	4S	0		31	31	13		100				100				16	30	0.44			1.0
<b>M Totals</b>			0		31	31	13		100				100				16	30	0.44			1.0
S	?	?															10		0.00			.5
S	?	3S	0		32	32	13		100				100				16	70	1.06			.5
S	?	4S	0	.0	9	9	4		100				100				16	20	0.44			.5
<b>S Totals</b>			0		42	42	17		100				100				14	30	0.57			1.4
<b>Totals</b>				1.1	20,822	20,584	8,370		0	58	27	15	9	12	37	42	29	92	0.86			224.8

T04N R07W S09 T00CC Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt 04N 07W 09 TAKE AREAS 00CC 159.90 37 95 1 <i>1, 2, and 5</i>	T04N R07W S09 T00CC BdFt W
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S Spp	So T	Gr rt	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
				Net BdFt	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					
A	DO	CU																			
A	DO	2S	21	.9	1,730	1,714	274		100			5	33	37	25	31	187	1.53			9.1
A	DO	3S	31	.8	2,481	2,460	393		100			13	36	18	34	31	102	0.86			24.2
A	DO	4S	48	1.3	3,912	3,862	618		100			14	18	21	47	30	68	0.68			56.7
<b>A</b>	<b>Totals</b>		30	1.1	8,123	8,037	1,285		79	21		12	27	23	38	30	84	0.79			95.7
D	DO	CU																			
D	DO	2S	73	1.2	7,012	6,926	1,107		1	44	55	1	7	38	53	35	359	2.40			19.3
D	DO	3S	25		2,416	2,416	386		87	13		13	9	36	43	33	94	0.82			25.7
D	DO	4S	2		194	194	31		100			49	26		25	20	31	0.55			6.3
<b>D</b>	<b>Totals</b>		36	.9	9,622	9,535	1,525		25	35	40	5	8	37	50	31	175	1.39			54.4
H	DO	CU																			
H	DO	2S	64	1.6	5,137	5,054	808			57	43	8		48	44	33	312	1.97			16.2
H	DO	3S	31	1.0	2,416	2,392	382		100				4	54	42	35	92	0.84			26.0
H	DO	4S	5		395	395	63		100			62	38			20	28	0.49			14.0
<b>H</b>	<b>Totals</b>		29	1.3	7,948	7,841	1,254		36	37	28	8	3	47	41	28	112	1.00			70.3
SF	DO	2S	91		1,192	1,192	191			40	60			75	25	33	388	2.34			3.1
SF	DO	3S	7		96	96	15		100					66	34	34	86	0.93			1.1
SF	DO	4S	1		16	16	3		100				100			26	40	0.62			.4
<b>SF</b>	<b>Totals</b>		5		1,305	1,305	209		9	36	55			1	73	25	33	283	1.87		4.6
<b>Type Totals</b>				1.0	26,998	26,719	4,272		43	32	25	8	12	38	43	30	119	1.03			225.0

T04N R07W S17 TTHIN Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt 04N 07W 17 TAKE -AREA 2 THIN 237.20 36 82 1	T04N R07W S17 TTHIN BdFt W
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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	?	?																					
H	?	2S		25	1,458	1,458	346			75	25			11	22	66				12		0.00	4.4
H	?	3S		59	1.8	3,508	3,445	817		92	8			1	58	41				36	246	1.71	5.9
H	?	4S		16	.9	957	949	225		4	96			58	31	3	7			35	96	0.78	35.8
H	<b>Totals</b>			37	1.2	5,923	5,852	1,388		1	70	23	6	9	8	40	42			21	26	0.47	35.9
H	<b>Totals</b>			37	1.2	5,923	5,852	1,388		1	70	23	6	9	8	40	42			27	71	0.74	82.0
D	?	?																		7		0.00	2.6
D	?	2S		22	1.4	1,535	1,513	359			100					15	85			39	287	1.77	5.3
D	?	3S		65	1.7	4,417	4,342	1,030		97	3			3	57	40				35	90	0.73	48.2
D	?	4S		13		874	874	207		100				11	30	46	13			29	42	0.38	20.8
D	<b>Totals</b>			42	1.4	6,827	6,729	1,596		75	25			1	6	46	46			33	88	0.73	76.9
A	?	?																		5		0.00	5.2
A	?	2S		13	2.9	421	409	97		28	72			100						17	90	1.26	4.6
A	?	3S		25		795	795	189		100					46	25	29			31	93	0.87	8.6
A	?	4S		62	1.2	1,960	1,938	460		100				31	36	7	26			26	50	0.63	38.5
A	<b>Totals</b>			20	1.1	3,177	3,142	745		91	9			32	34	11	23			24	55	0.70	56.8
M	?	4S		100		51	51	12		100				100						16	30	0.44	1.7
M	<b>Totals</b>			0		51	51	12		100				100						16	30	0.44	1.7
S	?	?																		10		0.00	.8
S	?	3S		78		53	53	13		100				100						16	70	1.06	.8
S	?	4S		22	.0	15	15	4		100				100						16	20	0.44	.8
S	<b>Totals</b>			0		68	68	16		100				100						14	30	0.57	2.3
<b>Type Totals</b>					1.3	16,047	15,842	3,758		0	77	21	2	11	12	37	40			28	72	0.72	219.7

T04N R07W S17 TTHIN	T04N R07W S17 TTHIN
Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt BdFt	
04N 07W 17 R/W THIN 9.50 36 150 1 W	

