



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal  
Hamlet  
Sale 341-08-16

District: Astoria

Date: June 29, 2007

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**Cost Summary**

	<b>Conifer</b>	<b>Hardwood</b>	<b>Total</b>
<b>Gross Timber Sales Value</b>	\$1,483,447.96	\$116,520.84	\$1,599,968.80
		<b>Project Work:</b>	\$(46,856.00)
		<b>Advertised Value:</b>	\$1,553,112.80



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**Timber Description**

**Location:** Portions of Section 31, T5N, R8W, and portions of Sections 6, 8, and 17, T4N, R8W, and portions of Section 1, T4N, R9W, W.M., Clatsop County, Oregon.

**Stand Stocking:** 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	22	0	97
Western Hemlock / Fir	19	0	95
Sitka Spruce	24	0	95
Red Cedar	23	0	91
Alder (Red)	14	0	97

Volume by Grade	2S	3S	4S	Camprur	SM	Total
Douglas - Fir	3,001	752	117	0	86	3,956
Western Hemlock / Fir	114	48	1	0	0	163
Sitka Spruce	75	243	10	0	0	328
Red Cedar	0	1	0	0	0	1
Alder (Red)	0	0	0	261	0	261
Total	3,190	1,044	128	261	86	4,709



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Comments: Pond Values Used: 2nd Quarter Calendar Year 2007.

Log Markets: Mist, Tillamook, Clatskanie, Garibaldi.

HAULING

Hauling costs equivalent to \$700 daily truck cost.

Other Costs (Profit and Risk to be added):

100% Branding and Painting @ \$1.00/MBF X 4,709 MBF = \$4,709

Line Pulling Area 2: 20 hours @ \$25/hr = \$500

Loggers Choice Landings: Area 2(1), Area 5(1), Area 6(3):

- Construction: 5 @ \$285/landing = \$1,425

- Rock: 50 cubic yards/landing = 250 cy

- Haul: \$5.34/cy x 250 cy = \$1,335

- Rock Development: 250 cy @ \$1.90/cy = \$475

Loggers Choice Spurs, approx. 5 sta. @ \$89/station = \$445

Directional Felling: \$2/MBF x 500 MBF = \$1,000

Snag Creation: 40 Snags \$45/tree = \$1,800.00

TOTAL Other Costs (Profit and Risk to be added) = \$11,689

Other Costs (No Profit and Risk added):

Slash Piling in Areas 1, 3, & 6: 44.3 hours x \$120/hr = \$5,316

Move-in Excavator for Slash Piling (2 X \$945) = \$1,090

Additional Cable Landing Piling in Areas 1, 3, & 6:

8 Landings x \$195/landing = \$1,560

TOTAL Other Costs (No Profit and Risk added) = \$7,966



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**Logging Conditions**

**Combination#: 1**

Douglas - Fir	15.60%
Western Hemlock / Fir	23.13%
Sitka Spruce	7.13%
Red Cedar	26.00%
Alder (Red)	19.72%

**Yarding Distance:** Short (400 ft)      **Downhill Yarding:** No  
**Logging System:** Track Skidder      **Process:** Manual Falling/Delimiting  
**Tree Size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF  
**Loads / Day:** 12.0      **Bd. Ft / Load:** 4,000  
**Cost / MBF:** \$71.68

**Machines:** Log Loader (B)  
Track Skidder

**Combination#: 2**

Douglas - Fir	44.41%
Western Hemlock / Fir	65.83%
Sitka Spruce	20.30%
Red Cedar	74.00%
Alder (Red)	56.14%

**Yarding Distance:** Medium (800 ft)      **Downhill Yarding:** No  
**Logging System:** Cable: Large Tower >=70      **Process:** Stroke Delimber  
**Tree Size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF  
**Loads / Day:** 6.0      **Bd. Ft / Load:** 4,000  
**Cost / MBF:** \$159.44

**Machines:** Log Loader (A)  
Stroke Delimber (A)  
Tower Yarder (Large)

**Combination#: 3**

Douglas - Fir	20.39%
Western Hemlock / Fir	5.63%
Sitka Spruce	37.01%
Alder (Red)	12.31%

**Yarding Distance:** Medium (800 ft)      **Downhill Yarding:** No  
**Logging System:** Track Skidder      **Process:** Manual Falling/Delimiting  
**Tree Size:** Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF  
**Loads / Day:** 8.0      **Bd. Ft / Load:** 4,000  
**Cost / MBF:** \$107.51

**Machines:** Log Loader (B)  
Track Skidder



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<b>Combination#:</b> 4	Douglas - Fir	19.60%
	Western Hemlock / Fir	5.41%
	Sitka Spruce	35.55%
	Alder (Red)	11.83%
<b>Yarding Distance:</b> Short (400 ft)		<b>Downhill Yarding:</b> No
<b>Logging System:</b> Cable: Medium Tower >40 - <70		<b>Process:</b> Manual Delimiting
<b>Tree Size:</b> Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF		
<b>Loads / Day:</b> 6.0	<b>Bd. Ft / Load:</b>	4,000
<b>Cost / MBF:</b> \$144.17		
<b>Machines:</b> Log Loader (A)		
	Tower Yarder (Medium)	



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**Logging Costs**

<b>Operating Seasons:</b>	2.00	<b>Profit Risk:</b>	10.00%
<b>Project Costs:</b>	\$46,856.00	<b>Other Costs (P/R):</b>	\$11,689.00
<b>Slash Disposal:</b>	\$0.00	<b>Other Costs:</b>	\$7,966.00

**Miles of Road**

Road Maintenance: \$4.21

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	4.5
Western Hemlock / Fir	\$0.00	3.0	4.0
Sitka Spruce	\$0.00	2.0	4.0
Red Cedar	\$0.00	2.0	3.5
Alder (Red)	\$0.00	2.0	3.5



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**Logging Costs Breakdown**

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
<b>Douglas - Fir</b>									
\$132.16	\$4.34	\$1.86	\$48.55	\$2.48	\$18.94	\$0.00	\$2.00	\$1.69	\$212.02
<b>Western Hemlock / Fir</b>									
\$135.39	\$4.42	\$1.86	\$55.68	\$2.48	\$19.98	\$0.00	\$2.00	\$1.69	\$223.50
<b>Sitka Spruce</b>									
\$128.53	\$4.42	\$1.86	\$83.52	\$2.48	\$22.08	\$0.00	\$2.00	\$1.69	\$246.58
<b>Red Cedar</b>									
\$136.62	\$4.59	\$1.86	\$99.09	\$2.48	\$24.46	\$0.00	\$2.00	\$1.69	\$272.79
<b>Alder (Red)</b>									
\$133.93	\$4.34	\$1.86	\$93.64	\$2.48	\$23.62	\$0.00	\$2.00	\$1.69	\$263.56

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$567.47	\$355.45	\$0.00
Western Hemlock / Fir	\$0.00	\$392.39	\$168.89	\$0.00
Sitka Spruce	\$0.00	\$395.99	\$149.41	\$0.00
Red Cedar	\$0.00	\$1,025.00	\$752.21	\$0.00
Alder (Red)	\$0.00	\$710.00	\$446.44	\$0.00



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**Summary**

**Amortized**

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Sitka Spruce	0	\$0.00	\$0.00
Red Cedar	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

**Unamortized**

Specie	MBF	Value	Total
Douglas - Fir	3,956	\$355.45	\$1,406,160.20
Western Hemlock / Fir	163	\$168.89	\$27,529.07
Sitka Spruce	328	\$149.41	\$49,006.48
Red Cedar	1	\$752.21	\$752.21
Alder (Red)	261	\$446.44	\$116,520.84

**Gross Timber Sale Value**

Recovery: \$1,599,968.80

Prepared by: Edward Holloran

Phone: 503-325-5451



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

Sale: Hamlet  
 Date: April 30, 2007  
 By: Ed Holloran

MBF: 4,709  
 \$\$/MBF: \$4.21

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations Entries (1)	Grader 14G	\$570	1	25	\$87	\$2,745
	Dump Truck 12CY	\$119	2	8	\$59	\$710
	FE Loader C966	\$525	1	8	\$79	\$1,157
Final Road Maintenance Haul Route	Grader 14G	\$570	1	42	\$84	\$4,098
	Dump Truck 12CY (2 @ \$119)	\$238	1	20	\$59	\$1,418
	FE Loader C966	\$525	1	20	\$79	\$2,105
	Vibratory Roller	\$570	1	42	\$79	\$3,888
	Water Truck 2,500 gallon Labor	\$139	1	42	\$70	\$3,079
				16	\$25	\$400
* Extra move with roller	Dump Truck 12CY & tilt trailer	\$158	1	1	\$59	\$217
<b>Total</b>						<b>\$19,817</b>

\* Move from Hamlet to Section 8 Rd. - One Hour with roller and Dump Truck and tilt trailer.

#### Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	2.5	6.3	2.5	25.2

#### Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	6.3	4.2	42.0
Vibratory Roller	1.5	6.3	4.2	42.0

Munce Rd. (0.65mi.), Munce ridge road (0.78mi.), Plus New Road Construction -2A to 2B, 6A to 6B (0.13 mi.), spur to Area 4 & 1 (0.56mi.), spur to Area 3 (0.12 mi.), two spurs to Area 2 (0.51 mi.), Hill Road (2.32 mi.), Section 8 Road (0.95 mi.), and spur along ridge on top of Area 6 (0.18 mi.)

**For a total of 6.3 miles**

Evaluate Munce ridge road (pit run base) to see type and amount of final road maintenance needed.

**SUMMARY OF ALL PROJECT COSTS**

SALE NAME: Hamlet

**NEW CONSTRUCTION:**

Project No.	Road segment	Length/Sta	Cost
Project No. 1	2A-2B, 5A, 6A-6B	6.50	\$8,276
<b>TOTALS</b>	0.12 miles	6.50 Stations	\$8,276

**ROAD IMPROVEMENT:**

Project No.	Road segment	Length/Sta	Cost
Project No. 2	13-14	6.20	\$2,583
Project No. 4	15-16 & 17	4.45	\$13,565
<b>TOTALS</b>	0.20 miles	10.65 Stations	\$16,148

**VACATING:**

Project No.	Road segment	Length/Sta	Cost
Project No. 3	V1-V2, V3	1.00	\$2,205
<b>TOTALS</b>	0.02 miles	1.00 Stations	\$2,205

**SPECIAL PROJECTS:**

Description	Cost
Project Road Maintenance	\$11,232
<b>TOTALS</b>	\$11,232

**MOVE IN:**

Equipment	Cost
D-8 Dozer (2 moves with lowboy @ \$1,030)	\$2,060
Excavator - Large - 2cy (C330) (3 @ \$1,030 - one post harvest)	\$3,090
12cy Dump Trucks (6 @ \$119 each and then 2 @ \$119 post harvest)	\$952
Front End Loader - Medium (966) (2 moves)	\$1,140
Grader (14G)	\$570
Vibratory Roller	\$570
Water Truck (2,500 gal.)	\$139
Dump Truck 12CY with Tilt Trailer (3 @ \$158)	\$474
<b>TOTAL</b>	\$8,995

**GRAND TOTAL** **\$46,856**

Compiled By: Ed Holloran

Date: 05/02/2007

**SUMMARY OF NEW CONSTRUCTION COSTS**

SALE NAME: Hamlet  
 ROAD: 2A-2B, 5A, 6A-6B

NEW CONSTRUCTION: 6.50 STATIONS 0.12 MILES  
 IMPROVEMENT:          STATIONS          MILES

<b>CLEARING &amp; GRUBBING</b>						
Method	Acres/amount		x	Rate/Acre	=	Cost
Scatter Outside of R/W New Roads (acres)	1.00		x	\$980.00	=	\$980.00
			x		=	
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>						<b>\$980</b>

<b>EXCAVATION</b>							
	Material	Cylamount		x	Rate	=	Cost
2A-2B, 6A-6B	Common (Standard Design) \$\$/sta.	7		x	\$139.00	=	\$903.50
				x		=	
				x		=	
2A, 6B, 5A	Undesigned Landing Construction \$\$/landing	2		x	\$285.00	=	\$570.00
	Undesigned Landing Construction \$\$/landing	1		x	\$285.00	=	\$285.00
<b>SUB TOTAL FOR EXCAVATION</b>						<b>\$1,759</b>	

<b>CULVERT MATERIALS AND INSTALLATION</b>										
	Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
2A-2B	1+50	18"/CPP	30	\$12.25	\$367.50					
5A	0+00	18"/CPP	40	\$12.25	\$490.00					
6A-6B	0+30	18"/CPP	35	\$12.25	\$428.75					
Other/miscellaneous:				Description	Quantity/Hrs.	Rate	Cost			
Culvert stakes & markers:				6' x 2 1/2" White Fiberglass (Carsonite) "I"-Beam post	3	\$14.10	\$42.30			
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>						<b>\$1,329</b>				

**Subtotal** **\$4,067**

Compiled by: Ed Holloran

Date: 04/27/2007

**SUMMARY OF NEW CONSTRUCTION COSTS**

SALE NAME: Hamlet

SURFACING:		Stations/amount	x	Rate/sta/amt	Cost	
Subgrade prep:		Description				
		Grade, Shape and Ditch 16' (2A-2B, 6A-6B) New	6.50	x	\$18.20	\$118.30
		Subgrade Compaction	6.50	x	\$14.80	\$96.20
					\$214.50	

