



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Salty Dog
Sale 341-13-49

District: Astoria

Date: June 13, 2012

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,798,953.34	\$304,855.36	\$3,103,808.70
		Project Work:	\$(734,461.00)
		Advertised Value:	\$2,369,347.70



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timber description

Location: Portions of Sections 27 and 34, T4N, R8W, W.M., Clatsop County, Oregon and portions of Sections 3, 4, and 10, T3N, R8W, W.M., Tillamook County, Oregon.

Stand Stocking: 80%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	97
Western Hemlock / Fir	18	0	95
Sitka Spruce	38	0	95
Red Cedar	21	0	92
Alder (Red)	13	0	95
Maple	11	0	95

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	2,774	877	135	0	3,786
Western Hemlock / Fir	4,756	1,976	278	0	7,010
Sitka Spruce	48	71	0	0	119
Red Cedar	1	1	0	0	2
Alder (Red)	0	0	0	926	926
Maple	0	0	0	18	18
Total	7,579	2,925	413	944	11,861



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

Expected Log Markets: Tillamook, Garibaldi, Warrenton, Hoquiam, Mist, Banks.

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% Brand and Paint: \$1/MBF x 11,861 MBF = \$11,861

Additional Rigging time for Area 4A: 80 hrs x \$25/hr = \$2,000

Additional Bucking for Blowdown Areas: 10 days of one faller @ \$400/day = \$4,000

Slash & Landing Piling (includes Move-In and Pile Materials) = \$25,370 (see attached appraisal)

Additional Fire Hose: 1000' X \$1/ft = \$1,000

Machine Washing for Invasive Weed Control = \$4,000

TOTAL Other Costs (with Profit & Risk to be added) = \$48,231

Other Costs (No Profit & Risk added):

"Logger's Choice" Landings in Areas 1 and 2: 6 landings x

\$338/landing = \$2,028

"Logger's Choice" Landing Rock Haul and Spreading: 6 landings x

80cy 6"-0" pit run per landing = 480cy, 480 cy x \$5.00/cy = \$2,400

Rock Royalty to McCracken = \$19,672.50

TOTAL Other Costs (No Profit & Risk added) = \$24,100.50



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logging conditions

combination#: 1

Douglas - Fir	17.33%
Western Hemlock / Fir	34.93%
Sitka Spruce	40.00%
Red Cedar	40.00%
Alder (Red)	23.50%

yarding distance: Long (1,500 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: 10.0 **bd. ft / load:** 4,500
cost / mbf: \$85.04

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

combination#: 2

Douglas - Fir	26.56%
Western Hemlock / Fir	52.52%
Sitka Spruce	60.00%
Red Cedar	60.00%
Alder (Red)	35.66%
Maple	1.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process:** Feller Buncher
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 6.0 **bd. ft / load:** 4,500
cost / mbf: \$53.28

machines: Feller Buncher w/ Delimber

combination#: 3

Douglas - Fir	56.12%
Western Hemlock / Fir	12.56%
Alder (Red)	40.84%
Maple	99.00%

yarding distance: Long (1,500 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: 9.0 **bd. ft / load:** 4,500
cost / mbf: \$94.49

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



"STEWARDSHIP IN FORESTRY"

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logging costs

Operating Seasons:	2.00	Profit Risk:	15.00%
Project Costs:	\$734,461.00	Other Costs (P/R):	\$48,231.00
Slash Disposal:	\$0.00	Other Costs:	\$24,100.50

Miles of Road

Road Maintenance: \$3.15

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	4.4
Western Hemlock / Fir	\$0.00	2.0	4.0
Sitka Spruce	\$0.00	1.0	4.2
Red Cedar	\$0.00	1.0	3.2
Alder (Red)	\$0.00	2.0	3.5
Maple	\$0.00	1.0	3.5



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$81.91	\$3.24	\$0.74	\$79.38	\$4.07	\$25.40	\$0.00	\$5.00	\$2.03	\$201.77
Western Hemlock / Fir									
\$69.55	\$3.31	\$0.74	\$89.02	\$4.07	\$25.00	\$0.00	\$5.00	\$2.03	\$198.72
Sitka Spruce									
\$65.98	\$3.31	\$0.74	\$169.56	\$4.07	\$36.55	\$0.00	\$5.00	\$2.03	\$287.24
Red Cedar									
\$65.98	\$3.40	\$0.74	\$228.92	\$4.07	\$45.47	\$0.00	\$5.00	\$2.03	\$355.61
Alder (Red)									
\$77.57	\$3.31	\$0.74	\$101.73	\$4.07	\$28.11	\$0.00	\$5.00	\$2.03	\$222.56
Maple									
\$94.08	\$3.31	\$0.74	\$203.48	\$4.07	\$45.85	\$0.00	\$5.00	\$2.03	\$358.56

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$521.62	\$319.85	\$0.00
Western Hemlock / Fir	\$0.00	\$423.17	\$224.45	\$0.00
Sitka Spruce	\$0.00	\$400.08	\$112.84	\$0.00
Red Cedar	\$0.00	\$945.00	\$589.39	\$0.00
Alder (Red)	\$0.00	\$550.00	\$327.44	\$0.00
Maple	\$0.00	\$450.00	\$91.44	\$0.00



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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	3,786	\$319.85	\$1,210,952.10
Western Hemlock / Fir	7,010	\$224.45	\$1,573,394.50
Sitka Spruce	119	\$112.84	\$13,427.96
Red Cedar	2	\$589.39	\$1,178.78
Alder (Red)	926	\$327.44	\$303,209.44
Maple	18	\$91.44	\$1,645.92

Gross Timber Sale Value

Recovery: \$3,103,808.70

Prepared by: John Tillotson

Phone: 503-325-5451

Site Prep Appraisal

Sale Number: 341-13-49
Sale Name: Salty Dog
Date: 04/20/2012

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	1.0	3.0
Hemlock/Fir	B	1.3	4.5
Hemlock/Spruce	C	1.5	5.0
Hemlock	D	1.5	5.0
Conifer/Hardwood	E	1.3	4.0

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	D	73	109.5	\$110.00	\$12,045.00
2	MC	D	30	45	\$110.00	\$4,950.00
3	MC	D	9	13.5	\$110.00	\$1,485.00
4	MC	A	1	1	\$110.00	\$110.00
4A	MC	D	0	0	\$110.00	\$0.00

Sub Total = \$18,480.00

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	3	\$220.00	\$660.00	365	\$5.00	\$1,825.00
2	4	\$220.00	\$880.00	150	\$5.00	\$750.00
3	3	\$220.00	\$660.00	45	\$5.00	\$225.00
4	3	\$220.00	\$660.00	3	\$5.00	\$15.00
4A	1	\$220.00	\$220.00	0	\$5.00	\$0.00

*Cost includes separating firewood

Sub Total = \$5,000.00

Move-In Allowance	Number of Move-In's	Total Move-In Allowance	
\$945.00	2	\$1,890.00	
			Sub Total = \$1,890.00

Grand Total = \$25,370.00

Harvest Road Maintenance Cost Summary

Sale: Salty Dog
 Date: 20-Apr-12
 By: John Tillotson

MBF: 11,861
 \$/MBF: \$3.15

FL

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	Production Rates			
Progressive Operations 1st entry	Grader 14G	\$675	1	28	\$83	\$2,999	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 10CY x 2	\$282	2	8	\$73	\$1,450	Grader	2.5	7.0	2.8
	FE Loader C966	\$675	1	4	\$77	\$983				
Progressive Operations 2 entry	Grader 14G	\$675	1	28	\$83	\$2,999	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 10CY x 2	\$282	2	8	\$73	\$1,450	Grader	2.5	7.0	2.8
	FE Loader C966	\$675	1	4	\$77	\$983				
Final Road Maintenance	Grader 14G	\$675	1	89	\$93	\$8,952	Production Rates	Miles/day	Distance(miles)	Days
	Dump Truck 10CY x 4	\$564	4	8	\$73	\$2,900	Grader	1.5	13.4	8.9
	FE Loader C966	\$675	1	4	\$77	\$983	Vibratory Roller*	1.5	13.4	8.9
	Vibratory Roller	\$675	1	89	\$72	\$7,083				
	Water Truck 2,500 gallon	\$165	1	72	\$83	\$6,141				
	Labor	\$0	1	10	\$38	\$380				
Total						\$37,303				

*Final Road Maintenance Only

Assumptions:
 Haul Route - via Keesler Ridge Road, Hopin Home Road, Sweehome Road, and NF Nehalem Road.

Interim Road Maintenance half of haul route each entry

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Salty Dog

ROAD CONSTRUCTION:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	1A-1B, 1C-1D, 3A-3B, 3C-3D, 3E-3F, 4A-4B, 4C-4D	83.85	\$179,036
	TOTALS	83.85	1.59 Miles
			\$179,036

ROAD IMPROVEMENT:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 2 & 3, Sale Access Road Improvement	15-16, 17-18, 19- 110, 111-112	289.17	5.48
Project No. 3, NF Road Improvement	11-12	171.67	3.25
	TOTALS	460.84	8.73 Miles
			\$101,049

SPECIAL PROJECTS:

	<u>Description</u>	<u>Cost</u>
Project No. 4	Fish Passable Box Culvert Installation I3-I4	\$45,402
Project No. 5	Rector Ridge Crushing	\$234,518
	Keesler Stockpile Site Construction	\$19,133
Project No. 6	North Fork Crushing	\$143,207
Project No. 7	Road Vacating V1-V2	\$1,531
Project Road Maintenance	Project Road Maintenance	\$3,804
	TOTAL	\$447,595

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
Dozer (D8)	\$1,220.00
Excavator (C330)	\$1,220.00
Excavator (C315)	\$699.00
Dump Trucks (12cy x 3)	\$423.00
Dump Trucks (Off Road)	\$119.00
F E Loader	\$675.00
Grader (14G)	\$675.00
Vibratory Roller	\$675.00
Rubber Tire Skidder (C518)	\$622.00
Water Truck (2,500 gallon)	\$165.00
(I3-I4) C330 Excavator	\$288.00
TOTAL	\$6,781

GRAND TOTAL **\$734,461**

Compiled By: C.Bangs Date: 04/27/2012

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Salty Dog
ROADS: 1A-1B (16+50), 1C-1D (10+50), 3A-3B (25+10)
 3C-3D (10+00), 3E-3F (2+00), 4A-4B (16+00), 4C-4D (3+75)

NEW CONSTRUCTION: 83.85 STATIONS
IMPROVEMENT: STATIONS
 1.59 MILES
 MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W	8.80	x	\$1,161.00	=	\$10,216.80
Endhaul Clearing Debris				=	
3A-3B (Sta. 0+00 to 5+00, 15+00 to Sta. 17+00)	0.80				
4A-4B (Sta. 3+80 to 12+50)	0.90				
(C330 x 20 hr, OR Dump Truck x 20 hr)			\$5,260.00	=	\$5,260.00