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			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	?	?	CU														6	0.00	3.6		
D	?	?	2S	59	.5	11,114	11,055	105		2	57	40		1		9	90	39	304	1.86	36.4
D	?	?	3S	35	1.3	6,686	6,596	63		98	2			0	3	48	48	35	85	0.73	77.5
D	?	?	4S	6		1,065	1,065	10		100				21	29	38	11	27	39	0.39	27.3
<b>D</b>	<b>Totals</b>			52	.8	18,865	18,716	178		41	35	24		2	3	25	71	34	129	1.00	144.8
H	?	?	?															18		0.00	6.8
H	?	?	2S	47	1.5	5,042	4,964	47			64	36		2	7	23	69	36	280	1.87	17.7
H	?	?	3S	43	1.3	4,597	4,536	43		84	10	6			2	46	52	35	99	0.81	45.8
H	?	?	4S	10	1.9	1,029	1,010	10	4	95	1			62	28	3	7	20	27	0.49	38.0
<b>H</b>	<b>Totals</b>			29	1.5	10,668	10,511	100	0	46	35	19		7	7	31	55	29	97	0.91	108.3
A	?	?	CU															5		0.00	5.8
A	?	?	2S	35	1.2	2,126	2,101	20		17	77	6		28	31	41		25	142	1.40	14.7
A	?	?	3S	17		999	999	9		100					52	22	26	30	93	0.88	10.7
A	?	?	4S	48	.9	2,893	2,868	27		100				27	30	9	34	27	54	0.65	53.2
<b>A</b>	<b>Totals</b>			17	.8	6,018	5,967	57		71	27	2		23	34	23	20	26	71	0.80	84.5
C	DO	?	CU															10		0.00	1.1
C	DO	?	3S	70		78	78	1		100							100	40	67	1.49	1.2
C	DO	?	4S	30		33	33	0		100				100				16	30	0.75	1.1
<b>C</b>	<b>Totals</b>			0		111	111	1		100				30		70		22	33	1.09	3.4
SF	?	?	2S	89		275	275	3			34	66				100		32	465	2.84	.6
SF	?	?	3S	11		35	35	0		100						100		32	120	1.06	.3
<b>SF</b>	<b>Totals</b>			1		310	310	3		11	30	58				100		32	350	2.25	.9
S	?	?	CU															10		0.00	.8
S	?	?	3S	78		53	53	1		100				100				16	70	1.06	.8
S	?	?	4S	22		15	15	0		100				100				16	20	0.44	.8
<b>S</b>	<b>Totals</b>			0		68	68	1		100				100				14	30	0.57	2.3
M	DO	?	4S	100		51	51	0		100				100				16	30	0.44	1.7
<b>M</b>	<b>Totals</b>			0		51	51	0		100				100				16	30	0.44	1.7
<b>Type Totals</b>					1.0	36,093	35,735	339	0	48	33	19		7	9	27	57	30	103	0.94	345.8

TC TSTATS		STATISTICS						PAGE	1	
ODF		PROJECT LOSTFIRE						DATE	3/25/2005	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	09	TAKE	00CC	159.90	37	193	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL	37	193	5.2							
CRUISE	18	95	5.3	21,434			.4			
DBH COUNT										
REFOREST										
COUNT	18	98	5.4							
BLANKS	1									
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
R ALDER	39	70.7	13.9	43		74.5	8,123	8,037	2,237	2,237
DOUG FIR	30	22.0	22.0	80		58.4	9,622	9,535	2,363	2,363
WHEMLOCK	21	39.8	16.1	51		56.2	7,948	7,841	1,959	1,959
PS FIR	5	1.5	25.4	102	1	5.4	1,305	1,305	283	283
<b>TOTAL</b>	<b>95</b>	<b>134.0</b>	<b>16.3</b>	<b>52</b>		<b>194.5</b>	<b>26,998</b>	<b>26,719</b>	<b>6,842</b>	<b>6,842</b>
	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
R ALDER	92.5	15.2	60	71	81					
DOUG FIR	131.8	21.7	17	22	27					
WHEMLOCK	117.7	19.3	32	40	47					
PS FIR	424.8	69.8	0	2	3					
<b>TOTAL</b>	<b>53.4</b>	<b>8.8</b>	<b>122</b>	<b>134</b>	<b>146</b>	<b>114</b>	<b>28</b>	<b>13</b>		
	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
R ALDER	93.4	15.4	63	74	86					
DOUG FIR	123.6	20.3	47	58	70					
WHEMLOCK	113.1	18.6	46	56	67					
PS FIR	433.0	71.2	2	5	9					
<b>TOTAL</b>	<b>48.5</b>	<b>8.0</b>	<b>179</b>	<b>194</b>	<b>210</b>	<b>94</b>	<b>24</b>	<b>10</b>		
	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
R ALDER	97.9	16.1	6,743	8,037	9,331					
DOUG FIR	124.5	20.5	7,583	9,535	11,487					
WHEMLOCK	124.9	20.5	6,231	7,841	9,451					
PS FIR	440.2	72.4	361	1,305	2,249					
<b>TOTAL</b>	<b>54.2</b>	<b>8.9</b>	<b>24,340</b>	<b>26,719</b>	<b>29,097</b>	<b>117</b>	<b>29</b>	<b>13</b>		