ROAD SEGMENT	2A-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-2B Volume (CY) per	Number of	0+00 to 4+00				
Base Rock	4"-0" Crushed	0+00 to 4+00	9	Station	49	Stations	4.00	196	\$5.83	\$1,143
Junction	4"-0" Crushed	0+00	9	Junction	22	Junctions	1	22	\$5.83	\$128
Landing	6"-0"	4+00	N/A	Landing	50	Landings	1	50	\$5.34	\$267
Total Rock for Road Segment:							2A-2B	268		\$1,538

ROAD SEGMENT	5A		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (Inches)	5A Volume (CY) per	Number of	0+00				
Culvert Backfill	1 1/2"-0" Crushed	0+00		Culvert	22	Culverts	1	22	\$5.83	\$128
Culvert Surface Rock	1 1/2"-0" Crushed	0+00	3	Culvert	11	Culverts	1	11	\$5.83	\$64
Landing	6"-0"	0+00	N/A	Landing	70	Landings	1	70	\$5.34	\$374
Total Rock for Road Segment:							5A	103		\$566

ROAD SEGMENT	6A-6B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (Inches)	6A-6B Volume (CY) per	Number of	0+00 to 2+50				
Base Rock	4"-0" Crushed	0+00 to 2+50	9	Station	49	Stations	2.50	123	\$5.83	\$714
Junction	4"-0" Crushed	0+00	9	Junction	22	Junctions	1	22	\$5.83	\$128
Junction	1 1/2"-0" Crushed	0+00	3	Junction	11	Junctions	1	11	\$5.83	\$64
Landing	6"-0"	2+50	N/A	Landing	50	Landings	1	50	\$5.34	\$267
Total Rock for Road Segment:							6A-6B	206		\$1,174

577

2 1/2"-0"	6"-0"	4"-0"	1 1/2"-0"	3/4"-0"	Total
0	170	363	44	0	577

PROCESSING:		No. sta	Rate/sta	Cost
Description				
Water, Process & Compact Crushed Rock (1 lift < 8"):		6.5	\$41.40	\$269
Water, Process & Compact Crushed Rock - 3 Junctions - 2nd lift		3	\$41.40	\$124
				\$393
<b>SUB TOTAL FOR SURFACING</b>				<b>\$3,885</b>

SPECIAL PROJECTS:		No. sta./ft./cy.	Rate per sta./ft./cy.	Cost
Develop Pit-Run (pr) rock 6"-0" (170 cy)		170	\$1.90	\$323
<b>SUB TOTAL FOR SPECIAL PROJECTS</b>				<b>\$323</b>

**SUB TOTAL FOR CLEARING, EXC., CULVERTS** \$4,067

**GRAND TOTAL** Cost per Mile \$67,223 **\$8,276**

Compiled By: Ed Holloran Date: 04/27/2007

**SUMMARY OF ROAD IMPROVEMENT COSTS - PROJECTS No. 1 & 2**

SALE NAME: Hamlet  
 ROAD: Road Improvement I3-14

NEW CONSTRUCTION: \_\_\_\_\_ STATIONS \_\_\_\_\_ MILES  
 IMPROVEMENT: 6.20 STATIONS 0.12 MILES

BRUSHING					
Method	Miles/Amount	x	Rate/Mile	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR BRUSHING

CLEARING & GRUBBING					
Method	Acres/Amount	x	Acres/Amount	=	Cost
		x		=	
		x		=	
Scatter Outside of R/W (acres)	0.28	x	\$980.00	=	\$274.40
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING

\$274

EXCAVATION					
Material	Cyl/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION

CULVERT MATERIALS AND INSTALLATION								
	Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
I3-14	3+00	18"CPP	30	\$12.25	\$367.50			

Other/miscellaneous:	Description	Quantity	Rate	Cost
Culvert stakes & markers	6' x 2 1/2" White Fiberglass (Carsonite)	1	\$14.10	\$14.10

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$382

**Subtotal** \$656

Compiled By: Ed Holloran Date: 04/26/2007

**SUMMARY OF ROAD IMPROVEMENT COSTS - PROJECTS No. 1 & 2**

SALE NAME: Hamlet

SURFACING		Description	Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:	I3-I4	Shape on I3-I4	6.20	x	\$18.20	\$112.84
		Subgrade (base rock) Compaction (with Cat)	6.20	x	\$14.80	\$91.76
						\$204.60

ROAD SEGMENT	I3 to I4		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) per	0+00 to 6+20 Number of	Stations				Stations
Base Rock-Leveling	4"-0" Crushed	As needed	9	Station	49	Stations	1	49	\$5.83	\$286
Surface Rock/Leveling	1 1/2"-0" Crushed	0+00 to 6+20	4	Station	22	Stations	6.2	136	\$5.83	\$795
Junction	1 1/2"-0" Crushed	0+00	3	Junction	11	Junctions	1	11	\$5.83	\$64
Turnout	4"-0"	4+00 to 5+00	9	Turnout	22	Turnouts	1	22	\$5.83	\$128
Turnout	1 1/2"-0" Crushed	4+00 to 5+00	4	Turnout	11	Turnouts	1	11	\$5.83	\$64
Turnaround	4"-0"	6+20	9	Turnaround	22	Turnarounds	1	22	\$5.83	\$128
Total Rock for Road Segment:							I3 to I4	251		\$1,466

Processing:		Description	No.sta	Rate/sta	Cost
		Water, Process & Compact Crushed Rock (1 lift < 9"):	6.2	\$41.40	\$257
					\$256.68

24"-6" pt.	6"-0" pt.	4"-0"	1 1/2"-0"	3/4"-0"	Total
0	0	93	158	0	251

**SUB TOTAL FOR SURFACING**

**\$1,927**

SPECIAL PROJECTS:				
Description	No.cy	Rate/cy	Cost	
<b>SUB TOTAL FOR SPECIAL PROJECTS</b>				<b>\$0</b>

**SUB TOTAL FOR CLEARING, EXC., CULVERTS**

**\$656**

**GRAND TOTAL**

Cost per Mile **\$21,997**

**\$2,583**

Compiled By: Ed Holloran

Date: 04/27/2007

**SUMMARY OF ROAD IMPROVEMENT COSTS - PROJECT No. 4**

SALE NAME:                 Hamlet                  
 ROAD:                 Fall Cr. Rd.                  
 POINTS:                 15 to 16 and 17                

NEW CONSTRUCTION:                  STATIONS                  MILES  
 IMPROVEMENT:                 4.45                 STATIONS                 0.08                 MILES

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
1 hr excavator	1	x	\$138.00	=	\$138.00
1 hr 12 cy dumptruck	1	x	\$59.00	=	\$59.00
<b>SUB TOTAL FOR CLEARING &amp; GRUBBING</b>					<b>\$197</b>

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
End-Haul Excavation (\$/cy)	2,784	x	\$3.31	=	\$9,215.04
(Load, Haul, and Compact Waste)		x		=	
Cut-slope rounding (\$/station)	3.10	x	\$31.00	=	\$96.10
Straw Bale - Sediment Filter (\$/bale)	8	x	\$4.50	=	\$36.00
		x		=	
End -Haul Excavation (\$/cy)	96	x	\$4.24	=	\$407.04
(Load, Haul, and Compact Waste)		x		=	
Buttress Construction-w/Excavator (\$/hr.)	4.00	x	\$138.00	=	\$552.00
Straw Bales - Sediment Filtration (\$/bale)	10	x	\$4.50	=	\$45.00
		x		=	
		x		=	
<b>SUB TOTAL FOR EXCAVATION</b>					<b>\$10,351</b>

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
Other/miscellaneous:									
Culvert stakes & markers:									
<b>SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION</b>						Subtotal of Clearing, Exc., Culv.		<b>\$10,548</b>	

Compiled by:                 Scott Bushnell & Ed Holloran                

Date:                 04/27/2007

**SUMMARY OF ROAD IMPROVEMENT COSTS - PROJECT No. 4**

SALE NAME: Hamlet

SURFACING		Stations/amount	x	Rate/sta/amt	Cost
Subgrade prep:	Description				
	Grade, Shape and Ditch 16'	3.45	x	\$18.20	\$62.79
	Subgrade Compaction	3.45	x	\$14.80	\$51.06
	Load and Haul Ditch Waste Materials	5.40	x	\$16.80	\$90.72
					\$204.57

ROAD SEGMENT		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
15 to 16		15 to 16		0+00 to 4+05				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of			
Surface Rock	1 1/2" - 0"	0+00 to 0+50	8	Station 43	Stations 0.50	22	\$5.83	\$128
Base Rock	4"-0"	1+50 to 4+05	9	Station 49	Stations 2.55	125	\$5.83	\$728
Surface Rock	1 1/2" - 0"	1+50 to 4+05	5	Station 27	Stations 2.55	69	\$5.83	\$401
Total Rock for Road Segment:						216		\$1,258

ROAD SEGMENT		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
17		17		0+00 to 0+40				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of			
Base Rock	4"-0"	0+00 to 0+40	9	Station 49	Stations 0.40	20	\$5.83	\$117
Surface Rock	1 1/2" - 0"	0+00 to 0+40	5	Station 27	Stations 0.40	11	\$5.83	\$64
Buttress	6"-0" Pit run					36	\$5.34	\$192
Buttress	24"-6" Riprap					84	\$4.27	\$359
Total Rock for Road Segment:						151		\$732

367

Processing:	Description	No. sta	Rate/sta	Cost
	Water, Process & Compact (3.55 + 0.4 Sta X 2 Lifts)	3.95	\$41.40	\$327

\$327

	24"-6"	6"-0"	4"-0"	1 1/2"-0"	3/4"-4"	Total
<b>SUB TOTAL FOR SURFACING</b>	84	36	145	102		367

\$2,521

**SPECIAL PROJECTS**

Description	Cost
Hand Seeding and Mulching (Pasture Mix) 0.6 ac @ \$460/ac	\$276
Straw Bales 18 bales @ \$4.50/bale	\$81
Quarry Winterization (1 hr Excavator @ \$138/hr)	\$138

**SUB TOTAL FOR SPECIAL PROJECTS**

\$495

**SUB TOTAL CLEARING, EXC., CULVERTS**

\$10,548

**GRAND TOTAL**

**\$13,565**

Compiled By: Scott Bushnell & Ed Holloran

Date: 04/01/2707



**CRUSHED ROCK COST**

SALE NAME: Hamlet  
 PROJECT: No.'s 1, 2, & 4  
 QUARRY: Fall Creek & Sweethome Stockpiles

ROCK TYPE: Crushed

DATE: 04/26/2007  
 BY: ED HOLLORAN  
& Scott Bushnell

Segment	Stations	Cubic Yards						Misc	Total
		Base	Running	Turnout	Turnaround	Junction			
2A-2B (4")	4.00	196				22		218	
6A-6B (4")	2.50	123				22		145	
6A-6B (1 1/2")						11		11	
5A (culvert)							33	33	
13-14 (4")	6.20	49		22	22			93	
13-14 (1 1/2")			136	11		11		158	
15-16 (4")	2.55	125						125	
15-16 (1 1/2")			69					69	
15-16 (1 1/2")	0.50		22					22	
17 (4")	0.40	20						20	
17 (1 1/2")			11					11	
<b>Grand Total</b>	<b>16.15</b>	<b>513</b>	<b>238</b>	<b>33</b>	<b>22</b>	<b>66</b>	<b>33</b>	<b>905</b>	

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	
2A-2B (4")	4.00	218		0.75	5.00	1.10	0.60	0.25	0.15	7.85
6A-6B (4")	2.50	145			2.00	0.75	0.15	1.25	0.12	4.27
6A-6B (1 1/2")		11			2.00	0.75	0.15	1.25	0.10	4.25
5A (culvert)		33		0.75	4.10	1.00	0.40	0.25	0.15	6.65
13-14 (4")	6.20	93			4.00	0.75	0.50	0.25	0.23	5.73
13-14 (1 1/2")		158			4.00	0.75	0.50	0.22	0.20	5.67
15-16 (4")	2.55	125				0.50	0.20	0.20	0.10	1.00
15-16 (1 1/2")		69			1.40	0.50	0.20	0.20	0.10	2.40
15-16 (1 1/2")	0.50	22			1.40	0.50	0.20	0.20	0.10	2.40
17 (4")	0.40	20					0.10	0.20	0.15	0.45
17 (1 1/2")		11			0.75	0.40	0.20	0.20	0.15	1.70
<b>TOTAL</b>	<b>16.15</b>	<b>905</b>								
<b>CUBIC YARD WEIGHTED HAUL</b>		<b>STA./NO.</b>	<b>CU. YD.</b>	<b>0.21</b>	<b>2.96</b>	<b>0.76</b>	<b>0.38</b>	<b>0.40</b>	<b>0.15</b>	<b>AVERAGE HAUL</b>
Average Round Trip Distance (miles) <b>9.72</b>										

**ROCK HAUL:**

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

Ave haul: \$4.08 /cy  
 Load: \$0.64 /cy  
 Spread: \$1.11 /cy

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

Truck type: D10 No. trucks: 6  
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 693

**CRUSHED ROCK HAUL COSTS      905 cy @      \$5.83 /cy**

PIT RUN ROCK COST

SALE NAME: HAMLET  
 PROJECT: No.'s 1, 2, & 4  
 QUARRY: Fall Creek Quarry

ROCK TYPE: Pit Run

DATE: 04/26/2007  
 BY: ED HOLLORAN  
& Scott Bushnell

		Cubic Yards								
Segment	Stations	Base	Landing	Turnout	Turnaround	Junction	Buttress	Misc	Total	
2B			50						50	
5A			70						70	
6B			50						50	
17	0.40						36		36	
Grand Total	0.40		170				36		206	

