



Timber Sale Appraisal Cost Summary Cow Hollow Sale 341-07-42

"STEWARDSHIP IN FORESTRY"

District: Astoria

Date: 4/5/07

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,216,209.50	\$301,949.91	\$2,518,159.41
		Project Work	(\$143,513.00)
		Advertised Value	\$2,374,646.41



Timber Sale Appraisal Timber Description Cow Hollow Sale 341-07-42

"STEWARDSHIP IN FORESTRY"

District: Astoria

Location: Portions of Sections 3, 4, 9, 10, and 15, T6N, R6W, and portions of Section 34, T7N, R6W, W.M., Clatsop County, Oregon.

Date: 4/5/07

Stand Stocking: 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	19	0	97
Western Hemlock / Fir	18	0	96
Red Cedar	21	0	96
Alder (Red)	17	0	95
Maple	14	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)	Maple	Total
2S	4,448	125	8	110	0	4,691
3S	1,314	51	1	347	0	1,713
4S	246	8	1	41	43	339
Total	6,008	184	10	498	43	6,743

Comments: Pond Values Used: 1st Quarter Calendar Year 2007.

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

Hauling costs adjusted to make equivalent to \$700 daily truck cost.

Hauling Cost Calculation Douglas-fir:

$\$700 - \% \text{ Profit \& Risk } (\$700 / 1.14) = \$614 \text{ Daily Truck Cost.}$

$\$614 \text{ Daily Truck Cost} / (4 \text{ trips per day} \times 4.5 \text{ MBF per load}) = \$34.11/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Western Hemlock/Fir:

$\$700 - \% \text{ Profit and Risk } (\$700 / 1.14) = \$614 \text{ Daily Truck Cost.}$

$\$614 \text{ Daily Truck Cost} / (3 \text{ trips per day} \times 4 \text{ MBF per load}) = \$51.17/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Western Red Cedar:

$\$700 - \% \text{ Profit and Risk } (700 / 1.14) = \$614 \text{ Daily Truck Cost.}$

$\$614 \text{ Daily Truck Cost} / (3 \text{ Trips per day} \times 4 \text{ MBF per load}) = \$51.17/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Maple:

$\$700 - \% \text{ Profit and Risk } (\$700 / 1.14) = \$614 \text{ Daily Truck Cost.}$

$\$614 \text{ Daily Truck Cost} / (2 \text{ trips per day} \times 3 \text{ MBF per load}) = \$102.33/\text{MBF Hauling Cost.}$

Hauling Cost Calculation Red Alder:

$\$700 - \% \text{ Profit and Risk } (\$700 / 1.14) = \$614 \text{ Daily Trucking Cost.}$

$\$614 \text{ Daily Truck Cost} / (2 \text{ trips per day} \times 2.5 \text{ MBF per load}) = 122.80/\text{MBF Hauling Cost.}$

Other Costs with P&R:

100% Branding and Painting: $\$1 \text{ MBF} \times 6,743 = \$6,743$

Additional log loader piling: $3 \text{ hours} \times \$65/\text{hr} \times 3 \text{ landings} = \585

TOTAL Other Costs w/P&R = \$7,328

Other Costs Without P&R:

Excavator Slash Piling: $15 \text{ hours} \times \$120/\text{hr} = \$1,800$

Excavator move-in: $1 \text{ move-in} \times \$945/\text{move-in} = \$945$

Vacate and crunch dirt road segments 3A to 3B, 3C to 3D, and 4G to 4H
after harvest: $\$50/\text{station} \times 41.55 \text{ stations} = \$2,077.5$

Snag Creation in Area 3: $59 \text{ snags} \times \$45/\text{snag} = \$2,655$

TOTAL Other Costs No P&R = \$7,477.5



Timber Sale Appraisal

Logging Conditions

Cow Hollow

Sale 341-07-42

"STEWARDSHIP IN FORESTRY"

Combination#: 1	Douglas - Fir	29.11%	
	Western Hemlock / Fir	33.49%	
	Alder (Red)	18.80%	
	Maple	39.00%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: No
Logging System:	Cable: Large Tower >=70		Process: Manual Delimiting
Tree Size:	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF		
Loads/Day:	4		Bd. Ft./Load: 4,800
Cost/MBF:	\$184.90		
Machines:			
	Log Loader (A)		
	Tower Yarder (Large)		
Combination#: 2	Douglas - Fir	30.91%	
	Western Hemlock / Fir	20.60%	
	Red Cedar	6.00%	
	Alder (Red)	13.65%	
	Maple	23.00%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: Yes
Logging System:	Shovel		Process: Manual Delimiting
Tree Size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
Loads/Day:	12		Bd. Ft./Load: 4,800
Cost/MBF:	\$40.88		
Machines:			
	Shovel Logger		
Combination#: 3	Douglas - Fir	11.61%	
	Western Hemlock / Fir	13.28%	
	Red Cedar	94.00%	
	Alder (Red)	49.24%	
Yarding Distance:	Short (400 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:	14		Bd. Ft./Load: 4,500
Cost/MBF:	\$59.44		
Machines:			
	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Large)		

Combination#: 4	Douglas - Fir	28.37%	
	Western Hemlock / Fir	32.63%	
	Alder (Red)	18.31%	
	Maple	38.00%	
Yarding Distance:	Short (400 ft)		Downhill Yarding: No
Logging System:	Cable: Medium Tower >40 - <70		Process: Manual Delimiting
Tree Size:	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF		
Loads/Day:	5		Bd. Ft./Load: 4,800
Cost/MBF:	\$138.19		
Machines:			
	Log Loader (A)		
	Tower Yarder (Medium)		



Timber Sale Appraisal

Logging Costs

Cow Hollow

Sale 341-07-42

"STEWARDSHIP IN FORESTRY"

Date: 4/5/07

Operating Seasons: 2.0

Profit & Risk: 14%

Project Costs: \$143,513

Other Costs (P/R): \$7,328

Slash Disposal: \$0

Other Costs: \$7,478

Road Maintenance: \$3.19

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	\$34.11	4.0	4.5
Western Hemlock / Fir	\$51.17	3.0	4.0
Red Cedar	\$51.17	3.0	4.0
Alder (Red)	\$122.80	2.0	3.0
Maple	\$102.33	2.0	3.0

Local Pond Values

Date	Species	Grade	Value
4/5/07	Douglas - Fir	2S	\$540.00
4/5/07	Douglas - Fir	3S	\$540.00
4/5/07	Douglas - Fir	4S	\$540.00
4/5/07	Western Hemlock / Fir	2S	\$370.00
4/5/07	Western Hemlock / Fir	3S	\$370.00
4/5/07	Western Hemlock / Fir	4S	\$370.00
4/5/07	Alder (Red)	2S	\$850.00
4/5/07	Alder (Red)	3S	\$850.00
4/5/07	Alder (Red)	4S	\$850.00



Timber Sale Appraisal Logging Costs Breakdown Cow Hollow Sale 341-07-42

"STEWARDSHIP IN FORESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)	Maple
Logging	112.57	123.33	58.33	94.91	134.03
Road Maintenance	3.29	3.32	3.32	3.36	3.36
Fire Protection	0.87	0.87	0.87	0.00	0.87
Hauling	35.16	53.30	53.30	129.26	107.72
Other (P/R appl.)	1.17	1.17	1.17	0.00	1.17
Profit & Risk	21.43	25.48	16.38	31.85	34.60
Slash Disposal	0.00	0.00	0.00	0.00	0.00
Scaling	2.00	2.00	2.00	2.00	2.00
Other	1.20	1.20	1.20	0.00	1.20
Total	177.69	210.67	136.57	261.38	284.95

Amortization	0.00	0.00	0.00	0.00	0.00
Pond Value	540.00	370.00	1,150.00	850.00	490.00
Stumpage	362.31	159.33	1,013.43	588.62	205.05
Amortized	0.00	0.00	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

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Amortized

	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)	Maple
MBF	0.00	0.00	0.00	0.00	0.00
Value	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00

Unamortized

	Douglas - Fir	Western Hemlock / Fir	Red Cedar	Alder (Red)	Maple
MBF	6,008.00	184.00	10.00	498.00	43.00
Value	362.31	159.33	1,013.43	588.62	205.05
Total	2,176,758.48	29,316.72	10,134.30	293,132.76	8,817.15

Gross Timber Sale Value

Recovery \$2,518,159.41

Prepared by: Derek Bangs

Date: 4/5/07

District: Astoria

Phone: (503) 325-5451

Road Maintenance Cost Summary

Sale: Cow Hollow
 Date: 20-Dec-06
 By: D. Bangs

MBF: 6,743
 \$\$/MBF: \$3.19

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates		
							Miles/day	Distance(miles)	Days
Progressive Operations 1st Entry	Grader 14G	\$570	1	15	\$84	\$1,260	2.5	4.5	1.8
	Dump Truck 12CY x 3	\$357	3	8	\$59	\$1,416			
	FE Loader C966	\$570	1	8	\$79	\$632			
Progressive Operations 2nd Entry	Grader 14G	\$570	1	15	\$84	\$1,260	2.5	4.5	1.8
	Dump Truck 12CY x 3	\$357	3	8	\$59	\$1,416			
	FE Loader C966	\$570	1	8	\$79	\$632			
Final Road Maintenance	Grader 14G	\$570	1	48	\$84	\$4,032	1.5	9.0	6.0
	Dump Truck 12CY x 3	\$357	3	16	\$59	\$2,832			
	FE Loader C966	\$570	1	16	\$79	\$1,264			
	Vibratory Roller	\$570	1	48	\$79	\$3,792	1.5	9.0	6.0
	Water Truck 2,500 gallon Labor	\$139	1	40	\$70	\$2,800			
Total									\$21,480

*Final Road Maintenance Only

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Cow Hollow

NEW CONSTRUCTION:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	2A-2B, 3A-3B, 3C-3D, 3E-3F, 4A-4B, 4C-4D, 4E-4F, 4G-4H, 5A-5B 5C-5D.	61.35	\$33,564
	TOTALS	61.35	\$33,564

ROAD IMPROVEMENT:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	I1-I2, I3-I4, I5-I6, I7-I8	314.95	\$59,341
	TOTALS	314.95	\$59,341

SPECIAL PROJECTS:

Project No. 2	Greasy Spoon Realignment and Stockpile Expansion	\$21,687
Project No. 3	Cow Hollow Brushing	\$19,589
	Project Work Road Maintenance	\$3,294
	TOTALS	\$44,570

MOVE IN:

	<u>Equipment</u>	<u>Cost</u>
	Dozer (D8)	\$1,030
	Dump Trucks (12 cy x 6)	\$714
	Dump Trucks (20 cy x 3)	\$420
	F E Loader (C966)	\$570
	Grader (14G)	\$570
	Rubber Tire Skidder (C518)	\$525
	Vibratory Roller	\$570
	Water Truck (2,500 gallon)	\$139
	Excavator (C330)	\$1,030
	Brush Cutter (15' vertical reach) x 2	\$470
	TOTAL	\$6,038

GRAND TOTAL **\$143,513**

Compiled By: D. Bangs *FL* Date: 01/16/2007

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SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Cow Hollow (Field Design) NEW CONSTRUCTION: 31.20 STATIONS 0.59 MILES
 ROAD: 2A-2B (2.8), 3C-3D (2.9), 3E-3F (3.8), 4A-4B (8.4), 4C-4D (1.0), IMPROVEMENT: STATIONS MILES
 4E-4F (2.3), 4G-4H (9.0), 5A-5B (0.5), 5C-5D (0.5)

Method	Acres/amount	X	Rate	=	Cost
Scatter Outside of r/W	2.4	X	\$980.00	=	\$2,352.00
SUB TOTAL FOR CLEARING & GRUBBING					\$2,352

Material	Sta/amount	X	Rate	=	Cost
Common (Drift Earth up to 200') \$\$/sta.	23.40	X	\$139.00	=	\$3,252.60
Balanced construction \$\$/sta.	7.80	X	\$89.00	=	\$694.20
Landing Construction \$\$/landing	9	X	\$285.00	=	\$2,565.00
SUB TOTAL FOR EXCAVATION					\$6,512

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
2A-2B	18"CPP	30	\$13.60	\$408.00			
4A-4B	18"CPP	30	\$13.60	\$408.00			
4C-4D	18"CPP	30	\$13.60	\$408.00			
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION							
Other/miscellaneous:					Quantity	Rate	Cost
Culvert markers:					3	\$14.10	\$42.30
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION					\$1,266	Subtotal	
							\$10,130

Project No. 1 New Road Construction

SUMMARY OF CONSTRUCTION COSTS

NEW CONSTRUCTION: 61.90 STATIONS
IMPROVEMENT: 0.00 STATIONS

1.17 MILES
0.00 MILES

SALE NAME: Cow Hollow
ROAD: 2A to 2B, 3A to 3B, 3C to 3D, 3E to 3F, 4A to 4B, 4C to 4D, 4E to 4F, 4G to 4H, 5A to 5B, and 5C to 5D.

Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT 2A to 2B Volume (CY) per	Sta. to Sta. 0+00 to 2+80 Number of	Stations/ amount	Rate/ Sta./ amt.	Cost
Subgrade prep:								
Grade, Shape and Ditch 16'						19.30	\$18.20	\$351.26
Subgrade Compaction						19.30	\$14.80	\$285.64
Grade, 14' Outslope						42.60	\$13.45	\$572.97
Waterbar						42.60	\$11.70	\$498.42
Total Rock for Road Segment								\$1,088

Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT 3A to 3B Volume (CY) per	Sta. to Sta. 0+00 to 0+50 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	0+00 to 0+50	8	Station 43	Stations 1	22	\$5.09	\$109
Culvert Bedding	3/4"-0" Crushed	11+60	8	Culvert 20	Culverts 1	20	\$5.09	\$102
Culvert Bedding	3/4"-0" Crushed	13+65	8	Culvert 20	Culverts 1	20	\$5.09	\$102
Total Rock for Road Segment						62		\$313

Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT 3E to 3F Volume (CY) per	Sta. to Sta. 0+00 to 3+80 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	3E to 3F	8	Station 43	Stations 3.80	163	\$5.09	\$832
Traction Rock	3/4"-0" Crushed	0+00 to 3+00	2	station 11	Stations 3	33	\$5.09	\$168
Junction	3/4"-0" Crushed	3E	2	Junction 11	Junctions 1	11	\$5.09	\$56
Junction	4"-0" Crushed	3E	8	Junction 24	Junctions 1	24	\$5.09	\$122
Turnouts	4"-0" Crushed		8	turnout 19	turnouts 1	19	\$5.09	\$97
Landings	6"-0" Pit-run			Landing 50	Landings 1	50	\$9.51	\$476
Total Rock for Road Segment						300		\$1,750

Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT 4A to 4B Volume (CY) per	Sta. to Sta. 0+00 to 8+40 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	4A to 4B	8	Station 43	Stations 8.40	361	\$5.09	\$1,839
Junction	3/4"-0" Crushed	4A	2	Junction 11	Junctions 1	11	\$5.09	\$56
Junction	4"-0" Crushed	4A	8	Junction 24	Junctions 1	24	\$5.09	\$122
Landings	6"-0" Pit-run	2+80, & 6+05		Landing 40	Landings 2	80	\$9.51	\$761
Landings	6"-0" Pit-run	8+40		Landing 50	Landings 1	50	\$9.51	\$476
Total Rock for Road Segment						526		\$3,253

Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT 4C to 4D Volume (CY) per	Sta. to Sta. 0+00 to 1+00 Number of	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	4C to 4D	8	Station 43	Stations 1	43	\$5.09	\$219
Landings	6"-0" Pit-run	4D		Landing 50	Landings 1	50	\$9.51	\$476
Junction	3/4"-0" Crushed	4C	2	Junction 11	Junctions 1	11	\$5.09	\$56
Junction	4"-0" Crushed	4C	8	Junction 24	Junctions 1	24	\$5.09	\$122

Total Rock for Road Segment:

4C to 4D

128

\$873

ROAD SEGMENT		4E to 4F		POINT TO POINT		4E to 4F		Sta. to Sta.		TOTAL VOLUME		Rate/		Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Stations	Junctions	Landings	0+00 to 2+30	Number of	(CY)	Sta./	amnt.			
Base Rock	4"-0" Crushed	4E to 4F	8	43	Station	2	1	1	0+00 to 2+30	2.30	99	\$5.09	\$503			
Junction	3 1/2"-0" Crushed	4E	2	11	Junction	1	1	1			11	\$5.09	\$56			
Junction	4"-0" Crushed	4E	8	24	Junction	1	1	1			24	\$5.09	\$122			
Landings	6"-0" Pit-run		50	50	Landing	1	1	1			50	\$9.51	\$476			
Total Rock for Road Segment:											184			\$1,157		
ROAD SEGMENT		4G to 4H		POINT TO POINT		4G to 4H		Sta. to Sta.		TOTAL VOLUME		Rate/		Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Stations			0+00 to 9+00	Number of	(CY)	Sta./	amnt.			
Base Rock	4"-0" Crushed	0+00 to 0+50	8	43	Station	1	1	1	0+00 to 9+00	0.50	22	\$5.09	\$109			
Total Rock for Road Segment:											22			\$109		
ROAD SEGMENT		5A to 5B		POINT TO POINT		5A to 5B		Sta. to Sta.		TOTAL VOLUME		Rate/		Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Stations <td></td> <td></td> <th>0+00 to 0+50</th> <th>Number of</th> <th>(CY)</th> <th>Sta./</th> <th>amnt.</th> <th></th> <th></th>			0+00 to 0+50	Number of	(CY)	Sta./	amnt.			
Base Rock	4"-0" Crushed	5A to 5B	8	43	Station	1	1	1	0+00 to 0+50	0.50	22	\$5.09	\$109			
Junction	4"-0" Crushed	5A	8	24	Junction	1	1	1			24	\$5.09	\$122			
Landings	6"-0" Pit-run		50	50	Landing	1	1	1			50	\$9.51	\$476			
Total Rock for Road Segment:											96			\$707		
ROAD SEGMENT		5C to 5D		POINT TO POINT		5C to 5D		Sta. to Sta.		TOTAL VOLUME		Rate/		Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY)	per	Stations <td></td> <td></td> <th>0+00 to 0+50</th> <th>Number of</th> <th>(CY)</th> <th>Sta./</th> <th>amnt.</th> <th></th> <th></th>			0+00 to 0+50	Number of	(CY)	Sta./	amnt.			
Base Rock	4"-0" Crushed	5C to 5D	8	43	Station	1	1	1	0+00 to 0+50	0.50	22	\$5.09	\$109			
Junction	4"-0" Crushed	5C	8	24	Junction	1	1	1			24	\$5.09	\$122			
Landings	6"-0" Pit-run		50	50	Landing	1	1	1			50	\$9.51	\$476			
Total Rock for Road Segment:											96			\$707		
Processing:																
Water, Process & Compact Crushed Rock:											19.30			\$799		
Water, Process & Compact Traction Rock:											3.00			\$124		
Develop Pit Run Rock:											430.00			\$817		
SUB TOTAL FOR SURFACING														\$13,406		
GRAND TOTAL														\$33,564		

Compiled By: Derek Bangs Date: 12/20/2006

Project No. 1 Road Improvement

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Cow Hollow NEW CONSTRUCTION: 314.95 STATIONS MILES 5.96
 ROAD: 11 to 12, 13 to 14, 15 to 16, and 17 to 18 IMPROVEMENT: 314.95 STATIONS MILES 5.96

ROAD SEGMENT		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	11 to 12	0+00 to 258+25			
Subgrade Leveling	3/4"-0" Crushed	11 to 12	N/A	11	Junctions	300	\$5.09	\$1,527
Junction	3/4"-0" Crushed	11 to 12	3	11	turnouts	176	\$5.09	\$896
Turnouts	3/4"-0" Crushed	11 to 12	3	11	Station	253	\$5.09	\$1,288
Surfacing Rock	3/4"-0" Crushed	11 to 12	3	19	Station	4,907	\$5.09	\$24,975
Total Rock for Road Segment:		11 to 12				5,636		\$28,686
ROAD SEGMENT		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	13-14	0+00 to 11+25			
Surfacing Rock	4"-0" Crushed	13 to 14	6	33	Station	371	\$5.09	\$1,890
Junction	4"-0" Crushed	13	6	24	Junctions	24	\$5.09	\$122
Turnouts	4"-0" Crushed	13 to 14	5	12	turnouts	36	\$5.09	\$183
Total Rock for Road Segment:		13-14				431		\$2,195
ROAD SEGMENT		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	15-16	0+00 to 20+75			
Subgrade Leveling	3/4"-0" Crushed	15 to 16	N/A	17	Station	70	\$5.09	\$356
Total Rock for Road Segment:		15-16				70		\$356
ROAD SEGMENT		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	0+00 to 24+70			
Surfacing Rock	4"-0" Crushed	17 to 18	6	33	Station	815	\$5.09	\$4,149
Junction	4"-0" Crushed	17	6	24	Junctions	24	\$5.09	\$122
Junction	3/4"-0" Crushed	17	2	11	Junctions	11	\$5.09	\$56
Turnouts	4"-0" Crushed	17 to 18	5	12	turnouts	36	\$5.09	\$183
Total Rock for Road Segment:		17 to 18				886		\$4,510
Subgrade prep: <u>Grade, Shape and Ditch</u>						314.95	x	\$5,732.09
							x	
SUB TOTAL FOR SURFACING								\$59,115
Processing:		Description		No. sta		Rate/sta		Cost
		Water, Process & Compact Crushed Rock:		314.95		\$41.40		\$13,039
		Process & Compact Subgrade Leveling:		258.25		\$17.80		\$4,597

SPECIAL PROJECTS		
Description	16 Markers x 14.10	Cost
Installing Culvert Markers	=	\$226
SUB TOTAL FOR SPECIAL PROJECTS		\$226
GRAND TOTAL		\$59,341

Compiled By: Derek Bangs Date: 12/20/2006

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Cow Hollow
 ROAD: Project No. 2 Greasy Spoon Realignment

NEW CONSTRUCTION: STATIONS
 IMPROVEMENT: 8.02 STATIONS

MILES
 0.15 MILES

CLEARING & GRUBBING		Acres	\$/Acre	Cost
(road)	Pile and burn	0.25	\$1,980	\$495.00
(stockpile site)	Pile and burn	0.29	\$1,980	\$574.20
Haul road slash to stockpile site for burning		Hours 4	\$/Hour \$208.00	\$832.00
SUB TOTAL FOR CLEARING & GRUBBING				\$1,901

Material	Cy/amount	Rate	Cost
Haul to waste (stockpile) site	1,439	\$1.57	\$2,259.23
Drift to fills	11	\$1.52	\$16.72
Embankment compaction	11	\$0.45	\$4.95
Slope Rounding (stations)	2	\$31.00	\$62.00
Haul fill material to 3A-3B	1,750	\$3.90	\$6,825.00
Stockpile site Drift for expansion	1,439	\$1.28	\$1,841.92
Waste material (embankment) compaction	1,439	\$0.45	\$647.55
SUB TOTAL FOR EXCAVATION			\$11,657

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
CULVERT MATERIALS AND INSTALLATION							
Other/miscellaneous:							
Culvert stakes & markers:							
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION							\$13,659
Subtotal							\$13,659

SURFACING

Subgrade prep:

Description

Grade, Shape and Ditch 20'	Stations/ amount	Rate/ sta/amt	Cost
Subgrade Compaction	8.02	\$20.30	\$162.81
Grade, shape, and compact stockpile site expansion	8.02	\$18.70	\$149.97
	14.00	\$28.25	\$395.50

ROAD SEGMENT	GS1 - GS2		POINT TO POINT		Sta. to Sta. 0+00 - 8+02	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per station				
Base Rock	4"-0" Crushed	2+00 - 5+10	10	70	3.10	217	\$5.09	\$1,105
Curve Widening	4"-0" Crushed		10	n/a	2	11	\$5.09	\$56
Turnouts (75 foot)	4"-0" Crushed		10	32	1	32	\$5.09	\$163
Surface rock	3/4"-0" Crushed		4	28	8	225	\$5.09	\$1,143
Curve Widening	3/4"-0" Crushed		4	n/a	2	5	\$5.09	\$25
Turnouts (75 foot)	3/4"-0" Crushed		4	12	1	12	\$5.09	\$61
Total Rock for Road Segment: GS1 - GS2								
Stockpile site						502		\$2,553

ROAD SEGMENT	Stockpile site		POINT TO POINT		Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per Stockpile site				
Base Rock	Reclaimed Rock		10			620	\$4.33	\$2,685
						0		\$0
						0		\$0
						0		\$0
						0		\$0
						0		\$0
Total Rock for Road Segment: Stockpile site								
						620		\$2,685

Processing:

Water, Process & Compact (4"-0"):	Description	#lifts	No.sta	Rate/sta	Cost
Water, Process & Compact (3/4"-0"):		2	3.10	\$41.40	\$257
Water, Process & Compact (Reclaimed rock):		1	8.02	\$41.40	\$332
		1	10	\$41.40	\$414

SUB TOTAL FOR SURFACING

\$6,949

SPECIAL PROJECTS

Reclaimed Rock	4"-0"	1 1/2"-0"	3/4"-0"	Total
620	260		242	1,122

Description	Cost
Hydroseed (0.25 acres @ \$1,050/acre = \$263)	\$263
Hydroseeder mobilization	\$189
Move loader to reclaimed rock site	\$570
Clear reclaimed rock vegetative matter (2 loader hrs @79)	\$158

SUB TOTAL FOR SPECIAL PROJECTS

\$1,180

GRAND TOTAL

\$21,687

Compiled By: _____

d.mellison

Date: 12/01/06

SALE NAME: Cow Hollow
 PROJECT: No. 2 Greasy Spoon Realignment
 QUARRY: _____

ROCK TYPE: Waste

DATE: 7/28/06
 BY: d.mellison

Segment	Stations	Cubic Yards								Total
		Base	Landing	Turnout	Turnaround	Junction	Waste	Misc		
GS1-GS2							1,439			1,439
Grand Total							1,439			1,439

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		
GS1-GS2		1,439							0.05	0.05	0.10
TOTAL		1,439									
CUBIC YARD WEIGHTED HAUL		STA./NO.	CU. YD.						0.05	0.05	AVERAGE HAUL 0.10
Average Round Trip Distance (miles)										0.20	

ROCK HAUL:

Truck type: D20 No. trucks: 1
 Delay min.: 8 Efficiency: 85%
 Ave haul: \$0.59 /cy
 **Load: \$0.72 /cy

Truck type: D12 No. trucks: _____
 Delay min.: 6 Efficiency: 85%
 *Dump: \$0.07 /cy
 ***Exc. & Shape Slope: \$0.19 /cy

Truck type: D10 No. trucks: _____
 Delay min.: 5 Efficiency: 85%
 Production: cy/day = 948

WASTE HAUL COSTS 1,439 cy @ \$1.57 /cy

*Productivity = 100 bcy/hr = \$0.70/bcy, \$0.70/bcy - \$0.59/bcy (ave. haul) = \$0.21/bcy for dump & load, lets use \$0.14/bcy for truck loading time and \$0.07/bcy for truck dumping time.