TC TSTATS				STATISTICS				PAGE 1		
ODF				PROJECT LOSTFIRE				DATE 3/25/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	09	LEAVE	00CC	159.90	37	21	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	37	21	.6							
CRUISE	7	9	1.3		1,049		.9			
DBH COUNT										
REFOREST										
COUNT	7	12	1.7							
BLANKS	23									
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
SNAG	4	3.0	28.1	26		13.0				
DOUGLEAV	2	2.2	19.1	76		4.3	310	310	81	81
SPRUCELV	2	.9	21.2	47		2.2	200	189	58	58
CEDLEAV	1	.5	29.0	63		2.2				
<b>TOTAL</b>	9	6.6	24.6	48		21.6	510	499	138	138
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH		5	10		15
SNAG	237.5	39.0	2	3	4					
DOUGLEAV	375.1	61.7	1	2	4					
SPRUCELV	456.1	75.0	0	1	2					
CEDLEAV	424.1	69.7	0	0	1					
<b>TOTAL</b>	165.6	27.2	5	7	8		1,097	274		122
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH		5	10		15
SNAG	230.4	37.9	8	13	18					
DOUGLEAV	363.8	59.8	2	4	7					
SPRUCELV	424.1	69.7	1	2	4					
CEDLEAV	424.1	69.7	1	2	4					
<b>TOTAL</b>	160.8	26.4	16	22	27		1,034	258		115
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH		5	10		15
SNAG										
DOUGLEAV	424.1	69.7	94	310	526					
SPRUCELV	501.0	82.4	33	189	345					
CEDLEAV										
<b>TOTAL</b>	317.1	52.1	239	499	759		4,023	1,006		447

TC TSTATS				STATISTICS				PAGE	1	
ODF				PROJECT LOSTFIRE				DATE	3/23/2005	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	09	AREA125	00CC	159.90	37	214	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	37	214	5.8							
CRUISE	19	104	5.5	22,752	.5					
DBH COUNT										
REFOREST										
COUNT	18	110	6.1							
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
R ALDER	39	70.7	13.9	43		74.5	8,123	8,037	2,237	2,237
DOUG FIR	30	22.0	22.0	80		58.4	9,622	9,535	2,363	2,363
WHEMLOCK	21	39.8	16.1	51		56.2	7,948	7,841	1,959	1,959
SNAG	4	3.0	28.1	26		13.0				
PS FIR	5	1.5	25.4	102	1	5.4	1,305	1,305	283	283
DOUGLEAV	1	2.3	16.0	70		3.2	465	465	121	121
SPRUCELV	2	.9	21.2	47		2.2	200	189	58	58
HEMLEAV	1	1.5	16.0	31		2.2	62	62	39	39
CEDLEAV	1	.5	29.0	63		2.2				
<b>TOTAL</b>	<i>104</i>	<i>142.3</i>	<i>16.7</i>	<i>52</i>		<i>217.2</i>	<i>27,724</i>	<i>27,434</i>	<i>7,059</i>	<i>7,059</i>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	92.5	15.2	60	71	81					
DOUG FIR	131.8	21.7	17	22	27					
WHEMLOCK	117.7	19.3	32	40	47					
SNAG	237.5	39.0	2	3	4					
PS FIR	424.8	69.8	0	2	3					
DOUGLEAV	448.3	73.7	1	2	4					
SPRUCELV	456.1	75.0	0	1	2					
HEMLEAV	424.1	69.7	0	2	3					
CEDLEAV	424.1	69.7	0	0	1					
<b>TOTAL</b>	<i>50.3</i>	<i>8.3</i>	<i>131</i>	<i>142</i>	<i>154</i>	<i>101</i>	<i>25</i>	<i>11</i>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	93.4	15.4	63	74	86					
DOUG FIR	123.6	20.3	47	58	70					
WHEMLOCK	113.1	18.6	46	56	67					
SNAG	230.4	37.9	8	13	18					
PS FIR	433.0	71.2	2	5	9					
DOUGLEAV	448.3	73.7	1	3	6					
SPRUCELV	424.1	69.7	1	2	4					
HEMLEAV	424.1	69.7	1	2	4					
CEDLEAV	424.1	69.7	1	2	4					
<b>TOTAL</b>	<i>47.6</i>	<i>7.8</i>	<i>200</i>	<i>217</i>	<i>234</i>	<i>90</i>	<i>23</i>	<i>10</i>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	97.9	16.1	6,743	8,037	9,331					
DOUG FIR	124.5	20.5	7,583	9,535	11,487					
WHEMLOCK	124.9	20.5	6,231	7,841	9,451					
SNAG										
PS FIR	440.2	72.4	361	1,305	2,249					
DOUGLEAV	448.3	73.7	122	465	807					
SPRUCELV	501.0	82.4	33	189	345					

TC TSTATS				STATISTICS				PAGE 2	
ODF				PROJECT LOSTFIRE				DATE 3/23/2005	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	07W	09	AREA125	00CC	159.90	37	214	1	W
SD: 1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
HEMLEAV		424.1	69.7	19	62	105			
CEDLEAV									
<b>TOTAL</b>		51.3	8.4	25,120	27,434	29,748	105	26	12

