



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Hubbub
Sale 341-13-20

District: Astoria

Date: July 17, 2012

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$753,941.48	\$633,011.84	\$1,386,953.32
		Project Work:	\$(227,497.00)
		Advertised Value:	\$1,159,456.32



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Hubbub
Sale 341-13-20

District: Astoria

Date: July 17, 2012

timber description

Location: Portions of Sections 8, 10, 11, & 17, T4N, R7W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	17	0	97
Western Hemlock / Fir	12	0	97
Sitka Spruce	16	0	97
Red Cedar	12	0	97
Alder (Red)	14	0	90
Maple	14	0	90

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	1,378	697	153	0	2,228
Western Hemlock / Fir	40	273	60	0	373
Sitka Spruce	17	8	13	0	38
Red Cedar	1	0	0	0	1
Alder (Red)	0	0	0	2,132	2,132
Maple	0	0	0	60	60
Total	1,436	978	226	2,192	4,832



Timber Sale Appraisal
Hubbub
Sale 341-13-20

"STEWARDSHIP IN FORESTRY"

District: Astoria

Date: July 17, 2012

comments: Pond Values Used: 1st Quarter Calendar Year 2012.

Expected Log Markets: Mist, OR; Clatskanie, OR; Tillamook, OR;
Forest Grove, OR.

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$780 daily truck cost.

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

100% Branding and Painting: \$1/MBF x 4,832 MBF = \$4,832

Log Loader Slash & Landing Piling (includes Move-In and Pile
Materials) = \$12,308 (see attached appraisal)

Machine Washing for Noxious Weed Compliance = \$2,000

TOTAL Other Costs (with Profit & Risk to be added) = \$19,140

Other Costs (No Profit & Risk added):

None.



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Hubbub Sale 341-13-20

District: Astoria

Date: July 17, 2012

logging conditions

combination#: 1

Douglas - Fir	52.00%
Western Hemlock / Fir	52.00%
Sitka Spruce	52.00%
Red Cedar	52.00%
Alder (Red)	52.00%
Maple	52.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 10.0 **bd. ft / load:** 3,200
cost / mbf: \$104.50

machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Medium)

combination#: 2

Douglas - Fir	10.00%
Western Hemlock / Fir	10.00%
Sitka Spruce	10.00%
Red Cedar	10.00%
Alder (Red)	10.00%
Maple	10.00%

yarding distance: Long (1,500 ft) **downhill yarding:** No
logging system: Cable: Large Tower >=70 **Process:** Stroke Delimber
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 10.0 **bd. ft / load:** 3,200
cost / mbf: \$119.58

machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Large)

combination#: 3

Douglas - Fir	38.00%
Western Hemlock / Fir	38.00%
Sitka Spruce	38.00%
Red Cedar	38.00%
Alder (Red)	38.00%
Maple	38.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process:** Stroke Delimber
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 8.0 **bd. ft / load:** 3,200
cost / mbf: \$56.18

machines: Stroke Delimber (B)



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Hubbub
Sale 341-13-20

District: Astoria

Date: July 17, 2012

logging costs

Operating Seasons:	2.00	Profit Risk:	12.00%
Project Costs:	\$227,497.00	Other Costs (P/R):	\$19,140.00
Slash Disposal:	\$0.00	Other Costs:	\$0.00

Miles of Road

Road Maintenance: \$4.75

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.0
Western Hemlock / Fir	\$0.00	2.0	4.0
Sitka Spruce	\$0.00	2.0	4.0
Red Cedar	\$0.00	2.0	4.0
Alder (Red)	\$0.00	2.0	3.0
Maple	\$0.00	2.0	3.0



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Hubbub
Sale 341-13-20

District: Astoria

Date: July 17, 2012

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$87.65	\$4.89	\$1.81	\$89.66	\$3.96	\$22.56	\$0.00	\$5.00	\$0.00	\$215.53
Western Hemlock / Fir									
\$87.65	\$4.89	\$1.81	\$89.66	\$3.96	\$22.56	\$0.00	\$5.00	\$0.00	\$215.53
Sitka Spruce									
\$87.65	\$4.89	\$1.81	\$89.66	\$3.96	\$22.56	\$0.00	\$5.00	\$0.00	\$215.53
Red Cedar									
\$87.65	\$4.89	\$1.81	\$89.66	\$3.96	\$22.56	\$0.00	\$5.00	\$0.00	\$215.53
Alder (Red)									
\$87.65	\$5.22	\$1.81	\$127.68	\$3.96	\$27.16	\$0.00	\$5.00	\$0.00	\$258.48
Maple									
\$87.65	\$5.22	\$1.81	\$127.68	\$3.96	\$27.16	\$0.00	\$5.00	\$0.00	\$258.48

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$517.87	\$302.34	\$0.00
Western Hemlock / Fir	\$0.00	\$410.54	\$195.01	\$0.00
Sitka Spruce	\$0.00	\$396.05	\$180.52	\$0.00
Red Cedar	\$0.00	\$945.00	\$729.47	\$0.00
Alder (Red)	\$0.00	\$550.00	\$291.52	\$0.00
Maple	\$0.00	\$450.00	\$191.52	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
 Hubbub
 Sale 341-13-20

District: Astoria

Date: July 17, 2012

summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	2,228	\$302.34	\$673,613.52
Western Hemlock / Fir	373	\$195.01	\$72,738.73
Sitka Spruce	38	\$180.52	\$6,859.76
Red Cedar	1	\$729.47	\$729.47
Alder (Red)	2,132	\$291.52	\$621,520.64
Maple	60	\$191.52	\$11,491.20

Gross Timber Sale Value

Recovery: \$1,386,953.32

Prepared by: Kevin Berry

Phone: 503-325-5451

Site Prep Appraisal

Sale Number: 341-13-20
Sale Name: Hubbub
Date: 04/23/2012

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	1.0	3.0
Hemlock/Fir	B	1.5	4.0
Hemlock/Spruce	C	2.0	6.0
Hemlock	D	2.0	6.0
Conifer/Hardwood	E	1.5	3.0

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	A	26	26	\$110.00	\$2,860.00
2	MC	E	29	43.5	\$110.00	\$4,785.00
3	MC	E	0	0	\$110.00	\$0.00

Sub Total = \$7,645.00

Sale Area	Number of Landings to be Piled	Cost/Landing Pile*	Total Cost/Area	Number of In-Unit Piles	Material Cost/Pile	Total Cost/Area
1	5	\$263.00	\$1,315.00	78	\$5.00	\$390.00
2	5	\$263.00	\$1,315.00	87	\$5.00	\$435.00
3	1	\$263.00	\$263.00	0	\$5.00	\$0.00

*Cost includes separating firewood

Sub Total = \$3,718.00

Move-In Allowance	Number of Move-In's	Total Move-In Allowance
\$945.00	1	\$945.00

Sub Total = \$945.00

Grand Total = \$12,308.00

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Hubbub

ROAD CONSTRUCTION:

Project No.1	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	A-B	57.75	\$48,535.00
	2A-2B, 2C-2D,	67.80	\$51,967.00
	TOTALS	125.55	\$100,502.00

ROAD IMPROVEMENT:

Project No.2	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	11-12, 13-14, 15-16	247.65	\$80,126.00
	TOTALS	247.65	\$80,126.00

SPECIAL PROJECTS:

	<u>Description</u>	<u>Cost</u>
Project No. 3	Road Vacating	\$14,306.00
Project No. 4	Roadside Brushing	\$19,521.00
	Project Road Maintenance	\$5,520.00
	TOTAL	\$39,347.00

MOVE IN:

	<u>Equipment</u>	<u>Cost</u>
	Excavator (C330)	\$1,220.00
	Excavator (C315)	\$699.00
	Dozer (D6)	\$675.00
	Dozer (D8)	\$1,220.00
	Rubber Tired Skidder	\$622.00
	Vibratory Roller	\$675.00
	Front End Loader (C966)	\$675.00
	10-12 yd dump truck (X 4 @ \$141 each)	\$564.00
	Large Grader (14G)	\$675.00
	Water Truck (2,500 gal)	\$165.00
	20yd dump truck w/pup trailer (X 2 @ \$166 each)	\$332.00
	TOTAL	\$7,522.00