** Loading cost = \$0.14/bcy and 5/60 (\$138/hr)/20 bcy = \$0.715/bcy

*** 50/60 of hour spent loading trucks, 10/60 of hour (\$138/hr) spent on pure exc/shaping * 8 hrs/day/948 bcy = \$0.19/bcy

SALE NAME: Cow Hollow
 PROJECT: No. 2 Greasy Spoon Realignment
 QUARRY: _____

ROCK TYPE: Reclaimed rock

DATE: 12/6/06
 BY: d.mellison

Segment	Stations	Cubic Yards							Total
		Base	Landing	Turnout	Turnaround	Junction	Reclaimed	Misc	
GS1-GS2							620		620
Grand Total							620		620

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	
GS1-GS2		620				3.50	0.60	0.20	0.20	4.50
TOTAL		620				3.50	0.60	0.20	0.20	AVERAGE HAUL 4.50
CUBIC YARD WEIGHTED HAUL		STA./NO. CU. YD.				3.50	0.60	0.20	0.20	
Average Round Trip Distance (miles) 9.00										

ROCK HAUL:

Truck type: <u>D20</u>	No. trucks: _____	Ave haul: \$3.67 /cy
Delay min.: <u>8</u>	Efficiency: <u>85%</u>	*Load: \$0.41 /cy
Truck type: <u>D12</u>	No. trucks: <u>4</u>	*Dump: \$0.25 /cy
Delay min.: <u>6</u>	Efficiency: <u>85%</u>	
Truck type: <u>D10</u>	No. trucks: _____	Production: cy/day = 514
Delay min.: <u>5</u>	Efficiency: <u>85%</u>	

WASTE HAUL COSTS 620 cy @ \$4.33 /cy

* Loading cost = 5/60 * \$59/hr (w/o operator) / 12 bcy = \$0.41
 ** Dumping cost = 3/60 * \$59/hr / 12 bcy = \$0.25
 \$0.19/bcy

SALE NAME: Cow Hollow
 PROJECT: No. 2 Greasy Spoon Realignment
 QUARRY: _____

ROCK TYPE: 3A-3B Fill

DATE: 12/06/06
 BY: d.mellison

Segment	Stations	Cubic Yards							Total
		Base	Landing	Turnout	Turnaround	Junction	Waste	Fill	
GS1-GS2								1,750	1,750
Grand Total								1,750	1,750

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	
GS1-GS2		1,750				0.40	1.60	0.20	0.20	2.40
TOTAL		1,750				0.40	1.60	0.20	0.20	AVERAGE HAUL 2.40
CUBIC YARD WEIGHTED HAUL		STA./NO.	CU. YD.			0.40	1.60	0.20	0.20	
Average Round Trip Distance (miles) 4.80										

ROCK HAUL:

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

Ave haul: \$2.65 /cy

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

*Load: \$0.96 /cy

**Dump: \$0.29 /cy

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

Production: cy/day = 712

FILL ROCK HAUL COSTS

cy @ \$3.90 /cy

* Load = 5/60 * \$138/hr / 12 bcy = \$0.96/bcy

** Dump = 3/60 * \$70/hr / 12bcy = \$0.29/bcy

Road Maintenance after completion of Projects

Sale: Cow Hollow
Date: 16-Jan-07
By: D. Bangs

Type	Equipment/Rationale	Hours	Rate	Cost
Final Haul	Grader 14G	10	\$84	\$840
Road	Dump Truck 12CY x 2	8	\$59	\$472
Maintenance	FE Loader C966	8	\$79	\$632
Haul Route	Vibratory Roller	10	\$79	\$790
	Water Truck 2,500 gallon	8	\$70	\$560
Total				\$3,294

Miles/day	Distance(miles)	Days
1.5	1.0	0.7
1.5	1.0	0.7

Production Rates
 Grader
 Vibratory Roller

**Cow Hollow
TIMBER CRUISE REPORT
FY 2007**

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5, 5a, and 5b are located in Portions of Sections 3, 4, 9, 10, and 15, T6N, R6W, and Section 34, T7N, R6W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 100%
Tax Code 8-01 (86%), 30-05 (14%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	New R/W	GTRA	Non-Thinnable	Stream Buffer	Net Acres	Survey Method
1	Partial Cut	52	2	1	0	0	1	48	GIS
2	Modified Clearcut	22	0	0	0	0	5	17	GIS
3	Partial Cut	130	2	3	0	0	7	118	GIS
4	Partial Cut	121	4	1	0	0	10	106	GIS
5	Partial Cut	44	0	0	18	0	3	23	GIS
5a	Group Selection Area	3	0	0	0	0	0	3	GIS
5b	Group Selection Area	3	0	0	0	0	0	3	GIS
6 R/W	Right-of-way	n/a	0	0	0	0	0	5	GIS
TOTALS		375	8	5	18	0	26	323	

4. **Cruisers and Cruise Dates:** Areas 1, 2, 3, 4, 5, and 6 were cruised by Derek Bangs, Jon Long, Peter Stone, Jay Morey, Jasen McCoy, and Dave Wolfgram, in October, 2006.

5. **Cruise Method and Computation:** AREA 1 is an "auto-mark" thinning unit and was variable plot cruised using a 40 BAF. These plots are located on a 3 chain by 5 chain grid, with every third plot measured and graded. A total of 31 plots were sampled, with 10 measured and graded plots, and 21 count plots. Cedar and alder are reserve species, and were recorded as "leave" trees. The "biggest and best" trees were recorded as "leave" trees to meet a target residual basal area of 150 ft²/acre. Hardwoods do not count towards the residual basal area. AREA 2 is a modified clearcut unit and was variable plot cruised using a 40 BAF. These plots are located on a 3 chain by 3 chain grid, with every third plot measured and graded. A total of 21 plots were sampled, with 8 measured and graded plots, and 13 count plots. Cedar is a reserve species.

AREAS 3, 4, and 5 are "auto-mark" thinning units and were variable plot cruised using a 40 BAF. These plots are located on a 5 chain by 9 chain grid, with every third plot measured and graded. A total of 69 plots were sampled, with 23 measured and graded plots, and 46 count plots. Cedar is a reserve species, and was recorded as "leave" trees. The "biggest and best" trees were recorded as "leave" trees to meet a target residual basal area of 120 ft²/acre. Hardwoods counted towards the residual basal area

AREAS 5a and 5b are group selection units and were variable plot cruised using a 40 BAF. A total of 6 plots were sampled with 6 graded plots 1 chain apart. All conifer are reserve species and were recorded as "leave trees".

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

All cruisers used Corvallis MicroTechnology (CMT) and/or Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

AREA	CRUISE	TRACT	TYPE
1	06N06W SEC 10	1_150_TAKE	00PC
2	06N06W SEC 10	2_TAKE	00CC
3, 4, and 5	06N06W SEC 03	345_120_TAKE	00PC
5a and 5b	07N06W SEC 34	PATCH	PACH
6.R/W	06N06W SEC 03	R/W	R/W

6. Timber Description: Area 1 is an "auto-mark" thinning unit, approximately 65 years old, consisting of a Douglas-fir stand with the occasional western hemlock, red alder, and cedar. Some small, non-thinnable pockets are scattered throughout the unit. This stand will be thinned to a SDI of 32 (150 Sq.Ft.BA), removing approximately 42 trees per acre and 16 MBF/acre. The average conifer "take" tree size is 20.1 inches DBH and 87 feet to a merchantable top (6 inch d.i.b.).

Area 2 is a modified clearcut unit, approximately 65 years old, consisting of Douglas-fir, western hemlock, red alder, with a minor component of cedar. The Douglas-fir averages 19.0 inches DBH, with an average height of 86 feet to a merchantable top (6 inch d.i.b.). The average alder tree size is 14.4 inches DBH and 46 feet to a merchantable top (7 inch d.i.b.). The average volume per acre to be harvested (net) is 39.7 MBF.

Areas 3, 4, and 5 are "auto-mark" thinning units, approximately 65 years old, consisting of Douglas-fir, western hemlock, noble fir, red alder, with a minor component of cedar. Some small, non-thinnable pockets are scattered throughout the unit. This stand will be thinned to a SDI of 26 (120 Sq.Ft.BA), removing approximately 61 trees per acre and 20 MBF/acre. The average conifer "take" tree size is 18.7 inches DBH and 73 feet to a merchantable top (6 inch d.i.b.). The average alder "take" tree size is 19.0 inches DBH and 72 feet to a merchantable top (7 inch d.i.b.).

Areas 5a and 5b are group selection areas, approximately 60 years old, consisting of primarily red alder. The average alder "take" tree size is 17.3 inches DBH and 46 feet to a merchantable top (7 inch d.i.b.).

Area 6 R/W is similar to the timber description mentioned above for Areas 3, 4, and 5. The average volume (net) is approximately 45.7 MBF/acre.

7. Statistical Analysis and Stand Summary: (See "Statistics" - Type Reports, attached)

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1 (PC)	40%	9%	33%	6%
2 (MC)	40%	12%	49%	11%
3, 4 and 5 (PC)	40%	7%	42%	5%
5a and 5b (GS)	40%	12%	36%	16%

* Statistics for the thinning units (Areas 1, 3, 4, and 5) is for the current stand (Take and leave trees combined).


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

Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	% D & B	% Sale
Douglas-fir	19"	6,008	4,448	1,314	246	2%	89%
Alder	17"	498	110	347	41	1%	7%
Hemlock	18"	184	125	51	8	<1%	3%
Bigleaf Maple	14"	43	0	0	43	<1%	<1%
Cedar	21"	10	8	1	1	<1%	<1%
TOTALS		6,743	4,691	1,713	339		

9. Approvals:

Prepared by: Derek Bangs Date: November 29, 2006

Unit Forester Approval:  Date: 2/26/07

10. Attachments:

- Cruise Designs (4)
- Cruise Maps (2)
- Volume Reports - 6 pages
- Statistics Reports - 13 pages
- Stand Tables - 2 pages
- Log Stock Tables - 3 pages

X:\Jewell_Unit\Timber Sales\2007\Cow Hollow\Pre-sale\CruiseReport.doc

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Cow Hollow **Area(s)** 1

Harvest Type: (PC) "Automark Thinning"

Approx. Cruise Acres: 48 **Estimated CV%** 40 Net BF or BA/Acre **SE% Objective** 9 Net BF or BA/Acre

Planned Sale Volume : 624 MBF **Estimated Sale Area Value/Acre:** \$5,200/Ac
(Area 1) (13 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 45 conifer:
(b) Sample 31 cruise plots (1 grade/2 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 90° (East/West)
Cruise Line Spacing 5 (chains)
Cruise Plot Spacing 3 (chains)
Grade/Count Ratio 1/2

Basal Area leave target 150 sq. ft. Cruiser needs to select 4 leave trees per plot and 3 leave trees every 4th plot. Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer offset by 1 or 2 chains and continue. Alder will not be thinned; Record alder as leave trees. All cedar are leave trees and count towards the leave tree basal area. Alder will not count towards the leave tree BA.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 8" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:**
 - A. **Species:** Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
 - B. **Sort:** Use code "1" (Domestic).
 - C. **Grade:** A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; 0 = Cull

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures: Plot Type Cruises:** Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.