TC TSTATS		STATISTICS							PAGE	1
ODF		PROJECT LOSTFIRE					DATE	3/23/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	17	AREA3	THIN	237.20	36	275	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		36	275	7.6						
CRUISE		18	150	8.3	47,894	.3				
DBH COUNT										
REFOREST										
COUNT		18	125	6.9						
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	32	30.2	21.5	85		76.2	12,046	11,995	3,080	3,080
WHEMLOCK	37	53.2	14.0	45		56.7	6,112	6,041	1,719	1,719
DOUG FIR	21	42.0	15.0	63		51.4	6,827	6,729	1,827	1,827
R ALDER	23	44.4	13.1	33		41.3	3,177	3,142	957	957
HEMLEAV	21	12.3	20.5	72		28.3	4,457	4,373	1,124	1,124
ALDRLEAV	9	13.9	17.7	59		23.8	3,139	3,125	841	841
CEDLEAV	3	2.3	19.4	36		4.7	111	111	82	82
SFIRLEAV	1	.3	28.0	102	0	1.3	286	286	59	59
SNAG	1	.8	15.0	18		.9				
S SPRUCE	1	.8	15.0	44		.9	68	68	18	18
BL MAPLE	1	1.7	10.0	17		.9	51	51	12	12
<b>TOTAL</b>	<b>150</b>	<b>201.9</b>	<b>16.1</b>	<b>54</b>		<b>286.5</b>	<b>36,275</b>	<b>35,922</b>	<b>9,720</b>	<b>9,720</b>
SD: 1		COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		73.5	12.2	27	30	34				
WHEMLOCK		114.8	19.1	43	53	63				
DOUG FIR		170.9	28.5	30	42	54				
R ALDER		176.3	29.4	31	44	57				
HEMLEAV		139.8	23.3	9	12	15				
ALDRLEAV		241.0	40.2	8	14	20				
CEDLEAV		426.9	71.2	1	2	4				
SFIRLEAV		600.0	100.0		0	1				
SNAG		600.0	100.0		1	2				
S SPRUCE		600.0	100.0		1	2				
BL MAPLE		600.0	100.0		2	3				
<b>TOTAL</b>		<b>58.9</b>	<b>9.8</b>	<b>182</b>	<b>202</b>	<b>222</b>	<b>139</b>	<b>35</b>	<b>15</b>	
SD: 1		COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		65.4	10.9	68	76	85				
WHEMLOCK		114.4	19.1	46	57	67				
DOUG FIR		152.5	25.4	38	51	64				
R ALDER		156.8	26.1	31	41	52				
HEMLEAV		125.6	20.9	22	28	34				
ALDRLEAV		238.5	39.7	14	24	33				
CEDLEAV		426.9	71.2	1	5	8				
SFIRLEAV		600.0	100.0	0	1	3				
SNAG		600.0	100.0	0	1	2				
S SPRUCE		600.0	100.0	0	1	2				
BL MAPLE		600.0	100.0	0	1	2				
<b>TOTAL</b>		<b>41.7</b>	<b>6.9</b>	<b>267</b>	<b>287</b>	<b>306</b>	<b>69</b>	<b>17</b>	<b>8</b>	
SD: 1		COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		63.9	10.6	10,718	11,995	13,271				
WHEMLOCK		129.6	21.6	4,736	6,041	7,347				
DOUG FIR		150.4	25.1	5,042	6,729	8,415				

TC TSTATS				STATISTICS				PAGE 2	
ODF				PROJECT LOSTFIRE				DATE 3/23/2005	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	07W	17	AREA3	THIN	237.20	36	275	1	W
SD: 1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
		VAR.	S.E. %	LOW	AVG	HIGH	5	10	15
R ALDER		158.7	26.5	2,311	3,142	3,973			
HEMLEAV		130.5	21.8	3,422	4,374	5,325			
ALDRLEAV		247.1	41.2	1,838	3,125	4,411			
CEDLEAV		426.9	71.2	32	111	191			
SFIRLEAV		600.0	100.0	0	286	573			
SNAG									
S SPRUCE		600.0	100.0	0	68	137			
BL MAPLE		600.0	100.0	0	51	103			
<b>TOTAL</b>		<b>42.6</b>	<b>7.1</b>	<b>33,371</b>	<b>35,922</b>	<b>38,474</b>	<b>73</b>	<b>18</b>	<b>8</b>

TC TSTATS		STATISTICS						PAGE 1		
ODF		PROJECT LOSTFIRE				DATE 3/23/2005				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	17	TAKE	THIN	237.20	36	143	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		36	143	4.0						
CRUISE		17	82	4.8	33,545	.2				
DBH COUNT										
REFOREST										
COUNT		15	61	4.1						
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	36	52.6	14.0	45		55.8	5,923	5,852	1,672	1,672
DOUG FIR	21	42.0	15.0	63		51.4	6,827	6,729	1,827	1,827
R ALDER	23	44.4	13.1	33		41.3	3,177	3,142	957	957
BL MAPLE	1	1.7	10.0	17		.9	51	51	12	12
S SPRUCE	1	.8	15.0	44		.9	68	68	18	18
<b>TOTAL</b>	82	141.4	14.0	46		150.4	16,047	15,842	4,487	4,487
	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
WHEMLOCK	114.6	19.1	43	53	63					
DOUG FIR	170.9	28.5	30	42	54					
R ALDER	176.3	29.4	31	44	57					
BL MAPLE	600.0	100.0		2	3					
S SPRUCE	600.0	100.0		1	2					
<b>TOTAL</b>	79.6	13.3	123	141	160	253	63	28		
	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
WHEMLOCK	114.7	19.1	45	56	66					
DOUG FIR	152.5	25.4	38	51	64					
R ALDER	156.8	26.1	31	41	52					
BL MAPLE	600.0	100.0	0	1	2					
S SPRUCE	600.0	100.0	0	1	2					
<b>TOTAL</b>	70.1	11.7	133	150	168	197	49	22		
	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
WHEMLOCK	130.8	21.8	4,576	5,852	7,127					
DOUG FIR	150.4	25.1	5,042	6,729	8,415					
R ALDER	158.7	26.5	2,311	3,142	3,973					
BL MAPLE	600.0	100.0	0	51	103					
S SPRUCE	600.0	100.0	0	68	137					
<b>TOTAL</b>	79.2	13.2	13,752	15,842	17,933	251	63	28		