GRAND TOTAL **\$227,497.00**

Compiled By: Kevin Berry *FL*

Date: 04/20/2012

SURFACING		Description	Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:		Grade, Shape and Ditch 16'	54.75	x	\$21.55	\$1,179.86
		Subgrade Compaction	54.75	x	\$17.52	\$959.22

ROAD SEGMENT A to B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	A to B Volume (CY) per		0+00 to 54+75 Number of			
Base Rock	Pit-Run	0+00-54+75	10	station	63	stations	54.75	3,449	\$13,935
Curve Widening Base Rock	Pit-Run	25+00, 44+00, 53+75	10	curve	N/A	curve	3.00	198	\$800
Junctions	Pit-Run	0+00	10	junction	55	junctions	1	55	\$222
Turnouts	Pit-Run	3+35, 9+20, 16+20, 19+55, 24+30, 35+20, 39+40, 43+85, 46+35, 53+75	10	TO	33	TO's	10	330	\$1,333
Turnarounds	Pit-Run	54+75	10	TA	22	TA's	1	22	\$89
Traction Rock	1"-0"	24+30-54+75	2	station	13	stations	30.45	396	\$2,934
Curve Widening Traction Rock	1"-0"	25+00, 44+00, 53+75	curve	curve	N/A	curves	3.00	44	\$326
Total Rock for Road Segment:			A to B				4,494		\$19,640

Processing:		Description	No. sta	Rate/sta	Cost
		Water, Process & Compact:	33.45	\$49.02	\$1,640
		Spread & Compact Pit-Run	54.75	\$51.39	\$2,814
SUB TOTAL FOR SURFACING					
		6"-0"pr	4,054	1 "-0"	440
				Total	4,494
					4,494
					\$26,232

SPECIAL PROJECTS			Description	Cost
			Pit-Run development \$2.30/CY x 4054CY	\$9,324.78
SUB TOTAL FOR SPECIAL PROJECTS				\$9,325

Subtotal of Surfacing & Spec. Proj. \$35,557
Subtotal of Clearing, Exc., Culv. \$12,978

GRAND TOTAL \$48,535

Compiled By: Kraig Kirkpatrick

Date: 04/11/2012

SURFACING	Subgrade prep:	Description	Stations/	x	Rate/	Cost
		Grade, Shape and Ditch 16'	67.80	x	\$21.55	\$1,461.09
		Subgrade Compaction	67.80	x	\$17.52	\$1,187.86

ROAD SEGMENT 1A-1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 5+50					
Base Rock	Pit-run	0+00 to 5+50	10	station	72	stations	5.50	396	\$4.04	\$1,600	
Landings	Pit-run	2+50, 5+50	N/A	landing	80	landings	2	160	\$4.04	\$646	
Junctions	Pit-run	0+00	10	junction	55	Jct's	1	55	\$4.04	\$222	
Total Rock for Road Segment:				1A-1B				611			\$2,468
ROAD SEGMENT 1C-1D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 6+80					
Base Rock	Pit-run	0+00 to 6+80	10	station	72	stations	6.80	490	\$4.04	\$1,978	
Turn Out/Around	Pit-run	4+50	10	T/A	22	Ta's	1	22	\$4.04	\$89	
Landings	Pit-run	6+80	N/A	landing	80	landings	1	80	\$4.04	\$323	
Junctions	Pit-run	0+00	10	junction	55	Jct's	1	55	\$4.04	\$222	
Tractions Rock	1"-0"	0+00 to 5+50	2	station	13	stations	6	78	\$7.41	\$578	
Total Rock for Road Segment:				1C-1D				725			\$3,190
ROAD SEGMENT 2A-2B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 37+00					
Base Rock	Pit-run	0+00 to 37+00	10	station	72	stations	37.00	2,664	\$4.04	\$10,763	
Turn Out/Around	Pit-run	10+80, 22+50	10	T/A	22	Ta's	2	44	\$4.04	\$178	
Landings	Pit-run	32+00, 37+00	N/A	landing	80	landings	2	160	\$4.04	\$646	
Junctions	Pit-run	0+00	10	junction	55	Jct's	1	55	\$4.04	\$222	
Total Rock for Road Segment:				2A-2B				2,923			\$11,809
ROAD SEGMENT 2C-2D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 11+50					
Base Rock	Pit-run	0+00 to 11+50	10	station	72	stations	11.50	828	\$4.04	\$3,345	
Turn Out/Around	Pit-run	1+75, 6+60, 9+25	10	T/A	22	Ta's	3	66	\$4.04	\$267	
Landings	Pit-run	11+50	N/A	landing	80	landings	1	80	\$4.04	\$323	
Junctions	Pit-run	0+00	10	junction	55	Jct's	1	55	\$4.04	\$222	
Tractions Rock	1"-0"	6+00 to 10+00	2	station	13	stations	4	52	\$7.41	\$385	
Total Rock for Road Segment:				2C-2D				1,081			\$4,542
ROAD SEGMENT 2E-2F				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	0+00 to 7+00					
Base Rock	Pit-run	0+00 to 7+00	10	station	72	stations	7.00	504	\$4.04	\$2,036	
Turn Out/Around	Pit-run	3+00	10	T/A	22	Ta's	1	22	\$4.04	\$89	
Landings	Pit-run	7+00	N/A	landing	80	landings	1	80	\$4.04	\$323	
Junctions	Pit-run	0+00	10	junction	55	Jct's	1	55	\$4.04	\$222	
Tractions Rock	1"-0"	3+00 to 6+00	2	station	13	stations	3	39	\$7.41	\$289	
Total Rock for Road Segment:				2E-2F				700			\$2,959
SUB TOTAL FOR SURFACING					6"-0"pr	1"-0"			Total		\$27,618
					5,871	169			6,040		

SPECIAL PROJECTS				Description	Cost
				Pit-Run development \$	\$2.30 x 5,871 = \$13,502.38
SUB TOTAL FOR SPECIAL PROJECTS					\$6,993

Subtotal of Surfacing & Spec. Proj. \$34,611
Subtotal of Cleaning, Exc., Culv. \$17,355

Gand Total \$51,967

Compiled By: Kevin Berry

Date: 04/20/2012

Hubbub

Project No. 3 Road Vacating

Location/Description	C330 Excavator	C330 Excavator	C330 Excavator	Truck	Labor	Seeding	Straw Mulch	Total
V1 to V2 0+00-80+00 Fill Removal Waterbar	65 hrs		80					
V3 to V4 0+00-4+00 Fill Removal Waterbar	6 hrs		4					
Walk excavator between sites.	1 hrs							
Total	72 hrs	0 sta.	84	0 hr	1 ac	150 lb	70 Bales	
Rate	\$144 /hr	/hr	\$30 ea	/hr	\$545 /ac	\$1.15 /lb	\$10.00 /Bale	
Cost	\$10,368	\$0	\$2,520	\$0	\$545	\$173	\$700.00	\$14,306