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	
2B		50		0.75	5.00	1.10	0.60	0.25	0.20	7.90
5A		70		0.75	4.10	1.00	0.40	0.25	0.15	6.65
6B		50			2.00	0.75	0.15	1.25	0.15	4.30
17	0.40	36					0.10	0.20	0.15	0.45
TOTAL	0.40	206								
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL				0.44	3.09	0.79	0.34	0.48	0.16	AVERAGE HAUL 5.30

Average Round Trip Distance (miles) 10.60

ROCK HAUL:

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

Ave haul: \$4.39 /cy  
 Load: \$0.95 /cy  
 Spread: \_\_\_\_\_ /cy

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

Truck type: D10 No. trucks: 4  
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 429

PIT RUN ROCK HAUL COSTS 206 cy @ \$5.34 /cy

RIP RAP ROCK COST

SALE NAME: Hamlet  
 PROJECT: No. 4  
 QUARRY: Fall Creek Quarry

ROCK TYPE: Rip Rap

DATE: 04/26/2007  
 BY: Scott Bushnell  
& Ed Holloran

		Cubic Yards									
Segment	Stations	Dissapator	Armor						Misc	Total	
I7	0.40		84							84	
Grand Total	0.40		84							84	

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	
I7	0.40	84					0.10	0.20	0.15	0.45
TOTAL	0.40	84					0.10	0.20	0.15	AVERAGE HAUL 0.45
CUBIC YARD WEIGHTED HAUL		STA./NO.	CU. YD.				0.10	0.20	0.15	
Average Round Trip Distance (miles) 0.90										

ROCK HAUL:

Truck type: D12 No. trucks: 1  
 Delay min.: 6 Efficiency: 85%

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

Ave haul: \$1.15 /cy  
 Load: \$1.22 /cy  
 Develop: \$1.90 /cy

Production: cy/day = 411

RIP RAP ROCK HAUL COSTS

84 cy @ \$4.27 /cy

SALE NAME: Hamlet  
 PROJECT: Project 4: 17  
 QUARRY: Fall Creek Quarry

ROCK TYPE: Waste

DATE: 02/01/2007  
 BY: S. Bushnell

Segment	Stations	Cubic Yards						Misc	Total
		Waste							
17		96						96	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
Grand Total	0.00	96	0	0	0	0	0	96	

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	
17	0.00	96				0.15	0.10	0.10	0.10	0.45
TOTAL	0.00	96				0.15	0.10	0.10	0.10	AVERAGE HAUL 0.45
CUBIC YARD WEIGHTED HAUL		STA./NO. CU. YD.	0.00	0.00	0.00	0.15	0.10	0.10	0.10	
									Average Round Trip Distance (miles)	0.90

WASTE HAUL:

Truck type: D12 No. trucks: 1  
 Delay min. 6 Efficiency: 85%

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

Ave haul: \$1.00 /cy  
 Load: \$2.26 /cy \*  
 Compact: \$0.98 /cy \*\*

Production: cy/day = 470

WASTE HAUL COSTS 96 cy @ \$4.24 /cy

\* (96 cy / 489 cy per day x 8hr per day x \$138 per hour / 96 cy)  
 \*\* (2hr per day x 0.5 days x \$94 per hour / 96 yd)

SALE NAME: Hamlet  
 PROJECT: Project 4: I5 to I6  
 QUARRY: Fall Creek Quarry

ROCK TYPE: Waste

DATE: 02/01/2007  
 BY: S. Bushnell

Segment	Stations	Cubic Yards						Misc	Total
		Waste							
I5 to I6		2,784						2,784	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
								0	
Grand Total	0.00	2,784	0	0	0	0	0	2,784	

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	
I5 to I6	0.00	2,784			0.20	0.40	0.20	0.10	0.10	1.00
TOTAL	0.00	2,784			0.20	0.40	0.20	0.10	0.10	
	STA./NO.	CU. YD.								AVERAGE HAUL
CUBIC YARD WEIGHTED HAUL			0.00	0.00	0.20	0.40	0.20	0.10	0.10	1.00
									Average Round Trip Distance (miles)	2.00

WASTE HAUL:

Truck type: D12      No. trucks: 2  
 Delay min.: 6      Efficiency: 85%

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

Ave haul: \$1.32 /cy  
 Load: \$1.68 /cy \*  
 Compact: \$0.31 /cy \*\*

Production: cy/day = 716

WASTE HAUL COSTS      2,784 cy @      \$3.31 /cy

\* (2784 cy / 658 cy per day x 8hr per day x \$138 per hour / 2784 cy)  
 \*\*(2hr per day x 4.5 days x \$94 per hour / 2784 yd)

**HAMLET**

**Project No. 3 Road Vacating**

**V1 and V2 to V3**

Location/Description	Log Loader	C330 #2 Excavator	D-8 CAT Dozer	Truck 12 yard	Labor	Pump	Straw Mulch	Total
<b>V1-V2</b> Vacate old fill/Remove fill. (on small Type N stream) 0.15 acres (app. 500 cubic yards) Close haul route when done.	hr	5 hr	hr	10 hr	6 hr	5 hr	15 bales	
		1 hr						
<b>V3</b> Vacate old fill/Remove fill. (on small Type N stream) 0.1 acres	2 hr	hr	hr	hr	2 hr	2 hr	10 bales	
	hr	hr	hr	hr	hr	hr	bales	
	hr	hr	hr	hr	hr	hr	bales	
	hr	hr	hr	hr	hr	hr	bales	
Waste Area Seeding & Mulching 0.25 acres - 2 locations	hr	hr	hr	hr	4 hr	hr	15 bales	
	hr	hr	hr	hr	hr	hr	bales	
<b>Total</b>	2 hr	6 hr	0 hr	10 hr	12 hr	7 hr	40 Bales	
<b>Rate</b>	\$87.5 /hr	\$138 /hr	\$126 /hr	\$59 /hr	\$25 /hr	\$7 /hr	\$4.50 /Bale	
<b>Cost</b>	\$175	\$828	\$0	\$590	\$300	\$49	\$180.00	<b>\$2,122</b>
Grass seed (100lbs/ac.)	0.5 ac.		50.0 lbs	X	\$1.65 /lb	=	\$83	\$83
<b>TOTAL</b>								<b>\$2,205</b>

Prepared by:

Ed Holloran

Date:

April 26, 2007

x:\Document\2007 FY Sales\Hamlet\Sale Prep\Projects\Vacating Costs-Hamlet 4-07.xls

## Project Work Road Maintenance Cost Summary

**Sale:** HAMLET  
**Date:** April 26, 2007  
**By:** Ed Holloran

Type	Equipment/Rationale	Hours	Rate	Cost
Post-Projects Road	Grader 14G	42	\$84	\$3,528
	Dump Truck 12CY (2 trucks)	20	\$59	\$1,180
	FE Loader C966	20	\$79	\$1,580
	Vibratory Roller	36	\$79	\$2,844
	Water Truck 2500 gallon	30	\$70	\$2,100
<b>Total</b>				<b>\$11,232</b>

Production Rates  
 Prep. roads by Grader  
 Grader - Processing  
 Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
9	7.2	0.8	8.0
1.50	7.2	4.8	48.0
1.50	7.2	4.8	48.0

Munce Rd. (0.65 mi.), Hill Road to Gall Creek Quarry (4.2 mi.), Fall Cr. Quarry to Sweethome  
 Stockpile (1.4 mi) and up Section 8 Rd. to Pt.2A (0.95 mi.)  
**TOTAL MILES for MAINTENANCE =7.2 miles**

**It is anticipated that not all rocked roads will need full processing and compaction  
 following project work therefore, hours needed have been reduced by 1/4.**

**HAMLET  
FY 2007  
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5, 6, and 7RW are located in portions of Sections 6, 8, and 17 in T4N, R8W, and portions of Section 1, T4N, R9W, and portions of Section 31, T5N, R8W; W.M., all in Clatsop County, Oregon.

All timber sale areas are posted with white ODF "TIMBER SALE BOUNDARY" signs and pink ribbon. Areas 1 and 5, and Areas 3 and 4 and Areas 1 and 4 have a common Area Boundary and are posted with yellow ODF "AREA BOUNDARY" signs and pink ribbon. The Right-of-Ways are posted with orange ODF "RIGHT-OF-WAY BOUNDARY" signs and orange ribbon.

2. **Fund Distribution:**
- |                  |             |             |
|------------------|-------------|-------------|
| <b>Fund:</b>     | BOF (38%)   | CSL (62%)   |
| <b>Tax Code:</b> | 10-02 (38%) | 10-14 (62%) |

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acreage	New R/W Acreage	Existing R/W Acreage	Stream Buffer Acreage	Green Tree Retention Area Acreage	Net Acreage
1	MC	11.5	0	0	- 2.0	0	9.5
2	PC	28.5	- 0.5	0	- 2.5	0	25.5
3	MC	5.5	0	0	- 1.0	0	4.5
4	PC	20.5	0	0.5	- 1.0	0	19.0
5	PC	34.0	0	0	- 3.0	0	31.0
6	MC	59.5	0	0	- 5.0	- 1.0	53.5
7	R/W	0.5	0				0.5
<b>TOTALS</b>		<b>160.0</b>	<b>- 0.5</b>	<b>- 0.5</b>	<b>-14.5</b>	<b>- 1.0</b>	<b>143.5</b>

4. **Cruisers and Cruise Dates:** Areas 1 and 3 were cruised by Ed Holloran and Kraig Kirkpatrick. Area 5 was cruised by Ed Holloran with Bruce Hazen and Kraig Kirkpatrick with Bruce Hazen. Area 2 was cruised by Ed Holloran and Dave Horning. Area 4 was cruised by Bruce Hazen and Dave Horning. Area 6 was cruised by Ed Holloran, Dave Wolfgram, Dave Horning and Kraig Kirkpatrick with Bruce Hazen. The cruise for Area 7 R/W was calculated using total cruise per acre volumes for partial harvest Areas 2, 4 and 5 and applying road R/W acreage. Acreage for R/W in modified-clearcut Area 6 was included in the total net acreage for this sale area. The field cruise was done from 2-8-07 to 2-21-07.
5. **Cruise Method and Computation:** All cruises used Corvallis Micro Technology (CMT) data collectors or Allegro data collectors. These were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

Areas 2, 4 and 5 (Partial Cut), were variable plot cruised with a 46.94 BAF for conifer and a 20.0 BAF for hardwoods. 61 plots were sampled on a cruise grid of 3 chains by 4 chains, with a count/cruise plot ratio of 2:1, with 35 grade plots.

Areas 1, 3 and 6 (Modified Clear Cut), were variable plot cruised with a 54.44 BAF for conifer and a 20.0 BAF for hardwoods. 55 plots were sampled on a cruise grid of 3 chains by 4 chains, with a count/cruise plot ratio of 2:1 with 32 grade plots.

All "take" and "leave" trees were measured and graded, on cruise plots in the Partial Cut Areas. In the Modified Clear Cut Areas, the leave trees were graded as camp run. In all areas the hardwoods were graded as camp run.



AREAS  
1, 3 and 6  
2, 4 and 5  
7 RW

PROJECT  
Hamlet  
Hamlet  
Hamlet

CRUISE TYPE  
00MC, MCTK, MCLV  
00PC, PCTK, PCLV  
PCRW

## 6. Timber Description:

Areas 1, 3, and 6 (Modified Clearcut) – These stands range from 67 to 80 years old, consisting of Douglas-fir dominated mixed conifer stands with patches of alder. These stands average 19 inches in DBH, with an average merchantable height of 60 feet. The average volume (net) to be harvested is 41.1 MBF/acre.

Areas 2, 4 and 5 (Partial Cut) – These stands are approximately 65 to 85 years old, consisting of Douglas-fir dominated mixed conifer stands with alder located along the streams and scattered in the stand. This stand will be harvested to an SDI of 32, with a basal area target of 170ft<sup>2</sup>, while removing approximately 58 trees per acre and 25.2 MBF/acre. The average “take” tree size is 21.6” DBH and 69 feet to a merchantable top (6” d.i.b. or 40% of the diameter at 16 feet).

## 7. Statistical Analysis: (See also “Statistics Reports,” attached.)

Area	Target CV	Target SE%	Actual CV	Actual SE%
1, 3 and 6	60	11	48.5	6.5
2, 4 and 5	40	11	27.9	3.6

The statistics for Areas 1, 2, 3, 4, 5 and 6 are “Take” and “Leave” stands combined.

## 8. Volumes by Species and Log Grades for All Sale Areas by MBF: (See “Species, Sort, Grade and Log Stand Tables” attached, of the thinning and regeneration harvest areas combined.) Volumes do not include “ingrowth.” The majority of defect and breakage was culled out during the cruise.