SUB TOTAL FOR CLEARING & GRUBBING

\$15,477

EXCAVATION

	Material	Cy/amount	x	Rate	=	Cost
0+00 to 16+50	1A-1B				=	
	Balanced Construction Field Design \$/sta.	16.50	x	\$106.00	=	\$1,749.00
	Landing Construction (14+50, 1B)	2.00	x	\$338.00	=	\$676.00
0+00 to 10+50	1C-1D					
	Balanced Construction Field Design \$/sta.	10.50	x	\$106.00	=	\$1,113.00
	Landing Construction (1D)	1.00	x	\$338.00	=	\$338.00
0+00 to 25+10	3A-3B					
	Common drift excavation \$/cy (includes drift to fill on 3E to 3F)	4,190.00	x	\$1.60	=	\$6,704.00
	Embankment compaction \$/cy	3,152.00	x	\$0.60	=	\$1,891.20
	Drill and Shoot (Sta. 15+00 to Sta. 17+00) \$/cy	2,231.00	x	\$5.90	=	\$13,162.90
	Ripping (Sta. 0+00 to 5+00, 10+00 to 12+00, 21+50 to 22+50) \$/cy	5,356.00	x	\$2.30	=	\$12,318.80
	End haul excavation \$/cy 5000' (To waste area/stockpile site)	5,081.00	x	\$3.50	=	\$17,783.50
	End haul excavation \$/cy 5000' (Pit-run/Riprap to roads)	5,495.00		\$3.50	=	\$19,232.50
	Free Draining Fill Construction (C330 Excavator hrs.)	10.00	x	\$144.00	=	\$1,440.00
	(Sta. 6+00 to 7+00, 9+30 to 11+00, 12+00 to 13+50, 21+00 to 22+60)					
	Fill Armor Placement (C330 Excavator hrs.)	12.00	x	\$144.00	=	\$1,728.00
	Cutslope Rounding \$/sta.	17.00	x	\$37.00	=	\$629.00
	Landing Construction (3B)	1.00	x	\$338.00	=	\$338.00
0+00 to 10+00	3C-3D					
	End haul excavation \$/cy 5000' (To waste area)	1,840.00	x	\$3.50	=	\$6,440.00
	Balanced Construction Field Design \$/sta.	7.00	x	\$106.00	=	\$742.00
	Cutslope Rounding \$/sta.	3.00	x	\$37.00	=	\$111.00
	Landing Construction (7+75, 3D)	2.00	x	\$338.00	=	\$676.00
0+00 to 2+00	3E-3F					
	Common drift excavation \$/cy	70.00	x	\$1.60	=	\$112.00
	Embankment compaction \$/cy (from 3A to 3B)	1,038.00	x	\$0.60	=	\$622.80
	Free Draining Fill Construction (C330 Excavator hrs.) Sta. 0+00 to 0+50	4.00	x	\$144.00	=	\$576.00
	Fill Armor Placement (C330 Excavator hrs.)	3.00	x	\$144.00	=	\$432.00
	Turnaround Construction (3F) (D8 hrs.)	1.00	x	\$147.00	=	\$147.00
0+00 to 16+00	4A-4B					
	Common drift excavation \$/cy	1,573.00	x	\$1.60	=	\$2,516.80
	Embankment compaction \$/cy	1,986.00	x	\$0.60	=	\$1,191.60
	Ripping (Sta. 3+80 to 11+00) \$/cy	1,178.00	x	\$2.30	=	\$2,709.40
	End haul excavation \$/cy 5000' (For construction or to waste area)	670.00		\$3.50	=	\$2,345.00
	Cutslope Rounding \$/sta.	1.00	x	\$37.00	=	\$37.00
	Landing Construction (4B)	1.00	x	\$338.00	=	\$338.00
0+00 to 3+75	4C-4D					
	Common drift excavation \$/cy	1,000.00	x	\$1.60	=	\$1,600.00
	Embankment compaction \$/cy	1,000.00	x	\$0.60	=	\$600.00
	Ripping (Sta. 1+40 to 3+75) \$/cy	1,064.00	x	\$2.30	=	\$2,447.20
	End haul excavation \$/cy 5000' (To waste area or rds/stockpile site)	1,721.00	x	\$3.50	=	\$6,023.50
	Cutslope Rounding \$/sta.	2.00	x	\$37.00	=	\$74.00
	Landing Construction (4D)	1.00	x	\$338.00	=	\$338.00

SUB TOTAL FOR EXCAVATION

\$109,183

CULVERT MATERIALS AND INSTALLATION											
	Location	Dia/type	Lineal ft.	Rate	Cost		Location	Dia/type	Lineal ft.	Rate	Cost
1A-1B	1+00	18"CPP	30	\$17.64	\$529.20						
	5+00	18"CPP	30	\$17.64	\$529.20						
1C-1D	2+00	18"CPP	30	\$17.64	\$529.20						
	4+00	18"CPP	30	\$17.64	\$529.20						
	6+00	18"CPP	30	\$17.64	\$529.20						
	8+00	18"CPP	30	\$17.64	\$529.20						
3A-3B	2+75	18"CPP	30	\$17.64	\$529.20						
	7+00	18"CPP	40	\$17.64	\$705.60						
	9+50	18"CPP	40	\$17.64	\$705.60						
	10+90	18"CPP	60	\$17.64	\$1,058.40						
	12+70	24"CPP	40	\$24.64	\$985.60						
	13+60	18"CPP	40	\$17.64	\$705.60						
	18+40	18"CPP	30	\$17.64	\$529.20						
	21+40	18"CPP	40	\$17.64	\$705.60						
	22+60	18"CPP	40	\$17.64	\$705.60						
3C-3D	0+50	18"CPP	40	\$17.64	\$705.60						
	8+00	18"CPP	40	\$17.64	\$705.60						
Other/miscellaneous:						Description	Quantity	Rate	Cost		
						Dissipator Construction (C315 hrs.)	4.00	\$94.00	\$376.00		
						Free Draining Fill Fabric 10 oz. non-woven \$/lf	900.00	\$2.50	\$2,250.00		
						Labor - Free Draining Fill Construction	8.00	\$38.00	\$304.00		
Culvert stakes & markers:						Install 6' Fiberglass Markers @\$18.00 each	17	\$18.00	\$306.00		
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION											
Subtotal of Clearing, Exc., Culv.											

\$14,453

\$139,113

SURFACING						Stations/ amount	x	Rate/ sta/amt	Cost	
Subgrade prep: Description										
Grade, Shape and Ditch 16'						83.85	x	\$21.55	\$1,806.97	
Subgrade Compaction						83.85	x	\$17.52	\$1,469.05	

ROAD SEGMENT 1A to 1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A to 1B		0+00 to 16+50					
				Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	0+00 to 16+50	7	station	44	stations	16.50	726	\$3.28	\$2,381	*Extra Haul
Base Rock	4"-0" Crushed	0+00 to 16+50	4	station	25	stations	16.50	413	\$3.12	\$1,287	
Junctions	6"-0" Pit-run	0+00	7	junction	22	junctions	1	22	\$3.28	\$72	*Extra Haul
Junctions	4"-0" Crushed	0+00	4	junction	11	junctions	1	11	\$3.12	\$34	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	11	junctions	1	11	\$3.12	\$34	
Turnouts	6"-0" Pit-run	2+30, 8+00, 12+50	7	TO	22	TO's	3	66	\$3.28	\$216	*Extra Haul
Turnouts	4"-0" Crushed	2+30, 8+00, 12+50	4	TO	11	TO's	3	33	\$3.12	\$103	
Landings	6"-0" Pit-run	14+50, 1B	N/A	Landing	80	Landings	2	160	\$3.28	\$525	*Extra Haul
Total Rock for Road Segment:				1A to 1B				1,442			\$4,653

ROAD SEGMENT 1C to 1D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	1C to 1D		0+00 to 10+50					
				Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	0+00 to 10+50	7	station	44	stations	10.50	462	\$3.28	\$1,515	*Extra Haul
Base Rock	4"-0" Crushed	0+00 to 10+50	4	station	25	stations	10.50	263	\$3.12	\$819	
Junctions	6"-0" Pit-run	0+00	7	junction	22	junctions	1	22	\$3.28	\$72	*Extra Haul
Junctions	4"-0" Crushed	0+00	4	junction	11	junctions	1	11	\$3.12	\$34	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	11	junctions	1	11	\$3.12	\$34	
Turnouts	6"-0" Pit-run	5+00	7	TO	22	TO's	1	22	\$3.28	\$72	*Extra Haul
Turnouts	4"-0" Crushed	5+00	4	TO	11	TO's	1	11	\$3.12	\$34	
Turnarounds	6"-0" Pit-run	9+00	7	TA	22	TA's	1	22	\$3.28	\$72	*Extra Haul
Turnarounds	4"-0" Crushed	9+00	4	TA	11	TA's	1	11	\$3.12	\$34	
Landings	6"-0" Pit-run	1D	N/A	Landing	80	Landings	1	80	\$3.28	\$262	*Extra Haul
Total Rock for Road Segment:				1C to 1D				915			\$2,951

ROAD SEGMENT 3A to 3B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	3A to 3B		0+00 to 25+10					
				Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	0+00 to 2+75, 14+65 to 25+10	7	station	44	stations	13.20	581		*	*Haul in excavation cost
Base Rock	4"-0" Crushed	0+00 to 2+75, 14+65 to 25+10	4	station	25	stations	13.20	330	\$3.12	\$1,030	
Base Rock	4"-0" Crushed	2+75 to 14+65	8	station	50	stations	11.90	595	\$3.12	\$1,856	
Surfacing Rock	1 1/2"-0" Crushed	0+00 to 23+00	3	station	19	stations	23.00	437	\$3.12	\$1,363	
Junctions	6"-0" Pit-run	0+00	7	junction	22	junctions	1	22		*	*Haul in excavation cost
Junctions	4"-0" Crushed	0+00	4	junction	11	junctions	1	11	\$3.12	\$34	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	11	junctions	1	11	\$3.12	\$34	
Turnouts	6"-0" Pit-run	17+50, 19+25	7	TO	22	TO's	2	44		*	*Haul in excavation cost
Turnouts	4"-0" Crushed	17+50, 19+25	4	TO	11	TO's	2	22	\$3.12	\$69	
Turnouts	4"-0" Crushed	4+70, 8+90, 11+90	8	TO	22	TO's	3	66	\$3.12	\$206	
Turnouts	1 1/2"-0" Crushed	4+70, 8+90, 11+90, 17+50, 19+25	3	TO	11	TO's	5	55	\$3.12	\$172	
Turnarounds	6"-0" Pit-run	23+70	7	TA	11	TA's	1	11		*	*Haul in excavation cost
Turnarounds	4"-0" Crushed	23+70	4	TA	11	TA's	1	11	\$3.12	\$34	
Culvert Bedding/Backfill	1 1/2"-0" Crushed	7+00, 10+90, 12+70, 21+40, 22+60	N/A	culvert	N/A	culverts	N/A	300	\$12.46	\$3,738	
Free Drain Fill Rock	24"-6" Riprap	6+00 to 7+00, 9+30 to 11+00, 12+00 to 13+50, 21+00 to 22+60	N/A	N/A		N/A		500		*	*Haul in excavation cost
Fill Armor	24"-6" Riprap		N/A	N/A		N/A		610		*	*Haul in excavation cost
Dissipator	24"-6" Riprap	2+75, 7+00, 9+50, 10+90, 12+70, 13+60, 18+40, 21+40, 22+60	N/A	N/A		N/A		180		*	*Haul in excavation cost
Landings	6"-0" Pit-run	3B	N/A	Landing	80	Landings	1	80		*	*Haul in excavation cost
Total Rock for Road Segment:				3A to 3B				3,866			\$8,537