TC TSTATS		STATISTICS						PAGE 1		
ODF		PROJECT LOSTFIRE						DATE 3/23/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	17	LEAVE	THIN	237.20	36	132	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		36	132	3.7						
CRUISE		18	68	3.8	14,597	.5				
DBH COUNT										
REFOREST										
COUNT		18	64	3.6						
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	32	30.2	21.5	85		76.2	12,046	11,995	3,080	3,080
HEMLEAV	21	12.3	20.5	72		28.3	4,457	4,373	1,124	1,124
ALDRLEAV	9	13.9	17.7	59		23.8	3,139	3,125	841	841
CEDLEAV	3	2.3	19.4	36		4.7	111	111	82	82
SFIRLEAV	1	.3	28.0	102	0	1.3	286	286	59	59
SNAG	1	.8	15.0	18		.9				
BL MAPLE	1	1.7	10.0	17		.9	51	51	12	12
<b>TOTAL</b>	<b>68</b>	<b>61.5</b>	<b>20.1</b>	<b>72</b>		<b>136.1</b>	<b>20,090</b>	<b>19,942</b>	<b>5,198</b>	<b>5,198</b>
SD:	1	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		73.5	12.2	27	30	34				
HEMLEAV		139.8	23.3	9	12	15				
ALDRLEAV		241.0	40.2	8	14	20				
CEDLEAV		426.9	71.2	1	2	4				
SFIRLEAV		600.0	100.0	0	0	1				
SNAG		600.0	100.0	0	1	2				
BL MAPLE		600.0	100.0	0	2	3				
<b>TOTAL</b>		<b>47.0</b>	<b>7.8</b>	<b>57</b>	<b>62</b>	<b>66</b>			<b>88</b>	<b>22</b>
$SDI = TPA \times \left(\frac{RMD}{10}\right)^{1.6}$ $= 61.5 \times \left(\frac{20.1}{10}\right)^{1.6}$ $= 187.9$ $DF_{max} = 31.3 \approx 30$										
SD:	1	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		65.4	10.9	68	76	85				
HEMLEAV		125.6	20.9	22	28	34				
ALDRLEAV		238.5	39.7	14	24	33				
CEDLEAV		426.9	71.2	1	5	8				
SFIRLEAV		600.0	100.0	0	1	3				
SNAG		600.0	100.0	0	1	2				
BL MAPLE		600.0	100.0	0	1	2				
<b>TOTAL</b>		<b>28.4</b>	<b>4.7</b>	<b>130</b>	<b>136</b>	<b>143</b>			<b>32</b>	<b>8</b>
SD:	1	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		63.9	10.6	10,718	11,995	13,271				
HEMLEAV		130.5	21.8	3,422	4,374	5,325				
ALDRLEAV		247.1	41.2	1,838	3,125	4,411				
CEDLEAV		426.9	71.2	32	111	191				
SFIRLEAV		600.0	100.0	0	286	573				
SNAG										
BL MAPLE		600.0	100.0	0	51	103				
<b>TOTAL</b>		<b>32.1</b>	<b>5.4</b>	<b>18,873</b>	<b>19,942</b>	<b>21,010</b>			<b>41</b>	<b>10</b>

TC TSTATS				STATISTICS				PAGE 1		
ODF				PROJECT LOSTFIRE				DATE 3/25/2005		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	17	R/W	THIN	9.50	36	275	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	36	275	7.6							
CRUISE	18	150	8.3		1,933		7.8			
DBH COUNT										
REFOREST										
COUNT	18	125	6.9							
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
DOUG FIR	53	72.4	18.0	72		127.6	18,865	18,716	4,906	4,906
WHEMLOCK	58	64.5	15.5	51		85.0	10,668	10,511	2,861	2,861
R ALDER	32	60.8	14.0	37		65.1	6,018	5,967	1,731	1,731
WR CEDAR	3	2.3	19.4	36		4.7	111	111	82	82
PS FIR	1	.3	28.0	102	0	1.3	310	310	64	64
SNAG	1	.8	15.0	18		.9				
S SPRUCE	1	.8	15.0	44		.9	68	68	18	18
BL MAPLE	1	1.7	10.0	17		.9	51	51	12	12
<b>TOTAL</b>	<b>150</b>	<b>203.5</b>	<b>16.1</b>	<b>54</b>		<b>286.4</b>	<b>36,093</b>	<b>35,735</b>	<b>9,675</b>	<b>9,675</b>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	108.6	18.1	59	72	85					
WHEMLOCK	107.6	17.9	53	64	76					
R ALDER	160.1	26.7	45	61	77					
WR CEDAR	426.9	71.2	1	2	4					
PS FIR	600.0	100.0		0	1					
SNAG	600.0	100.0		1	2					
S SPRUCE	600.0	100.0		1	2					
BL MAPLE	600.0	100.0		2	3					
<b>TOTAL</b>	<b>57.2</b>	<b>9.5</b>	<b>184</b>	<b>203</b>	<b>223</b>	<b>131</b>	<b>33</b>	<b>15</b>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	87.6	14.6	109	128	146					
WHEMLOCK	104.2	17.4	70	85	100					
R ALDER	145.1	24.2	49	65	81					
WR CEDAR	426.9	71.2	1	5	8					
PS FIR	600.0	100.0	0	1	3					
SNAG	600.0	100.0	0	1	2					
S SPRUCE	600.0	100.0	0	1	2					
BL MAPLE	600.0	100.0	0	1	2					
<b>TOTAL</b>	<b>41.5</b>	<b>6.9</b>	<b>267</b>	<b>286</b>	<b>306</b>	<b>69</b>	<b>17</b>	<b>8</b>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	83.2	13.9	16,122	18,716	21,310					
WHEMLOCK	112.2	18.7	8,545	10,511	12,476					
R ALDER	160.3	26.7	4,373	5,967	7,561					
WR CEDAR	426.9	71.2	32	111	191					
PS FIR	600.0	100.0		310	620					
SNAG										
S SPRUCE	600.0	100.0	0	68	137					
BL MAPLE	600.0	100.0	0	51	103					
<b>TOTAL</b>	<b>43.9</b>	<b>7.3</b>	<b>33,119</b>	<b>35,735</b>	<b>38,351</b>	<b>77</b>	<b>19</b>	<b>9</b>		