Species	DBH	Net Vol.	Special Mill	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	22	3,956	86	3,001	752	117		2.9	84.0
Western Hemlock	19	163	0	114	48	1		15.8	3.5
Sitka Spruce	24	328	0	75	243	10		17.1	7.0
Western Red Cedar	23	1	0	0	1	0		5.3	<0.1
Alder	14	261	0	0			261	4.6	5.5
<b>TOTAL</b>	<b>20</b>	<b>4,709</b>	<b>86</b>	<b>3,190</b>	<b>1,044</b>	<b>128</b>	<b>261</b>	<b>4.7</b>	<b>100</b>

9. Prepared by: Edward M. Holloran

Date: April 27, 2007

10. Approved by: Dave Groch

Date: 5/4/07

11. Attachments: Species, Sort, Grade Reports (4 pages)  
Statistics Stand Summary Reports (8 pages)  
Log Stock Table Reports (4 pages)  
Leave Tree Stand Table Reports (3 pages)  
Cruise Plans & Maps (7 pages)

X:\Sunset Unit\2007 FY Sales\HamletSale Prep\Cruise\Cruise Report - Hamlet.doc

TC PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)										Page 1									
T04N R09W S01 TyMCTK 67.50		Project: HAMLET		Acres 143.50			Date 3/5/2007			Time 4:23:13PM											
T05N R08W S31 TyPCRW .50																					
T05N R08W S31 TyPCTK 75.50																					
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
A	?	?			100.0	68												15		0.00	1.7
A	?	CR		6	1.1	1,837	1,817	261	0	74	22	3	16	26	33	25	27	64	0.75	28.6	
<b>A Totals</b>				6	4.6	1,905	1,817	261	0	74	22	3	16	26	33	25	26	60	0.72	30.3	
D	?	?			100.0	662												10		0.00	11.9
D	?	2S		64	.7	21,050	20,912	3,001		1	40	60	2	2	13	83	37	407	2.41	51.4	
D	?	3S		16	.7	5,272	5,237	752	0	79	13	7	5	5	30	59	35	105	0.91	49.7	
D	?	4S		2		812	812	117	2	98	0		82	13	4		18	28	0.52	29.1	
D	?	SM		2	.0	597	597	86				100			57	43	35	487	2.86	1.2	
<b>D Totals</b>				84	2.9	28,393	27,558	3,957	0	18	33	49	5	3	17	75	30	192	1.52	143.3	
H	?	?			100.0	192												13		0.00	3.4
H	?	2S		2	2.6	813	792	114		2	33	65	0	2	65	33	36	497	2.87	1.6	
H	?	3S		1		336	336	48		28	15	56			56	44	35	182	1.36	1.9	
H	?	4S		0		8	8	1		100			100				18	58	1.13	.1	
<b>H Totals</b>				3	15.8	1,348	1,136	163		10	28	62	1	1	62	36	25	163	1.51	7.0	
S	?	?			100.0	454												14		0.00	2.0
S	?	2S		2		522	522	75			27	73	25		48	27	33	673	3.96	.8	
S	?	3S		5	1.0	1,712	1,695	243		10	24	66	16	2	29	52	32	287	2.25	5.9	
S	?	4S		0		72	72	10	7	93	0	0	78	22			19	27	0.77	2.7	
<b>S Totals</b>				7	17.1	2,761	2,290	329	0	11	24	66	20	2	33	45	26	201	1.93	11.4	
C	?	?			100.0	0												8		0.00	.0
C	?	2S		0		1	1	0			11	89			11	89	37	577	3.35	.0	
C	?	3S		0		1	1	1		21	79				100		40	230	2.49	.0	
C	?	4S		0		0	0	0		100			100				15	23	0.54	.0	
<b>C Totals</b>				0	5.3	1	1	1		14	6	80	5		6	89	23	146	2.02	.0	
<b>Totals</b>					4.7	34,408	32,802	4,707	0	21	31	48	6	4	21	69	29	171	1.43	192.0	

9

T04N R09W S01 TMCTK T04N R09W S01 TMCTK  
 Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt BdFt  
 04N 09W 01 AREAS1 3 6 MCTK 67.50 55 179 1 W

Spp	S	So	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	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
D	?	?				00.0	794										10		0.00	20.8
D	?	2S	75		.4	26,210	26,096	1,761		0	39	61	1	1	14	84	37	412	2.44	63.3
D	?	3S	19		.8	6,596	6,545	442	1	85	14		6	5	35	54	35	96	0.86	68.0
D	?	4S	3			1,045	1,045	71	3	97			79	15	7		19	29	0.52	35.4
D	?	SM	3			1,046	1,046	71				100			48	52	36	500	2.84	2.1
<b>D</b>	<b>Totals</b>		85		2.7	35,691	34,733	2,344	0	19	32	49	5	2	19	75	30	183	1.47	189.7
A	?	?			00.0	26											9		0.00	1.8
A	?	CR	100			2,923	2,923	197		81	16	2	11	31	28	29	27	65	0.72	45.2
<b>A</b>	<b>Totals</b>		7		.9	2,949	2,923	197	81	16	2		11	31	28	29	27	62	0.72	47.0
H	?	?			00.0	407											13		0.00	7.2
H	?	2S	68		2.2	1,497	1,464	99		2	23	75		2	75	23	35	526	3.02	2.8
H	?	3S	31			674	674	45		24	16	60			54	46	36	203	1.44	3.3
H	?	4S	1			16	16	1		100			100				18	60	1.17	.3
<b>H</b>	<b>Totals</b>		5		17.0	2,594	2,154	145	10	21	70		1	1	68	30	24	159	1.49	13.6
S	?	?			00.0	76											8		0.00	.9
S	?	2S	23			298	298	20			100				100		40	360	2.14	.8
S	?	3S	69			886	886	60		18	44	38	10		30	59	32	202	1.87	4.4
S	?	4S	7			95	95	6	11	89			65	35			20	28	0.64	3.4
<b>S</b>	<b>Totals</b>		3		5.6	1,356	1,280	86	1	19	54	27	12	3	21	64	26	135	1.52	9.5
<b>Type Totals</b>					3.5	42,590	41,089	2,774	0	23	31	46	5	4	22	69	29	158	1.35	259.8

T05N R08W S31 TPCTK T05N R08W S31 TPCTK  
 Twp Rge Sec Tract Type Acre Plots Sample Trees CuFt BdFt  
 05N 08W 31 AREAS 2 4 5 PCTK 75.50 61 107 1 W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D	?	?		100.0	541												7	0.00	3.9		
D	?	2S	77	1.0	16,262	16,104	1,216		1	40	58		2	3	12	82	37	397	2.36	40.6	
D	?	3S	19	.5	4,071	4,050	306		72	12	17		4	6	23	66	35	122	1.00	33.3	
D	?	4S	3		603	603	46		100				89	11			18	26	0.51	23.4	
D	?	SM	1		192	192	14				100				100		32	430	2.94	.4	
<b>D</b>	<b>Totals</b>			83	3.3	21,669	20,949	1,582		18	33	49		5	4	15	76	31	206	1.59	101.6
S	?	?		100.0	790												15	0.00	3.0		
S	?	2S	23		717	717	54				100		34		66		25	986	6.83	.7	
S	?	3S	76	1.3	2,424	2,392	180		8	17	75		18	3	29	50	32	331	2.45	7.2	
S	?	4S	2		50	50	4		100				100				19	25	0.97	2.0	
<b>S</b>	<b>Totals</b>			13	20.7	3,982	3,159	239		8	13	79		23	2	37	38	26	243	2.19	13.0
A	?	?		100.0	105												21	0.00	1.7		
A	?	CR	100	4.2	872	835	63		1	53	39	7		29	10	48	12	25	61	0.82	13.8
<b>A</b>	<b>Totals</b>			3	14.5	977	835	63	1	53	39	7		29	10	48	12	25	54	0.74	15.4
H	?	2S	85	5.3	203	192	15				100					100	40	360	2.25	.5	
H	?	3S	15		35	35	3		100							100	32	65	0.88	.5	
<b>H</b>	<b>Totals</b>			1	4.5	237	227	17		15	85					15	85	36	213	1.64	1.1
<b>Type Totals</b>					6.3	26,865	25,170	1,900	0	18	31	51		8	4	19	69	30	192	1.56	131.1

Species, Sort Grade - Board Foot Volumes (Type)

Project: HAMLET

T05N R08W S31 TPCRW

T05N R08W S31 TPCRW

Twp	Rge	Sec	Tract	Type	Acre	Plots	Sample Trees	CuFt	BdFt
05N	08W	31	AREAS 2 4 5	PCRW	.50	61	231	1	W

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/Lf			
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
D	?	?		00.0	1,276												6	0.00	9.3		
D	?	2S	83	.7	47,368	47,040	24		1	22	77		2	2	10	87	38	532	2.95	88.3	
D	?	3S	14	.6	7,930	7,880	4		56	12	32		7	10	18	65	33	144	1.20	54.6	
D	?	4S	1		848	848	0		96	4			78	22			18	30	0.57	28.7	
D	?	SM	2	1.1	1,141	1,128	1				100				57	43	34	696	4.09	1.6	
<b>D</b>	<b>Totals</b>		86	2.8	58,563	56,896	29		10	20	70		4	3	12	81	31	312	2.17	182.5	
S	?	?		00.0	697												15	0.00	2.6		
S	?	2S	20		1,444	1,444	1				100		15		29	56	32	1201	6.84	1.2	
S	?	3S	78	.5	5,719	5,690	3		6	10	84		8	2	17	73	33	468	3.07	12.2	
S	?	4S	2		179	179	0		64	16	20		64	36			20	40	0.89	4.4	
<b>S</b>	<b>Totals</b>		11	9.0	8,039	7,314	4		6	8	86		11	3	19	68	28	358	2.78	20.4	
A	?	?		00.0	105												21	0.00	1.7		
A	?	CR	100	4.2	872	835	6		1	53	39	7	29	10	48	12	25	61	0.82	13.8	
<b>A</b>	<b>Totals</b>		1	14.5	977	835	0		1	53	39	7	29	10	48	12	25	54	0.74	15.4	
H	?	2S	61	1.7	615	604	0		1	54	45		1		7	91	38	459	2.85	1.3	
H	?	3S	35		350	350	0		15	24	61				100		32	257	1.88	1.4	
H	?	4S	4		43	43	0		100				100				19	24	0.52	1.8	
<b>H</b>	<b>Totals</b>		2	1.1	1,007	997	0		10	41	49		5		40	55	28	223	1.90	4.5	
C	?	?		00.0	22												8	0.00	.7		
C	?	2S	52		199	199	0			11	89				11	89	37	577	3.35	.3	
C	?	3S	43		165	165	10		21		79				100		40	230	2.49	.7	
C	?	4S	5		19	19	0		100				100				15	23	0.54	.8	
<b>C</b>	<b>Totals</b>		1	5.3	405	383	10		14	6	80		5		6	89	23	146	2.02	2.6	
<b>Type Totals</b>				3.7	68,992	66,425	38		0	10	19	71		5	3	13	79	30	295	2.14	225.5