ROAD SEGMENT 3C to 3D			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	3C to 3D Volume (CY) per	0+00 to 10+00 Number of						
Base Rock	6"-0" Pit-run	0+00 to 10+00	7	station	44	stations	10.00	440		*	*Haul in excavation cost
Base Rock	4"-0" Crushed	0+00 to 10+00	4	station	25	stations	10.00	250	\$3.12	\$780	
Surfacing Rock	1 1/2"-0" Crushed	0+00 to 4+00	3	station	19	stations	4.00	76	\$3.12	\$237	
Junctions	6"-0" Pit-run	0+00	7	junction	22	junctions	1	22		*	*Haul in excavation cost
Junctions	4"-0" Crushed	0+00	4	junction	11	junctions	1	11	\$3.12	\$34	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	11	junctions	1	11	\$3.12	\$34	
Landings	6"-0" Pit-run	7+75, 3D	N/A	Landing	80	Landings	2	160		*	*Haul in excavation cost
Total Rock for Road Segment:			3C to 3D				970		\$1,086		
ROAD SEGMENT 3E to 3F			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	3E to 3F Volume (CY) per	0+00 to 2+00 Number of						
Base Rock	4"-0" Crushed	0+00 to 2+00	8	station	50	stations	2.00	100	\$3.12	\$312	
Surfacing Rock	1 1/2"-0" Crushed	0+00 to 2+00	3	station	19	stations	2.00	38	\$3.12	\$119	
Junctions	4"-0" Crushed	0+00	8	junction	22	junctions	1	22	\$3.12	\$69	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	11	junctions	1	11	\$3.12	\$34	
Turnarounds	4"-0" Crushed	3F	8	turnaround	11	turnarounds	1	11	\$3.12	\$34	
Free Drain Fill Rock	24"-6" Riprap	0+00 to 0+50	N/A	N/A		N/A		150		*	*Haul in excavation cost
Fill Armor	24"-6" Riprap		N/A	N/A		N/A		220		*	*Haul in excavation cost
Total Rock for Road Segment:			3E to 3F				552		\$568		
ROAD SEGMENT 4A to 4B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	4A to 4B Volume (CY) per	0+00 to 16+00 Number of						
Base Rock	6"-0" Pit-run	0+00 to 16+00	7	station	44	stations	16.00	704		*	*Haul in excavation cost
Base Rock	4"-0" Crushed	0+00 to 16+00	4	station	25	stations	16.00	400	\$3.12	\$1,248	
Turnouts	6"-0" Pit-run	2+30, 10+70, 12+50	7	TO	22	TO's	3	66		*	*Haul in excavation cost
Turnouts	4"-0" Crushed	2+30, 10+70, 12+50	4	TO	11	TO's	3	33	\$3.12	\$103	
Junctions	6"-0" Pit-run	0+00	7	junction	22	junctions	1	22		*	*Haul in excavation cost
Junctions	4"-0" Crushed	0+00	4	junction	11	junctions	1	11	\$3.12	\$34	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	11	junctions	1	11	\$3.12	\$34	
Landings	6"-0" Pit-run	14+00, 4B	N/A	Landing	80	Landings	2	160		*	*Haul in excavation cost
Total Rock for Road Segment:			4A to 4B				1,407		\$1,420		
ROAD SEGMENT 4C to 4D			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost		
Application	Rock Size and Type	Location	Depth of Rock (inches)	4C to 4D Volume (CY) per	0+00 to 3+75 Number of						
Base Rock	6"-0" Pit-run	0+00 to 3+75	7	station	44	stations	3.75	165		*	*Haul in excavation cost
Base Rock	4"-0" Crushed	0+00 to 3+75	4	station	25	stations	3.75	94	\$3.12	\$293	
Surfacing Rock	1 1/2"-0" Crushed	0+00 to 3+00	3	station	19	stations	3.00	57	\$3.12	\$178	
Junctions	6"-0" Pit-run	0+00	7	junction	66	junctions	1	66		*	*Haul in excavation cost
Junctions	4"-0" Crushed	0+00	4	junction	44	junctions	1	44	\$3.12	\$137	
Junctions	1 1/2"-0" Crushed	0+00	3	junction	44	junctions	1	44	\$3.12	\$137	
Curve Widening	6"-0" Pit-run		12	N/A		N/A		80		*	*Haul in excavation cost
Landings	6"-0" Pit-run	4D	N/A	Landing	80	Landings	1	80		*	*Haul in excavation cost
Total Rock for Road Segment:			4C to 4D				630		\$745		
*Pit-run/Riprap generated from excavation on new roads. Haul cost included in excavation costs. Extra costs for haul beyond the waste area.											
Processing:			Description					No.sta	Rate/sta	Cost	
			Spread & Compact 6"-0" Pit-run (\$/cy)					3805	\$1.50	\$5,708	
			Water, Process & Compact: 4"-0"					84.00	\$49.02	\$4,118	
			Water, Process & Compact: 1 1/2"-0"					32.00	\$49.02	\$1,569	
			24"-6"	6"-0"pr	4"-0"	1 1/2"-0"	Total				
SUB TOTAL FOR SURFACING			1,660	4,285	2,763	1,073	9,781		9,781	\$34,628	
SPECIAL PROJECTS											
Description								Cost			
Develop waste area (scatter and pile stumps, level access road)								\$ 1,746			
(C330 Excavator 6hrs., D8 6hrs.)											
Shape/Compact Waste Area (6,419cy x \$0.30/cy)								\$ 1,926			
Seed and Mulching (Waste areas)								\$ 1,623			
SUB TOTAL FOR SPECIAL PROJECTS								\$5,295			
								Subtotal of Surfacing & Spec. Proj.			
								\$39,923			
								Subtotal of Clearing, Exc., Culv.			
								\$139,113			
GRAND TOTAL								\$179,036			

Compiled By: C.Bangs

Date: 04/13/2012

CRUSHED ROCK COST

SALE NAME: Salty Dog
 PROJECT: New Construction
 QUARRY: Rector Ridge

MATERIAL: Crushed

DATE: 04/13/2012
 BY: C.Bangs

Segment	Stations	Cubic Yards						Misc	Total
		Base	Running	Turnout	Turnaround	Junction			
1A-1B	16.50	413		33		22			468
1C-1D	10.50	263		11	11	22			307
3A-3B	25.10	925	437	121	11	22			1,516
3C-3D	10.00	250	76			11			337
3E-3F	2.00	100	38		11	33			182
4A-4B	16.00	400		33		22			455
4C-4D	3.75	94	57			88			239
Grand Total	83.85	2,445	608	198	33	220			3,504

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
1A-1B	16.50	468			1	0.90	0.50	0.50	0.10	3.00
1C-1D	10.50	307			1	0.50	0.50	0.50	0.10	2.40
3A-3B	25.10	1,516					0.10	0.50	0.10	0.70
3C-3D	10.00	337					0.30	0.50	0.10	0.90
3E-3F	2.00	182					0.10	0.50	0.10	0.70
4A-4B	16.00	455						0.10	0.05	0.15
4C-4D	3.75	239						0.10	0.10	0.20
TOTAL	83.85	3,504								
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL					0.20	0.16	0.19	0.42	0.09	AVERAGE HAUL 1.07
Average Round Trip Distance (miles)										2.14

ROCK HAUL:

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

Ave haul: \$1.89 /cy
 Load: \$0.45 /cy
 Spread: \$0.78 /cy

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

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

Production: cy/day = 926

CRUSHED ROCK HAUL COSTS 3,504 cy @ \$3.12 /cy

PIT RUN ROCK COST

SALE NAME:	Salty Dog
PROJECT:	New Road Construction
QUARRY:	

MATERIAL: Pit Run

DATE: 04/13/2012
BY: C.Bangs

		Cubic Yards							
Segment	Stations	Base	Landing	Turnout	Turnaround	Junction		Misc	Total
1A-1B	16.50	726	160	66		22			974
1C-1D	10.50	462	80	22	22	22			608
Grand Total	27.00	1,188	240	88	22	44			1,582

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
1A-1B	16.50	974			1	0.70	0.50	0.60	0.15	2.95
1C-1D	10.50	608			0.5	0.60	0.50	0.55	0.15	2.30
TOTAL 27.00		1,582								AVERAGE HAUL 2.70
STA./NO.		CU. YD.								
CUBIC YARD WEIGHTED HAUL					0.81	0.66	0.50	0.58	0.15	

Average Round Trip Distance (miles) 5.40

ROCK HAUL:

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

*Ave haul:	\$3.28	/cy
Load:	*	/cy
Spread:	*	/cy

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

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

Production: cy/day = 533

PIT RUN ROCK HAUL COSTS

1,582 cy @ \$3.28 /cy

*Average haul is additional haul costs from waste area to new roads.

*Loading costs included in excavation of new roads.

*Spreading cost included in Summary of Construction Costs

CRUSHED ROCK COST

SALE NAME:	Salty Dog
PROJECT:	New Construction
QUARRY:	Rector Ridge

DATE: 04/13/2012
BY: C.Bangs

		Cubic Yards							
Segment	Stations	Base	Running	Turnout	Turnaround	Junction		Misc	Total
3A-3B								300	300
Grand Total								300	300

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	
3A-3B		300			2	3.50	2.50	1.00	0.20	9.20

ROCK HAUL:

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

Ave haul:	\$8.65	/cy
Load:	\$2.02	/cy
Spread:	\$1.79	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>3</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 202

CRUSHED ROCK HAUL COSTS 300 cy @ \$12.46 /cy

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Salty Dog NEW CONSTRUCTION: STATIONS MILES
ROAD: I1-I2, I5-I6, I7-I8, I9-I10, and I11-I12 IMPROVEMENT: 461.84 STATIONS 8.75 MILES
POINTS: I1-I2 (171+67 sta), I3-I4 (1+00 sta), I5-I6 (234+73), I7-I8 (37+50), I9-I10 (1+45), I11-I12 (15+49 sta.)

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
(I11-I12) Hand Brushing (Hrs)	2	x	\$38.00	=	\$76.00

SUB TOTAL FOR CLEARING & GRUBBING

\$76

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
(I5-I6) Catch basin work C330 (Hrs)	1	x	\$144.00	=	\$144.00
Ditchout work C330 (Hrs)	1	x	\$144.00	=	\$144.00
Improve Turnout work C330 (Hrs)	0.5	x	\$144.00	=	\$72.00
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION

\$360

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
(I5-I6) 78+78	18" CPP	40	\$17.64	\$705.60	(I5-I6) 114+59	18" CPP	40	\$17.64	\$705.60
(I5-I6) 86+33	18" CPP	40	\$17.64	\$705.60	(I5-I6) 153+81	18" CPP	40	\$17.64	\$705.60
(I5-I6) 89+65	18" CPP	40	\$17.64	\$705.60	(I7-I8) 0+70	18" CPP	32	\$17.64	\$564.48
					(I7-I8) 7+80	18" CPP	40	\$17.64	\$705.60
					(I7-I8) 18+45	18" CPP	40	\$17.64	\$705.60
					(I7-I8) 23+90	18" CPP	40	\$17.64	\$705.60

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	(I5-I6) 7, (I7-I8) 4	11	\$18.00	\$198.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$6,407

Subtotal of Clearing, Exc., Culv.

\$6,843

SURFACING	I1-I2,I3-I4,I5-I6,I7-I8,I9-I10,I11-I12		Stations/		Rate/	
	Subgrade prep: Description		amount	x	sta/amt	Cost
	Grade, Shape and Ditch 16'		460.84	x	\$21.55	\$9,931.10
	Subgrade Compaction		460.84	x	\$17.52	\$8,073.92
	Re-establish Ditchline		18.89	x	\$42.50	\$802.83
	Stob removal (I5 to I6)		184.10	x	\$21.55	\$3,967.36
	Sod Removal (I11 to I12)		15.49	x	\$19.89	\$308.10