Prepared by: Kraig Kirkpatrick Date: 03/28/2012

**HUBBUB TIMBER SALE
BRUSHING COSTS**

02/28/12

ROAD SEGMENT	BRUSHING SEGMENT	SEGMENT NAME	SEGMENT LENGTH	RATING	RATE	COST
AF10	B2	Bloom Lake Rd	2.95	LIGHT MEDIUM	\$850	\$2,507.50
AF10KK	B6	Bloom Lake Spur	0.05	MEDIUM	\$1,100	\$55.00
AF10JJ	B5	Bloom Lake Spur	0.05	MEDIUM	\$1,100	\$55.00
AF10II	B4	Bloom Lake Spur	0.05	MEDIUM	\$1,100	\$55.00
AF10HH	B3	Bloom Lake Spur	0.2	MEDIUM	\$1,100	\$220.00
AF20	B7		0.5	LIGHT MEDIUM	\$850	\$425.00
AF30	B8		0.04	LIGHT	\$750	\$30.00
AF40	B9		0.06	LIGHT	\$750	\$45.00
AF50	B10		0.04	LIGHT MEDIUM	\$850	\$34.00
AF60	B11		0.12	MEDIUM	\$1,100	\$132.00
AF70	B12		0.14	MEDIUM	\$1,100	\$154.00
AF80	B14		0.07	MEDIUM	\$1,100	\$77.00
AF80AA	B13		0.11	MEDIUM HEAVY	\$1,350	\$148.50
AF90	B15	Road to Area 2	1.05	MEDIUM	\$1,100	\$1,155.00
AF90BB	B17		0.04	LIGHT	\$750	\$30.00
AF90AA	B16		0.035	LIGHT MEDIUM	\$850	\$29.75
AF100	B18		0.5	MEDIUM	\$1,100	\$550.00
AF	B19	August Fire Rd		LIGHT MEDIUM	\$850	\$0.00
LL90	B28	Lost Lake Quarry Rd	0.5	MEDIUM	\$1,100	\$550.00
LL150	B20	Road to Area 3	0.5	MEDIUM	\$1,100	\$550.00
LL150BB	B22		0.08	Light Medium	\$850	\$68.00
LL150AA	B21		0.3	Medium	\$1,100	\$330.00
LL140	B23		1.2	Medium	\$1,100	\$1,320.00
LL140BB	B24		0.55	Medium	\$1,100	\$605.00
LL140BB10	B25		0.2	Medium	\$1,100	\$220.00
LL140AA	B26		0.75	Medium	\$1,100	\$825.00
LL140AA10	B27		0.2	Medium	\$1,100	\$220.00
LL110	B30		0.6	Medium	\$1,100	\$660.00
AF,LL	B1	August Fire Lost Lake Rd	7.35	Medium	\$1,100	\$8,085.00
LL100	B29		0.35	Medium	\$1,100	\$385.00
						\$0.00

18.585

\$19,520.75

Road Maintenance after completion of Projects

Sale: Hubbub
Date: 23-Apr-12
By: Kevin Berry FL
Quartz Creek Rd, August Fire Rd, Lost Lake Rd.

Type	Equipment/Rationale	Move in Rate	Hours	Rate	Cost
Post- Project Road Maintenance	Grader 14G (onsite)		16	\$93	\$1,488
	Dump Truck 12CY (2 trucks, onsite)		8	\$73	\$584
	FE Loader C966 (onsite)		8	\$77	\$616
	Vibratory Roller (onsite)		16	\$94	\$1,504
	Water Truck 2500 gallon (onsite)		16	\$83	\$1,328
Total					\$5,520

Miles/day	Distance(miles)	Days
1.5	2.2	1.5

Production Rates
Grader

Road Maintenance Cost Summary

Sale: Hubbut
 Date: 23-Apr-12
 By: Kevin Berry FL

MBF: 4.832
 \$\$/MBF: \$4.75

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
							Miles/day	Distance(miles)	Days	
Progressive Operations Entry	Grader 14G	\$675	1	16	\$90	\$2,115	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 10CY x 2	\$282	2	8	\$73	\$1,450	Grader	2.5	5.0	2.0
	FE Loader C966	\$675	1	8	\$74	\$1,267				
Final Road Maintenance	Grader 14G	\$675	1	50	\$90	\$5,175	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 10CY x 3	\$423	2	16	\$73	\$2,759	Grader	1.5	9.5	6.3
	FE Loader C966	\$675	1	16	\$74	\$1,859	Vibratory Roller*	1.5	9.5	6.3
	Vibratory Roller	\$675	1	50	\$72	\$4,275				
	Water Truck 2,500 gallon	\$165	1	50	\$78	\$4,065				
Total						\$22,965				

*Final Road Maintenance Only

**Hubbub
TIMBER CRUISE REPORT
FY 2012**

1. Sale Area Location: Areas 1 through 4 are located in portions of Sections 8, 10, 11, & 17 of T4N, R7W, W.M., Clatsop County, Oregon
2. **Fund Distribution:** BOF 100%
Tax Code 8-01 (100%)
3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	Non Stocked	New R/W	Stream Buffer	Net Acres	Survey Method
1	Modified Clearcut	74	4	0	1	2	67	GIS
2	Modified Clearcut	93	4	7	1	1	80	GIS
3	Modified Clearcut	52	0	2	0	13	37	GIS
4	Right-of-Way	2	0	0	0	0	2	GIS
TOTALS		221	8	9	2	16	186	

4. Cruisers and Cruise Dates:

All areas were cruised by Jasen McCoy, Derek Bangs, Dave Rygell, Ty Williams, Erik Burgher, and Kevin Berry on 3/30/2012 and 4/3/2012.

5. Cruise Method and Computation:

Areas 1 through 3 are modified clearcut units and were variable plot cruised using 33.26 BAF for hardwoods and 40 BAF for conifer. These plots are located on a 3 chain by 10 chain grid, with every third plot measured and graded. A total of 57 plots were sampled, with 22 measured and graded plots, 33 count plots and 2 zero plots.

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

AREA	CRUISE	TRACT	TYPE	ACRES
1, 2, & 3	Hubbub	AREA123	Take	184
4 (R/W)	Hubbub	AREA123	R/W	2

Areas 1, 2, and 3 are modified clearcut units, approximately 50 to 60 year-old, consisting of red alder, Douglas-fir, western hemlock/true fir, western redcedar and minor amounts of Sitka spruce, and bigleaf maple. The average red alder tree size is 14 inches DBH with an average height of 51 feet to a merchantable top. The average Douglas-fir tree size to be harvested is 17 inches DBH, with an average height of 65 feet to a merchantable top (6 inch d.i.b.). The average western hemlock/true fir tree size is 12 inches DBH and 45 feet to a merchantable top (6 inch d.i.b.). The average volume per acre to be harvested (net) is 26.0 MBF.

Area 4 (Right-of-Way) is two acres of in-sale right-of-way. The timber type is similar to the Sale Area therefore the total cruise volume from Areas 1 through 3 was applied to these acres.

7. Statistical Analysis and Stand Summary

Statistics for Stand B.F. volumes

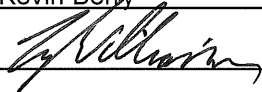
Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1, 2, and 3	60%	10%	60.6%	8.0%

8. Volumes by Species and Log Grade:

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	Camp Run	% D & B	% Sale
Red Alder	14"	2,132	0	0	0	2,132	2%	44%
Douglas-fir	17"	2,228	1,378	697	153	0	3%	46%
Western Hemlock/true fir	12"	373	40	273	60	0	2%	7%
Sitka Spruce	16"	38	17	8	13	0	2%	<1%
Western Redcedar	12"	1	1	0	0	0	1%	<1%
Bigleaf Maple	14"	60	0	0	0	60	<1%	<1%
TOTALS		4,832	1,436	978	226	2,192		

9. Approvals:

Prepared by: Kevin Berry Date: April 11, 2011
 Unit Forester Approval:  Date: 5/2/12

10. Attachments:

- Cruise Designs and Maps - 4 pages
- Volume Reports - 3 pages
- Statistics Reports - 5 pages
- Log Stock Tables -3 pages
- Stand Table Summary - 2 pages

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Hubbub Area(s) 1, 2, 3

Harvest Type: Modified Clearcut

Approx. Cruise Acres: 195 Estimated CV% 60 Net BF or BA/Acre SE% Objective 10

Planned Sale Volume: 6.568 MMBF Estimated Sale Area Value/Acre: \$ 7,578

A. **Cruise Goals:** (a) Grade minimum 100 trees:
Determine log grades for sale value; Determine snag and leave tree species and sizes;
Determine "diameter limit" harvest parameters;

B. Cruise Design:

1. **Plot Cruises:** **Conifer** BAF 40 (Full point; Half point) (circle one)
Hardwood BAF 33.61 (Full point; Half point) (circle one)
Cruise Line Direction(s) E-W
Cruise Line Spacing 10 chains
Cruise Plot Spacing 3 chains
Grade/Count Ratio 1:2


Record all hardwood as camp run. Record all cedar as leave. Record all snags as SN and record diameter & total height. If plot lands in buffer then offset at least 1/2 chain outside the buffer.