34  
35

TC TSTATS		STATISTICS				PAGE 1				
		PROJECT HAMLET				DATE 3/5/2007				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	01	AREAS136	MCTK	67.50	55	320	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		55	320	5.8						
CRUISE		29	179	6.2	8,681	2.1				
DBH COUNT										
REFOREST										
COUNT		25	141	5.6						
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
DOUG FIR	103	82.1	21.0	71		197.0	35,691	34,733	8,511	8,340
R ALDER	56	33.5	13.6	39		33.8	2,949	2,923	907	898
WHEMLOCK	10	7.6	18.9	42		14.8	2,594	2,154	569	476
S SPRUCE	10	5.5	19.9	47		11.9	1,356	1,280	390	376
<b>TOTAL</b>	<b>179</b>	<b>128.6</b>	<b>19.2</b>	<b>60</b>		<b>257.5</b>	<b>42,590</b>	<b>41,089</b>	<b>10,378</b>	<b>10,091</b>
SD: 1	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
			LOW	AVG	HIGH	5	10	15		
DOUG FIR	90.0	12.1	72	82	92					
R ALDER	169.5	22.9	26	33	41					
WHEMLOCK	308.5	41.6	4	8	11					
S SPRUCE	262.2	35.4	4	5	7					
<b>TOTAL</b>	<b>52.2</b>	<b>7.0</b>	<b>120</b>	<b>129</b>	<b>138</b>		<b>109</b>	<b>27</b>	<b>12</b>	
SD: 1	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
			LOW	AVG	HIGH	5	10	15		
DOUG FIR	81.4	11.0	175	197	219					
R ALDER	161.3	21.8	26	34	41					
WHEMLOCK	349.0	47.1	8	15	22					
S SPRUCE	260.0	35.1	8	12	16					
<b>TOTAL</b>	<b>52.6</b>	<b>7.1</b>	<b>239</b>	<b>258</b>	<b>276</b>		<b>111</b>	<b>28</b>	<b>12</b>	
SD: 1	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
			LOW	AVG	HIGH	5	10	15		
DOUG FIR	83.5	11.3	30,822	34,733	38,643					
R ALDER	162.3	21.9	2,283	2,923	3,562					
WHEMLOCK	454.7	61.3	833	2,154	3,474					
S SPRUCE	295.0	39.8	771	1,280	1,789					
<b>TOTAL</b>	<b>62.9</b>	<b>8.5</b>	<b>37,603</b>	<b>41,089</b>	<b>44,575</b>		<b>158</b>	<b>40</b>	<b>18</b>	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT HAMLET				DATE 3/5/2007		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	01	AREAS136	MCLV	67.50	55	57	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	55	57	1.0							
CRUISE	18	37	2.1	1,057	3.5					
DBH COUNT										
REFOREST										
COUNT	11	16	1.5							
BLANKS	26									
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	18	3.9	36.5	89		28.7	5,932	5,898	1,271	1,265
SNAG	10	9.0	15.7	55		12.2				
SPRUCELV	5	1.3	29.2	50		5.9	786	782	200	196
CEDLEAV	3	.7	32.0	59		4.0	392	371	120	113
ALDRLEAV	1	.7	14.0	33		.7	34	34	13	13
<b>TOTAL</b>	<b>37</b>	<b>15.7</b>	<b>24.6</b>	<b>62</b>		<b>51.6</b>	<b>7,144</b>	<b>7,085</b>	<b>1,604</b>	<b>1,587</b>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	181.9	24.5	3	4	5					
SNAG	337.4	45.5	5	9	13					
SPRUCELV	366.7	49.4	1	1	2					
CEDLEAV	433.4	58.4	0	1	1					
ALDRLEAV	519.5	70.1	0	1	1					
<b>TOTAL</b>	<b>195.5</b>	<b>26.4</b>	<b>12</b>	<b>16</b>	<b>20</b>	<b>1,528</b>	<b>382</b>	<b>170</b>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	185.6	25.0	22	29	36					
SNAG	252.1	34.0	8	12	16					
SPRUCELV	338.1	45.6	3	6	9					
CEDLEAV	447.1	60.3	2	4	6					
ALDRLEAV	519.5	70.1	0	1	1					
<b>TOTAL</b>	<b>132.8</b>	<b>17.9</b>	<b>42</b>	<b>52</b>	<b>61</b>	<b>706</b>	<b>176</b>	<b>78</b>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	184.9	24.9	4,427	5,898	7,369					
SNAG										
SPRUCELV	361.2	48.7	401	782	1,163					
CEDLEAV	443.1	59.7	149	371	592					
ALDRLEAV	519.5	70.1	10	34	58					
<b>TOTAL</b>	<b>171.7</b>	<b>23.2</b>	<b>5,445</b>	<b>7,085</b>	<b>8,726</b>	<b>1,179</b>	<b>295</b>	<b>131</b>		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT HAMLET				DATE 3/5/2007		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	01	AREAS136	00MC	67.50	55	376	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	55	376	6.8							
CRUISE	32	216	6.8		9,738		2.2			
DBH COUNT										
REFOREST										
COUNT	22	142	6.5							
BLANKS	1									
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	103	82.1	21.0	71		197.0	35,691	34,733	8,511	8,340
R ALDER	56	33.5	13.6	39		33.8	2,949	2,923	907	898
DOUGLEAV	18	3.9	36.5	89		28.7	5,932	5,898	1,271	1,265
WHEMLOCK	10	7.6	18.9	42		14.8	2,594	2,154	569	476
SNAG	10	9.0	15.7	55		12.2				
S SPRUCE	10	5.5	19.9	47		11.9	1,356	1,280	390	376
SPRUCELV	5	1.3	29.2	50		5.9	786	782	200	196
CEDLEAV	3	.7	32.0	59		4.0	392	371	120	113
ALDRLEAV	1	.7	14.0	33		.7	34	34	13	13
<b>TOTAL</b>	<b>216</b>	<b>144.3</b>	<b>19.8</b>	<b>60</b>		<b>309.1</b>	<b>49,734</b>	<b>48,174</b>	<b>11,982</b>	<b>11,678</b>
	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	90.0	12.1	72	82	92					
R ALDER	169.5	22.9	26	33	41					
DOUGLEAV	181.9	24.5	3	4	5					
WHEMLOCK	308.5	41.6	4	8	11					
SNAG	337.4	45.5	5	9	13					
S SPRUCE	262.2	35.4	4	5	7					
SPRUCELV	366.7	49.4	1	1	2					
CEDLEAV	433.4	58.4	0	1	1					
ALDRLEAV	519.5	70.1	0	1	1					
<b>TOTAL</b>	<b>48.1</b>	<b>6.5</b>	<b>135</b>	<b>144</b>	<b>154</b>	<b>93</b>	<b>23</b>	<b>10</b>		
	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	81.4	11.0	175	197	219					
R ALDER	161.3	21.8	26	34	41					
DOUGLEAV	185.6	25.0	22	29	36					
WHEMLOCK	349.0	47.1	8	15	22					
SNAG	252.1	34.0	8	12	16					
S SPRUCE	260.0	35.1	8	12	16					
SPRUCELV	338.1	45.6	3	6	9					
CEDLEAV	447.1	60.3	2	4	6					
ALDRLEAV	519.5	70.1	0	1	1					
<b>TOTAL</b>	<b>40.8</b>	<b>5.5</b>	<b>292</b>	<b>309</b>	<b>326</b>	<b>67</b>	<b>17</b>	<b>7</b>		
	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	83.5	11.3	30,822	34,733	38,643					
R ALDER	162.3	21.9	2,283	2,923	3,562					
DOUGLEAV	184.9	24.9	4,427	5,898	7,369					
WHEMLOCK	454.7	61.3	833	2,154	3,474					
SNAG										
S SPRUCE	295.0	39.8	771	1,280	1,789					
SPRUCELV	361.2	48.7	401	782	1,163					
CEDLEAV	443.1	59.7	149	371	592					



TC TSTATS				STATISTICS				PAGE 2	
				PROJECT HAMLET				DATE 3/5/2007	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	01	AREASI 3 6	00MC	67.50	55	376	1	W
SD: 1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
ALDRLEAV		519.5	70.1	10	34	58			
<b>TOTAL</b>		48.5	6.5	45,023	48,174	51,325	94	24	10

TC TSTATS					STATISTICS			PAGE 1		
					PROJECT HAMLET			DATE 3/5/2007		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	08W	31	AREAS 2 4 5	00PC	75.50	61	459	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		61	459	7.5						
CRUISE		35	231	6.6	7,106	3.3				
DBH COUNT										
REFOREST										
COUNT		26	202	7.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUGLEAV	96	26.0	32.4	104		148.7	36,994	36,052	7,624	7,505
DOUG FIR	73	41.5	22.5	78		114.3	21,669	20,949	5,086	4,997
S SPRUCE	10	4.8	28.1	71		20.8	3,982	3,159	872	727
SPRUCELV	11	5.1	25.3	50		17.7	3,976	3,976	834	834
R ALDER	22	11.6	14.2	34		12.8	977	835	307	285
SNAG	7	1.2	35.6	44		8.5				
HEMLEAV	6	2.2	19.6	42		4.6	770	770	179	179
CEDLEAV	4	1.2	21.8	40		3.1	201	179	84	77
WHEMLOCK	2	.5	23.0	74		1.5	237	227	63	63
<b>TOTAL</b>	<b>231</b>	<b>94.1</b>	<b>25.4</b>	<b>76</b>		<b>332.0</b>	<b>68,806</b>	<b>66,147</b>	<b>15,048</b>	<b>14,666</b>
SD: 1		COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		47.3	6.1	24	26	28				
DOUG FIR		91.4	11.7	37	41	46				
S SPRUCE		229.9	29.4	3	5	6				
SPRUCELV		219.3	28.1	4	5	6				
R ALDER		233.0	29.8	8	12	15				
SNAG		272.1	34.8	1	1	2				
HEMLEAV		479.9	61.5	1	2	4				
CEDLEAV		622.1	79.7	0	1	2				
WHEMLOCK		547.6	70.1	0	1	1				
<b>TOTAL</b>		<b>46.1</b>	<b>5.9</b>	<b>89</b>	<b>94</b>	<b>100</b>	<b>85</b>	<b>21</b>	<b>9</b>	
SD: 1		COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		28.6	3.7	143	149	154				
DOUG FIR		78.8	10.1	103	114	126				
S SPRUCE		212.4	27.2	15	21	26				
SPRUCELV		182.2	23.3	14	18	22				
R ALDER		195.8	25.1	10	13	16				
SNAG		237.6	30.4	6	8	11				
HEMLEAV		305.3	39.1	3	5	6				
CEDLEAV		471.6	60.4	1	3	5				
WHEMLOCK		547.6	70.1	0	2	3				
<b>TOTAL</b>		<b>25.3</b>	<b>3.2</b>	<b>321</b>	<b>332</b>	<b>343</b>	<b>26</b>	<b>6</b>	<b>3</b>	
SD: 1		COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
				LOW	AVG	HIGH	5	10	15	
DOUGLEAV		31.9	4.1	34,578	36,052	37,525				
DOUG FIR		81.9	10.5	18,752	20,949	23,146				
S SPRUCE		211.4	27.1	2,304	3,159	4,014				
SPRUCELV		198.3	25.4	2,967	3,976	4,986				
R ALDER		202.2	25.9	619	835	1,052				
SNAG										
HEMLEAV		348.9	44.7	426	770	1,114				
CEDLEAV		468.8	60.0	72	179	287				

TC TSTATS				STATISTICS			PAGE 2		
				PROJECT HAMLET			DATE 3/5/2007		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
05N	08W	31	AREAS 2 4 5	00PC	75.50	61	459	1	W
SD: 1		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
		VAR.	S.E. %	LOW	AVG	HIGH	5	10	15
WHEMLOCK		547.7	70.1	68	227	386			
<b>TOTAL</b>		28.0	3.6	63,778	66,147	68,516	31	8	3

TC TSTATS		STATISTICS PROJECT HAMLET						PAGE 1	DATE 3/5/2007		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
05N	08W	31	AREAS 2 4 5	PCTK	75.50	61	220	1	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		61	220	3.6							
CRUISE		29	107	3.7	4,415	2.4					
DBH COUNT											
REFOREST COUNT		28	113	4.0							
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
DOUG FIR		73	41.5	22.5	78		114.3	21,669	20,949	5,086	4,997
S SPRUCE		10	4.8	28.1	71		20.8	3,982	3,159	872	727
R ALDER		22	11.6	14.2	34		12.8	977	835	307	285
WHEMLOCK		2	.5	23.0	74		1.5	237	227	63	63
<b>TOTAL</b>		<b>107</b>	<b>58.5</b>	<b>21.6</b>	<b>69</b>		<b>149.4</b>	<b>26,865</b>	<b>25,170</b>	<b>6,328</b>	<b>6,072</b>
SD: 1		COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
				LOW	AVG	HIGH	5	10	15		
DOUG FIR		91.4	11.7	37	41	46					
S SPRUCE		229.9	29.4	3	5	6					
R ALDER		233.0	29.8	8	12	15					
WHEMLOCK		547.6	70.1	0	1	1					
<b>TOTAL</b>		<b>72.7</b>	<b>9.3</b>	<b>53</b>	<b>58</b>	<b>64</b>		<b>212</b>	<b>53</b>	<b>24</b>	
SD: 1		COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
				LOW	AVG	HIGH	5	10	15		
DOUG FIR		78.8	10.1	103	114	126					
S SPRUCE		212.4	27.2	15	21	26					
R ALDER		195.8	25.1	10	13	16					
WHEMLOCK		547.6	70.1	0	2	3					
<b>TOTAL</b>		<b>59.9</b>	<b>7.7</b>	<b>138</b>	<b>149</b>	<b>161</b>		<b>144</b>	<b>36</b>	<b>16</b>	
SD: 1		COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
				LOW	AVG	HIGH	5	10	15		
DOUG FIR		81.9	10.5	18,752	20,949	23,146					
S SPRUCE		211.4	27.1	2,304	3,159	4,014					
R ALDER		202.2	25.9	619	835	1,052					
WHEMLOCK		547.7	70.1	68	227	386					
<b>TOTAL</b>		<b>66.4</b>	<b>8.5</b>	<b>23,030</b>	<b>25,170</b>	<b>27,310</b>		<b>176</b>	<b>44</b>	<b>20</b>	

TC TSTATS		STATISTICS				PAGE 1				
		PROJECT HAMLET				DATE 3/5/2007				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
05N	08W	31	AREAS 2 4 5	PCLV	75.50	61	239	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		61	239	3.9						
CRUISE		35	124	3.5	2,691	4.6				
DBH COUNT										
REFOREST										
COUNT		26	100	3.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUGLEAV	96	26.0	32.4	104		148.7	36,994	36,052	7,624	7,505
SPRUCELV	11	5.1	25.3	50		17.7	3,976	3,976	834	834
SNAG	7	1.2	35.6	44		8.5				
HEMLEAV	6	2.2	19.6	42		4.6	770	770	179	179
CEDLEAV	4	1.2	21.8	40		3.1	201	179	84	77
<b>TOTAL</b>	<b>124</b>	<b>35.6</b>	<b>30.7</b>	<b>88</b>		<b>182.6</b>	<b>41,941</b>	<b>40,978</b>	<b>8,720</b>	<b>8,595</b>
	COEFF VAR.%	S.E.%	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
DOUGLEAV	47.3	6.1	24	26	28					
SPRUCELV	219.3	28.1	4	5	6					
SNAG	272.1	34.8	1	1	2					
HEMLEAV	479.9	61.5	1	2	4					
CEDLEAV	622.1	79.7	0	1	2					
<b>TOTAL</b>	<b>42.1</b>	<b>5.4</b>	<b>34</b>	<b>36</b>	<b>38</b>		<b>71</b>	<b>18</b>	<b>8</b>	
	COEFF VAR.%	S.E.%	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
DOUGLEAV	28.6	3.7	143	149	154					
SPRUCELV	182.2	23.3	14	18	22					
SNAG	237.6	30.4	6	8	11					
HEMLEAV	305.3	39.1	3	5	6					
CEDLEAV	471.6	60.4	1	3	5					
<b>TOTAL</b>	<b>9.8</b>	<b>1.3</b>	<b>180</b>	<b>183</b>	<b>185</b>		<b>4</b>	<b>1</b>	<b>0</b>	
	COEFF VAR.%	S.E.%	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1			LOW	AVG	HIGH	5	10	15		
DOUGLEAV	31.9	4.1	34,578	36,052	37,525					
SPRUCELV	198.3	25.4	2,967	3,976	4,986					
SNAG										
HEMLEAV	348.9	44.7	426	770	1,114					
CEDLEAV	468.8	60.0	72	179	287					
<b>TOTAL</b>	<b>18.3</b>	<b>2.3</b>	<b>40,017</b>	<b>40,978</b>	<b>41,938</b>		<b>13</b>	<b>3</b>	<b>1</b>	