9. **Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Derek Bangs
 Approved by: *Jon Long*
 Date: 10/12/06

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Cow Hollow **Area(s)** 2

Harvest Type: (MC) "Modified Clearcut"

Approx. Cruise Acres: 17 **Estimated CV%** 40 Net BF or BA/Acre **SE% Objective** 12 Net BF or BA/Acre

Planned Sale Volume : 1,920 MBF **Estimated Sale Area Value/Acre:** \$16,000/Ac
(Area 2) (40 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 30 conifer:
(b) Sample 21 cruise plots (1 grade/2 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

- 1. **Plot Cruises:** BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 90° (East/West)
Cruise Line Spacing 3 (chains)
Cruise Plot Spacing 3 (chains)
Grade/Count Ratio 1/2

Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer offset by 1 or 2 chains and continue. All cedar and marked wildlife trees are leave trees and are recorded as leave trees.

C. Tree Measurements:

- 1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 8" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:**
 - A. **Species:** Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
 - B. **Sort:** Use code "1" (Domestic).
 - C. **Grade:** A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; 0 = Cull

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures: Plot Type Cruises:** Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.

9. **Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Derek Bangs
 Approved by: *Jon Long*
 Date: 10/12/06

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Cow Hollow **Area(s)** 3, 4, & 5

Harvest Type: (PC) "Automark Thinning"

Approx. Cruise Acres: 247 **Estimated CV%** 40 Net BF or BA/Acre **SE% Objective** 7 Net BF or BA/Acre

Planned Sale Volume : 3,968 MBF **Estimated Sale Area Value/Acre:** \$6,400/Ac
(Areas 3, 4, & 5) (16 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 100 conifer:
(b) Sample 70 cruise plots (1 grade/2 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 360° (North/South) AZ = 235° Line 20
Cruise Line Spacing 5 (chains)
Cruise Plot Spacing 9 (chains)
Grade/Count Ratio 1/2

Basal Area leave target 120 sq. ft. Cruiser needs to select 3 leave trees per plot. Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer offset by 1 or 2 chains and continue. Alder will be thinned and will count towards basal area. All cedar are leave trees and count towards the leave tree basal area.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 8" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

- 5. Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.
- 6. Species, Sort, and Grade Codes:**
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; 0 = Cull
- 7. Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
- 8. Standard Field Procedures: Plot Type Cruises:** Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
- 9. Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
- 10. Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Derek Bangs
 Approved by: _____
 Date: 10/12/06

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Cow Hollow **Area(s)** Patch Cut

Harvest Type: (MC) "Modified Clearcut"

Approx. Cruise Acres: 6 **Estimated CV%** 40 Net BF or BA/Acre **SE% Objective** 12 Net BF or BA/Acre

Planned Sale Volume : 180 MBF **Estimated Sale Area Value/Acre:** \$2,400/Ac
(Patch Cut) (30 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 25 alder:
(b) Sample 6 cruise plots (1 grade/0 count); (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point; Half point) (circle one)
Cruise Line Direction(s) AZ= 201° (Line 24), AZ= 144° (Line 25)
Cruise Line Spacing N/A (chains)
Cruise Plot Spacing 2 (chains)
Grade/Count Ratio 1/0

Cruise all take and leave trees. If a cruise line ends up paralleling in a buffer offset by 1 or 2 chains and continue. Record all conifers as leave trees.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 8" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.
- 5. Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to

maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. Species, Sort, and Grade Codes:

- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; 0 = Cull

7. **Deductions**: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures: Plot Type Cruises**: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.

9. **Cruising Equipment**: Relaskop, Rangefinder, Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. **Attachments**: A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Derek Bangs
Approved by: Jon Long 10/13/06
Date: 10/12/06

MAP:A

Cruise Map Cow Hollow

Portions of Sections 3, 4, 9, 10 & 15,
T6N, R6W, & Section 34, T7N,
R6W, W.M., Clatsop County, OR



Approximate Net Acreage
MC Acres PC Acres

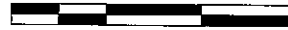
Area 1 (PC) -		48
Area 2 (MC) -	17	
Area 3 (PC) -		119
Area 4 (PC) -		106
Area 5 (PC) -		23
Area 5A (MC) -	3	
Area 5B (MC) -	3	
Total =	23	296
Total Sale Acres = 319		

LEGEND

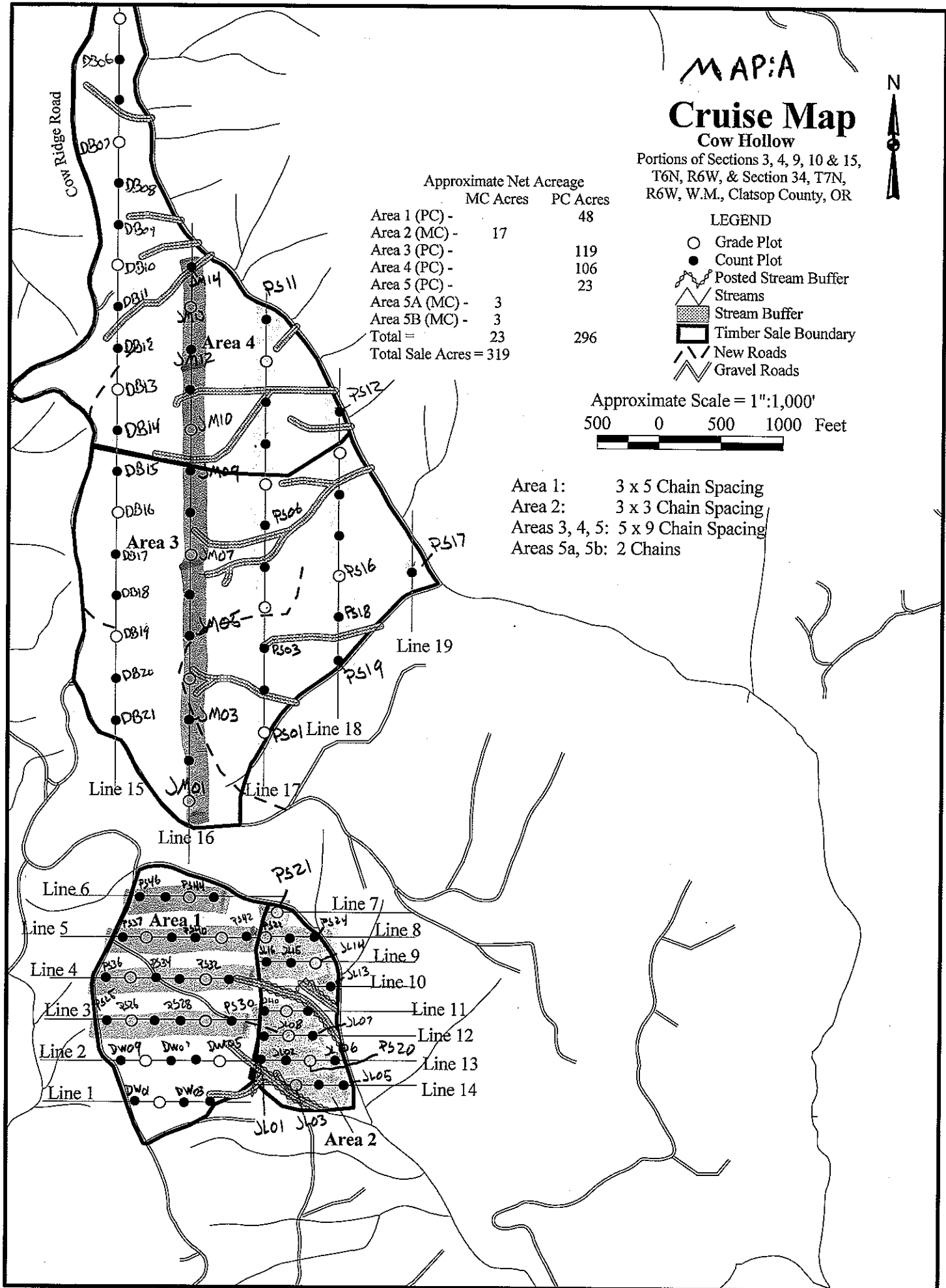
- Grade Plot
- Count Plot
- ▭ Posted Stream Buffer
- ▭ Streams
- ▭ Stream Buffer
- ▭ Timber Sale Boundary
- ▭ New Roads
- ▭ Gravel Roads

Approximate Scale = 1":1,000'

500 0 500 1000 Feet



- Area 1: 3 x 5 Chain Spacing
- Area 2: 3 x 3 Chain Spacing
- Areas 3, 4, 5: 5 x 9 Chain Spacing
- Areas 5a, 5b: 2 Chains



MAP: B



Peter

Derek

Jay

Petelo Dave

Cruise Map

Cow Hollow

Portions of Sections 3, 4, 9, 10 & 15, T6N, R6W, & Section 34, T7N, R6W, W.M., Clatsop County, OR

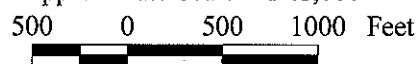
LEGEND

- Grade Plot
- Count Plot
- ▭ Posted Stream Buffer
- ▭ Streams
- ▭ Stream Buffer
- ▭ Timber Sale Boundary
- ▭ New Roads
- ▭ Gravel Roads

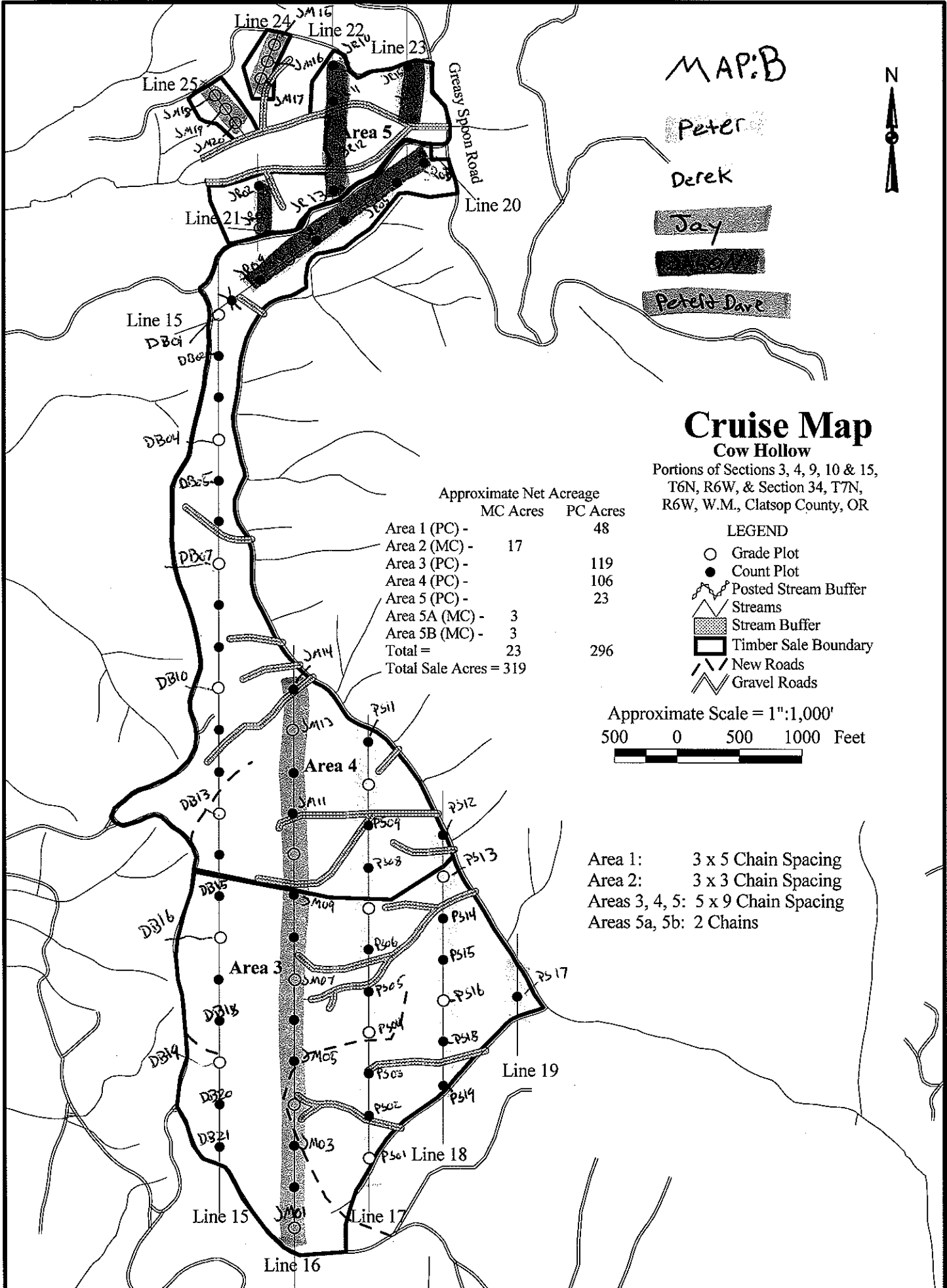
Approximate Net Acreage

	MC Acres	PC Acres
Area 1 (PC) -		48
Area 2 (MC) -	17	
Area 3 (PC) -		119
Area 4 (PC) -		106
Area 5 (PC) -		23
Area 5A (MC) -	3	
Area 5B (MC) -	3	
Total =		296
Total Sale Acres =	319	