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8 " for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7 " or 40% of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length

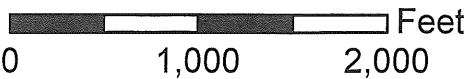
is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple); DL(Douglas-fir over 30"dbh); HL(Western hemlock over 30" dbh); SL(Sitka spruce over 30" dbh); CL (Western red cedar over 30" dbh); NFL (Noble fir over 30" dbh); SFL (Silver fir over 30" dbh)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures: Plot Type Cruises:** Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
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. **Machete**
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, scale, **Machete**

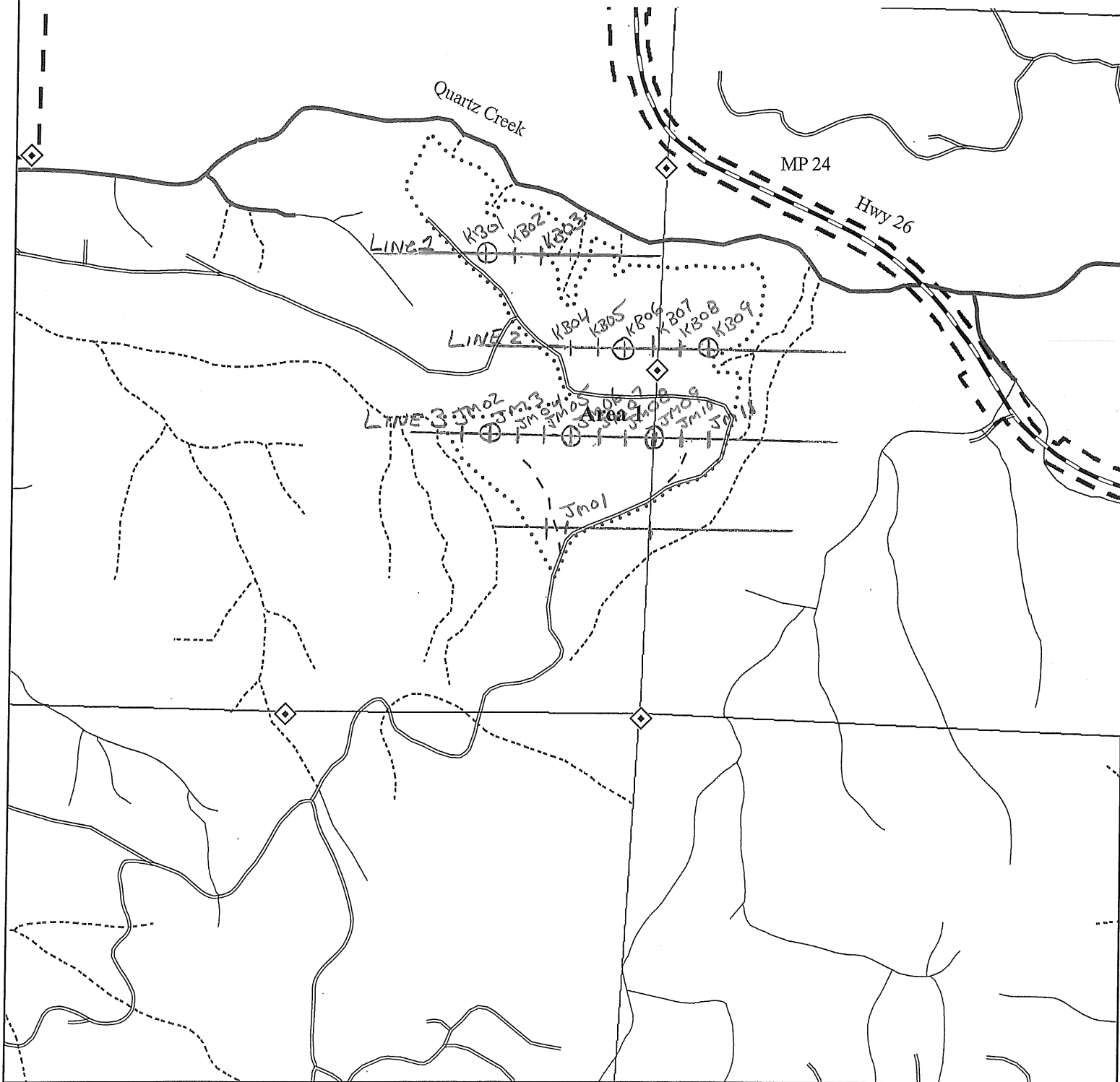
Cruise Design by: Kevin Berry
Approved by: 
Date: 3/28/12

"Exhibit A"

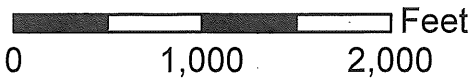
OF TIMBER SALE CONTRACT NO. 341-12-54
HUBBUB
PORTIONS OF 8, 10, 11, & 17,
T4N, R7W, W.M. , CLATSOP COUNTY, OREGON



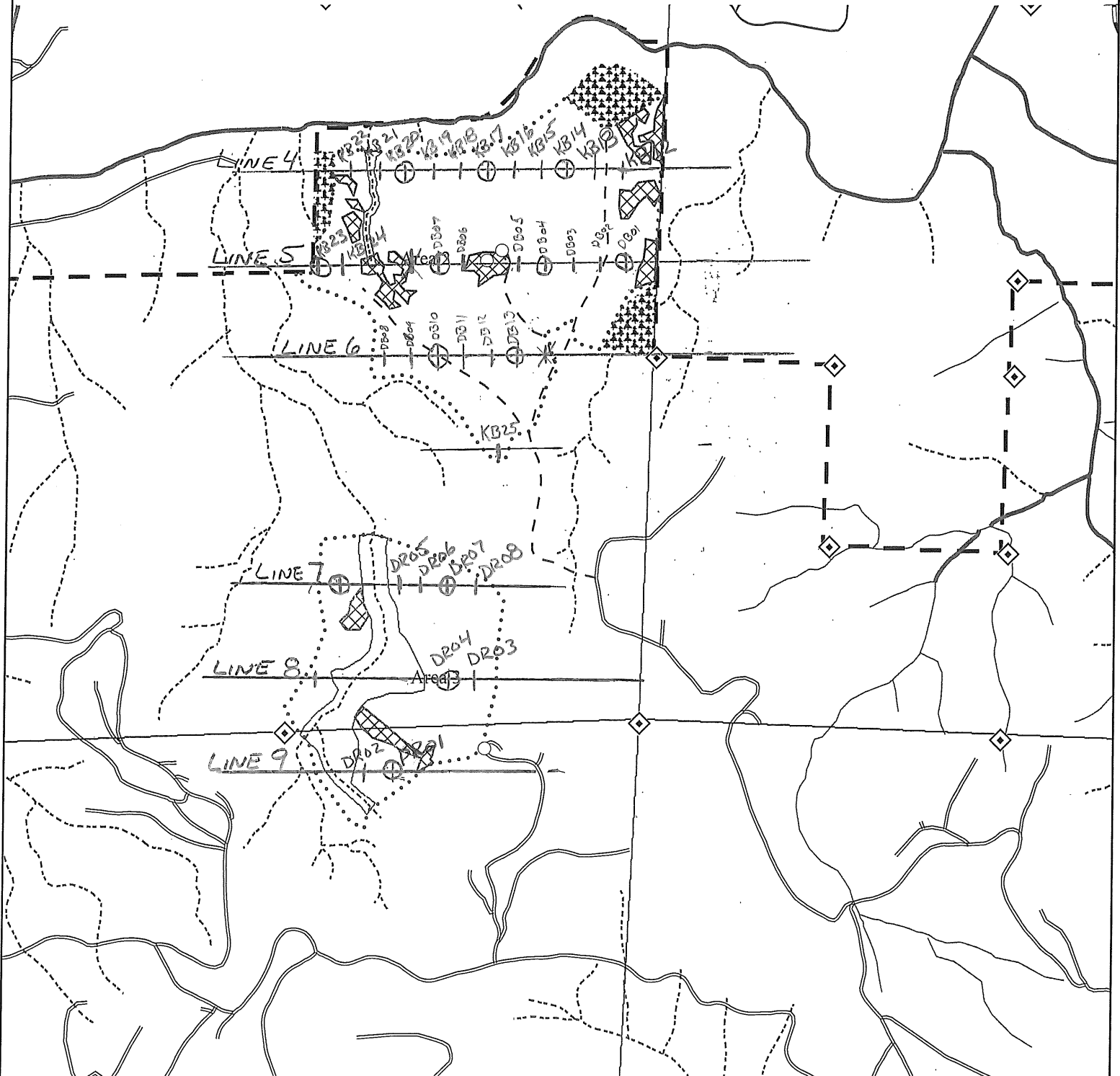
CRUISE MAP AREA 1
40 BAF CONIFER
3ch x 10ch 33.6 BAF HRDWOOD