ROAD SEGMENT I1 to I2				POINT TO POINT I1 to I2		Sta. to Sta. 0+00 - 171+67		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Surface Rock	11/2"-0" crushed		4	station 25	stations	171.67		4,292	\$2.96	\$12,704
Junctions	11/2"-0" crushed		4	junction 11	junctions	9		99	\$2.96	\$293
Turnouts	11/2"-0" crushed		4	turnout 11	turnouts	22		242	\$2.96	\$716
Leveling Rock	11/2"-0" crushed		n/a	load 11	loads	17		187	\$2.96	\$554
Curve Widening	11/2"-0" crushed		4	curve n/a	curves	18		265	\$2.96	\$784
Total Rock for Road Segment: I1 to I2								5,085		
ROAD SEGMENT I5 to I6				POINT TO POINT I5 to I6		Sta. to Sta. 0+00 - 234+73		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Leveling Rock	11/2"-0" crushed		n/a	load 11	loads	34		374	\$3.53	\$1,320
Surface Rock	11/2"-0" crushed		3	station 19	stations	234.73		4,460	\$3.53	\$15,743
Raise grade	11/2"-0" crushed	137+77	n/a	station n/a	stations	0.62		44	\$3.53	\$155
Stockpile Site entrance	11/2"-0" crushed	153+19	n/a	Station n/a	stations	n/a		20	\$3.53	\$71
Junctions	11/2"-0" crushed		3	junction 20	junctions	10		200	\$3.53	\$706
Culvert Bedding/Backfill	11/2"-0" crushed		n/a	culvert 33	culverts	5		165	\$3.53	\$582
Curve Widening	11/2"-0" crushed		3	curve n/a	curves	52		415	\$3.53	\$1,465
Turnouts	11/2"-0" crushed		3	turnout 8	turnouts	30		240	\$3.53	\$847
Dissipators	24"-6" riprap		n/a	culvert 10	culverts	2		20	\$4.80	\$96
Total Rock for Road Segment: I5 to I6								5,938		
ROAD SEGMENT I7 to I8				POINT TO POINT I7 to I8		Sta. to Sta. 0+00 - 37+50		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed		8	station 50	stations	37.50		1875	\$3.53	\$6,619
Leveling Rock	4"-0" crushed		n/a	load 11	loads	8		88	\$3.53	\$311
Turnouts	4"-0" crushed		8	turnout 22	turnouts	3		66	\$3.53	\$233
Turnarounds	4"-0" crushed		8	turnaround 20	turnarounds	1		20	\$3.53	\$71
Curve Widening	4"-0" crushed		8	curve n/a	curves	7		44	\$3.53	\$155
Culvert Bedding/Backfill	11/2"-0" crushed		n/a	culvert 33	culverts	4		132	\$3.53	\$466
Dissapators	24"-6" riprap		n/a	culvert n/a	culverts	4		70	\$4.80	\$336
Total Rock for Road Segment: I7 to I8								2,295		
ROAD SEGMENT I9 to I10				POINT TO POINT I9 to I10		Sta. to Sta. 0+00 - 1+45		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed		8	station 50	stations	1.45		73	\$3.53	\$256
Turnouts	4"-0" crushed		8	turnout 22	turnouts	1		22	\$3.53	\$78
Total Rock for Road Segment: I9 to I10								95		
ROAD SEGMENT I11 to I12				POINT TO POINT I11 to I12		Sta. to Sta. 0+00 - 15+49		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Leveling Rock	1 1/2"-0" crushed		n/a	load 11	loads	5		55	\$3.53	\$194
Total Rock for Road Segment: I11 to I12								55		
				Gradation		# Lifts	# Sta.'s	Rate/sta	Cost	
				Water, Process & Compact:		(11/2"-0")	1	421.89	\$49.02	
				Water, Process & Compact:		(4"-0")	2	38.95	\$49.02	
				1 1/2"-0"	4"-0"	24"-6"	36"-12"	36"-24"	Total	
				11,190	2,188	90			13,467	
SUB TOTAL FOR SURFACING										\$94,206

SPECIAL PROJECTS		Description	Cost
SUB TOTAL FOR SPECIAL PROJECTS			\$0
GRAND TOTAL		Subtotal of Surfacing & Spec. Proj.	\$94,206
		Subtotal of Clearing, Exc., Culv.	\$6,843
			\$101,049

Compiled By: d.mellison

Date: 04/13/12

CRUSHED ROCK COST

SALE NAME:	Salty Dog
PROJECT:	I1 to I2, I3 to I4
QUARRY:	North Fork Quarry

MATERIAL: Crushed

DATE: 04/13/12
BY: d.mellison

		Backfill/ Base	Surfacing	Turnout	Curves	Junction	Foot/Wings	Leveling	Total
Segment	Stations								
I1 to I2	171+67		4,292	242	265	99		187	5,085
I3 to I4	1+00	550	25				22		597
Grand Total		550	4,317	242	265	99	22	187	5,682

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	
I1 to I2	171+67	5,085			0.20	0.93	0.30	0.10	0.10	1.63
I3 to I4	1+00	597			0.30	0.91	0.30	0.10	0.10	1.71
TOTAL		5,682								AVERAGE HAUL 1.64
STA./NO.		CU. YD.			0.21	0.93	0.30	0.10	0.10	
CUBIC YARD WEIGHTED HAUL										
Average Round Trip Distance (miles)									3.28	

ROCK HAUL:

Truck type: D20 No. trucks: 3
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$1.79	/cy
Load:	\$0.45	/cy
Spread:	\$0.73	/cy

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

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

Production: cy/day = 1,263

CRUSHED ROCK HAUL COSTS 5,682 cy @ \$2.96 /cy

RIP RAP ROCK COST

SALE NAME: Salty Dog
PROJECT: I3 to I4
QUARRY: North Fork Quarry

MATERIAL: Rip Rap

DATE: 04/13/12
BY: d.mellison

		Cubic Yards							
Segment	Stations	Dissapator	Armor	F. Armor	Retention	Bank Armor	subbase	Misc	Total
13 - 14				20	20	44	55		139
Grand Total				20	20	44	55		139

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	
I3 - I4		139			0.30	0.91	0.30	0.10	0.10	1.71
TOTAL		139								AVERAGE
STA./NO.		CU. YD.			0.30	0.91	0.30	0.10	0.10	HAUL
CUBIC YARD WEIGHTED HAUL										1.71
Average Round Trip Distance (miles)									3.42	

ROCK HAUL:

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

Ave haul:	\$2.15	/cy
Load:	\$1.01	/cy
Develop:		/cy

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

Production: cy/day = 544

RIP RAP ROCK HAUL COSTS 139 cy @ \$3.16 /cy

CRUSHED ROCK COST

SALE NAME: Salty Dog
 PROJECT: Stockpile Site, I5-I6, I7-I8, I9-I10, I11-I12 MATERIAL: Crushed
 QUARRY: Rector Ridge

DATE: 03/01/12
 BY: d.mellison

Segment	Stations	Base	Surfacing	Turnout	Curves	Jct/TA	Bedding	Leveling	Total
I5 to I6	234+73		4,504	240	415	220	165	374	5,918
I7 to I8	37+50	1,875		66	44	20	132	88	2,225
I9 to I10	1+45	73		22					95
Stockpiling		10,000							10,000
SP site Constr		36	22						58
I11 to I12								55	55
Grand Total		11,984	4,526	328	459	240	297	517	18,351

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
I5 to I6	234+73	5,918				0.52	1.50	0.10	0.10	2.22
I7 to I8	37+50	2,225				0.85	0.50	0.10	0.10	1.55
I9 to I10	1+45	95				0.85	0.60	0.10	0.10	1.65
Stockpiling		10,000				0.85	0.50	0.10	0.10	1.55
SP site Constr		58				0.85	0.50	0.10	0.10	1.55
I11 to I12		55				0.85	0.65	0.10	0.10	1.70
TOTAL		18,351								
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL						0.74	0.82	0.10	0.10	AVERAGE HAUL 1.77
Average Round Trip Distance (miles)									3.53	

ROCK HAUL:

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

Ave haul: \$2.36 /cy
 Load: \$0.45 /cy
 Spread: \$0.73 /cy

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

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

Production: cy/day = 1,487

CRUSHED ROCK HAUL COSTS 18,351 cy @ \$3.53 /cy

PIT RUN ROCK COST

SALE NAME:	Salty Dog
PROJECT:	5
QUARRY:	Rector Ridge

MATERIAL: Pit Run

DATE: 04/13/12
BY: d.mellison

		Cubic Yards							
Segment	Stations	Base	Landing	Turnout	Turnaround	Junction		Misc	Total
Stockpile site		2,500							2,500
Grand Total		2,500							2,500

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	
Stockpile site		2,500				0.65	0.30	0.10	0.10	1.15
TOTAL		2,500								AVERAGE HAUL
STA./NO.		CU. YD.				0.65	0.30	0.10	0.10	1.15
CUBIC YARD WEIGHTED HAUL										
Average Round Trip Distance (miles)									2.30	

ROCK HAUL:

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

*Ave haul: \$1.79 /cy
*Load: /cy
Spread: \$0.45 /cy

Truck type:	<u>D12</u>	No. trucks:	<u>5</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 1,632

PIT RUN ROCK HAUL COSTS	2,500 cy @	\$2.24 /cy
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*Average haul is additional haul costs from waste area to stockpile site.

*Loading costs included in excavation of new roads.

RIP RAP ROCK COST

SALE NAME:	Salty Dog
PROJECT:	15 to 16, 17 to 18
QUARRY:	Rector Ridge

MATERIAL: Rip Rap

DATE: 03/01/12
BY: d.mellison

		Cubic Yards							
Segment	Stations	Dissapator	Armor					Misc	Total
15 to 16	234+73	20							20
17 to 18	37+50	70							70
Grand Total		90							90

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	
15 to 16	234+73	20				0.52	1.50	0.10	0.10	
17 to 18	37+50	70				0.85	0.50	0.10	0.10	
TOTAL		90								AVERAGE HAUL
STA./NO.		CU. YD.				0.78	0.72	0.10	0.10	1.70
CUBIC YARD WEIGHTED HAUL						Average Round Trip Distance (miles)				3.40

ROCK HAUL:

Truck type:	<u>D12</u>	No. trucks:	<u>1</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>
Truck type:	<u>D10</u>	No. trucks:	<u>1</u>
Delay min.:	<u>5</u>	Efficiency:	<u>85%</u>

Ave haul:	\$2.28	/cy
Load:	\$2.52	/cy
Develop:		/cy

Production: cy/day = 255

RIP RAP ROCK HAUL COSTS 90 cy @ \$4.80 /cy

Sale Name: Salty Dog
Project: No. 4 (I3 to I4)
Project Type: F Stream Crossing

Tributary North Fork Nehalem BOX CULVERT

Prepared by: d.mellison

Date: 04/13/12

Phase I: Dewatering System

Qty.	Equipment/Activity	Qty	(\$/Qty)	Hours	Cost (\$)
135	Sandbags		\$0.60		\$81.00
	Sand purchased and loaded	10	\$12.50		\$125.00
	Dump truck to pickup/deliver sand for sandbags		\$73.00	4	\$292.00
2	Fill sandbags (labor)		\$38.00	3	\$228.00
	Visqueen	2	\$50.00		\$100.00
2	Place sandbags & visqueen (labor)		\$38.00	3	\$228.00
	Place sandbags (C330 Excavator)		\$144.00	1.5	\$216.00
	Volume Pump		\$9.00	27	\$243.00
	Service pump/set up night system		\$38.00	6	\$228.00
	Remove dewatering system (C330)		\$144.00	1	\$144.00
	Remove dewatering system (Labor)		\$38.00	3	\$114.00
					\$1,999.00

Phase II: Development of Footing/wing wall bed

Qty.	Equipment/Activity	Qty (Cy)	(\$/Cy)	Hours	(\$/Hr)	Cost (\$)
	Salvage existing Riprap (C330)	111		3	\$144.00	\$432.00
	(D10)	111		3	\$73.00	\$219.00
	Salvage Existing Culvert (C330)			1	\$144.00	\$144.00
	Return to STATE (Pickup)			4	\$39.00	\$156.00
	(Labor)			4	\$38.00	\$152.00
	Excavate for footings/wings (C330)	433		4	\$144.00	\$576.00
2	(D10)	433		8	\$73.00	\$1,168.00
	Load, haul, dump footing/wing mat. (1½"-0")	22	Costs in (I3-I4) summary			
	Load,haul,dump footing/wing mat. (24'-6") Riprap	55	Costs in (I3-I4) summary			
	Spread footing/wing material (both gradations) (C330)			3	\$144.00	\$432.00
2	Laborer (spreading footing material) (Compacting)			3	\$38.00	\$228.00
	Footing geotextile	56	\$1.50			\$84.00
	Labor wrapping 1½"-0" crushed with geotextile			3	\$38.00	\$114.00
	Hand Held Tamper			2	\$9.00	\$18.00
						\$3,723.00