TC TSTNDSUM		Stand Table Summary														
ODF		Project LOSTFIRE														
T04N R07W S17 TTHIN										T04N R07W S17 TTHIN						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:								
04N	07W	17	LEAVE	THIN	237.20	36	68	2	Date:	3/31/2001						
								Time:	12:37:40PM							
S Spc	T	DBH	Sample Trees	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
SN	Totals	1	82	26	.761	.93										
Totals		68	87	94	61.539	136.14	123.01	42.3	162.1	5198	19,942			12,329	4,730	

**Log Stock Table - MBF**

T04N R07W S09 Ty00CC	159.90
T04N R07W S17 TyTHIN	9.50
T04N R07W S17 TyTHIN	237.20

Project: LOSTFIRE  
Acres 397.10

S Spp	T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
D		?0	2S	20	16		16	.5						16							
D		DO	2S	24	12		12	.4					12								
D		DO	2S	28	37		37	1.1									37				
D		DO	2S	30	34		34	1.0						34							
D		?	2S	32	498	3.1	483	14.6					73	106	230	74					
D		?	2S	40	994		990	30.0					2	246	219	336	184	4			
D		DO	3S	14	17		17	.5							17						
D		DO	3S	18	8		8	.2					0	8							
D		DO	3S	20	23		23	.7							23						
D		?	3S	22	53	35.0	35	1.1							35						
D		?0	3S	23	0		0	.0						0							
D		DO	3S	26	8		8	.2					8								
D		DO	3S	27	5		5	.1					5								
D		DO	3S	28	11		11	.3					5	6							
D		?0	3S	30	10		10	.3					1		10						
D		?	3S	32	758		758	23.0					156	224	378						
D		?	3S	36	50		50	1.5					50	0							
D		DO	3S	38	15		15	.5						15							
D		?	3S	40	538		538	16.3							114						
D		DO	4S	14	9		9	.3					9								
D		?	4S	16	10		10	.3					7	3							
D		?	4S	18	9		9	.3					9								
D		?	4S	20	11		11	.3					11								
D		?0	4S	24	4		4	.1					0	4							
D		DO	4S	26	4		4	.1					4								
D		?	4S	30	64		64	2.0					64								
D		?	4S	32	100		100	3.0					100								
D		DO	4S	38	8		8	.2					8								
D		?	4S	40	29		29	.9					29								
D		Totals			3,337	1.2	3,299	39.4					620	501	536	328	450	566	295	4	
H		DO	2S	14	34		34	1.2									34				
H		DO	2S	16	32		32	1.2										32			
H		DO	2S	20	1		1	.0							1						
H		?	2S	30	42		42	1.5						42							
H		?	2S	32	480	1.5	473	17.2						139	77	199	59				
H		DO	2S	36	2	30.8	1	.0							1						
H		?	2S	40	624		618	22.5							159	234	223	2			



**Log Stock Table - MBF**

T04N R07W S09 Ty00CC 159.90  
T04N R07W S17 TyTHIN 9.50  
T04N R07W S17 TyTHIN 237.20

Project: LOSTFIRE  
Acres 397.10

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
A	?	4S	20	183	3.1	177	8.5		54	123										
A	DO	4S	22	8		8	.4			8										
A	?	4S	24	52		52	2.5			52										
A	DO	4S	25	15		15	.7			15										
A	?	4S	26	17		17	.8			17										
A	?	4S	30	190		190	9.1			159	31									
A	?	4S	32	122		122	5.8			122										
A	DO	4S	34	45		45	2.1			45										
A	?	4S	36	56		56	2.7			56										
A	DO	4S	37	17		17	.8			17										
A	DO	4S	38	54		54	2.6			54										
A	?	4S	40	253	1.3	249	11.9			249										
A	DO	4S	43	43		43	2.0		43											
A	Totals			2,110	1.1	2,087	24.9		97	1157	472	199	123	38						
SF	?	2S	32	145		145	68.7				10	27	83	25						
SF	DO	2S	40	48		48	22.6					17	30							
SF	?	3S	32	11		11	5.0			10	0									
SF	DO	3S	40	5		5	2.5			5										
SF	DO	4S	26	3		3	1.2		3											
SF	Totals			212		212	2.5		3	15	0	10	27	101	55					
C	DO	3S	40	1		1	70.0		1	0										
C	DO	4S	16	0		0	30.0			0										
C	Totals			1		1	.0		1	1										
M	?	4S	16	13		13	100.0		13											
M	Totals			13		13	.2		13											
S	?	3S	16	13		13	77.8				13									
S	?	4S	16	4		4	22.2		4											
S	Totals			17		17	.2		4		13									
Total	All Species			8,466	1.1	8,370	100.0		10	1302	1888	1704	944	912	1160	443	6			

CRUISE DESIGN  
ASTORIA DISTRICT

Sale Name: Lost Fire Area(s) 1, 2, 5

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

Approx. Cruise Acres: 175 Estimated CV% 45 Net BF or SE% Objective 11 Net BF or BAF/Acre BAF/Acre

Planned Sale Volume: 8.8 MMBF Estimated Sale Area Value/Acre: \$ 5,000

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and 20 hardwood trees;  
 (b) Sample 17 cruise plots; (c) Other goals ( X Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; \_\_\_ Determine LWD (down wood) cubic feet and decay classes; \_\_\_ Determine "diameter limit" harvest parameters;