"Exhibit A"
OF TIMBER SALE CONTRACT NO. 341-12-54
HUBBUB
PORTIONS OF 8, 10, 11, & 17,
T4N, R7W, W.M. , CLATSOP COUNTY, OREGON



CRUISE MAP AREAS 1 1/2
40 BAF CONIFER
30h x 10ch , 33.6 BAF HRDWOOD



T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1											
		Project: HUBBUB								Date 4/12/2012											
										Time 1:58:41PM											
T04N R07W S08 TTAKE										T04N R07W S08 TTAKE											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
04N	07W	08	AREA123	TAKE	184.00	57	110	1	W												
S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf			
A	DO	CU																			
A	DO	CR	100	.1	11,468	11,460	2,109	75	25	5	32	29	34	30	81	0.77				2.8	142.3
A	Totals		44	.1	11,468	11,460	2,109	75	25	5	32	29	34	30	79	0.76					145.0
D	DO	CU																			
D	DO	2S	61	1.4	7,513	7,409	1,363	9	71	20	2	31	67	36	264	1.70				6.3	28.1
D	DO	3S	32	2.0	3,825	3,749	690	92	8		2	29	69	37	98	0.78					38.4
D	DO	4S	7		819	819	151	100			47	53		22	25	0.40					32.1
D	Totals		46	1.5	12,157	11,976	2,204	41	46	12	4	5	28	63	31	114	0.96				105.0
H	DO	2S	7		134	134	25		100				100	32	280	1.97					.5
H	DO	3S	76		1,457	1,457	268	3	97				9	91	37	76	0.56				19.2
H	DO	4S	17		321	321	59	100			42		20	38	21	34	0.47				9.5
H	Totals		7		1,911	1,911	352	2	91	7	7		17	76	32	65	0.56				29.2
S	DO	2S	45		93	93	17	100					100	36	100	1.25					.9
S	DO	3S	20		41	41	8	100					100	35	60	1.31					.7
S	DO	4S	35		71	71	13	100			100			11	26	0.81					2.7
S	Totals		1		205	205	38	100			35		20	45	20	47	1.12				4.3
M	DO	CR	100		329	329	61	100					47	53	29	79	0.82				4.2
M	Totals		1		329	329	61	100					47	53	29	79	0.82				4.2
NF	DO	2S	85		80	80	15	100					100	40	180	1.15					.4
NF	DO	3S	15		13	13	2	100					100	28	30	0.50					.4
NF	Totals		0		93	93	17	100					14	86	34	105	0.88				.9
Type Totals				.7	26,163	25,974	4,779	0	61	33	6	5	17	28	50	30	90	0.82			288.6

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
		Project: HUBBUB										Date 4/12/2012										
												Time 1:58:41PM										
T04N R07W S08 TR/W												T04N R07W S08 TR/W										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
04N	07W	08	AREA123	R/W	2.00	57	117	1	W													
S Spp	So T	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				
A	DO	CU																				
A	DO	CR	100	.1	11,468	11,460	23	75	25	5	32	29	34	30	81	0.77					2.8	142.3
A	Totals		44	.1	11,468	11,460	23	75	25	5	32	29	34	30	79	0.76						145.0
D	DO	CU																				6.3
D	DO	2S	61	1.4	7,513	7,409	15	9	71	20		2	31	67	36	264	1.70					28.1
D	DO	3S	32	2.0	3,825	3,749	7	92	8			2		29	37	98	0.78					38.4
D	DO	4S	7		819	819	2	100				47	53		22	25	0.40					32.1
D	Totals		46	1.5	12,157	11,976	24	41	46	12	4	5	28	63	31	114	0.96					105.0
H	DO	2S	13		284	284	1		100				46	54	36	318	2.03					.9
H	DO	3S	71		1,478	1,478	3	3	94	3			4	9	37	76	0.57					19.6
H	DO	4S	16		312	312	1		100			42		20	21	34	0.47					9.3
H	Totals		8		2,074	2,074	4	2	82	16	6	3	15	75	32	70	0.60					29.7
S	DO	2S	45		93	93	0		100					100	36	100	1.25					.9
S	DO	3S	20		41	41	0		100				100		35	60	1.31					.7
S	DO	4S	35		71	71	0		100		100				11	26	0.81					2.7
S	Totals		1		205	205	0		100		35		20	45	20	47	1.12					4.3
M	DO	CR	100		329	329	1		100			47	53		29	79	0.82					4.2
M	Totals		1		329	329	1		100			47	53		29	79	0.82					4.2
C	DO	2S	85		107	107	0		100				100		32	60	0.59					1.8
C	DO	4S	15		18	18	0		100		100				11	10	0.27					1.8
C	Totals		0		125	125	0		100		14		86		22	35	0.51					3.6
NF	DO	2S	85		80	80	0		100					100	40	180	1.15					.4
NF	DO	3S	15		13	13	0		100			100			28	30	0.50					.4
NF	Totals		0		93	93	0		100		14		86		34	105	0.88					.9
Type Totals				.7	26,451	26,262	53	0	61	33	6	5	17	28	50	30	90	0.82				292.6

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	HUBBUB	DATE 4/12/2012				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07W	08	AREA123	TAKE	184.00	57	323	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	57	323	5.7							
CRUISE	22	110	5.0		31,550		.3			
DBH COUNT										
REFOREST										
COUNT	33	185	5.6							
BLANKS	2									
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	51	88.5	14.3	51		99.0	11,468	11,460	3,282	3,282
DOUG FIR	37	53.7	16.7	65		81.4	12,157	11,976	3,107	3,107
WHEMLOCK	14	21.3	11.8	45		16.1	1,911	1,911	527	527
S SPRUCE	3	3.4	16.3	27		4.9	205	205	96	96
BL MAPLE	4	4.2	14.4	30		4.7	329	329	99	99
NOB FIR	1	.4	17.0	70	0	.7	93	93	27	27
TOTAL	110	171.5	14.9	54		206.9	26,163	25,974	7,138	7,138
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	51.8	7.2	144	155	167					
DOUG FIR	72.7	11.9	305	346	388					
WHEMLOCK	73.9	21.3	99	125	152					
S SPRUCE	45.8	31.7	46	67	88					
BL MAPLE	49.8	28.5	55	78	100					
NOB FIR										
TOTAL	88.3	8.5	194	212	230	311	78	35		
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	78.7	10.4	79	88	98					
DOUG FIR	139.1	18.4	44	54	64					
WHEMLOCK	239.1	31.6	15	21	28					
S SPRUCE	387.2	51.2	2	3	5					
BL MAPLE	345.7	45.7	2	4	6					
NOB FIR	755.0	99.9	0	0	1					
TOTAL	45.7	6.1	161	171	182	84	21	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		
R ALDER	79.7	10.5	89	99	109					
DOUG FIR	140.2	18.6	66	81	97					
WHEMLOCK	233.5	30.9	11	16	21					
S SPRUCE	379.1	50.2	2	5	7					
BL MAPLE	341.7	45.2	3	5	7					
NOB FIR	755.0	99.9	0	1	1					
TOTAL	48.4	6.4	194	207	220	93	23	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		
R ALDER	83.1	11.0	10,199	11,460	12,721					
DOUG FIR	141.9	18.8	9,727	11,976	14,226					
WHEMLOCK	281.7	37.3	1,199	1,911	2,624					
S SPRUCE	383.7	50.8	101	205	308					
BL MAPLE	382.4	50.6	162	329	495					
NOB FIR	755.0	99.9	0	93	187					
TOTAL	60.6	8.0	23,892	25,974	28,057	147	37	16		