Phase III: Install box segments and Wing walls

Qty.	Equipment/Activity	Qty	(\$/Qty)	Hours	(\$/Hr)	Cost (\$)
	Unload/Set Footings (C330)			2	\$144.00	\$288.00
	(Labor)			2	\$38.00	\$76.00
1	Concrete Open Bottom Slab Culvert (HS-25 loading), 24' x 8'	24				\$20,400.00
2	Unload and set box components (C330)			3	\$144.00	\$864.00
	(Labor)			3	\$38.00	\$114.00
	Purchasing ecology blocks (6 footers)	32	\$50.00			\$1,600.00
	(4 footers)	18	\$35.00			\$630.00
	Transporting ecology blocks (Dump Truck/tilt trailer)			12	\$92.00	\$1,104.00
	Unloading ecology blocks (C330)			2.5	\$144.00	\$360.00
	(D10/Trailer)			2.5	\$92.00	\$230.00
2	(Labor)			2.5	\$38.00	\$190.00
	Placing Ecology Blocks (C330)			4	\$144.00	\$576.00
2	(Labor)			4	\$38.00	\$304.00
	Load/haul Select Backfill behind ecology blocks (1½"-0")	80	Costs in (I3-I4) summary			
	Place select backfill (C330)	80		6	\$144.00	\$864.00
	Hand held tamper			6	\$9.00	\$54.00
	(Labor)			6	\$38.00	\$228.00
	Geogrid	147	\$2.10			\$308.70
	(Labor)			8	\$38.00	\$304.00
	Grout mixing/pouring labor			3	\$38.00	\$114.00
	Joint Grouting (sacks)	20	\$22.14			\$442.80
2	Joint grouting labor			3.5	\$38.00	\$266.00
						\$29,317.50

Phase IV: Approach Backfills and Riprap placement

Qty.	Equipment/Activity	Qty	(\$/Qty)	Hours	(\$/Hr)	Cost (\$)
	Backfill with Select Borrow Material	406	\$2.07			\$840.42
	Hand Held Tamper	100		2	\$9.00	\$18.00
	Machine Compaction of structure embankment	306	\$0.60			\$183.60
	Labor	100		2	\$38.00	\$76.00
	Haul/Dump streambed retention riprap material (36"-12")	20	Costs in (I3-I4) summary			
	Haul/Dump streambank riprap material	44	Costs in (I3-I4) summary			
	Machine place hauled/salvaged fill/wing wall armor. (C330)	131		3	\$144.00	\$432.00
	(D10)			1.5	\$73.00	\$109.50
	Machine place channel armor (C330) (24"-6")	44		4	\$144.00	\$576.00
	Machine place streambed retention riprap (C330) (36"-12")	20		2	\$144.00	\$288.00
	Haul and dump Fill Armor	20	Costs in (I3-I4) summary			
	Haul and dump streambed material	14	Costs in (I3-I4) summary			
	Spread 4"-0" and develop streambed (C330)	14		2	\$144.00	\$288.00
						\$2,811.52

Phase V: Grade, Shape, Process and Mulching

Qty.	Equipment	Qty (Cy)	(\$/Cy)	Unit	(\$/Unit)	Cost (\$)
	Grade & Shape Approaches	1			\$21.55	\$21.55
	Process Crushed Rock	3			\$49.02	\$147.06
	Straw Mulch w/Seed Application)(Site and waste area)			0.15	\$1,173	\$175.95
						\$344.56

Phase VI: Crushed Rock and Riprap

ROAD SEGMENT I3 to I4				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) per		0+00 - 1+00 Number of				
Surface Rock	1 1/2"-0" crushed		4	station	25	stations	1	25	\$2.96	\$74
Footing base	1 1/2"-0" crushed		12"	footing	5.5	footings	2	11	\$2.96	\$33
Wingwall base	1 1/2"-0" crushed		24"	wing wall	n/a	wing walls	4	11	\$2.96	\$33
Ecology block backfill	1 1/2"-0" crushed		n/a	wing wall	n/a	wing walls	4	80	\$2.96	\$237
Select Backfill	4"-0" crushed		n/a	abutment	n/a	abutments	2	406	\$2.96	\$1,202
Streambed material	4"-0" crushed		n/a	n/a	n/a	n/a	n/a	14	\$2.96	\$41
Base Rock	4"-0" crushed		8	station	50	stations	1	50	\$2.96	\$148
Footing/wing wall subbase	24"-6" riprap		24	n/a	n/a	n/a	n/a	55	\$3.16	\$174
Streambank Armor	24"-6" riprap		n/a	n/a	n/a	n/a	n/a	44	\$3.16	\$139
New Fill Armor	24"-6" riprap		n/a	n/a	n/a	n/a	n/a	20	\$3.16	\$63
Streambed retention mat.	36"-12" riprap		n/a	n/a	n/a	n/a	n/a	20	\$3.16	\$63
Total Rock for Road Segment:				I3 to I4				736		\$2,206

Miscellaneous Costs

Qty.	Equipment	Qty.	\$	Hours	(\$/Hr.)	Cost (\$)
	Engineering Fees	1				\$5,000.00
						\$5,000.00

Total Project Cost = \$45,401.94

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 5

Timber Sale Name: Salty Dog

Quarry: Rector Ridge
 Location: Sw 1/4, Sec. 4, T3N, R8W
 County: Clatsop
 By: d.mellison
 Date: 04/13/2012

Swell: _____
 Shrink: 16%

Loading Hopper: No

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"	12%	CR			
1-1/2"-0"	5%	CR	6,500	6,878	14,418
4"-0"	5%	CR	4,000	4,952	9,592
6"-0"		PR			
24"-6"		RR		70	70
36"-12"		RR		20	20
TOTAL CUBIC YARDS OF ROCK:			10,500	11,920	24,100

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Dump Trucks	3	\$141	\$423				
Screening Plants	1	\$515	\$515				
D8 Cat	1	\$1,220	\$1,220				
D6 Cat	1	\$675	\$675	Loader	2	\$699	\$1,398
Drill & Compressor	1	\$1,180	\$1,180	Fire Truck	1	\$141	\$141
Powder	1	\$327	\$327	3 Stage Crusher	1	\$2,694	\$2,694
Excavator	1	\$1,220	\$1,220				

SUB TOTAL FOR MOBILIZATION

\$9,794

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,205	\$3,205
Screening Plants	1	\$273	\$273
Loading Hopper		\$273	
Original Calibration	1	\$507	\$507

SUB TOTAL FOR SET UP COSTS

\$3,985

TOTAL MOBILIZATION & SET UP COSTS

\$13,779

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Bench equipment access trail (pile & burn)	0.2	acres	\$2,345	\$469

TOTAL CLEARING & GRUBBING COSTS

\$469

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Bench access trail (C330)	8	hrs.	\$144.00	\$1,152
Rock source drill trails (C330)	8	hrs.	\$144.00	\$1,152

TOTAL EXCAVATION COSTS

\$2,304

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping			\$2.20	
crushed	24,010	100%	Drill & shoot	100%	25,301	\$2.30	\$58,191
pit run	0	0	Oversize red	1%	240	\$5.80	\$1,393
rip rap	90	0%	Other				
Total	24,100						
reject	1,201	5.0%					
TOTAL ROCK DEVELOPMENT COSTS							\$59,584

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	2	\$507.00	\$1,014
Calibrate			
Test	10	\$57.30	\$573
Test			
TOTAL CALIBRATION & TESTING COSTS			\$1,587

6) MOVING SHOT ROCK TO CRUSHER SITE

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Push Shot Rock to loading area (D8)	60	hrs.	\$147.00	\$8,820
Load pushed rock, (C330)	120	hrs.	\$144.00	\$17,280
Haul shot rock to crusher (D10)	120	hrs.	\$73.00	\$8,760
TOTAL SHOT ROCK TO CRUSHER SITE				\$34,860

7) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	25,211	\$0.74	\$18,712
TOTAL FEEDING & LOADING COSTS			\$18,712

8) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed					
1-1/2"-0"	crushed	14,418	3 stage	120	\$2.74	\$39,529
4"-0"	crushed	9,592	3 stage	140	\$2.35	\$22,541

TOTAL ROCK CRUSHING COSTS \$62,071

9) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader	1	\$90.00	\$90.00
Excavator		\$138.00	

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

\$90.00

SUB TOTAL \$90

HAUL & STOCKPILE

STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. Keesler Stockpile Site	4" & 1-1/2"		10,500	\$3.52	\$36,915 *

* Stockpile volume is weighted with the Improvement volumes to get the load and haul rate.

SUB TOTAL \$36,915

TOTAL STOCKPILING COSTS \$37,005

10) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	\$3,277
\$2.73 /CY 1,201 CY	
Compact the waste area 1,201 CY \$0.30	\$360
Final Quarry Maintenance, block and waterbar access roads, and slope to drain the quarry floor	
D8 Cat \$147.00 1.5 Hrs.	\$221
C330 \$144.00 2 Hrs.	\$288

TOTAL MISCELLANEOUS COSTS \$4,146

11) GRAND TOTAL: \$234,518

\$/Cubic Yard \$9.77

Footnotes:

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Salty Dog NEW CONSTRUCTION: _____ STATIONS _____ MILES
 ROAD: Keesler Stockpile Site Construction (Project No. 5) IMPROVEMENT: _____ STATIONS _____ MILES
 POINTS: _____

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
1. 4 acres (Pile & Burn)	1.4	x	\$2,345	=	\$3,283.00
		x		=	
		x		=	
		x		=	
SUB TOTAL FOR CLEARING & GRUBBING					\$3,283

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
Common Drift Excavation	3,742	x	\$1.60	=	\$5,987.20
Embankment Compaction	3,742	x	\$0.60	=	\$2,245.20
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
SUB TOTAL FOR EXCAVATION					\$8,232

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
					</				

\$11,515

SURFACING		Subgrade prep:		Description	Stations/ amount*	x	Rate/ sta/amt	Cost
				Keesler Ridge Stockpile site		x		\$0.00
						x		\$0.00

ROAD SEGMENT		Stockpile Site		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					
Base Rock	6"-0" pitrun		10	site	2500	sites	1	2,500	\$2.24	\$5,600
Entrance Junction	4"-0" crushed		10	junction	36	junctions	1	36	\$3.53	\$127
Entrance Junction	1 1/2"-0" crushed		4	junction	22	junctions	1	22	\$3.53	\$78
								0		\$0
Total Rock for Road Segment:				Stockpile Site				2,558		\$5,805

Stockpile site pitrun is produced and hauled from the new construction roads.

Processing:		Description	# hrs.	# Lifts	No. sta	Rate/sta	Cost
		Spread and machine compact pit-run	12			\$147.00	\$1,764
		Water, Process & Compact:		1	1	\$49.02	\$49.02

	6"-0"	4"-0"	1 1/2"-0"	Total
SUB TOTAL FOR SURFACING	2,500	36	22	2,558

\$7,618

SPECIAL PROJECTS		Description	Cost

SUB TOTAL FOR SPECIAL PROJECTS \$0

	Subtotal of Surfacing & Spec. Proj.	\$7,618
	Subtotal of Clearing, Exc., Culv.	\$11,515

GRAND TOTAL	\$19,133
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Compiled By: d.mellison

Date: 04/20/12

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 6 Timber Sale Name: Salty Dog
 Quarry: North Fork Quarry (Timber Sale Costs) Swell: _____
 Location: NE1/4, NE1/4, Section 26, T4N, R9W, W.M. Shrink: 16%
 County: Clatsop
 By: d.mellison Loading Hopper: No
 Date: 04/13/12

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"	2%	CR	6,000	6,512 *	13,472
4"-0"		CR		470	470
6"-0"		PR			
24"-6"		RR		119	119
36"		RR		20	20
TOTAL CUBIC YARDS OF ROCK:			6,000	7,121	14,081

Includes 300 cy (free draining fill) and 1,000 cy (North Fork Road Maintenance), both piles truck measure.