Approximate Scale = 1":1,000'



- Area 1: 3 x 5 Chain Spacing
- Area 2: 3 x 3 Chain Spacing
- Areas 3, 4, 5: 5 x 9 Chain Spacing
- Areas 5a, 5b: 2 Chains



Species, Sort Grade - Board Foot Volumes (Project)

T06N R06W S03 Ty00PC
THRU
T07N R06W S34 TyPACH

Project: COW
Acres 323.00

Page 1
Date 11/29/2006
Time 10:51:00AM

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of 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		DOCU														9		0.00	4.9		
D		DO2S		74	2.2	14,074	13,771	4,448		2	55	43		2	2	38	57	35	300	1.92	45.9
D		DO3S		21	2.7	4,181	4,069	1,314		95	5			2	12	47	38	32	82	0.73	49.7
D		DO4S		5	.6	766	762	246		6	94			24	56	14	6	23	31	0.46	25.0
D Totals				89	2.2	19,021	18,602	6,008	0	26	42	32	3	6	39	51	30	148	1.17	125.5	
A		DOCU															4		0.00	2.1	
A		DO2S		22	1.3	344	340	110			75	25		27	40	22	11	25	193	1.74	1.8
A		DO3S		69	.3	1,077	1,073	347		37	61	2		8	13	61	17	31	123	1.09	8.7
A		DO4S		9	1.3	128	126	41		8	92			34	17	32	17	25	40	0.57	3.1
A Totals				7	.6	1,549	1,539	497	1	33	59	7	14	20	50	16	25	98	1.04	15.7	
C		DO2S		80	4.6	25	24	8			87	13				87	13	32	199	2.14	.1
C		DO3S		8		2	2	1		65	35			65		35		18	54	0.81	.0
C		DO4S		12		3	3	1		100					100			26	30	0.62	.1
C Totals				0	3.7	31	30	10	17	72	11	5	12	72	11	27	106	1.41	.3		
M		DOCU															35		0.00	.2	
M		DO4S		99		133	133	43		100						69	31	34	63	0.64	2.1
M		DOCR		1		1	1	0		100						100		32	60	0.59	.0
M Totals				1		134	134	43	100							69	31	34	58	0.59	2.3
H		DOCU															6		0.00	.8	
H		DO2S		67		388	388	125			100						100	40	232	1.35	1.7
H		DO3S		28		157	157	51		100						89	11	33	94	0.75	1.7
H		DO4S		5		26	26	8		100				9	91			21	29	0.46	.9
H Totals				3		571	571	184	32	68	0	4	25	71	29	114	0.97	5.0			
Totals					2.0	21,305	20,875	6,743	0	27	44	29	4	7	40	49	30	140	1.14	148.8	

T06N R06W S10 T00PC										T06N R06W S10 T00PC			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
06N	06W	10	1_150_TAKE	00PC	48.00	30	28	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	DO	CU																				
D	DO	2S	75	3.7	12,690	12,214	586		3	71	26		2	4	34	59			32		0.00	1.7
D	DO	3S	21	2.7	3,653	3,554	171		100				1	25	30	44			35	258	1.76	47.4
D	DO	4S	4	5.7	529	499	24		100				31	57		12			31	77	0.71	46.0
D	Totals		100	3.6	16,871	16,267	781		28	53	19		3	11	32	54			31	143	1.16	114.1
Type Totals				3.6	16,871	16,267	781		28	53	19		3	11	32	54			31	143	1.16	114.1

Species, Sort Grade - Board Foot Volumes (Type)										Page	1									
T TSPCSTGR		Project: COW								Date	11/29/2006									
										Time	10:58:32AM									
T06N R06W S10 T00CC										T06N R06W S10 T00CC										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
06N	06W	10	2_TAKE	00CC	17.00	21	34	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	DO	CU														6		0.00		3.0
D	DO	2S	73	1.7	23,408	23,018	391		3	86	10		8	27	65	35	252	1.63		91.4
D	DO	3S	21	1.1	6,691	6,619	113		100			4	25	43	28	30	86	0.78		76.7
D	DO	4S	6		1,856	1,856	32	9	91			34	66			21	28	0.43		65.9
D	Totals		79	1.4	31,956	31,493	535	1	29	63	8	3	15	29	53	29	133	1.10		237.0
A	DO	CU														3		0.00		25.2
A	DO	2S	25	4.8	1,745	1,660	28		100				66	34		29	183	1.55		9.1
A	DO	3S	40	2.6	2,700	2,629	45		71	29		16	40	45		27	105	0.97		25.1
A	DO	4S	35	1.4	2,266	2,235	38	8	92			32	15	34	18	25	41	0.57		54.2
A	Totals		16	2.8	6,712	6,525	111	3	60	37		17	38	38	6	21	57	0.77		113.6
H	DO	2S	70		866	866	15		100					100		40	400	2.07		2.2
H	DO	3S	26		325	325	6		100					100		40	150	1.07		2.2
H	DO	4S	4		43	43	1		100			100				12	20	0.50		2.2
H	Totals		3		1,234	1,234	21		30	70		4		96		31	190	1.43		6.5
C	DO	2S	85	5.3	411	390	7		100				100			32	180	2.00		2.2
C	DO	4S	15		65	65	1		100				100			26	30	0.62		2.2
C	Totals		1	4.5	476	455	8		14	86			14	86		29	105	1.38		4.3
Type Totals				1.7	40,378	39,706	675	1	34	59	6	5	18	30	46	27	110	1.03		361.4

T06N R06W S03 T00PC		T06N R06W S03 T00PC
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
06N 06W 03 345_120_TAKE 00PC 247.00 69 65 1		W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU														7		0.00	5.7	
D		DO	2S	73	1.9	13,617	13,352	3,298		2	50	48		3	1	40	56	35	312	1.97	42.7
D		DO	3S	22	2.9	4,172	4,053	1,001		93	7			2	9	50	38	33	82	0.72	49.3
D		DO	4S	5		752	752	186	6	94				21	53	19	6	24	32	0.47	23.8
D	Totals			91	2.1	18,542	18,157	4,485	0	26	38	36		3	5	42	50	31	149	1.17	121.6
A		DO	3S	100		972	972	240		23	77					77	23	35	150	1.17	6.5
A	Totals			5		972	972	240		23	77					77	23	35	150	1.17	6.5
H		DO	CU															6		0.00	1.0
H		DO	2S	67		433	433	107			100						100	40	220	1.30	2.0
H		DO	3S	28		177	177	44		100						100		32	90	0.72	2.0
H		DO	4S	5		30	30	7		100					100			22	30	0.45	1.0
H	Totals			3		640	640	158		32	68				5	28	68	29	108	0.93	5.9
M		DO	4S	100		169	169	42		100						70	30	34	63	0.64	2.7
M	Totals			1		169	169	42		100						70	30	34	63	0.64	2.7
Type Totals					1.9	20,322	19,937	4,925	0	27	40	32		3	4	43	49	31	146	1.15	136.7

T07N R06W S34 TPACH										T07N R06W S34 TPACH			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
07N	06W	34	PATCH	PACH	6.00	6	32	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
									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														6	0.00	37.8	
A		DO	2S	55	12,504	12,504	75			73	27	40	34	15	11	24	188	1.77	66.4	
A		DO	3S	43	9,449	9,449	57		68	19	13	35	50	9	5	23	75	0.89	126.4	
A		DO	4S	2	389	389	2		100			74	26			17	27	0.61	14.2	
A	Totals			100	22,341	22,341	134		30	49	21	38	41	12	9	20	91	1.12	244.8	
M		DO	CU														35	0.00	9.7	
M	Totals																35	0.00	9.7	
Type Totals					22,341	22,341	134		30	49	21	38	41	12	9	21	88	1.05	254.5	