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	HUBBUB		DATE	4/12/2012			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
04N	07W	08	AREA123	R/W	2.00	57	336	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
				PLOTS	TREES	TREES	TREES				
TOTAL				57	336	5.9					
CRUISE				27	117	4.3	356	32.9			
DBH COUNT											
REFOREST											
COUNT				28	165	5.9					
BLANKS				2							
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		51	88.5	14.3	51		99.0	11,468	11,460	3,282	3,282
DOUG FIR		37	53.7	16.7	65		81.4	12,157	11,976	3,107	3,107
WHEMLOCK		15	21.2	12.1	46		16.8	2,074	2,074	565	565
SNAG		5	4.9	15.9	28		6.7				
S SPRUCE		3	3.4	16.3	27		4.9	205	205	96	96
BL MAPLE		4	4.2	14.4	30		4.7	329	329	99	99
WR CEDAR		1	1.8	12.0	45		1.4	125	125	39	39
NOB FIR		1	.4	17.0	70	0	.7	93	93	27	27
TOTAL		117	178.0	14.9	53		215.7	26,451	26,262	7,214	7,214
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		51.8	7.2	144	155	167					
DOUG FIR		72.7	11.9	305	346	388					
WHEMLOCK		88.0	24.4	115	152	189					
SNAG											
S SPRUCE		45.8	31.7	46	67	88					
BL MAPLE		49.8	28.5	55	78	100					
WR CEDAR											
NOB FIR											
TOTAL		92.6	8.6	186	204	221	342	86	38		
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		78.7	10.4	79	88	98					
DOUG FIR		139.1	18.4	44	54	64					
WHEMLOCK		238.6	31.6	14	21	28					
SNAG		321.4	42.5	3	5	7					
S SPRUCE		387.2	51.2	2	3	5					
BL MAPLE		345.7	45.7	2	4	6					
WR CEDAR		529.1	70.0	1	2	3					
NOB FIR		755.0	99.9	0	0	1					
TOTAL		44.6	5.9	167	178	189	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		
R ALDER		79.7	10.5	89	99	109					
DOUG FIR		140.2	18.6	66	81	97					
WHEMLOCK		224.2	29.7	12	17	22					
SNAG		294.3	38.9	4	7	9					
S SPRUCE		379.1	50.2	2	5	7					
BL MAPLE		341.7	45.2	3	5	7					
WR CEDAR		529.1	70.0	0	1	2					
NOB FIR		755.0	99.9	0	1	1					

TC TSTATS				STATISTICS			PAGE	2			
				PROJECT HUBBUB			DATE	4/12/2012			
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt	
04N	07W	08	AREA123	R/W	2.00		57	336	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
TOTAL		45.7		6.1		203	216	229	84	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
R ALDER		83.1		11.0		10,199	11,460	12,721			
DOUG FIR		141.9		18.8		9,727	11,976	14,226			
WHEMLOCK		262.8		34.8		1,353	2,074	2,796			
SNAG											
S SPRUCE		383.7		50.8		101	205	308			
BL MAPLE		382.4		50.6		162	329	495			
WR CEDAR		529.1		70.0		38	125	213			
NOB FIR		755.0		99.9		0	93	187			
TOTAL		59.2		7.8		24,206	26,262	28,318	140	35	16

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT HUBBUB							DATE	4/12/2012	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
04N	07	08	AREA123	R/W		186.00	114	659	1	W	
04N	07W	08	AREA123	TAKE							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			114	659	5.8						
CRUISE			49	227	4.6	31,906	.7				
DBH COUNT											
REFOREST											
COUNT			61	350	5.7						
BLANKS			4								
100 %											
STAND SUMMARY											
		SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER		102	88.5	14.3	51		99.0	11,468	11,460	3,282	3,282
DOUG FIR		74	53.7	16.7	65		81.4	12,157	11,976	3,107	3,107
WHEMLOCK		29	21.3	11.8	45		16.1	1,913	1,913	528	528
S SPRUCE		6	3.4	16.3	27		4.9	205	205	96	96
BL MAPLE		8	4.2	14.4	30		4.7	329	329	99	99
SNAG		5	.1	15.9	28		.1				
WR CEDAR		1	.0	12.0	45		.0	1	1	0	0
NOB FIR		2	.4	17.0	70	0	.7	93	93	27	27
TOTAL		227	171.5	14.9	54		207.0	26,166	25,977	7,139	7,139
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		51.5	5.1	147	155	163					
DOUG FIR		72.2	8.4	317	346	375					
WHEMLOCK		82.2	16.1	117	139	162					
S SPRUCE		41.0	18.3	54	67	79					
BL MAPLE		46.1	17.4	64	78	91					
SNAG											
WR CEDAR											
NOB FIR				210	210	210					
TOTAL		90.3	6.0	195	208	220	326	81	36		
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		147.3	13.8	76	88	101					
DOUG FIR		217.2	20.3	43	54	65					
WHEMLOCK		347.2	32.5	14	21	28					
S SPRUCE		548.2	51.3	2	3	5					
BL MAPLE		491.4	46.0	2	4	6					
SNAG		463.5	43.4	0	0	0					
WR CEDAR		751.6	70.3	0	0	0					
NOB FIR		1056.2	98.8	0	0	1					
TOTAL		117.1	11.0	153	172	190	547	137	61		
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		148.2	13.9	85	99	113					
DOUG FIR		218.6	20.5	65	81	98					
WHEMLOCK		339.6	31.8	11	16	21					
S SPRUCE		537.2	50.3	2	5	7					
BL MAPLE		485.9	45.5	3	5	7					
SNAG		426.3	39.9	0	0	0					
WR CEDAR		751.6	70.3	0	0	0					

TC PSTATS		PROJECT STATISTICS							PAGE	2	
		PROJECT		HUBBUB			DATE		4/12/2012		
TWP	RGE	SC	TRACT	TYPE	ACRES			PLOTS	TREES	CuFt	BdFt
04N	07	08	AREA123	R/W	186.00			114	659	1	W
04N	07W	08	AREA123	TAKE							
CL	68.1		COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
NOB FIR		1056.2	98.8		0	1	1				
TOTAL		<i>119.1</i>	<i>11.1</i>		<i>184</i>	<i>207</i>	<i>230</i>	<i>566</i>	<i>142</i>	<i>63</i>	
CL	68.1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER		151.9	14.2		9,831	11,460	13,089				
DOUG FIR		220.8	20.7		9,502	11,976	14,450				
WHEMLOCK		404.1	37.8		1,190	1,913	2,637				
S SPRUCE		543.4	50.8		101	205	309				
BL MAPLE		541.7	50.7		162	329	496				
SNAG											
WR CEDAR		751.6	70.3		0	1	2				
NOB FIR		1056.2	98.8		1	93	186				
TOTAL		<i>129.5</i>	<i>12.1</i>		<i>22,829</i>	<i>25,977</i>	<i>29,126</i>	<i>670</i>	<i>167</i>	<i>74</i>	