Log Stock Table - MBF

T04N R09W S01 TyMCTK	67.50
T05N R08W S31 TyPCRW	.50
T05N R08W S31 TyPCTK	75.50

Project: HAMLET  
Acres 143.50

Spp	S T	So Gr	Log	Gross	Def	Net	%	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
D	?	2S	26	26	5.0	25	.6					0	0	11	14			
D		DO	2S	28		13	.3									13		
D	?	2S	30	18	2.7	17	.4						17					
D	?	2S	32	403		401	10.1					3	117	70	112	62	37	
D	?	2S	34	0		0	.0						0			0		
D	?	2S	36	4		4	.1						3		0		0	
D	?	2S	38	0	2.2	0	.0						0					
D	?	2S	40	2,504		2,490	63.0					15	263	419	926	431	418	19
D	?	3S	12	1		1	.0				1		0					
D	?	3S	14	1		1	.0						1					
D	?	3S	16	25	8.6	22	.6					15	0	8				
D	?	3S	18	1		1	.0					1						
D	?	3S	19	0		0	.0					0						
D	?	3S	20	14		14	.4			2	4	0	3	0	6			
D	?	3S	22	1		1	.0				1		0					
D	?	3S	24	14	6.2	13	.3				0	2				11		
D	?	3S	26	2		2	.1				2	0	0	0				
D	?	3S	28	15		15	.4			2	2	11	0					
D	?	3S	30	9		9	.2			4	5							
D	?	3S	32	209		208	5.3			29	67	63	21	19	10			
D	?	3S	34	20		20	.5			6	3	11						
D	?	3S	36	18	3.9	17	.4				0	17						
D	?	3S	37	3		3	.1					3						
D	?	3S	38	17		17	.4		0		8	6	4					
D	?	3S	40	406		406	10.3			3	88	58	183	40	15	18	0	
D	?	4S	8	1		1	.0					1						
D	?	4S	10	0		0	.0						0					
D	?	4S	12	2		2	.1				2	0						
D	?	4S	14	8		8	.2			6	1	0						
D	?	4S	15	1		1	.0			1								
D	?	4S	16	51		51	1.3			34	16	1						
D	?	4S	17	1		1	.0				1							
D	?	4S	18	5		5	.1				5							
D	?	4S	20	28		28	.7			16	3	10						
D	?	4S	22	3		3	.1				3	0						
D	?	4S	24	2		2	.1			2	0							
D	?	4S	26	6		6	.2			4	2							

Log Stock Table - MBF

T04N R09W S01 TyMCTK	67.50
T05N R08W S31 TyPCRW	.50
T05N R08W S31 TyPCTK	75.50

Project: **HAMLET**  
Acres **143.50**

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		?	4S	28	0		0	.0					0							
D		?	4S	30	4		4	.1			4									
D		?	4S	32	5		5	.1		2	3									
D		?	SM	32	48		48	1.2					48	0	0					
D		?0	SM	36	0		0	.0						0						
D		?0	SM	40	37		37	.9					37	0	0					
D		Totals			4,074	2.9	3,955	84.0		0	5	208	181	340	475	533	1178	553	456	26
H		?	?	6	3	100.0														
H		?	?	10	5	100.0														
H		?	?	12	6	100.0														
H		?	?	15	5	100.0														
H		?	?	16	8	100.0														
H		?	2S	20	0		0	.0					0							
H		?	2S	28	2		2	1.2					2							
H		?	2S	32	76	2.9	74	45.4						0	22	40	11			
H		?	2S	40	38	2.1	38	23.1					14	17	7	0	0			
H		?	3S	32	27		27	16.7			3	1		4	3	7	9		0	
H		?	3S	38	4		4	2.4			4									
H		?	3S	40	17		17	10.5				5					12			
H		?	4S	12	0		0	.0					0							
H		?	4S	16	0		0	.0				0								
H		?	4S	18	1		1	.7					1							
H		?0	4S	20	0		0	.0				0								
H		Totals			193	15.8	163	3.5			7	7		3	18	19	14	43	40	12
S		?	?	6	19	100.0														
S		?	?	10	2	100.0														
S		?	?	16	17	100.0														
S		?	?	20	12	100.0														
S		?	?	30	15	100.0														
S		?	2S	20	19		19	5.7										19		
S		?	2S	32	36		36	10.9										14	22	
S		?0	2S	40	21		21	6.2						20	0	0	0			
S		?	3S	16	11		11	3.5			1			0	10					
S		?	3S	18	2		2	.6					2							



Log Stock Table - MBF

T04N R09W S01 TyMCTK 67.50  
T05N R08W S31 TyPCRW .50  
T05N R08W S31 TyPCTK 75.50

Project: HAMLET  
Acres 143.50

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+	
S	?	3S	20		25		25	7.6					2	5	0		18				
S	?	3S	22		1		1	.4					1				0				
S	?	3S	24		0		0	.0					0								
S	?	3S	26		1		1	.3			1										
S	?	3S	30		3		3	1.0						3							
S	?	3S	32		74	3.3	71	21.7			2	2	13	9	25	0	0	21			
S	?	3S	36		0		0	.0			0										
S	?	3S	40		128		128	38.9			7	4	2	7		47	60	0	1	0	
S	?	4S	14		1		1	.2			1										
S	?	4S	16		3		3	.8			3										
S	?	4S	20		5		5	1.4		1	2	1									
S	?	4S	24		2		2	.7			2										
S	?	4S	26		0		0	.0					0		0						
S		Totals			396	17.1	329	7.0		1	18	7	9	20	38	71	70	50	43	0	
C	?	?	8		0	100.0															
C	?	2S	32		0		0	5.7					0								
C	?	2S	40		0		0	46.3							0			0			
C	?	3S	40		0		0	43.0			0	0				0					
C	?	4S	12		0		0	1.2					0								
C	?	4S	16		0		0	3.8			0										
C		Totals			0	5.3	0	.0			0	0	0	0	0		0				
Total		All Species			4,938	4.7	4,707	100.0		0	7	338	214	422	551	607	1272	666	549	81	0



TC TSTNDSUM

**Stand Table Summary**

**Project HAMLET**

**T05N R08W S31 TPCLV**

**T05N R08W S31 TPCLV**

**Twp Rge Sec Tract**  
**05N 08W 31 AREAS 2 4 5**

**Type**  
**PCLV**

**Acres**  
 75.50

**Plots**  
 61

**Sample Trees**  
 124

**Page: 2**  
**Date: 03/05/201**  
**Time: 4:22:10PM**

S Spc T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
								Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
SN	28	1	86	62	.283	1.21										
SN	48	1	88	28	.096	1.21										
SN	50	1	88	39	.089	1.21										
SN	66	1	85	55	.051	1.21										
SN	67	1	71	18	.049	1.21										
SN	Totals	7	76	50	1.227	8.46										
Totals		124	84	113	35.636	182.59	89.94	95.6	455.6		8595	40,978		6,489	3,094	

**Stand Table Summary**

Project **HAMLET**

**T04N R09W S01 TMCLV**

**T04N R09W S01**

Twp Rge Sec Tract  
04N 09W 01 AREAS1 3 6

Type  
MCL

Acres  
67.50

Plots  
55

Sample Trees  
37

Page: 1  
Date: 03/05/201  
Time: 4:49:30PM

S Spec	T	Av			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
		Sample DBH	FF Trees	Ht 16'				Tot	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits
DL		23	1	85	99	.553	1.59	1.66	35.7	146.7	59	243		40	16
DL		27	1	85	115	.401	1.59	1.20	57.3	233.3	69	281		47	19
DL		28	1	85	50	.373	1.59	.37	80.0	420.0	30	157		20	11
DL		29	1	82	117	.348	1.59	1.04	67.7	266.7	71	278		48	19
DL		34	1	83	151	.253	1.59	.76	110.3	513.3	84	390		57	26
DL		36	2	80	113	.451	3.19	1.13	118.2	496.0	133	560		90	38
DL		38	2	89	122	.405	3.19	1.01	147.4	720.0	149	729		101	49
DL		43	1	85	136	.158	1.59	.47	171.3	856.7	81	406		55	27
DL		44	2	83	142	.302	3.19	1.06	149.9	755.7	158	799		107	54
DL		45	1	78	100	.144	1.59	.29	204.0	740.0	59	214		40	14
DL		48	3	84	117	.381	4.78	1.02	202.1	985.0	205	1,000		139	67
DL		56	1	81	146	.093	1.59	.28	291.7	1466.7	82	410		55	28
DL		60	1	81	157	.081	1.59	.24	349.0	1773.3	85	432		57	29
DL	Totals	18	84	114		3.943	28.70	10.54	120.1	559.8	1,265	5,898		854	398
SL		21	1	78	37	.494	1.19	.49	43.0	50.0	21	25		14	2
SL		26	1	77	34	.322	1.19	.32	57.0	230.0	18	74		12	5
SL		34	1	76	78	.188	1.19	.38	111.0	325.0	42	122		28	8
SL		38	1	83	120	.151	1.19	.45	132.3	640.0	60	290		40	20
SL		42	1	93	99	.123	1.19	.25	223.5	1100.0	55	272		37	18
SL	Totals	5	79	58		1.279	5.94	1.89	103.8	413.5	196	782		133	53
CL		24	1	81	73	.420	1.32	.84	46.0	155.0	39	130		26	9
CL		40	1	68	88	.151	1.32	.15	213.0	610.0	32	92		22	6
CL		42	1	78	88	.137	1.32	.27	152.0	540.0	42	148		28	10
CL	Totals	3	78	79		.708	3.96	1.27	88.9	292.8	113	371		76	25
AL		14	1	87	42	.680	.73	.68	19.0	50.0	13	34		9	2
AL	Totals	1	87	42		.680	.73	.68	19.0	50.0	13	34		9	2
SN		12	3	89	55	4.992	3.92								
SN		15	2	88	80	1.456	1.79								
SN		16	1	89	55	.936	1.31								
SN		17	1	88	20	.829	1.31								
SN		23	1	88	120	.453	1.31								
SN		32	1	71	17	.234	1.31								
SN		40	1	88	26	.150	1.31								
SN	Totals	10	88	58		9.049	12.24								
Totals		37	86	72		15.660	51.57	14.37	110.4	492.9	1587	7,085		1,071	478

## CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Hamlet Area(s) 1, 3, and 6

Harvest Type: (MC) PC CT "Automark Thinning" (circle one)  
(Net BF) or (Net BF) or

Approx. Cruise Acres: 65 Estimated CV% 60% BAI/Acre SE% Objective 11% BAI/Acre

Planned Sale Volume: 4.7 MMBF Estimated Sale Area Value/Acre: \$ 10,250

**A. Cruise Goals:** (a) Grade minimum 120 conifer and 20 hardwood trees:  
 (b) Sample 53 cruise plots; Grade 28 plots; (c) Other goals (\_\_\_ 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; )  
 Basal Area leave target N/A sq. ft. Cruiser needs to select - or - leave trees per plot.