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Dump Trucks	3	\$141	\$423	Off Highway Dump Truck	1	\$515	\$515
Screening Plants	1	\$515	\$515				
D8 Cat	1	\$1,220	\$1,220				
D6 Cat	1	\$675	\$675	Loader	1	\$699	\$699
Drill & Compressor	1	\$1,180	\$1,180				
Powder	1	\$327	\$327	3 Stage Crusher	1	\$2,694	\$2,694
Excavator	1	\$1,220	\$1,220				
SUB TOTAL FOR MOBILIZATION				\$9,469			

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,205	\$3,205
Screening Plants		\$273	
Loading Hopper		\$273	
Original Calibration	1	\$507	\$507

SUB TOTAL FOR SET UP COSTS **\$3,712**

TOTAL MOBILIZATION & SET UP COSTS **\$13,181**

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Pile and Burn	0.133	acres	\$2,345	\$312
Haul to burn area	4	hrs.	\$93	\$372
Move-in Fire Truck for the burning of the Clearing Debris	1	ea	\$141	\$141

TOTAL CLEARING & GRUBBING COSTS **\$825**

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread, compact)	858	bcy	\$3	\$2,145

TOTAL EXCAVATION COSTS

\$2,145

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping			\$2.20	
crushed	13,942	99%	Drill & shoot	100%	14,350	\$2.30	\$33,006
pit run	0	0	Oversize red	2%	279	\$5.80	\$1,617
rip rap	139	1%	Other				
Total	14,081						
reject	269	1.9%					

TOTAL ROCK DEVELOPMENT COSTS

\$34,623

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	1	\$507.00	\$507
Calibrate			
Test	6	\$57.30	\$344
Test			

TOTAL CALIBRATION & TESTING COSTS

\$851

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	14,211	\$0.79	\$11,188
D8 pushing Shot Rock (Hrs.)	78	\$147.00	\$11,466

TOTAL FEEDING & LOADING COSTS

\$22,654

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed					
1-1/2"-0"	crushed	13,472	3 stage	120	\$2.74	\$36,936
4"-0"	crushed	470	3 stage	140	\$2.35	\$1,105

TOTAL ROCK CRUSHING COSTS

\$38,040

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader	2	\$90.00	\$180.00
Excavator		\$138.00	

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

\$180.00

SUB TOTAL

\$180

HAUL & STOCKPILE

STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1.					
2. Sweethome Creek	1-1/2"-0"	6	6,960	\$4.21	\$29,289
3.					
4.					
5.					
6.					

SUB TOTAL

\$29,289

TOTAL STOCKPILING COSTS

\$29,469

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area:	\$975
\$3.62 /CY 269 CY	
Compact Reject:	
\$0.30 /CY 269 CY	\$81
Waterbar access trail and slope the floor to drain:	
1 hrs. \$147.00 (D8)	\$147
1.5 hrs. \$144.00 (C330)	\$216

TOTAL MISCELLANEOUS COSTS

\$1,419

10) GRAND TOTAL:

\$143,207

\$/Cubic Yard

\$10.27

Footnotes:

HAUL and STOCKPILE COST

SALE NAME: Salty Dog
 QUARRY: North Fork Quarry (Timber Sale Cost) ROCK TYPE: Crushed

Location 1. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
							0.10
Truck type: <u>D12</u> No. trucks: _____ Delay min.: <u>15</u> Efficiency: <u>75%</u> Ave haul: <u>#DIV/0!</u> /cy Load: <u>#N/A</u> /cy Stockpile: <u>#N/A</u> /cy Truck type: <u>D12</u> No. trucks: _____ Delay min.: <u>12</u> Efficiency: <u>75%</u> Production: cy/day = <u>0</u> Truck type: _____ No. trucks: _____ Delay min.: <u>10</u> Efficiency: <u>75%</u> Production: cy/day = <u>0</u>							
Location 1. 0		Haul and Stockpile Cost			#DIV/0! /cy		

Location 2. Sweethome 1-1/2"-0"	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
			0.30	0.92	0.50	0.10	0.10
Truck type: <u>D20</u> No. trucks: _____ Delay min.: <u>15</u> Efficiency: <u>75%</u> Ave haul: <u>\$2.95</u> /cy Load: <u>\$0.48</u> /cy Stockpile: <u>\$0.78</u> /cy Truck type: <u>D12</u> No. trucks: <u>6</u> Delay min.: <u>12</u> Efficiency: <u>85%</u> Production: cy/day = <u>1,186</u> Truck type: <u>D10</u> No. trucks: _____ Delay min.: <u>10</u> Efficiency: <u>75%</u> Production: cy/day = <u>1,186</u>							
Location 2. Sweethome Creek		Haul and Stockpile Cost			\$4.21 /cy		

Location 3. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
				1.00	1.00		
Truck type: <u>D20</u> No. trucks: _____ Delay min.: <u>15</u> Efficiency: <u>75%</u> Ave haul: <u>#DIV/0!</u> /cy Load: <u>#N/A</u> /cy Stockpile: <u>#N/A</u> /cy Truck type: <u>D12</u> No. trucks: _____ Delay min.: <u>12</u> Efficiency: <u>75%</u> Production: cy/day = <u>0</u> Truck type: <u>D10</u> No. trucks: _____ Delay min.: <u>10</u> Efficiency: <u>75%</u> Production: cy/day = <u>0</u>							
Location 3. 0		Haul and Stockpile Cost			#DIV/0! /cy		

Salty Dog**Project No. 7 Road and Fill Vacating****V1 to V2**

Location/Description	C330 Excavator	Labor	Seeding	Straw Mulch	Total
V1 to V2 Fill Removal	8 hrs				
V1 to V2 Erosion Control Mulch Hand Grass Seeding labor & seed		3 hr	0.12 ac	20 bales	
Total	8 hrs	3 hr	0.12 ac	20 Bales	
Rate	\$144 /hr	\$38 /hr	\$545.00 /ac	\$10.0 /Bale	
Cost	\$1,152	\$114	\$65	\$200.00	\$1,531

Prepared by: Bryce Rodgers

Date: 04/13/2013

Projects Road Maintenance Cost Summary

Sale: Salty Dog
Date: 20-Apr-12
By: C.Bangs

Type	Equipment/Rationale		Hours	Rate	Cost
Final Haul	Grader 14G		8	\$93	\$744
Road	Dump Truck 12CY		8	\$73	\$584
Maintenance	FE Loader C966		8	\$77	\$616
Haul Route	Vibratory Roller		12	\$72	\$864
	Water Truck 2,500 gallon		12	\$83	\$996
Total					\$3,804

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	1.5	1.0
Vibratory Roller	1.5	1.5	1.0

Portion of North Fork Road

**Salty Dog
FY 2012
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, 3, 4 and 4A are located in portions of Sections 27 and 34 T4N, R8W; W.M., Clatsop County, Oregon, portions of Sections 3, 4, and 10, T3N, R8W, W.M., Tillamook County, Oregon.

All timber sale areas are posted with ODF "Timber Sale Boundary", signs and pink ribbon. Area 5 R/W is posted with ODF "Right-of-Way Boundary" signs.

2. **Fund Distribution:** **Fund:** BOF (100%)
Tax Code: 8-01 (37%)
56-1 (63%)

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acres	New R/W Acres	Stream Buffer Acres	Existing R/W Acres	Reserve steep slope areas/ wind thrown areas Acres	Net Acreage
1	MC	99	4	5	0	0	90
2	MC	65	1	1	2	0	61
3	MC	55	2	3	0	5	45
4	MC	98	2	22	0	2	72
4A	MC	21	0	0	0	0	21
5(R/W)	R/W	3	12*	0	0	0	12
TOTALS		341		31	2	7	301

*An additional 3 acres of R/W is located outside of the sale area on road segment 3A to 3B.

4. **Cruisers and Cruise Dates:** Areas 1, 2 and 3 were cruised by Jay Morey, Ed Holloran, Andrew Arvin, and Bryce Rodgers. Areas 4 and 4A were cruised by Jasen McCoy, Andrew Arvin, Jay Morey, Jon Long, and Bryce Rodgers. Areas 1, 2, and 3 were cruised in March 2012, and Areas 4 and 4A were cruised in April 2012.

5. **Cruise Method and Computation:** Cruises used Corvallis MicroTechnology (CMT), and was downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria District office.

Areas 1, 2, 3 and 4A (Modified Clearcuts), was variable plot cruised with a 40 BAF for conifers and hardwoods. 64 plots were sampled on a cruise grid of 4.5 chains by 8 chains, with a count/cruise ratio of 2:1.

Area 4 (Modified Clearcut), was variable plot cruised with a 40 BAF for conifers and hardwoods. 22 plots were sampled on a cruise grid of 3 chains by 13 chains, with a count/cruise ratio of 1:1.

Area 5 R/W, was calculated applying road R/W acreage using per acre cruise volumes for total harvest in Areas 1, 2, 3 and 4A.

<u>AREAS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1,2,3,4A	SALTY DOG	1234A	TAKE
4	SALTY DOG	AREA 4	TAKE
5R/W	SALTY DOG	5	R/W

6. Timber Description:

Areas 1, 2, 3 and 4A (Modified Clearcut) – These stands are approximately 60 to 70 years old, consisting of Hemlock dominated mixed conifer stands with patches of hardwoods. The average “take” volume per acre is 40 MBF, tree size is 17 inches in DBH, with an average height of 62 feet to a merchantable top (6” D.I.B. or 40% of the diameter at 16 feet).

Area 4 (Modified Clearcut) – This stand is approximately 50 years old, consisting of Douglas-fir, hemlock and patches of hardwoods. The average “take” volume per acre is 37 MBF, tree size is 16 inches DBH and 58 feet to a merchantable top (6” D.I.B. or 40% of the diameter at 16 feet).

Area 5 R/W – The R/W is the same type timber as Areas 1, 2, 3, and 4A. The average volume to remove from Area 5 is 42.5 MBF per acre.

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
1, 2, 3, 4A	60	10	54.7	6.8
4	40	10	46.9	10.2

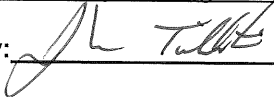
The statistics for all areas are “Take” and “Leave” stands combined.

8. Take Volumes by Species and Log Grades for All Sale Areas by MBF: (See attached “Species, Sort Grade-Board Feet Volumes (Project)”, “Stand Table Summary” attached, and “Log Stock Table” of all areas combined.) Volumes do not include “ingrowth.” The majority of defect and breakage was culled out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	19	3,786	2,774	877	135		4.4	31
Alder	14	926				926	4.3	7
Maple	11	18				18	0.0	<1
Hemlock	18	7,010	4,756	1,976	278		4.5	59
Spruce	38	119	48	71			6.4	<1
Cedar	22	2	1	1			0.0	<1
TOTAL		11,861						

9. Prepared by: Bryce Rodgers

Date: April 6, 2012

10. Approved by: 

Date: 4/30/2012

11. Attachments: Cruise Plans & Maps (6 pages)
Species, Sort, Grade Reports (4 pages)
Statistics Reports (8 pages)
Stand Table Summary Reports (2 pages)
Log Stock Table Reports (3 pages)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Salty Dog **Areas** 1, 2, 3 and 4A

Harvest Type: (MC) Clearcut

Approx. Cruise Acres: 202 **Estimated CV%** 60 Net BF/Acre **SE% Objective** 10

Planned Sale Volume : 10,798 MBF **Estimated Sale Area Value/Acre:** \$6,000/Ac
(35 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 100 conifer and 10 hardwood trees:
(b) Sample 58 cruise plots (1 grade/ 2 count); (c) Other goals (X Determine
volume and quality)

B. Cruise Design:

1. Plot Cruises: BAF 40.0 (Full point; Half point) (circle one) sighting at 4.5 feet.

Cruise Line Direction(s) Area 1 (322°) Area 2 (295°)

Area 3 (310°)

Cruise Line Spacing 8 (chains)

Cruise Plot Spacing 4.5 (chains)

Grade/Count Ratio 1:2

If a plot ends up in a buffer adjust by pacing on through or offsetting one chain. Take plots as marked on map. All cedar are leave trees. Record all snags as SN. Grade all hardwoods as CampRun.

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".

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 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.