Log Stock Table - MBF

T04N R07W S08 TyR/W 2.00
T04N R07W S08 TyTAKE 184.00

Project: HUBBUB
Acres 186.00

Page 1
Date 4/12/2012
Time 2:03:47PM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
A		DO	CR	12	13		13	.6				13							
A		DO	CR	16	52		52	2.4			8		18	26					
A		DO	CR	17	9		9	.4			9								
A		DO	CR	18	6		6	.3			6								
A		DO	CR	19	13		13	.6			13								
A		DO	CR	20	12		12	.6			12								
A		DO	CR	21	14		14	.7			14								
A		DO	CR	24	214		214	10.0			38	20	91	65					
A		DO	CR	26	96		96	4.5			32		28			36			
A		DO	CR	27	43		43	2.0				10		34					
A		DO	CR	28	104		104	4.9			14	27	26			37			
A		DO	CR	29	16		16	.7			16								
A		DO	CR	30	203		203	9.5			31		103	69					
A		DO	CR	31	38		38	1.8					38						
A		DO	CR	32	312		312	14.6			55	35	116	106					
A		DO	CR	33	33		33	1.6			33								
A		DO	CR	34	189		189	8.9			32	29	44	43		41			
A		DO	CR	35	41		41	1.9								41			
A		DO	CR	36	50		50	2.3			50								
A		DO	CR	37	27		27	1.3			27								
A		DO	CR	40	609		608	28.5			202	77	287			42			
A		DO	CR	41	37		37	1.7			37								
A		Totals			2,133		2,132	44.1			629	212	752	343		161	36		
H		DO	2S	32	25		25	7.0							25				
H		DO	2S	40	0		0	.1							0				
H		DO	3S	21	0		0	.0						0					
H		DO	3S	22	0		0	.0			0								
H		DO	3S	32	24		24	6.8					24						
H		DO	3S	36	59		59	16.5			59								
H		DO	3S	40	188		188	52.8			8	57	93	30					
H		DO	4S	14	19		19	5.5			19								
H		DO	4S	18	5		5	1.5			5								
H		DO	4S	32	12		12	3.4			12								
H		DO	4S	40	23		23	6.4			23								
H		Totals			356		356	7.4			8	175	93	54	0	25			
D		DO	2S	24	37	25.0	28	1.3							28				

Log Stock Table - MBF

T04N R07W S08 TyR/W 2.00
T04N R07W S08 TyTAKE 184.00

Project: HUBBUB
Acres 186.00

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
D		DO	2S	32	437	1.5	430	19.3				78	182	74	45	50			
D		DO	2S	40	923		920	41.3				47	186	465	222				
D		DO	3S	19	9		9	.4											
D		DO	3S	20	4		4	.2			4								
D		DO	3S	31	8		8	.3			8								
D		DO	3S	32	204	5.3	193	8.7			19	51	69	54					
D		DO	3S	40	488		484	21.7			137	208	140						
D		DO	4S	9	2		2	.1			2								
D		DO	4S	17	30		30	1.4			30								
D		DO	4S	18	8		8	.3			8								
D		DO	4S	19	22		22	1.0			22								
D		DO	4S	20	9		9	.4			9								
D		DO	4S	21	9		9	.4				9							
D		DO	4S	26	10		10	.4			10								
D		DO	4S	28	37		37	1.7			37								
D		DO	4S	30	25		25	1.1			25								
D		Totals			2,261	1.5	2,228	46.1			310	276	334	423	539	296	50		
M		DO	CR	23	8		8	13.4			8								
M		DO	CR	28	21		21	33.5				21							
M		DO	CR	32	25		25	40.2				25							
M		DO	CR	35	8		8	12.8			8								
M		Totals			61		61	1.3			16		45						
S		DO	2S	36	17		17	45.3				17							
S		DO	3S	35	8		8	20.0			8								
S		DO	4S	16	13		13	34.7				13							
S		Totals			38		38	.8			8	30							
C		DO	2S	32	0		0	85.7			0								
C		DO	4S	11	0		0	14.3			0								
C		Totals			0		0	.0			0								
NF		DO	2S	40	15		15	85.7				15							
NF		DO	3S	28	2		2	14.3			2								
NF		Totals			17		17	.4			2	15							

Log Stock Table - MBF

T04N R07W S08 TyR/W	2.00
T04N R07W S08 TyTAKE	184.00

Project: HUBBUB
Acres 186.00

Page 3
Date 4/12/2012
Time 2:03:47PM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
Total		All Species			4,867		4,832	100.0		8	1140	612	1200	766	726	331	50				

TC		PSTNDSUM		Stand Table Summary							Page		1			
										Date:		4/12/2012				
T04N R07W S08 TyR/W 2.00				Project				HUBBUB		Time:		2:03:46PM				
T04N R07W S08 TyTAKE 184.00				Acres				186.00		Grown Year:						
S Spec	T	DBH	Sample Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
				FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
D		9	4	86	31	9.960	4.40	9.96	6.5	20.0		65	199		120	37
D		10	2	85	28	4.034	2.20									
D		11	2	86	140	3.334	2.20	6.67	14.5	50.0		97	333		180	62
D		14	2	87	87	2.058	2.20	4.12	19.0	70.0		78	288		145	54
D		15	6	86	96	5.378	6.60	10.76	21.8	75.0		235	807		437	150
D		16	6	87	100	4.727	6.60	9.45	26.0	93.3		246	882		457	164
D		17	4	85	103	2.792	4.40	5.58	24.0	87.5		134	489		249	91
D		18	4	88	101	2.490	4.40	4.98	35.5	130.0		177	647		329	120
D		19	8	87	104	4.470	8.80	10.06	35.8	127.8		360	1,285		669	239
D		20	6	88	110	3.025	6.60	5.04	38.8	148.0		196	746		364	139
D		21	10	87	124	4.573	11.00	11.89	42.1	174.6		500	2,076		931	386
D		22	8	86	114	3.334	8.80	10.00	39.1	151.7		391	1,517		727	282
D		23	2	85	125	.763	2.20	2.29	45.7	190.0		104	435		194	81
D		25	2	89	121	.645	2.20	1.94	53.7	230.0		104	445		193	83
D		27	4	86	142	1.107	4.40	3.32	68.8	306.7		229	1,018		425	189
D		28	4	85	116	1.029	4.40	2.57	74.6	314.0		192	808		357	150
D		Totals	74	86	89	53.718	81.40	98.63	31.5	121.4		3,107	11,976		5,778	2,228
A		10	8	86	45	14.241	7.77	14.24	10.7	37.5		153	534		285	99
A		11	2	86	85	2.942	1.94	2.94	21.0	70.0		62	206		115	38
A		12	4	86	79	4.945	3.88	7.42	18.0	63.3		134	470		248	87
A		13	16	86	76	16.853	15.53	25.28	19.7	61.7		499	1,559		929	290
A		14	12	87	79	10.899	11.65	18.16	22.2	80.0		403	1,453		750	270
A		15	14	86	77	11.076	13.59	20.57	22.4	77.7		460	1,598		856	297
A		16	20	87	79	13.907	19.42	26.42	24.4	88.9		645	2,350		1,200	437
A		17	10	87	82	6.160	9.71	12.32	28.6	103.0		352	1,269		655	236
A		18	6	87	81	3.296	5.83	6.59	32.3	110.0		213	725		397	135
A		19	2	87	73	.986	1.94	1.97	33.5	120.0		66	237		123	44
A		20	2	86	88	.890	1.94	1.78	43.0	155.0		77	276		142	51
A		21	2	87	101	.807	1.94	1.61	52.0	175.0		84	283		156	53
A		22	4	86	77	1.471	3.88	2.94	45.3	170.0		133	500		248	93
A		Totals	102	86	73	88.474	99.03	142.26	23.1	80.6		3,282	11,460		6,104	2,132
H		9	4	83	17	5.218	2.31	5.22	5.0	20.0		26	104		49	19
H		10	4	86	82	4.226	2.31	4.23	17.0	60.0		72	254		134	47
H		11	2	87	86	1.746	1.15	1.75	21.0	70.0		37	122		68	23
H		12	6	88	90	4.402	3.46	7.34	17.8	70.0		131	514		243	96
H		13	2	89	116	1.250	1.15	2.50	22.5	90.0		56	225		105	42
H		14	6	86	83	3.234	3.46	6.47	20.3	71.7		132	464		245	86
H		17	2	83	52	.731	1.15	.73	38.0	70.0		28	51		52	10
H		21	2	88	94	.479	1.15	.96	48.5	185.0		46	177		86	33
H		22	1	87	104	.005	.01	.01	40.0	166.7		1	2		1	0
H		Totals	29	86	70	21.293	16.15	29.20	18.1	65.5		528	1,913		982	356
M		14	6	87	52	3.309	3.54	3.31	23.3	86.7		77	287		144	53
M		16	2	87	42	.844	1.18	.84	26.0	50.0		22	42		41	8
M		Totals	8	87	50	4.153	4.72	4.15	23.9	79.2		99	329		184	61
S		13	2	82	19	1.776	1.64	1.78	13.0	40.0		23	71		43	13
S		18	2	78	59	.927	1.64	1.85	22.5	50.0		42	93		78	17
S		21	2	81	41	.681	1.64	.68	46.0	60.0		31	41		58	8
S		Totals	6	81	34	3.384	4.91	4.31	22.3	47.5		96	205		179	38
NF		17	2	88	88	.445	.70	.89	30.0	105.0		27	93		50	17