T06N R06W S03 TR/W	Twp 06N	Rge 06W	Sec 03	Tract R/W	Type R/W	Acres 5.00	Plots 69	Sample Trees 128	CuFt 1	T06N R06W S03 TR/W
										BdFt W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf			
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
D		DO	CU														10		0.00	9.8		
D		DO	2S	83	1.6	35,070	34,499	172		1	33	66		2	2	42	55	34	392	2.35	87.9	
D		DO	3S	14	1.9	6,137	6,018	30		93	7			3	13	46	37	32	85	0.77	70.4	
D		DO	4S	3	.7	952	945	5	5	95				20	60	15	5	24	32	0.49	29.3	
D	Totals			91	1.7	42,159	41,462	207	0	17	28	55		3	5	42	51	31	210	1.51	197.4	
A		DO	CU															27		0.00	1.7	
A		DO	2S	53		1,312	1,312	7				100				49	51	36	411	2.68	3.2	
A		DO	3S	44		1,066	1,066	5		18	82			23		59	18	30	148	1.22	7.2	
A		DO	4S	3		73	73	0		100					100			26	50	1.04	1.5	
A	Totals			5		2,451	2,451	12		11	36	54		10	3	52	35	31	180	1.47	13.6	
H		DO	CU																6		0.00	1.6
H		DO	2S	67		722	722	4				100					100	40	220	1.30	3.3	
H		DO	3S	28		295	295	1		100						100		32	90	0.72	3.3	
H		DO	4S	5		49	49	0		100					100			22	30	0.45	1.6	
H	Totals			2		1,066	1,066	5		32	68				5	28	68	29	108	0.93	9.8	
M		DO	4S	100		318	318	2		100						49	51	35	76	0.73	4.2	
M	Totals			1		318	318	2		100						49	51	35	76	0.73	4.2	
C		DO	2S	56		205	205	1				100					100	40	600	4.57	.3	
C		DO	3S	44		158	158	1		65	35			65		35		18	54	0.81	2.9	
C	Totals			1		363	363	2		28	15	56		28		15	56	20	111	1.59	3.3	
Type Totals					1.5	46,357	45,660	228	0	18	29	53		3	5	42	50	31	200	1.47	228.3	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	COW		DATE	11/21/2006		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	10	1 150	00PC	48.00	31	188	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		31	188	6.1						
CRUISE		10	67	6.7	4,443		1.5			
DBH COUNT										
REFOREST										
COUNT		21	121	5.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	38	44.9	24.7	103		149.3	37,431	36,875	7,915	7,915
DOUG FIR	28	41.8	20.1	87		92.0	16,871	16,267	4,080	4,080
SNAG	1	5.8	13.0	100		5.3				
TOTAL	67	92.6	22.1	95		246.7	54,303	53,142	11,995	11,995
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	68.7	11.1	927	1,043	1,159					
DOUG FIR	52.9	10.2	423	471	519					
SNAG										
TOTAL	80.5	9.8	711	789	866	259	65	29		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	29.3	5.3	41	43	46					
DOUG FIR	90.4	16.2	34	40	47					
SNAG	435.7	78.2	1	6	10					
TOTAL	50.3	9.0	81	90	98	101	25	11		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	23.4	4.2	138	145	151					
DOUG FIR	81.8	14.7	76	89	102					
SNAG	435.7	78.2	1	5	9					
TOTAL	35.5	6.4	223	239	254	50	13	6		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	23.9	4.3	34,158	35,685	37,213					
DOUG FIR	83.2	14.9	13,392	15,743	18,093					
SNAG										
TOTAL	32.5	5.8	48,426	51,428	54,430	42	11	5		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT COW		DATE 11/21/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	10	1 150 TAKE	00PC	48.00	31	69	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		31	69	2.2						
CRUISE		9	28	3.1	2,008		1.4			
DBH COUNT										
REFOREST										
COUNT		16	41	2.6						
BLANKS		6								
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	28	41.8	20.1	87		92.0	16,871	16,267	4,080	4,080
TOTAL	28	41.8	20.1	87		92.0	16,871	16,267	4,080	4,080
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	52.9	10.2	423	471	519					
TOTAL	52.9	10.2	423	471	519	116	29	13		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	90.4	16.2	34	40	47					
TOTAL	90.4	16.2	34	40	47	326	82	36		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	81.8	14.7	76	89	102					
TOTAL	81.8	14.7	76	89	102	267	67	30		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	83.2	14.9	13,392	15,743	18,093					
TOTAL	83.2	14.9	13,392	15,743	18,093	276	69	31		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	COW		DATE	11/21/2006		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	10	1 150 LEAVE	00PC	48.00	31	119	1	W	
			TREES	ESTIMATED	PERCENT					
			PER PLOT	TOTAL	SAMPLE					
			PLOTS	TREES	TREES	TREES				
TOTAL		31	119	3.8						
CRUISE		10	39	3.9	2,435		1.6			
DBH COUNT										
REFOREST										
COUNT		21	80	3.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	38	44.9	24.7	103		149.3	37,431	36,875	7,915	7,915
SNAG	1	5.8	13.0	100		5.3				
TOTAL	39	50.7	23.6	103		154.7	37,431	36,875	7,915	7,915
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	68.7	11.1	927	1,043	1,159					
SNAG										
TOTAL	71.5	11.4	900	1,016	1,132	204	51	23		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	29.3	5.3	41	43	46					
SNAG	435.7	78.2	1	6	10					
TOTAL	57.1	10.2	44	49	54	130	33	14		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	23.4	4.2	138	145	151					
SNAG	435.7	78.2	1	5	9					
TOTAL	28.4	5.1	142	150	157	32	8	4		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	23.9	4.3	34,158	35,685	37,213					
SNAG										
TOTAL	23.9	4.3	34,158	35,685	37,213	23	6	3		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT COW		DATE 11/21/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	10	2	00CC	17.00	21	135	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		21	135	6.4						
CRUISE		8	35	4.4	2,573	1.4				
DBH COUNT										
REFOREST										
COUNT		13	93	7.2						
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
DOUG FIR	21	84.2	19.0	86		165.7	31,956	31,493	7,666	7,666
R ALDER	11	54.2	14.4	46		61.0	6,712	6,525	1,846	1,846
SNAG	1	8.6	18.0	70		15.2	1,983	1,983	586	586
WHEMLOCK	1	2.2	22.0	95		5.7	1,234	1,234	286	286
WR CEDAR	1	2.2	22.0	60		5.7	476	455	173	173
TOTAL	35	151.4	17.5	70		253.3	42,361	41,690	10,558	10,558
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	54.6	12.2	405	461	518					
R ALDER	72.2	22.8	118	153	188					
SNAG										
WHEMLOCK										
WR CEDAR										
TOTAL	71.3	12.0	311	354	396	203	51	23		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	80.4	18.0	69	84	99					
R ALDER	127.2	28.4	39	54	70					
SNAG	211.2	47.2	5	9	13					
WHEMLOCK	251.0	56.1	1	2	3					
WR CEDAR	251.0	56.1	1	2	3					
TOTAL	35.9	8.0	139	151	164	54	14	6		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	77.2	17.3	137	166	194					
R ALDER	123.9	27.7	44	61	78					
SNAG	211.2	47.2	8	15	22					
WHEMLOCK	251.0	56.1	3	6	9					
WR CEDAR	251.0	56.1	3	6	9					
TOTAL	36.8	8.2	232	253	274	57	14	6		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	76.6	17.1	26,098	31,493	36,889					
R ALDER	119.2	26.6	4,786	6,525	8,263					
SNAG	211.2	47.2	1,047	1,983	2,920					
WHEMLOCK	251.0	56.1	542	1,234	1,926					
WR CEDAR	251.0	56.1	200	455	710					
TOTAL	49.1	11.0	37,114	41,690	46,265	101	25	11		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT COW		DATE 11/21/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	10	2 TAKE	00CC	17.00	21	126	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	21	126	6.0							
CRUISE	8	34	4.3	2,427	1.4					
DBH COUNT										
REFOREST										
COUNT	13	86	6.6							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	21	84.2	19.0	86		165.7	31,956	31,493	7,666	7,666
R ALDER	11	54.2	14.4	46		61.0	6,712	6,525	1,846	1,846
WHEMLOCK	1	2.2	22.0	95		5.7	1,234	1,234	286	286
WR CEDAR	1	2.2	22.0	60		5.7	476	455	173	173
TOTAL	34	142.8	17.5	70		238.1	40,378	39,706	9,971	9,971
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	54.6	12.2	405	461	518					
R ALDER	72.2	22.8	118	153	188					
WHEMLOCK										
WR CEDAR										
TOTAL	71.3	12.2	314	357	401	203	51	23		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	80.4	18.0	69	84	99					
R ALDER	127.2	28.4	39	54	70					
WHEMLOCK	251.0	56.1	1	2	3					
WR CEDAR	251.0	56.1	1	2	3					
TOTAL	43.3	9.7	129	143	157	79	20	9		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	77.2	17.3	137	166	194					
R ALDER	123.9	27.7	44	61	78					
WHEMLOCK	251.0	56.1	3	6	9					
WR CEDAR	251.0	56.1	3	6	9					
TOTAL	43.6	9.8	215	238	261	80	20	9		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	76.6	17.1	26,098	31,493	36,889					
R ALDER	119.2	26.6	4,786	6,525	8,263					
WHEMLOCK	251.0	56.1	542	1,234	1,926					
WR CEDAR	251.0	56.1	200	455	710					
TOTAL	54.2	12.1	34,894	39,706	44,519	123	31	14		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	COW		DATE	11/21/2006		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	03	345 120	00PC	247.00	69	411	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES		TREES	TREES				
TOTAL		69	411	6.0						
CRUISE		23	136	5.9	23,930		6			
DBH COUNT										
REFOREST										
COUNT		45	275	6.1						
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	59	52.8	18.7	73		100.9	18,542	18,157	4,357	4,357
DOUGLEAV	58	24.5	27.0	101		97.4	23,443	23,132	4,826	4,822
ALDRLEAV	2	3.1	24.9	73		10.4	1,569	1,569	374	374
SNAG	8	4.6	19.3	48		9.3				
R ALDER	1	3.2	19.0	72		6.4	972	972	266	266
CEDLEAV	2	2.9	15.9	32		4.1	363	363	105	105
WHEMLOCK	2	2.0	18.0	91		3.5	640	640	157	157
BL MAPLE	3	2.7	12.6	39		2.3	169	169	58	58
MAPLELV	1	1.1	17.0	52		1.7	166	166	51	51
TOTAL	136	96.9	21.1	77		235.9	45,862	45,167	10,194	10,190
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	70.8	9.2	502	553	603					
DOUGLEAV	59.7	7.8	1,148	1,246	1,344					
ALDRLEAV			510	510	510					
SNAG										
R ALDER										
CEDLEAV	127.3	119.2		400	877					
WHEMLOCK	28.3	26.5	239	325	411					
BL MAPLE	9.1	6.3	59	63	67					
MAPLELV										
TOTAL	86.8	7.4	735	794	853	301	75	33		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	105.3	12.7	46	53	59					
DOUGLEAV	45.7	5.5	23	25	26					
ALDRLEAV	276.3	33.2	2	3	4					
SNAG	262.0	31.5	3	5	6					
R ALDER	333.7	40.1	2	3	5					
CEDLEAV	404.7	48.7	2	3	4					
WHEMLOCK	472.5	56.8	1	2	3					
BL MAPLE	653.8	78.6	1	3	5					
MAPLELV	472.5	56.8	0	1	2					
TOTAL	67.2	8.1	89	97	105	180	45	20		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	95.8	11.5	89	101	112					
DOUGLEAV	37.6	4.5	93	97	102					
ALDRLEAV	276.2	33.2	7	10	14					
SNAG	246.9	29.7	7	9	12					
R ALDER	333.7	40.1	4	6	9					

TC TSTATS				STATISTICS				PAGE 2	
				PROJECT COW		DATE 11/21/2006			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
06N	06W	03	345 120	00PC	247.00	69	411	1	W
CL: 68.1%		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CEDLEAV	383.4	46.1	2	4	6				
WHEMLOCK	472.5	56.8	2	3	5				
BL MAPLE	653.8	78.6	0	2	4				
MAPLELV	472.5	56.8	1	2	3				
TOTAL	45.6	5.5	223	236	249	83	21	9	
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	95.0	11.4	16,083	18,157	20,232				
DOUGLEAV	38.7	4.7	22,057	23,132	24,208				
ALDRLEAV	276.3	33.2	1,047	1,569	2,090				
SNAG									
R ALDER	333.7	40.1	582	972	1,362				
CEDLEAV	390.3	46.9	193	363	533				
WHEMLOCK	472.5	56.8	276	640	1,003				
BL MAPLE	653.8	78.6	36	169	301				
MAPLELV	472.5	56.8	71	166	260				
TOTAL	41.7	5.0	42,899	45,167	47,435	70	17	8	

TC TSTATS		STATISTICS				PAGE	1			
		PROJECT		COW		DATE 11/21/2006				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	03	345 120 TAKE	00PC	247.00	69	195	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		69	195	2.8						
CRUISE		16	65	4.1	14,991	.4				
DBH COUNT										
REFOREST										
COUNT		37	130	3.5						
BLANKS		16								
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	59	52.8	18.7	73		100.9	18,542	18,157	4,357	4,357
R ALDER	1	3.2	19.0	72		6.4	972	972	266	266
WHEMLOCK	2	2.0	18.0	91		3.5	640	640	157	157
BL MAPLE	3	2.7	12.6	39		2.3	169	169	58	58
TOTAL	65	60.7	18.5	72		113.0	20,322	19,937	4,838	4,838
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	70.8	9.2	502	553	603					
R ALDER										
WHEMLOCK	28.3	26.5	239	325	411					
BL MAPLE	9.1	6.3	59	63	67					
TOTAL	75.0	9.3	471	519	567	224	56	25		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	105.3	12.7	46	53	59					
R ALDER	333.7	40.1	2	3	5					
WHEMLOCK	472.5	56.8	1	2	3					
BL MAPLE	653.8	78.6	1	3	5					
TOTAL	100.3	12.1	53	61	68	402	100	45		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	95.8	11.5	89	101	112					
R ALDER	333.7	40.1	4	6	9					
WHEMLOCK	472.5	56.8	2	3	5					
BL MAPLE	653.8	78.6	0	2	4					
TOTAL	87.9	10.6	101	113	125	309	77	34		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	95.0	11.4	16,083	18,157	20,232					
R ALDER	333.7	40.1	582	972	1,362					
WHEMLOCK	472.5	56.8	276	640	1,003					
BL MAPLE	653.8	78.6	36	169	301					
TOTAL	87.4	10.5	17,842	19,937	22,032	305	76	34		

TC TSTATS		STATISTICS								PAGE	1
		PROJECT				COW		DATE		11/21/2006	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	06W	03	345 120 LEAV	00PC	247.00	69	216	1	W		
				TREES	ESTIMATED	PERCENT					
		PLOTS	TREES	PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL		69	216	3.1							
CRUISE		23	71	3.1	8,939	.8					
DBH COUNT											
REFOREST											
COUNT		45	145	3.2							
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	
DOUGLEAV		58	24.5	27.0	101	97.4	23,443	23,132	4,826	4,822	
ALDRLEAV		2	3.1	24.9	73	10.4	1,569	1,569	374	374	
SNAG		8	4.6	19.3	48	9.3					
CEDLEAV		2	2.9	15.9	32	4.1	363	363	105	105	
MAPLELV		1	1.1	17.0	52	1.7	166	166	51	51	
TOTAL		71	36.2	25.0	85	122.9	25,540	25,230	5,356	5,352	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %		COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV		59.7	7.8	1,148	1,246	1,344					
ALDRLEAV				510	510	510					
SNAG											
CEDLEAV		127.3	119.2		400	877					
MAPLELV											
TOTAL		76.7	9.1	950	1,046	1,141	235	59	26		
CL: 68.1 %		COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV		45.7	5.5	23	25	26					
ALDRLEAV		276.3	33.2	2	3	4					
SNAG		262.0	31.5	3	5	6					
CEDLEAV		404.7	48.7	2	3	4					
MAPLELV		472.5	56.8	0	1	2					
TOTAL		46.7	5.6	34	36	38	87	22	10		
CL: 68.1 %		COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV		37.6	4.5	93	97	102					
ALDRLEAV		276.2	33.2	7	10	14					
SNAG		246.9	29.7	7	9	12					
CEDLEAV		383.4	46.1	2	4	6					
MAPLELV		472.5	56.8	1	2	3					
TOTAL		27.5	3.3	119	123	127	30	8	3		
CL: 68.1 %		COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV		38.7	4.7	22,057	23,132	24,208					
ALDRLEAV		276.3	33.2	1,047	1,569	2,090					
SNAG											
CEDLEAV		390.3	46.9	193	363	533					
MAPLELV		472.5	56.8	71	166	260					
TOTAL		25.3	3.0	24,461	25,230	25,998	26	6	3		