4. Form Factors: (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

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

6. **Species, Sort, and Grade Codes:**

A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)

B. Sort: Use code "1" (Domestic).

C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
Hardwoods: R = CampRun

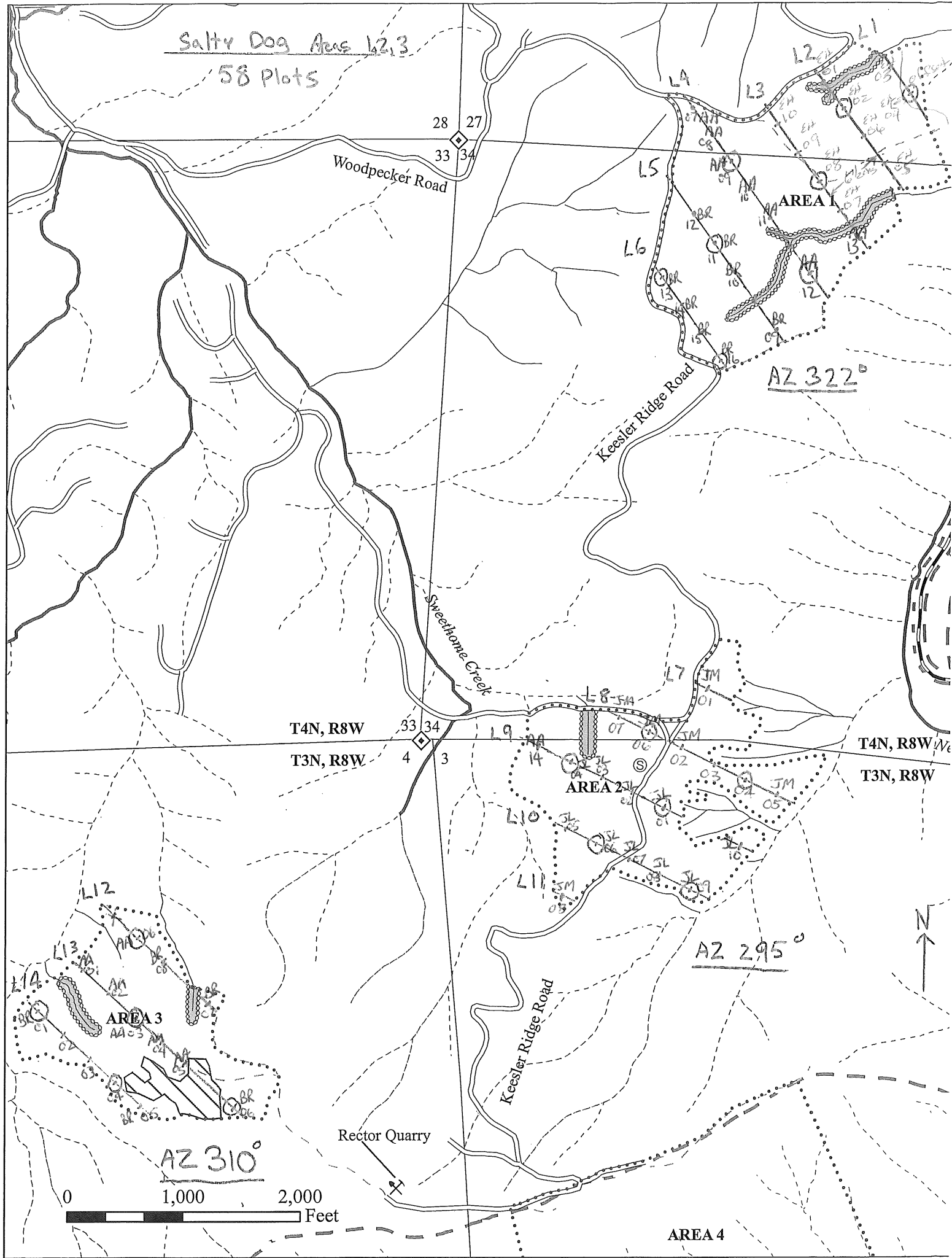
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally 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: Bryce Rodgers Approved by:  Date: 3/15/2012



Salty Dog Area 12, 3
58 plots

Woodpecker Road

Keesler Ridge Road

Sweet Home Creek

T4N, R8W
T3N, R8W

T4N, R8W
T3N, R8W

Rector Quarry

0 1,000 2,000 Feet

N

AZ 310°

AZ 295°

AZ 322°

AREA 4

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Salty Dog **Area** 4

Harvest Type: (MC) Clearcut

Approx. Cruise Acres: 99 **Estimated CV%** 40 Net BF/Acre **SE% Objective** 10

Planned Sale Volume : 10,798 MBF **Estimated Sale Area Value/Acre:** \$6,000/Ac
(35 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum ⁶⁰100 conifer and 10 hardwood trees:
(b) Sample 22 cruise plots (1 grade/1 count); (c) Other goals (X Determine volume and quality)

B. Cruise Design:

1. Plot Cruises: BAF 40.0 (Full point; Half point) (circle one) sighting at 4.5 feet.

Cruise Line Direction(s) Area 4 (146°)
Cruise Line Spacing 13 (chains)
Cruise Plot Spacing 3 (chains)
Grade/Count Ratio 1:1

If a plot ends up in a buffer adjust by pacing on through or offsetting one chain. Take plots as marked on map. All cedar are leave trees. Record all snags as SN. Grade all hardwoods as CampRun.

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".

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 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.

4. Form Factors: (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. Tree Segments: Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to

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

6. Species, Sort, and Grade Codes:

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

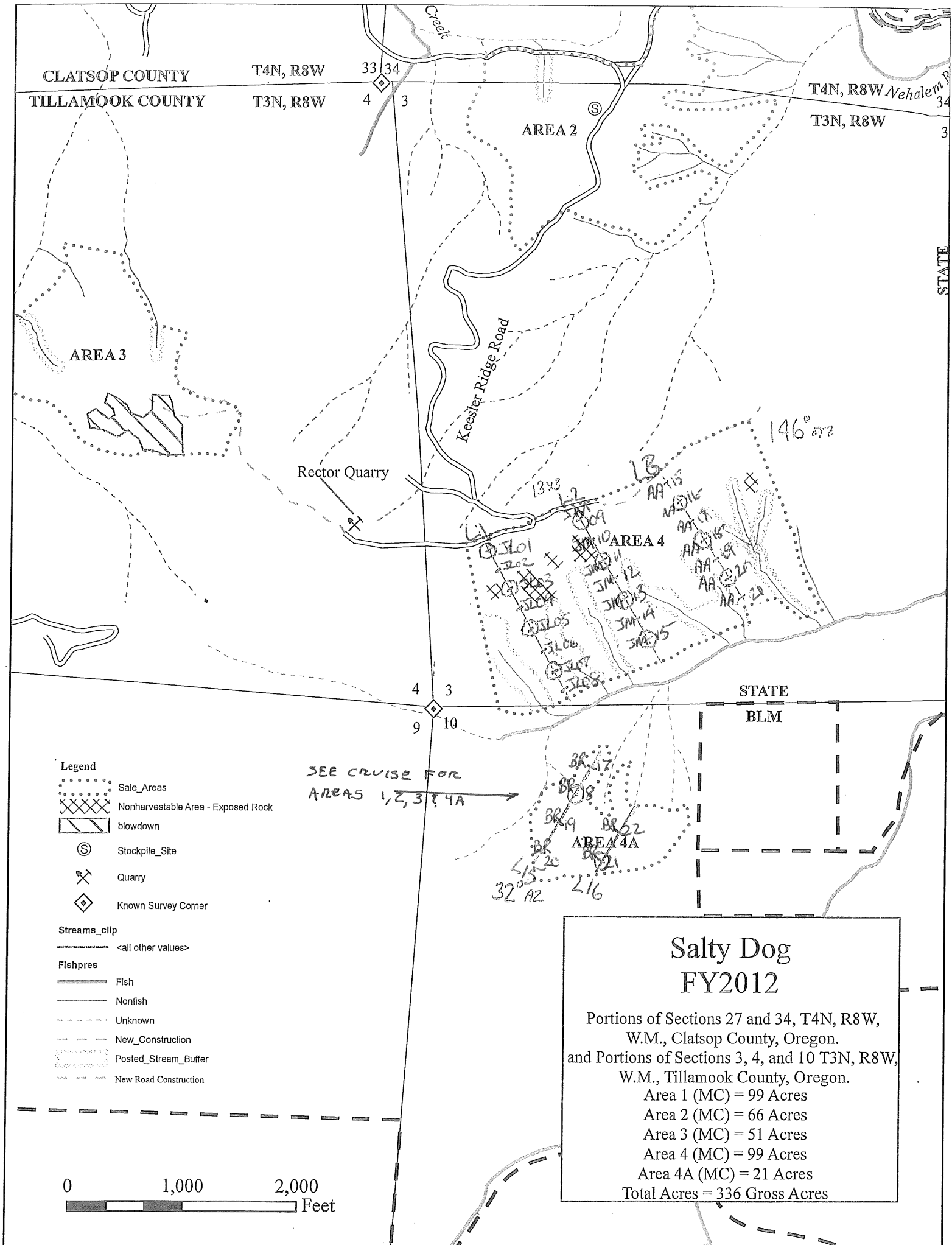
- 7. Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally 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: Bryce Rodgers Approved by: Jon Long Date: 4-4-12



TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)															
T03N R08W S03 TyTAKE72.00 T04N R08W S27 TyTAKE217.00 T04N R08W S27 TyR/W12.00				Project: SALTY												Page1			
				Acres301.00												Date5/1/2012			
																Time11:18:51AM			
S Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre	
			Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D	DOCU		100.0	421											14		0.00	3.7	
D	DO2S	73	1.5	9,354	9,217	2,774		2	48	51		2	1	48	50	35	306	1.99	30.1
D	DO3S	23	.9	2,940	2,914	877		98	2			2	6	48	44	34	76	0.70	38.1
D	DO4S	4		447	447	135		100				79	21			17	26	0.52	17.1
D Totals		32	4.4	13,163	12,577	3,786		27	35	37		5	3	46	47	31	141	1.17	89.1
A	DOCU		100.0	129												7		0.00	4.9
A	DOCR	100	.3	3,086	3,077	926		75	21	4		17	32	29	22	26	63	0.72	49.2
A Totals		8	4.3	3,215	3,077	926		75	21	4		17	32	29	22	24	57	0.71	54.1
M	DOCR	100		59	59	18		100					100			24	30	0.46	2.0
M Totals		0		59	59	18		100					100			24	30	0.46	2.0
H	DOCU		100.0	696												8		0.00	4.8
H	DO2S	67	1.8	16,085	15,801	4,756		1	61	38		1		23	76	37	339	2.00	46.6
H	DO3S	29	1.8	6,682	6,564	1,976		97	0	3		2	6	31	62	36	95	0.78	69.1
H	DO4S	4		923	923	278		100				67	33			20	27	0.49	33.6
H Totals		59	4.5	24,386	23,288	7,010		32	42	27		4	3	24	69	32	151	1.17	154.1
S	DOCU		100.0	27												8		0.00	.1
S	DO2S	40		160	160	48				100				100		40	940	4.47	.2
S	DO3S	60	.1	237	237	71			26	74		5		72	23	33	595	4.28	.4
S Totals		1	6.4	424	397	119			15	85		3		43	54	32	620	4.23	.6
C	DO2S	79		7	7	2			100				100			32	230	2.03	.0
C	DO3S	21		2	2	1			100					37	63	36	61	0.71	.0
C Totals		0		8	8	2			21	79				87	13	34	145	1.33	.1
Totals			4.5	41,255	39,406	11,861		33	38	29		5	5	32	58	30	131	1.10	300.0