Stand Table Summary

T04N R07W S08 TyR/W	2.00
T04N R07W S08 TyTAKE	184.00

Project HUBBUB
Acres 186.00

Time: 2:03:46PM
Grown Year:

S Spc T	Sample DBH	Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
			FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
NF	Totals	2	88	88	.445	.70	.89	30.0	105.0		27	93		50	17
C	12	1	78	90	.019	.02	.04	11.0	35.0		0	1		1	0
C	Totals	1	78	90	.019	.02	.04	11.0	35.0		0	1		1	0
SN	10	1	87	25	.024	.01									
SN	15	2	87	30	.025	.03									
SN	30	1	86	20	.003	.01									
SN	50	1	85	88	.001	.02									
SN	Totals	5	87	28	.052	.07									
Totals		227	86	76	171.538	207.00	279.48	25.5	92.9		7,139	25,977		13,278	4,832

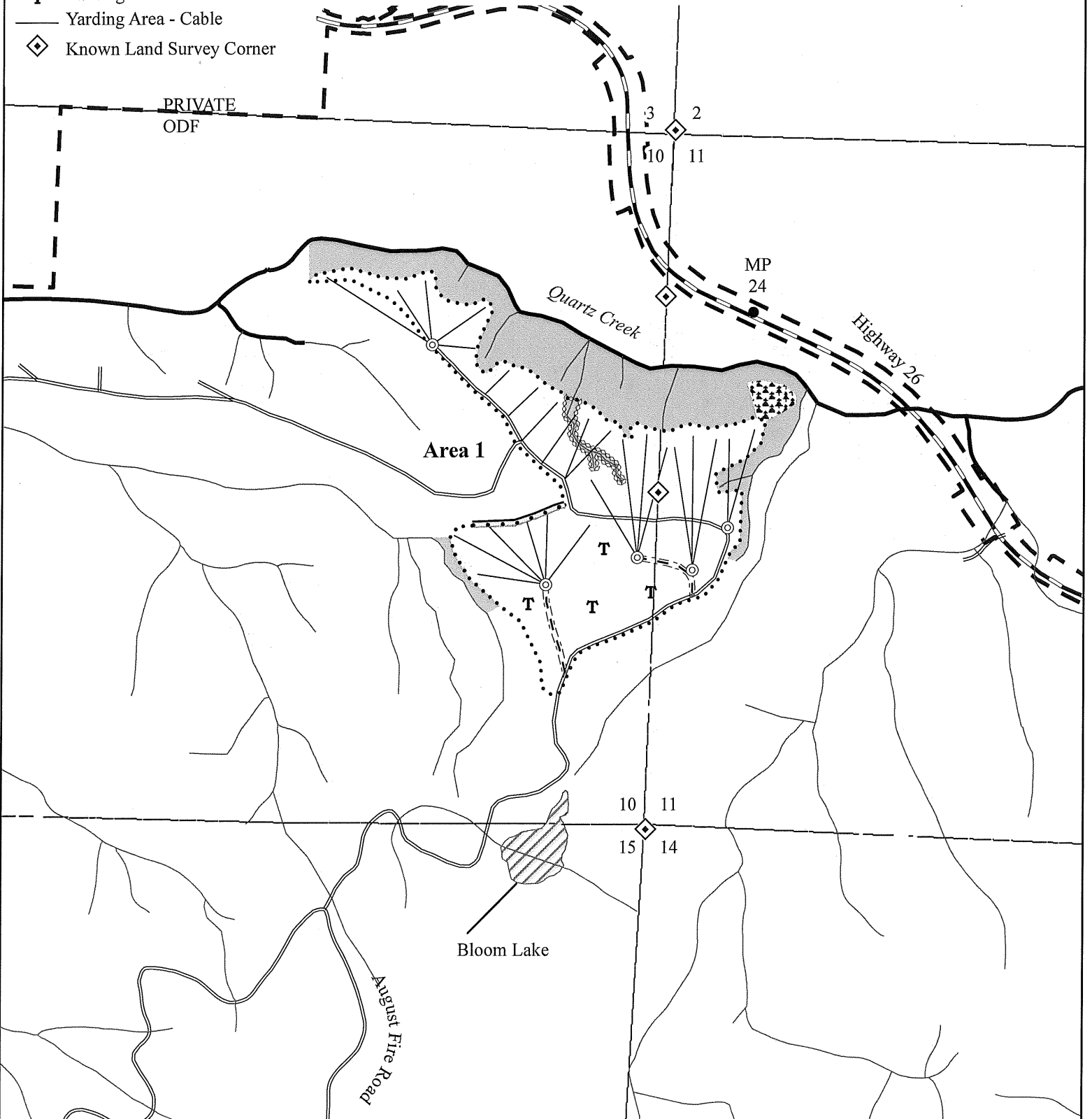
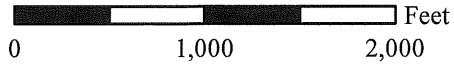
Legend

- Posted Timber Sale Boundary
- - - - - Unposted Timber Sale Boundary
- ==== Paved Road
- ==== Existing Surfaced Road
- - - - - New Road Construction
- Type N Streams
- Type F Streams
- ▨ Posted Stream Buffer
- ▨ Buffer Zone
- ▨ Green Tree Retention Area
- T Yarding Area - Ground
- Yarding Area - Cable
- ◇ Known Land Survey Corner

Logging Plan

OF TIMBER SALE CONTRACT NO. 341-13-20
 HUBBUB
 PORTIONS OF SECTIONS 8, 10, 11, & 17,
 T4N, R7W, W.M. , CLATSOP COUNTY, OREGON

Approximate Scale = 1":1,000'



Legend

- Posted Timber Sale Boundary
- Unposted Timber Sale Boundary
- State Hwy
- Existing Surfaced Road
- - - New Road Construction
- Type N Streams
- Type F Streams
- ▨ Posted Stream Buffer
- ▩ Buffer Zone
- ▧ Green Tree Retention Area
- ▦ Non Harvestable Area
- T Yarding Area - Ground
- Yarding Area - Cable
- ▬ Ownership Boundary
- - - Vacated Road
- ◇ Known Land Survey Corner

Logging Plan

OF TIMBER SALE CONTRACT NO. 341-13 -20
 HUBBUB
 PORTIONS OF SECTIONS 8, 10, 11, & 17,
 T4N, R7W, W.M. , CLATSOP COUNTY, OREGON

Approximate Scale = 1":1,000'