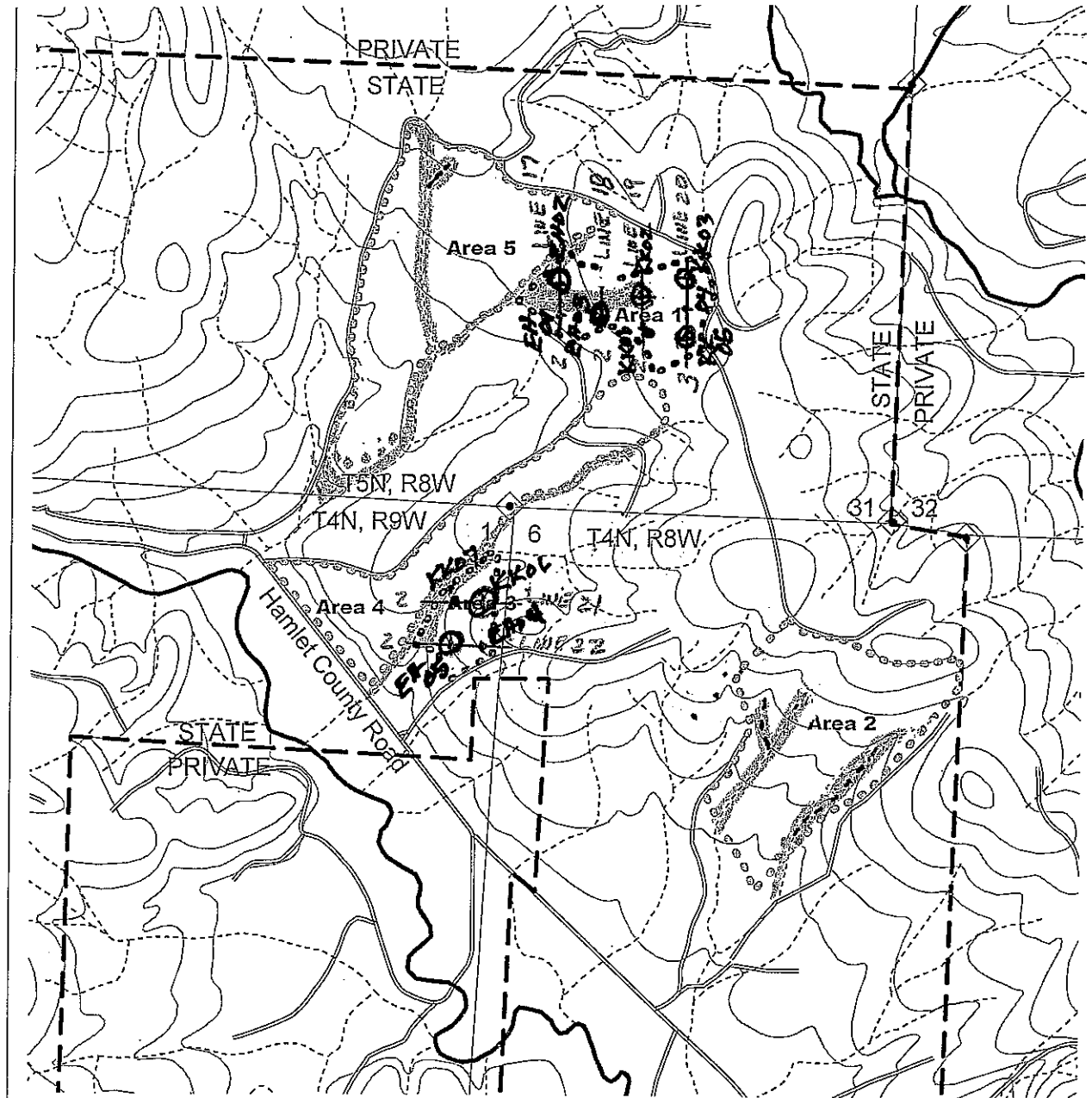
**B. Cruise Design:** (8.5 bars) (14 bars)  
**1. Plot Cruises:** BAF 20 - Alder 54.44 - Conifer (Full point) Half point (circle one)  
 Fixed Plot Size \_\_\_ Plot Radius \_\_\_ feet  
 Cruise Line Direction(s) Area 1 - North/South;  
Area 3 - East/West; Area 6 - 45° / 225°  
 Cruise Line Spacing 4 chains -- 264 feet  
 Cruise Plot Spacing 3 chains -- 198 feet  
 Grade/Count Ratio Grade 1 out of 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" or at least 20 board feet for conifers and 8" or at least 30 board feet (10' to a 8" top -- 16' to a 7" top). 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. **Cruise snags 15 DBH inches and over. Cruise all "W" (wildlife) trees and all reserved trees (cedar) as Leave trees by species.**
- 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** for conifer is 7", 7" for hardwoods or 40 % of **DOB** at 16' form point. Generally, use 7" outside bark for trees < 18" DBH and 40% of DOB @ FP for trees > 18" DBH.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. **Hardwood** form factors are a Standard 87.

- 5. Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.
- 6. Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)  
 B. Sort: Use code "1" (Domestic).  
 C. Grade: A = #1 Peeler; B = #2 Peeler; C = #3 Peeler; D = Special Mill; 2 = 2 sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility  
**Hardwoods and Wildlife Trees: Grade all hardwoods and wildlife trees as Camp Run =R. Lengths for Alder are 8 and 10 foot multiples.**
- 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 indivisible 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, Yellow Paint.
- 10. Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Ed Holloran 02/07/07  
 Approved by: *[Signature]* 2/7/07  
 Date: \_\_\_\_\_



LEGEND

Sale Boundary  
 MC  
 PC

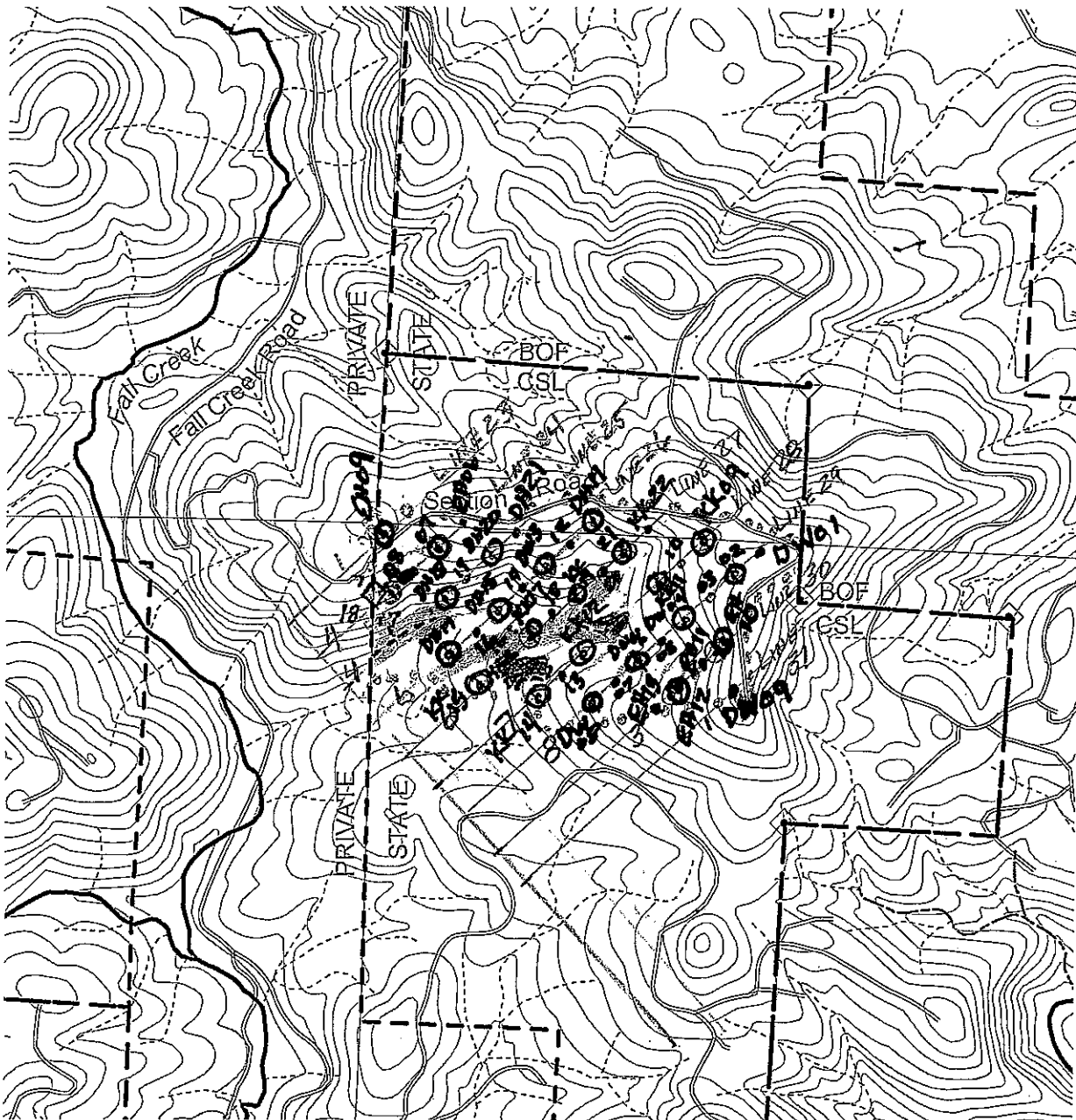
FY2007  
 Hamlet  
 Portions of Section 31, T5N, R8W,  
 Sections 6, 8, and 17, T4N, R8W,  
 and Section 1, T4N, R9W,  
 W.M., Clatsop County, Oregon.

Map A - Topography  
 1:12000

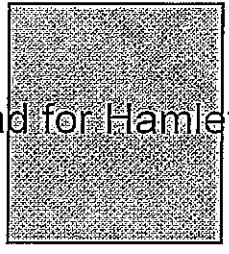


APPROXIMATE NET ACREAGE:	
	MC Aci
Area 1(MC)	10
Area 2(PC)	
Area 3(MC)	5
Area 4(PC)	
Area 5(PC)	
Area 6(MC)	55
TOTALS =	70 A
Total Sale Acreage	

MC Areas 1 & 3 - 13 plots  
 7 grade  
 Actual Plot Locations



LEGEND



Legend for Hamlet View

FY2007  
Hamlet  
Portions of Section 31, T5N; R8W,  
Sections 6, 8, and 17, T4N, R8W,  
and Section 1, T4N, R9W,  
W.M., Clatsop County, Oregon.

Map A - Topography  
1:12000



APPROXIMATE NET ACREAGE:	
	MC Aci
Area 1(MC)	10
Area 2(PC)	
Area 3(MC)	5
Area 4(PC)	
Area 5(PC)	
Area 6(MC)	55
<b>TOTALS =</b>	<b>70</b>
Total Sale Acreage	

MC Areas 40 plots (+3?)  
21 grade Plots (+2?)



**CRUISE DESIGN  
ASTORIA DISTRICT**

Sale Name: HAMLET Area(s) 2, 4, and 5

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

Approx. Cruise Acres: 72 Estimated CV% 40% <sup>Net BF</sup> or <sup>Net BF</sup> SE% Objective 11% BA/Acre

Planned Sale Volume: 4.7 MMBF Estimated Sale Area Value/Acre: \$10,250

**A. Cruise Goals:** (a) Grade minimum 100 conifer and 10 hardwood trees:  
 (b) Sample 60 cruise plots; Grade 31 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; X Determine "diameter limit" harvest parameters; )  
Basal Area leave target 160 sq. ft. (140 to 188) Cruiser needs to select 3 or 4 leave trees per plot, Biggest and Best.  
Also select one intermediate 40% crown tree where available (160-180 sq. ft).

**B. Cruise Design:** (8.5 bars) (13 bars)  
**1. Plot Cruises:** BAF 20 - Alder 46.94 - Conifer (Full point) Half point) (circle one)  
 Fixed Plot Size      Plot Radius      feet  
 Cruise Line Direction(s) Area 4 - 45°/225° Areas 2 & 5 - North/South  
 Cruise Line Spacing 4 chains 264 feet  
 Cruise Plot Spacing 3 chains 198 feet  
 Grade/Count Ratio Grade 1 out of 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" or at least 20 board feet for conifers and 8" or at least 30 board feet (10' to an 8" top - 16' to a 7" top) 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** for conifer is 7", 7" for hardwoods or 40 % of DOB at 16' form point. Generally, use 7" outside bark for trees < 18" DBH and 40% of DOB @ FP for trees > 18" DBH.  
**4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

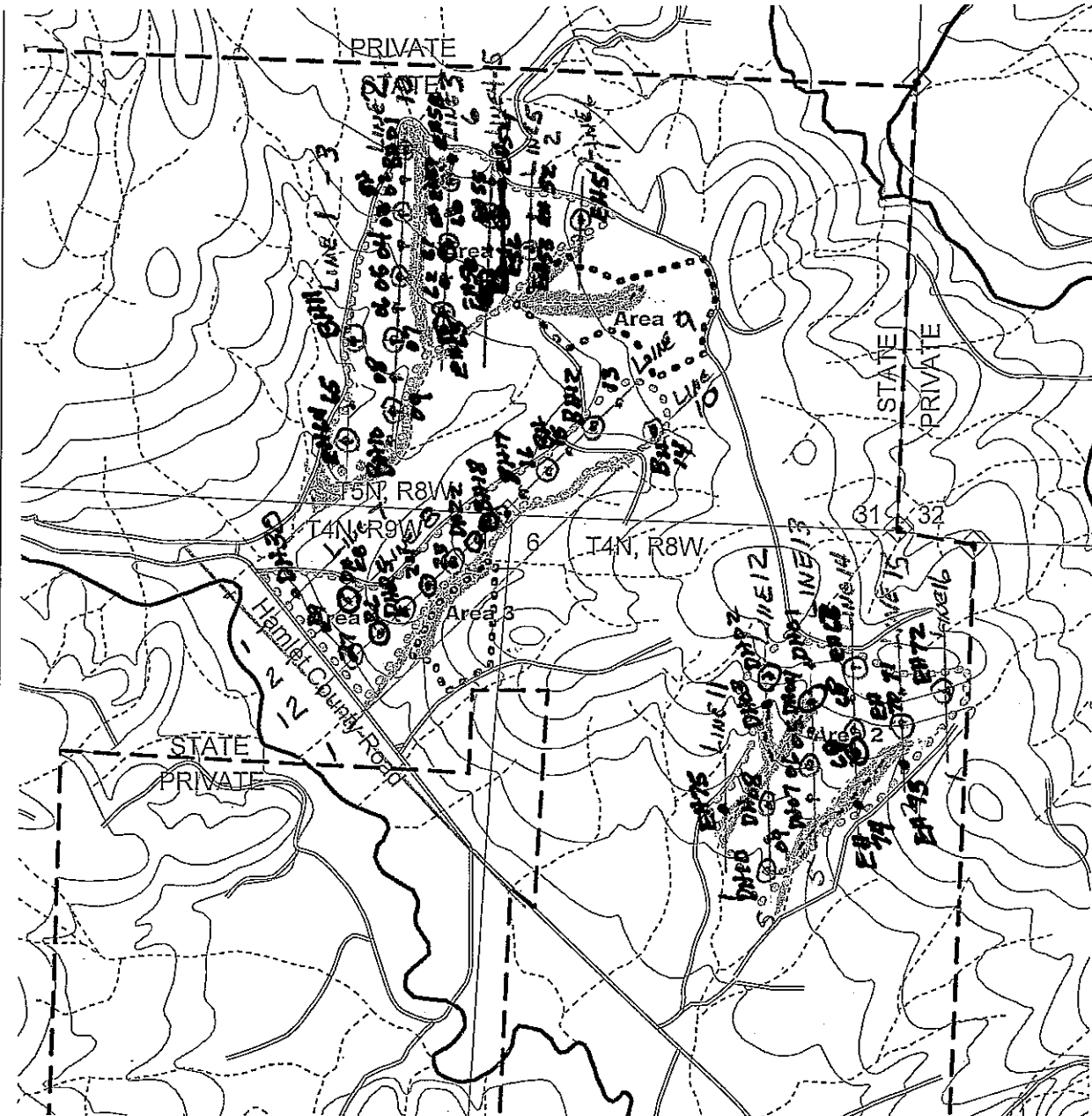
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.
6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)  
 B. Sort: Use code "1" (Domestic).  
 C. Grade: A = #1 Peeler; B = #2 Peeler; C = #3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility  
**Hardwoods: Grade Hardwoods as Camp Run = R. Lengths for Alder are 8 and 10 foot multiples.**

**Cruise snags 15 DBH inches and over. Cruise all reserved trees (cedar and Blue Marked trees) as Leave trees by species.**

If you see a **40% + crown - intermediate tree** in a cruise plot it would be a **leave tree**. Leave Alder will count toward the Basal Area leave requirements.