CRUISE ALL W TREES AND SNAGS ≥ 15" DBH

B. **Cruise Design:** <sup>B1</sup> CONIFER <sup>B2</sup> ALDER BAF 33.61

1. Plot Cruises: BAF 40 (Full point) Half point (circle one)

Fixed Plot Size \_\_\_ Plot Radius \_\_\_ feet

Cruise Line Direction(s) See Cruise Map

Cruise Line Spacing 10 (chains) (feet)

Cruise Plot Spacing 5 (chains) (feet)

Grade/Count Ratio 1:2

2. ITS (Sample Tree) Cruises: Measure-grade ratios: D-fir \_\_\_ Hemlock \_\_\_  
Spruce \_\_\_ True Fir \_\_\_ Cedar \_\_\_ Hardwood \_\_\_

C. **Tree Measurements:**

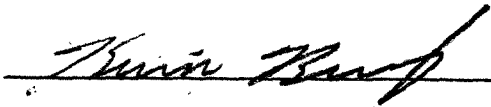
1. **Diameter:** Minimum DBH to cruise is 8 " for conifers and 10 " for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.

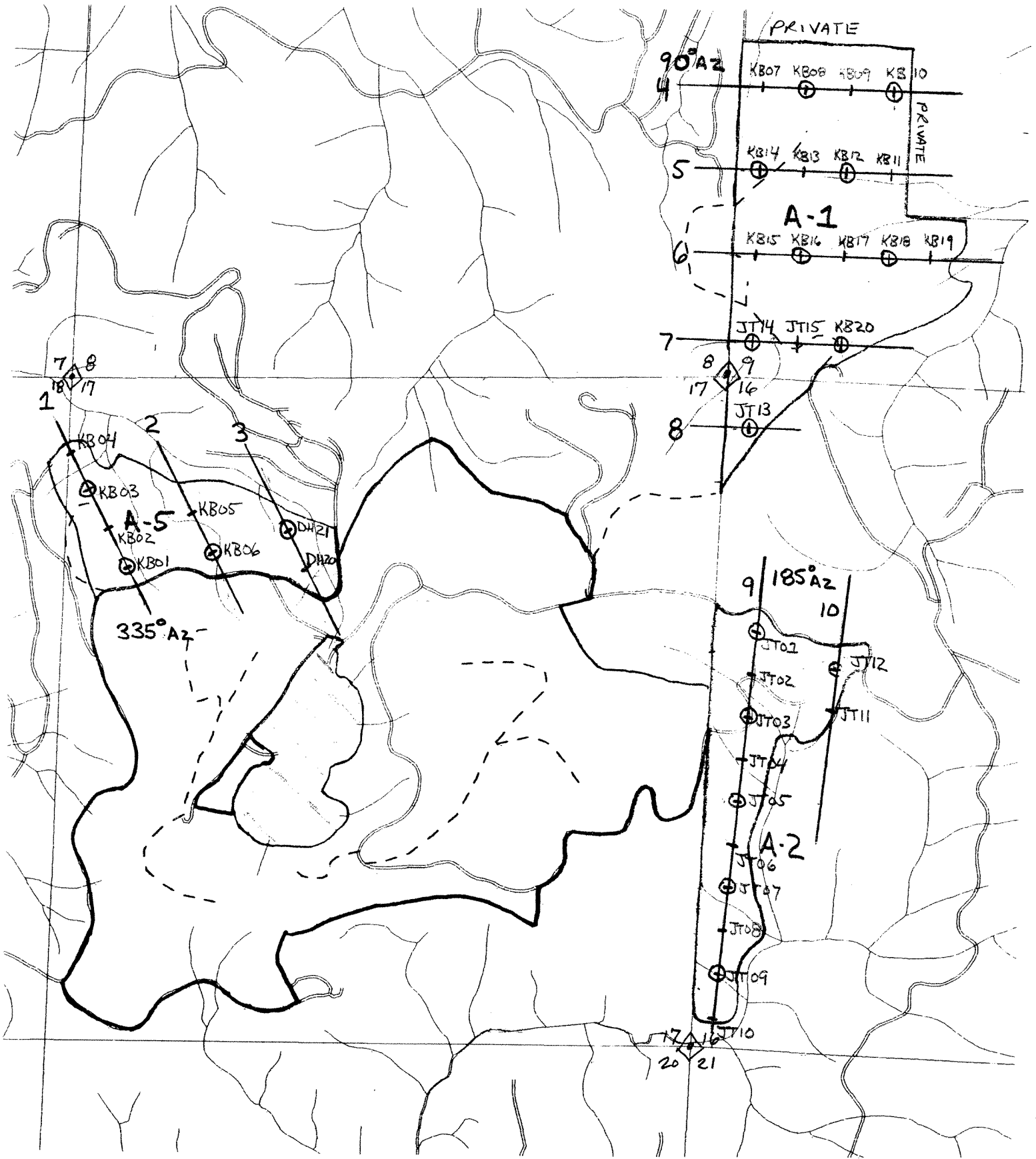
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.

3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7 " 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
  
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.
  - ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.
  