TC TSTATS		STATISTICS								PAGE	1
		PROJECT				COW		DATE		11/21/2006	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
07N	06W	34	PATCH ALL	PACH	6.00	6	35	1	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		6	35	5.8							
CRUISE		6	35	5.8	747	4.7					
DBH COUNT											
REFOREST COUNT											
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	
R ALDER	28	114.1	17.3	46		186.7	22,341	22,341	5,547	5,547	
BL MAPLE	4	7.5	25.5	48		26.7					
DOUGLEAV	2	2.5	31.6	111		13.3	3,417	3,417	711	711	
SPRUCELV	1	.5	52.0	155		6.7	2,703	2,703	486	486	
TOTAL	35	124.5	18.5	48		233.3	28,462	28,462	6,744	6,744	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.			
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER	59.0	11.4	232	262	292						
BL MAPLE											
DOUGLEAV	41.7	39.1	899	1,475	2,051						
SPRUCELV											
TOTAL	219.9	37.1	292	465	637	1,932	483	215			
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.			
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER	95.0	42.3	66	114	162						
BL MAPLE	156.0	69.5	2	8	13						
DOUGLEAV	244.9	109.1		2	5						
SPRUCELV	244.9	109.1		0	1						
TOTAL	80.8	36.0	80	125	169	311	78	35			
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.			
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER	61.6	27.4	135	187	238						
BL MAPLE	181.7	80.9	5	27	48						
DOUGLEAV	244.9	109.1		13	28						
SPRUCELV	244.9	109.1		7	14						
TOTAL	33.3	14.8	199	233	268	53	13	6			
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.			
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
R ALDER	57.0	25.4	16,676	22,341	28,007						
BL MAPLE											
DOUGLEAV	244.9	109.1		3,417	7,145						
SPRUCELV	244.9	109.1		2,703	5,652						
TOTAL	36.2	16.1	23,873	28,462	33,051	62	16	7			

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	COW		DATE	11/21/2006		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06W	34	PATCH	PACH	6.00	6	32	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		6	32	5.3						
CRUISE		6	32	5.3	730		4.4			
DBH COUNT										
REFOREST										
COUNT										
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	28	114.1	17.3	46		186.7	22,341	22,341	5,547	5,547
BL MAPLE	4	7.5	25.5	48		26.7				
TOTAL	32	121.6	17.9	46		213.3	22,341	22,341	5,547	5,547
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	59.0	11.4	232	262	292					
BL MAPLE										
TOTAL	73.8	13.0	199	229	259	217	54	24		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	95.0	42.3	66	114	162					
BL MAPLE	156.0	69.5	2	8	13					
TOTAL	83.9	37.3	76	122	167	335	84	37		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	61.6	27.4	135	187	238					
BL MAPLE	181.7	80.9	5	27	48					
TOTAL	38.7	17.2	177	213	250	71	18	8		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
R ALDER	57.0	25.4	16,676	22,341	28,007					
BL MAPLE										
TOTAL	57.0	25.4	16,676	22,341	28,007	154	39	17		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	COW		DATE	11/21/2006		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	06W	03	R/W	R/W	5.00	69	395	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		69	395	5.7						
CRUISE		23	128	5.6	468	27.3				
DBH COUNT										
REFOREST										
COUNT		45	267	5.9						
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	117	77.3	21.7	82		198.8	42,159	41,462	9,215	9,211
R ALDER	3	5.9	22.4	73		16.2	2,451	2,451	614	614
WHEMLOCK	2	3.3	18.0	91		5.8	1,066	1,066	262	262
WR CEDAR	2	2.9	15.9	32		4.1	363	363	105	105
BL MAPLE	4	4.2	13.3	41		4.1	318	318	106	106
TOTAL	128	93.6	21.2	78		229.0	46,357	45,660	10,302	10,298
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	76.5	7.1	833	896	960					
R ALDER	27.6	19.1	356	440	524					
WHEMLOCK	28.3	26.5	239	325	411					
WR CEDAR	127.3	119.2		400	877					
BL MAPLE	51.3	29.3	60	85	110					
TOTAL	80.7	7.1	783	844	904	260	65	29		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	70.3	8.5	71	77	84					
R ALDER	272.0	32.7	4	6	8					
WHEMLOCK	360.4	43.3	2	3	5					
WR CEDAR	404.7	48.7	2	3	4					
BL MAPLE	511.2	61.5	2	4	7					
TOTAL	64.3	7.7	86	94	101	165	41	18		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	57.1	6.9	185	199	212					
R ALDER	271.7	32.7	11	16	22					
WHEMLOCK	360.4	43.3	3	6	8					
WR CEDAR	383.4	46.1	2	4	6					
BL MAPLE	511.2	61.5	2	4	7					
TOTAL	46.4	5.6	216	229	242	86	21	10		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	55.4	6.7	38,697	41,462	44,227					
R ALDER	271.7	32.7	1,650	2,451	3,252					
WHEMLOCK	360.4	43.3	604	1,066	1,528					
WR CEDAR	390.3	46.9	193	363	533					
BL MAPLE	511.2	61.5	122	318	513					
TOTAL	45.6	5.5	43,154	45,660	48,167	83	21	9		

Stand Table Summary																
TC TSTNDSUM																
Project COW																
T06N R06W S10 T00PC										T06N R06W S10 T00PC						
Twp		Rge		Sec		Tract		Type		Acres		Plots	Sample Trees		Page: 1	
06N		06W		10		1_150_LEAVE		00PC		48.00		30	39		Date: 11/29/20	
Time: 11:10:31AM																
S Spc	T	Sample		Av		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
		DBH	Trees	FF 16'	Ht Tot				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DL		16	1	85	82	2.815	3.93	5.63	22.0	65.0		124	366		59	18
DL		18	2	91	123	4.448	7.86	15.57	24.4	104.3		380	1,623		183	78
DL		19	2	86	109	3.992	7.86	13.97	23.6	80.0		329	1,118		158	54
DL		20	1	85	71	1.801	3.93	3.60	31.5	100.0		113	360		54	17
DL		23	2	87	114	2.724	7.86	8.17	42.5	170.0		347	1,389		167	67
DL		24	7	87	137	8.756	27.51	30.02	48.1	204.6		1,445	6,142		694	295
DL		25	2	92	140	2.306	7.86	6.92	60.5	295.0		418	2,041		201	98
DL		26	4	90	143	4.263	15.72	14.92	58.9	280.7		878	4,189		422	201
DL		27	2	89	142	1.977	7.86	5.93	70.7	313.3		419	1,858		201	89
DL		28	5	90	154	4.595	19.65	16.54	69.7	344.4		1,152	5,698		553	274
DL		29	3	91	149	2.570	11.79	9.42	71.6	360.9		675	3,401		324	163
DL		30	2	90	152	1.601	7.86	5.60	80.4	422.9		451	2,370		216	114
DL		31	1	92	142	.750	3.93	2.25	96.7	493.3		217	1,110		104	53
DL		32	2	90	148	1.407	7.86	4.22	105.0	523.3		443	2,209		213	106
DL		36	1	93	166	.556	3.93	2.22	116.2	665.0		259	1,479		124	71
DL		44	1	93	173	.372	3.93	1.49	176.5	1022.5		263	1,522		126	73
DL	Totals	38	89	131		44.933	149.33	146.49	54.0	251.7		7,915	36,875		3,799	1,770
SN	13	1	88	126		5.786	5.33									
SN	Totals	1	88	126		5.786	5.33									
Totals		39	89	130		50.719	154.67	146.49	54.0	251.7		7915	36,875		3,799	1,770

TC TSTNDSUM		Stand Table Summary													
Project COW											T06N R06W S03 T00PC				
T06N R06W S03 T00PC											T06N R06W S03 T00PC				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:							
06N	06W	03	345_120_LEAV	00PC	247.00	69	71	1	Date:	11/29/201					
									Time:	11:10:13AM					
S Spc	T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.			Tons	Cunits	MBF
DL		15	1	86	110	1.368	1.68	2.74	25.5	100.0	70	274		172	68
DL		16	1	85	108	1.203	1.68	3.61	18.0	70.0	65	253		160	62
DL		18	1	93	124	.950	1.68	2.85	30.7	130.0	87	371		216	92
DL		19	1	89	117	.853	1.68	2.56	28.7	123.3	73	316		181	78
DL		21	2	87	119	1.396	3.36	4.19	36.0	153.3	151	642		372	159
DL		22	3	87	114	1.908	5.04	5.09	43.4	170.0	221	865		545	214
DL		23	2	85	108	1.164	3.36	2.91	47.0	170.0	137	495		338	122
DL		24	3	90	125	1.603	5.04	4.81	52.3	237.8	252	1,144		622	283
DL		25	2	87	115	.985	3.36	2.96	50.3	206.7	149	611		367	151
DL		26	4	89	138	1.822	6.72	5.92	59.0	280.0	349	1,658		863	409
DL		27	6	87	131	2.534	10.07	6.76	64.1	281.3	433	1,900		1,070	469
DL		28	1	92	167	.393	1.68	1.57	69.5	342.5	109	538		270	133
DL		29	5	88	125	1.830	8.40	5.49	72.5	348.7	398	1,915		983	473
DL		31	1	93	179	.320	1.68	1.28	91.5	520.0	117	666		290	165
DL		32	5	88	149	1.503	8.40	4.81	93.3	464.4	449	2,234		1,108	552
DL		33	3	91	146	.848	5.04	2.54	111.3	585.6	283	1,490		700	368
DL		34	5	89	147	1.332	8.40	4.26	109.4	571.9	466	2,437		1,151	602
DL		35	2	90	162	.503	3.36	2.26	88.6	491.1	200	1,111		495	274
DL		36	1	87	137	.238	1.68	.71	76.7	393.3	55	280		135	69
DL		37	1	84	159	.225	1.68	.67	137.3	670.0	93	452		229	112
DL		38	3	82	144	.640	5.04	2.13	116.5	613.0	248	1,307		614	323
DL		39	1	88	154	.202	1.68	.61	158.7	806.7	96	490		238	121
DL		41	2	87	138	.366	3.36	1.28	130.9	702.9	168	901		414	223
DL		43	1	85	109	.167	1.68	.50	129.3	673.3	65	336		160	83
DL		44	1	86	141	.159	1.68	.48	184.0	940.0	88	448		217	111
DL	Totals		58	88	129	24.512	97.39	72.99	66.1	316.9	4,822	23,132		11,909	5,714
AL		24	1	86	94	1.661	5.22	3.32	53.5	255.0	178	847		439	209
AL		26	1	86	79	1.415	5.22	2.83	69.5	255.0	197	722		486	178
AL	Totals		2	86	87	3.076	10.43	6.15	60.9	255.0	374	1,569		925	387
CL		12	1	86	37	2.583	2.03	2.58	10.0	40.0	26	103		64	26
CL		33	1	73	115	.342	2.03	.68	115.5	380.0	79	260		195	64
CL	Totals		2	84	46	2.925	4.06	3.27	32.1	111.1	105	363		259	90
ML		17	1	86	65	1.103	1.74	1.10	46.0	150.0	51	166		125	41
ML	Totals		1	86	65	1.103	1.74	1.10	46.0	150.0	51	166		125	41
SN		12	1	82	35	1.476	1.16								
SN		14	1	88	103	1.085	1.16								
SN		18	1	89	111	.656	1.16								
SN		19	1	89	34	.589	1.16								
SN		28	1	88	19	.271	1.16								
SN		31	1	88	32	.221	1.16								
SN		32	1	87	93	.208	1.16								
SN		56	1	88	33	.068	1.16								
SN	Totals		8	86	63	4.573	9.28								
Totals			71	87	108	36.190	122.90	83.51	64.1	302.1	5352	25,230		13,218	6,232

Log Stock Table - MBF

T06N R06W S03 Ty00PC
 THRU
 T07N R06W S34 TyPACH

Project: COW
 Acres 275.00

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S Spp	Gr rt	Log de Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
							2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
D	DO	4S	13	2		2	.0			1	1							
D	DO	4S	14	1		1	.0			1								
D	DO	4S	15	20		20	.3			20								
D	DO	4S	16	1		1	.0			1								
D	DO	4S	17	11		11	.2			11								
D	DO	4S	18	2		2	.0			1	0							
D	DO	4S	19	9		9	.2			7	2							
D	DO	4S	20	8		8	.1			4	4							
D	DO	4S	21	10		10	.2			9	0							
D	DO	4S	22	19		19	.3			14	5							
D	DO	4S	23	17		17	.3			17								
D	DO	4S	24	24		24	.4			24								
D	DO	4S	25	6		6	.1			6								
D	DO	4S	26	19		19	.3			19								
D	DO	4S	27	13		13	.2			13	0							
D	DO	4S	28	17		17	.3		3	14								
D	DO	4S	29	13		13	.2			12	0							
D	DO	4S	32	36		36	.6			36								
D	DO	4S	36	4	33.3	3	.0			3								
D	DO	4S	40	12		12	.2		12									
D	Totals			6,144	2.2	6,008	89.1		15	537	408	636	996	1167	1419	608	219	4
A	DO	2S	12	12		12	2.4						2		7	3		
A	DO	2S	16	3		3	.5								3			
A	DO	2S	20	15		15	3.1					3		9	3			
A	DO	2S	24	9		9	1.8							9				
A	DO	2S	30	35		35	7.1					18		5	13			
A	DO	2S	32	25	5.7	24	4.8							13	11			
A	DO	2S	40	12		12	2.4					9			3			
A	DO	3S	10	2		2	.4								2			
A	DO	3S	12	2		2	.4				1	1						
A	DO	3S	14	1		1	.2				1							
A	DO	3S	15	2		2	.3					1	1					
A	DO	3S	16	1		1	.2							1				
A	DO	3S	18	1		1	.1				1							
A	DO	3S	20	20		20	4.0				5	15						
A	DO	3S	23	3		3	.7				1				2			
A	DO	3S	24	19	2.8	18	3.7				1	13	4					