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 indivisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with DBH on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Ed Holloran 02/07/07  
 Approved by:  2/7/07  
 Date: \_\_\_\_\_

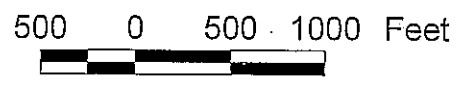


LEGEND

Sale Boundary  
 MC  
 PC

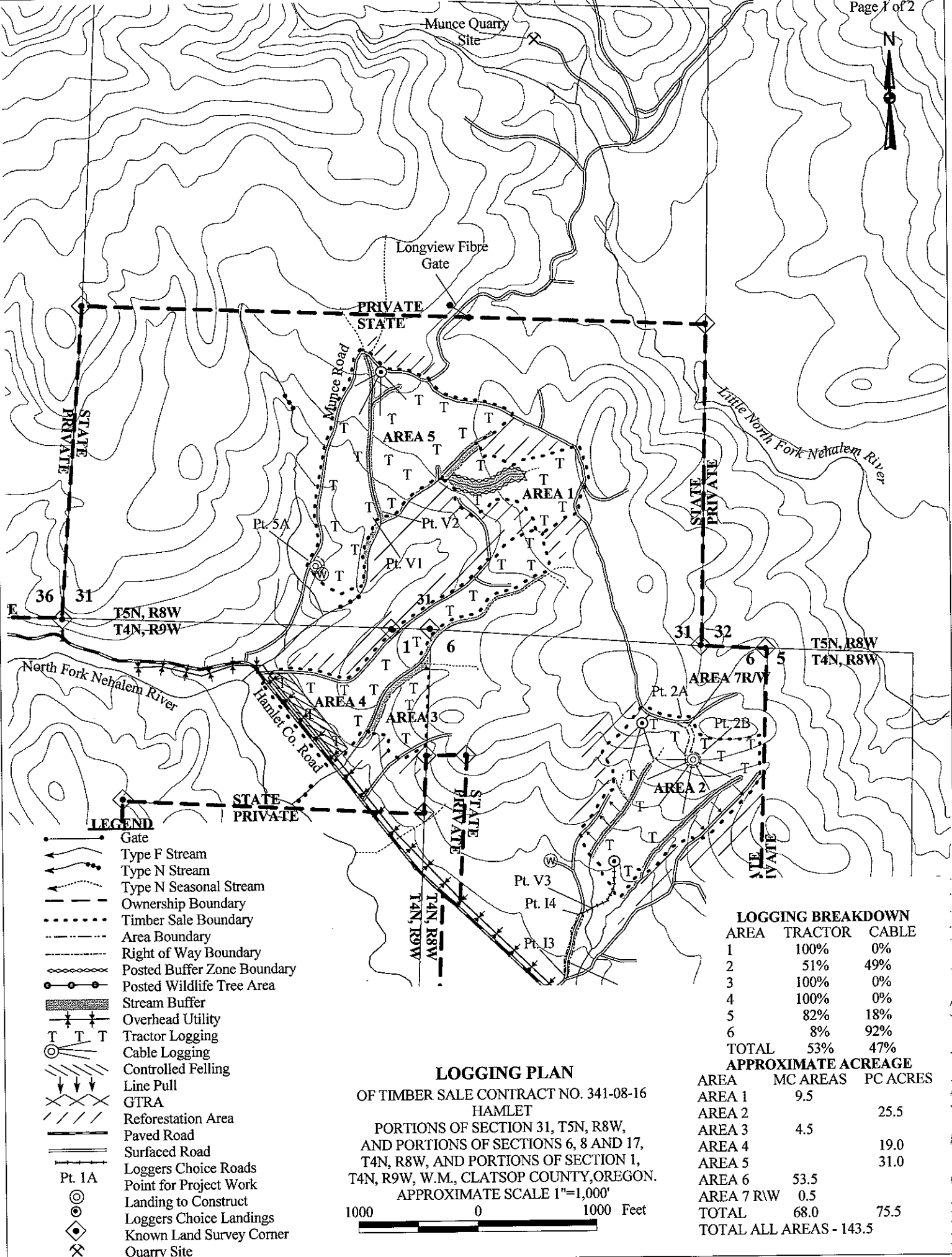
FY2007  
 Hamlet  
 Portions of Section 31, T5N, R8W,  
 Sections 6, 8; and 17, T4N, R8W,  
 and Section 1, T4N, R9W,  
 W.M., Clatsop County, Oregon.

Map A - Topography  
 1:12000



APPROXIMATE NET ACREAGE:	
	MC Acre
Area 1(MC)	10
Area 2(PC)	
Area 3(MC)	5
Area 4(PC)	
Area 5(PC)	
Area 6(MC)	55
<b>TOTALS =</b>	<b>70 A</b>
Total Sale Acreage	

Partial Cut Cruise 60 plots - 31 Grade  
 Actual Plot Locations



**LEGEND**

- Gate
- Type F Stream
- Type N Stream
- Type N Seasonal Stream
- Ownership Boundary
- Timber Sale Boundary
- Area Boundary
- Right of Way Boundary
- Posted Buffer Zone Boundary
- Posted Wildlife Tree Area
- Stream Buffer
- Overhead Utility
- Tractor Logging
- Cable Logging
- Controlled Felling
- Line Pull
- GTRA
- Reforestation Area
- Paved Road
- Surfaced Road
- Loggers Choice Roads
- Point for Project Work
- Landing to Construct
- Loggers Choice Landings
- Known Land Survey Corner
- Quarry Site

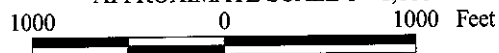
**LOGGING BREAKDOWN**

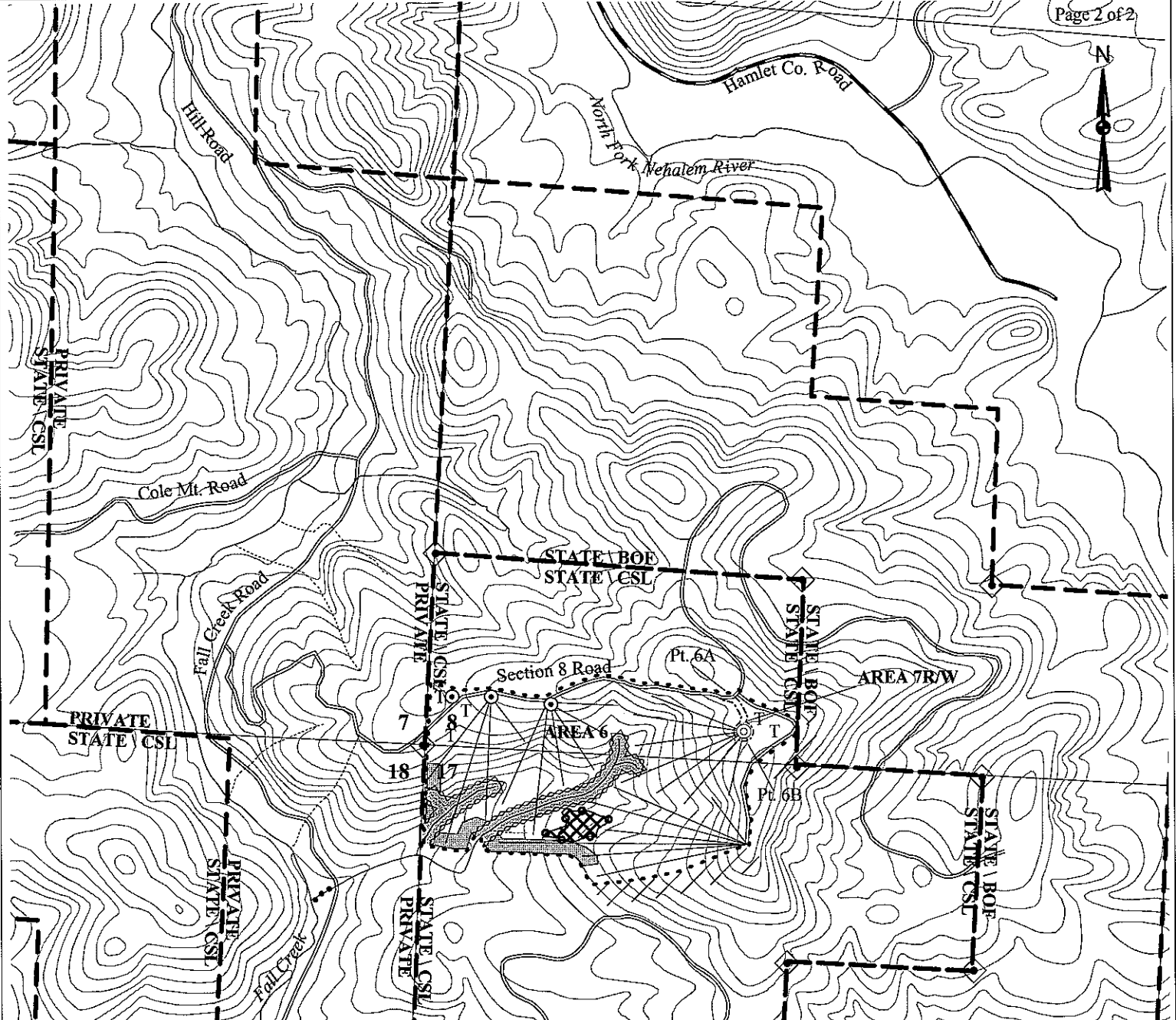
AREA	TRACTOR	CABLE
1	100%	0%
2	51%	49%
3	100%	0%
4	100%	0%
5	82%	18%
6	8%	92%
<b>TOTAL</b>	<b>53%</b>	<b>47%</b>

**LOGGING PLAN**  
 OF TIMBER SALE CONTRACT NO. 341-08-16  
 HAMLET  
 PORTIONS OF SECTION 31, T5N, R8W,  
 AND PORTIONS OF SECTIONS 6, 8 AND 17,  
 T4N, R8W, AND PORTIONS OF SECTION 1,  
 T4N, R9W, W.M., CLATSOP COUNTY, OREGON.  
 APPROXIMATE SCALE 1"=1,000'

**APPROXIMATE ACREAGE**

AREA	MC AREAS	PC ACRES
AREA 1	9.5	
AREA 2		25.5
AREA 3	4.5	
AREA 4		19.0
AREA 5		31.0
AREA 6	53.5	
AREA 7 R/W	0.5	
<b>TOTAL</b>	<b>68.0</b>	<b>75.5</b>
<b>TOTAL ALL AREAS - 143.5</b>		





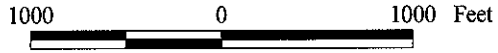
**LEGEND**

- Type F Stream
- Type N Stream
- Type N Seasonal Stream
- Ownership Boundary
- Timber Sale Boundary
- Area Boundary
- Right of Way Boundary
- Posted Buffer Zone Boundary
- Posted Wildlife Tree Area
- Stream Buffer
- Tractor Logging
- Cable Logging
- 100' Top Attached yarding
- Controlled Felling
- Line Pull
- GTRA
- Reforestation Area
- Paved Road
- Surfaced Road
- Loggers Choice Roads
- Point for Project Work
- Landing to Construct
- Loggers Choice Landings
- Known Land Survey Corner
- Quarry Site

**LOGGING PLAN**

OF TIMBER SALE CONTRACT NO. 341-08-16  
 HAMLET  
 PORTIONS OF SECTION 31, T5N, R8W, AND  
 PORTIONS OF SECTIONS 6, 8 AND 17, T4N, R8W,  
 AND PORTIONS OF SECTION 1, T4N, R9W,  
 W.M., CLATSOP COUNTY, OREGON.

APPROXIMATE SCALE 1"=1,000'



**LOGGING BREAKDOWN**

AREA	TRACTOR	CABLE
1	100%	0%
2	51%	49%
3	100%	0%
4	100%	0%
5	82%	18%
6	8%	92%
<b>TOTAL</b>	<b>53%</b>	<b>47%</b>

**APPROXIMATE ACREAGE**

AREA	MC ACRES	PC ACRES
AREA 1	9.5	
AREA 2		25.5
AREA 3	4.5	
AREA 4		19.0
AREA 5		31.0
AREA 6	53.5	
AREA 7 R/W	0.5	
<b>TOTAL</b>	<b>68.0</b>	<b>75.5</b>
<b>TOTAL ALL AREAS</b>	<b>- 143.5</b>	