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
  
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.
  - B. Data Recorder Instructions
  - C. Other

Cruise Design by:   
 Approved by: \_\_\_\_\_  
 Date: \_\_\_\_\_



**Exhibit A Map**

OF TIMBER SALE CONTRACT NO. XXX-XX-XX  
 LOST FIRE COMBINATION  
 PORTIONS OF SEC. 9, 16, 17, 18, T4N, R7W,  
 W.M. CLATSOP COUNTY, OREGON

1" = 1000'  
 Scale

**Legend**

- + COUNT PLOT
- ⊕ GRADE PLOT

Sch x 10ch GRID  
 4n RAF



CRUISE DESIGN  
ASTORIA DISTRICT

Sale Name: LOST FIRE Area(s) 3

Harvest Type: CC PC CT "Automark Thinning" (circle one)  
Approx. Cruise Acres: 275 Estimated CV% 40 Net BF or SE% Objective 7 Net BF or BA/Acre BA/Acre

Planned Sale Volume: 8.8 MMBF Estimated Sale Area Value/Acre: \$ 5,000

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and 20 hardwood trees:  
 (b) Sample 14 cruise plots; (c) Other goals ( X Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes;    Determine LWD (down wood) cubic feet and decay classes;    Determine "diameter limit" harvest parameters;  
CRUISE ALL SNAGS =>15"

B. **Cruise Design:**

1. **Plot Cruises:** BAF 33.6 (Full point) Half point) (circle one)  
 Fixed Plot Size    Plot Radius    feet  
 Cruise Line Direction(s) 360°  
 Cruise Line Spacing 8 (chains)(feet)  
 Cruise Plot Spacing 8 (chains)(feet)  
 Grade/Count Ratio 1:2
2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir    Hemlock     
 Spruce    True Fir    Cedar    Hardwood

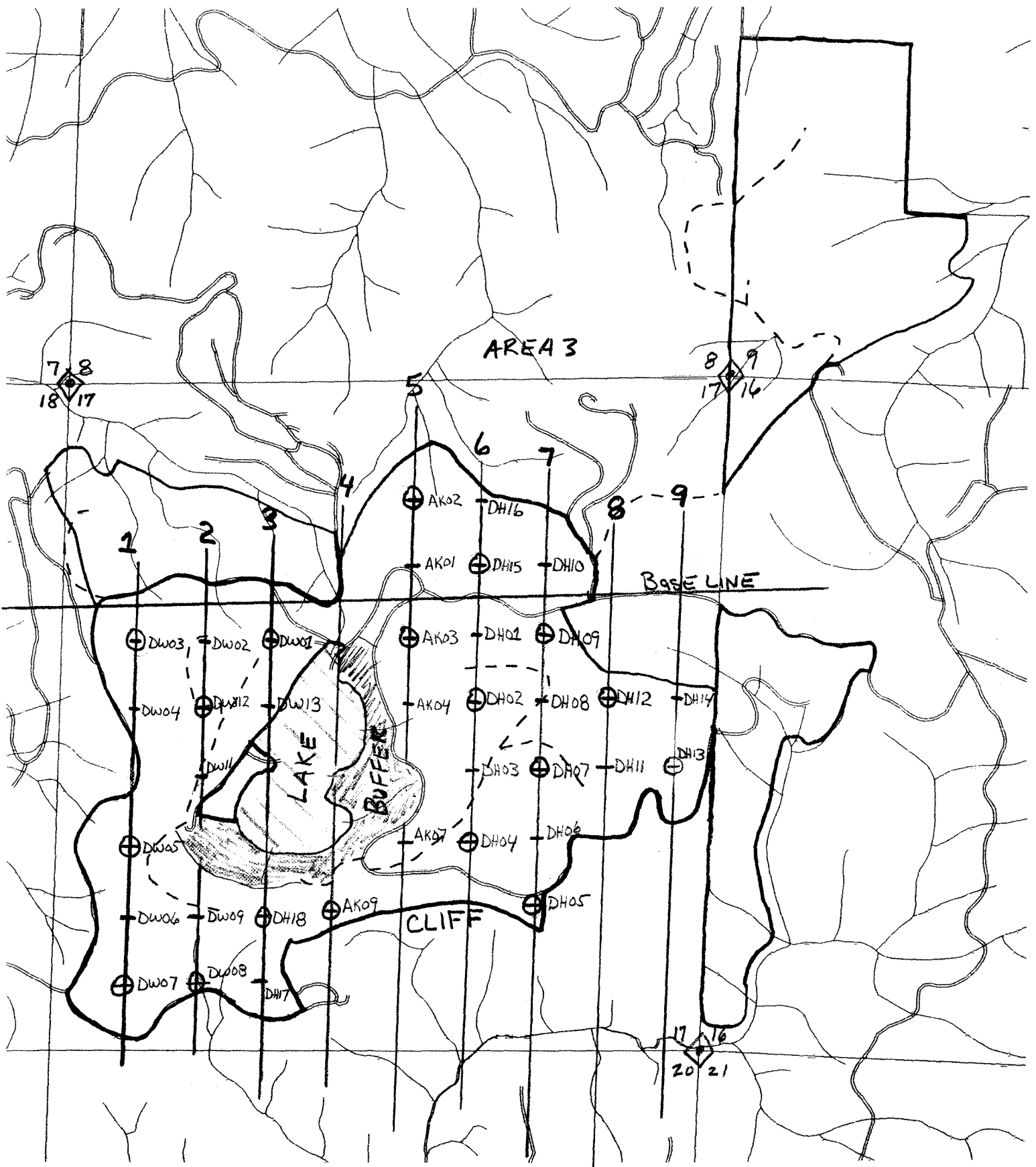
C. **Tree Measurements:**

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" 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.

25' UNPOSTED buffers around lake and Perennial Streams

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
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.  
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.
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
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).  
 B. Data Recorder Instructions  
 C. Other

Cruise Design by: Kevin B...  
 Approved by: \_\_\_\_\_  
 Date: \_\_\_\_\_



**Legend**  
 + Count Plot  
 ⊕ GRADE PLOT

**Exhibit A Map**  
 OF TIMBER SALE CONTRACT NO. XXX-XX-XX  
 LOST FIRE COMBINATION  
 PORTIONS OF SEC. 9, 16, 17, 18, T4N, R7W,  
 W.M. CLATSOP COUNTY, OREGON

1" = 1000'  
 Scale

8ch x 8ch Grid  
 22 / 2AE