Log Stock Table - MBF

T06N R06W S03 Ty00PC
 THRU
 T07N R06W S34 TyPACH

Project: COW
 Acres 275.00

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Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
A		DO 3S	26	1		1	.3					1							
A		DO 3S	27	1		1	.3					1							
A		DO 3S	29	1		1	.3					1							
A		DO 3S	30	21	3.2	20	4.1					4	8		3	5			
A		DO 3S	31	1		1	.2					1							
A		DO 3S	32	211		211	42.5					9	2	13	187				
A		DO 3S	36	3		3	.6					3							
A		DO 3S	38	57		57	11.5				57								
A		DO 4S	14	1		1	.2					1							
A		DO 4S	17	1		1	.2					1							
A		DO 4S	18	1		1	.2			1									
A		DO 4S	19	2		2	.4			2									
A		DO 4S	20	9		9	1.8				4	5							
A		DO 4S	21	1		1	.3				1								
A		DO 4S	22	1		1	.1					1							
A		DO 4S	23	2	33.3	1	.2				1								
A		DO 4S	26	0		0	.1					0							
A		DO 4S	30	3		3	.7				3								
A		DO 4S	32	4		4	.8				4								
A		DO 4S	34	4		4	.8					4							
A		DO 4S	35	5		5	1.1				5								
A		DO 4S	40	7		7	1.4					7							
A		Totals		500		497	7.4			3	76	46	42	49	229	48	3		
C		DO 2S	32	7	5.3	7	69.4						7						
C		DO 2S	40	1		1	10.7								1				
C		DO 3S	16	1		1	5.4					1							
C		DO 3S	32	0		0	2.9						0						
C		DO 4S	26	1		1	11.6				1								
C		Totals		10	3.7	10	.1			1	1		7		1				
M		DO 4S	32	30		30	69.2				30								
M		DO 4S	40	13		13	30.8				13		0						
M		Totals		43		43	.6				43		0						
H		DO 2S	40	125		125	68.0						111		15				
H		DO 3S	32	45		45	24.5				15		30						
H		DO 3S	40	6		6	3.0						6						

Log Stock Table - MBF

T06N R06W S03 Ty00PC
 THRU
 T07N R06W S34 TyPACH

Project: COW
 Acres 275.00

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Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
H		DO 4S	12	1		1	.4			1									
H		DO 4S	22	8		8	4.1			8									
H		Totals		184		184	2.7			23		36	111		15				
Total		All Species		6,882	2.0	6,743	100.0		18	680	455	715	1163	1396	1483	610	219		4

Logging Plan

OF TIMBER SALE CONTRACT NO 341-07-42
 COW HOLLOW
 PORTIONS OF SECTIONS 3, 4, 9, 10
 AND 15, T6N, R6W, AND SECTION 34,
 T7N, R6W, W.M., CLATSOP COUNTY, OR



Approximate Net Acreage

	MC Acres	PC Acres
Area 1 (PC) -		48
Area 2 (MC) -	17	
Area 3 (PC) -		118
Area 4 (PC) -		106
Area 5 (PC) -		23
Area 5a (GS) -	3	
Area 5b (GS) -	3	
Area 6 (R/W) -	5	
Total =	28	295
Total Sale Acres =		323

Approximate Scale = 1"=1,000'

500 0 500 1000 Feet

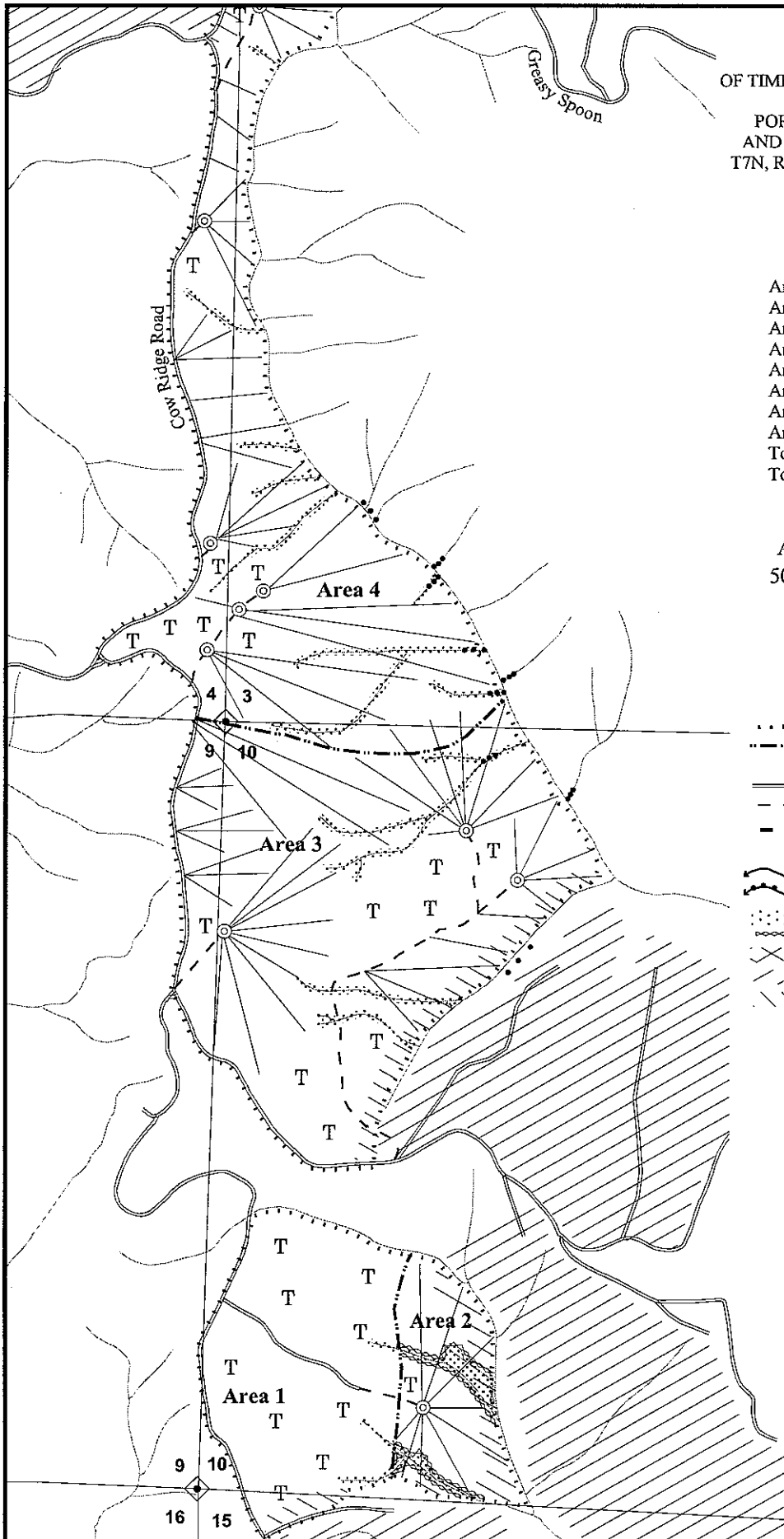


LEGEND

- Timber Sale Boundary
- - - - - Area Boundary
- ⊙ Landings To Be Constructed
- ==== Surfacd Existing Road
- - - - - New Construction Road
- - - - - Property Line
- ◊ Known Land Survey Corner
- ~ Type F Stream
- ~ Type N Stream
- Unposted Stream Buffer
- Posted Stream Buffer
- Green Tree Retention Area
- Reforestation Area
- Controlled Felling
- ⊙ Stockpile
- T Tractor Logging Areas
- ▴ Cable Logging Areas

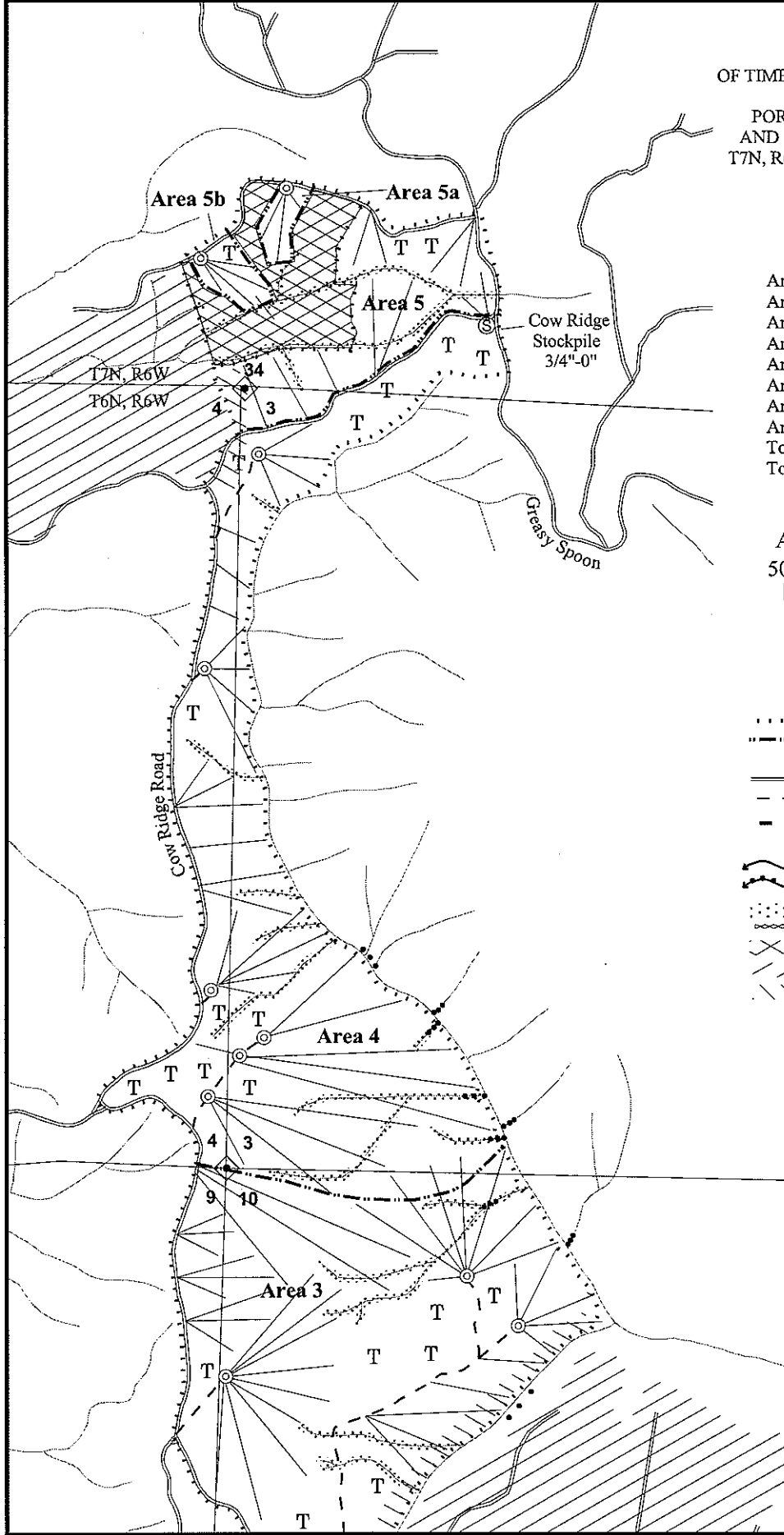
LOGGING BREAKDOWN

	Cable	Tractor
Area 1:	0%	100%
Area 2:	94%	6%
Area 3:	69%	31%
Area 4:	83%	17%
Area 5:	91%	9%
Area 5a:	100%	0%
Area 5b:	92%	8%
Area 6 R/W	0%	100%



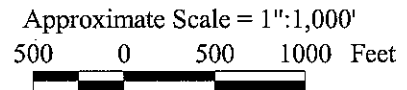
Logging Plan

OF TIMBER SALE CONTRACT NO 341-07-42
 COW HOLLOW
 PORTIONS OF SECTIONS 3, 4, 9, 10
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- Area Boundary
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Area 2:	94%	6%
Area 3:	69%	31%
Area 4:	83%	17%
Area 5:	91%	9%
Area 5a:	100%	0%
Area 5b:	92%	8%
Area 6 R/W	0%	100%