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)												Page 1				
		Project: SALTY												Date 5/1/2012				
														Time 10:56:48AM				
T04N R08W S27 TTAKE												T04N R08W S27 TTAKE						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt									
04N	08W	27	1234A	TAKE	217.00	64	126	1	W									
S So Gr T rt ad Spp		% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
							Log Scale Dia.				Log Length				Ln	Bd	CF/ Lf	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)														Page 1					
		Project: SALTY														Date 4/12/2012	Time 12:57:10PM				
T03N R08W S03 TTAKE										T03N R08W S03 TTAKE											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
03N	08W	03	AREA 4	TAKE	72.00	22	84	1	W												
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln	Bd	CF/			
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	Ft	Lf	
D	DO	CU																15		0.00	12.6
D	DO	2S	59	1.9	18,165	17,827	1,284			3	67	30		4	2	40	55	35	260	1.80	68.5
D	DO	3S	36	1.0	10,737	10,627	765			99	1			2	5	47	47	34	76	0.68	140.2
D	DO	4S	5		1,343	1,343	97			100				82	18			17	23	0.47	58.1
D Totals			81	1.5	30,244	29,797	2,145			42	41	18		7	4	40	49	30	107	0.96	279.4
A	DO	CU																3		0.00	2.8
A	DO	CR	100	.4	3,697	3,684	265			61	26	13		11	40	36	13	25	70	0.87	52.6
A Totals			10	.4	3,697	3,684	265			61	26	13		11	40	36	13	24	66	0.86	55.4
H	DO	CU																6		0.00	4.1
H	DO	2S	26		823	823	59				100						100	40	200	1.23	4.1
H	DO	3S	68	5.2	2,262	2,143	154			100						50	50	36	98	0.79	21.9
H	DO	4S	6		178	178	13			100					100			24	30	0.46	5.9
H Totals			9	3.6	3,263	3,144	226			74	26				6	34	60	31	87	0.80	36.1
M	DO	CR	100		248	248	18			100					100			24	30	0.46	8.3
M Totals			1		248	248	18			100					100			24	30	0.46	8.3
Type Totals				1.5	37,452	36,873	2,655			47	38	16		6	8	39	46	29	97	0.92	379.1

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)												Page 1						
Project: SALTY												Date 4/12/2012								
												Time 12:57:35PM								
T04N R08W S27 TR/W										T04N R08W S27 TR/W										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
04N	08W	27	5	R/W	12.00	64	139	1	W											
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln	Bd	CF/		

TC PSTATS			PROJECT STATISTICS							PAGE	1	
			PROJECT		SALTY						DATE	5/1/2012
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
03N	08	03	AREA 4	TAKE		301.00	150	968	1	W		
04N	08W	27	1234A	TAKE								
04N	08W	27	5	R/W								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			150	968	6.5							
CRUISE			69	349	5.1	46,839	.7					
DBH COUNT												
REFOREST												
COUNT			81	536	6.6							
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK			182	75.4	18.2	67		136.2	24,386	23,288	5,859	5,736
DOUG FIR			92	43.4	18.9	66		84.7	13,163	12,577	3,261	3,175
R ALDER			67	34.5	13.5	40		34.3	3,215	3,077	961	927
S SPRUCE			5	.2	38.1	91		2.0	424	397	90	86
BL MAPLE			1	2.0	11.0	25		1.3	59	59	22	22
WR CEDAR			2	.0	21.9	71		.1	8	8	3	3
TOTAL			349	155.6	17.5	60		258.5	41,255	39,406	10,195	9,948
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			
WHEMLOCK		94.0	7.0	497	534	571						
DOUG FIR		77.4	8.1	371	403	436						
R ALDER		72.1	8.8	104	114	124						
S SPRUCE		33.8	16.8	1,619	1,946	2,273						
BL MAPLE												
WR CEDAR		4.9	4.6	277	290	303						
TOTAL		107.8	5.8	411	436	462	464	116	52			
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
WHEMLOCK		150.6	12.3	66	75	85						
DOUG FIR		239.7	19.6	35	43	52						
R ALDER		212.8	17.4	29	34	40						
S SPRUCE		590.1	48.1	0	0	0						
BL MAPLE		702.3	57.3	1	2	3						
WR CEDAR		704.3	57.5	0	0	0						
TOTAL		98.4	8.0	143	156	168	387	97	43			
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
WHEMLOCK		143.5	11.7	120	136	152						
DOUG FIR		197.9	16.1	71	85	98						
R ALDER		203.9	16.6	29	34	40						
S SPRUCE		559.7	45.7	1	2	3						
BL MAPLE		702.3	57.3	1	1	2						
WR CEDAR		702.3	57.3	0	0	0						
TOTAL		96.2	7.8	238	259	279	370	92	41			
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
WHEMLOCK		143.5	11.7	20,562	23,288	26,014						
DOUG FIR		193.8	15.8	10,589	12,577	14,566						
R ALDER		213.6	17.4	2,540	3,077	3,613						

TC PSTATS				PROJECT STATISTICS				PAGE	2
				PROJECT	SALTY			DATE	5/1/2012
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
03N	08	03	AREA 4	TAKE	301.00	150	968	1	W
04N	08W	27	1234A	TAKE					
04N	08W	27	5	R/W					
CL	68.1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10
S SPRUCE			564.7	46.1	214	397	580		
BL MAPLE			702.3	57.3	25	59	93		
WR CEDAR			706.1	57.6	4	8	13		
TOTAL			104.4	8.5	36,050	39,406	42,762	435	109
								48	

TC TSTATS				STATISTICS				PAGE 1					
				PROJECT	SALTY	DATE 5/1/2012							
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt				
04N	08W	27	1234A	00CC	217.00	64	440	1	W				
				TREES	ESTIMATED	PERCENT							
				PER PLOT	TOTAL	SAMPLE							
					TREES	TREES							
TOTAL				64	440	6.9							
CRUISE				30	152	5.1	32,725	.5					
DBH COUNT													
REFOREST													
COUNT				34	236	6.9							
BLANKS													
100 %													
STAND SUMMARY													
				SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS			
				TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC			
										NET			
										GROSS			
										CF/AC			
										NET			
										CF/AC			
WHEMLOCK				86	94.1	18.3	67		171.9	30,045	29,557	7,248	7,248
DOUG FIR				9	10.0	25.5	95		35.6	7,191	7,117	1,623	1,623
R ALDER				29	36.2	12.8	38		32.5	2,894	2,886	856	856
SNAG				13	6.3	23.4	56		18.8				
HEMLEAV				7	1.7	24.9	93		5.6	1,107	1,072	244	244
DOUGLEAV				3	1.4	25.6	98		5.0	960	947	221	221
S SPRUCE				2	.3	37.9	91		2.5	512	512	111	111
CEDLEAV				2	.7	21.9	71		1.9	208	208	65	65
SPRUCELV				1	.1	54.0	92		1.3	186	182	54	54
TOTAL				152	150.8	18.3	62		275.0	43,103	42,480	10,422	10,422
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	
WHEMLOCK		89.9		9.7		473		523		574			
DOUG FIR		33.4		11.8		685		777		868			
R ALDER		69.8		13.2		94		108		122			
SNAG													
HEMLEAV		111.3		45.3		513		937		1,362			
DOUGLEAV		30.6		21.1		560		710		860			
S SPRUCE		47.6		44.6		1,027		1,855		2,683			
CEDLEAV		4.9		4.6		277		290		303			
SPRUCELV													
TOTAL		116.1		9.4		420		463		507		538 134 60	
CL: 68.1 %		COEFF		TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0		VAR.%		S.E.%		LOW		AVG		HIGH		5 10 15	
WHEMLOCK		80.9		10.1		85		94		104			
DOUG FIR		188.1		23.5		8		10		12			
R ALDER		157.2		19.6		29		36		43			
SNAG		178.3		22.3		5		6		8			
HEMLEAV		459.2		57.4		1		2		3			
DOUGLEAV		330.7		41.3		1		1		2			
S SPRUCE		406.8		50.8		0		0		0			
CEDLEAV		455.8		56.9		0		1		1			
SPRUCELV		561.2		70.1		0		0		0			
TOTAL		40.2		5.0		143		151		158		65 16 7	
CL: 68.1 %		COEFF		BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0		VAR.%		S.E.%		LOW		AVG		HIGH		5 10 15	
WHEMLOCK		73.3		9.2		156		172		188			
DOUG FIR		188.9		23.6		27		36		44			
R ALDER		151.7		19.0		26		33		39			
SNAG		156.6		19.6		15		19		22			
HEMLEAV		454.5		56.8		2		6		9			

TC TSTATS				STATISTICS				PAGE	2
				PROJECT		SALTY		DATE	5/1/2012
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	08W	27	1234A	00CC	217.00	64	440	1	W
CL: 68.1 %				BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0		COEFF	S.E.%	LOW	AVG	HIGH	5	10	15
DOUGLEAV		334.3	41.7	3	5	7			
S SPRUCE		390.4	48.8	1	3	4			
CEDLEAV		454.5	56.8	1	2	3			
SPRUCELV		561.2	70.1	0	1	2			
TOTAL		43.8	5.5	260	275	290	77	19	9
CL: 68.1 %				NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK		72.8	9.1	26,871	29,557	32,244			
DOUG FIR		189.5	23.7	5,432	7,117	8,801			
R ALDER		162.5	20.3	2,300	2,886	3,471			
SNAG									
HEMLEAV		459.4	57.4	457	1,072	1,687			
DOUGLEAV		335.6	41.9	550	947	1,343			
S SPRUCE		391.0	48.8	262	512	762			
CEDLEAV		457.0	57.1	89	208	327			
SPRUCELV		561.2	70.1	54	182	309			
TOTAL		54.7	6.8	39,579	42,480	45,381	119	30	13

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT SALTY				DATE	5/1/2012	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	08W	27	1234A	TAKE	217.00	64	389	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		64	389	6.1						
CRUISE		28	126	4.5	30,526			.4		
DBH COUNT										
REFOREST										
COUNT		36	233	6.5						
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK		86	94.1	18.3	67	171.9	30,862	29,557	7,391	7,248
DOUG FIR		9	10.0	25.5	95	35.6	7,367	7,117	1,654	1,623
R ALDER		29	36.2	12.8	38	32.5	3,055	2,886	899	856
S SPRUCE		2	.3	37.9	91	2.5	547	512	116	111
TOTAL		126	140.7	17.8	62	242.5	41,831	40,072	10,059	9,838
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	
WHEMLOCK		89.9	9.7	473	523	574				
DOUG FIR		33.4	11.8	685	777	868				
R ALDER		69.8	13.2	94	108	122				
S SPRUCE		47.6	44.6	1,027	1,855	2,683				
TOTAL		103.2	9.2	424	467	510	425	106	47	
CL: 68.1 %		COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		80.9	10.1	85	94	104				
DOUG FIR		188.1	23.5	8	10	12				
R ALDER		157.2	19.6	29	36	43				
S SPRUCE		406.8	50.8	0	0	0				
TOTAL		43.5	5.4	133	141	148	76	19	8	
CL: 68.1 %		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		73.3	9.2	156	172	188				
DOUG FIR		188.9	23.6	27	36	44				
R ALDER		151.7	19.0	26	33	39				
S SPRUCE		390.4	48.8	1	3	4				
TOTAL		47.2	5.9	228	243	257	89	22	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	
WHEMLOCK		72.8	9.1	26,871	29,557	32,244				
DOUG FIR		189.5	23.7	5,432	7,117	8,801				
R ALDER		162.5	20.3	2,300	2,886	3,471				
S SPRUCE		391.0	48.8	262	512	762				
TOTAL		57.1	7.1	37,216	40,072	42,928	130	33	14	

TC TSTATS				STATISTICS				PAGE	1			
				PROJECT	SALTY			DATE	5/1/2012			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt			
03N	08W	03	AREA 4	00CC	72.00	22	188	1	W			
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			22	188	8.5							
CRUISE			14	94	6.7	15,827	.6					
DBH COUNT												
REFOREST												
COUNT			8	63	7.9							
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			71	149.5	17.2	60		240.0	30,244	29,797	8,073	8,073
R ALDER			9	29.0	15.9	48		40.0	3,697	3,684	1,151	1,151
SNAG			10	17.0	19.3	64		34.5				
WHEMLOCK			3	16.0	15.8	72		21.8	3,263	3,144	885	885
BL MAPLE			1	8.3	11.0	25		5.5	248	248	91	91
TOTAL			94	219.8	16.9	58		341.8	37,452	36,873	10,199	10,199
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			81.9	9.7	267	296	325					
R ALDER			76.3	26.9	114	156	197					
SNAG												
WHEMLOCK			24.3	16.8	169	203	237					
BL MAPLE												
TOTAL			95.8	9.9	221	245	269	367	92	41		
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			63.7	13.9	129	150	170					
R ALDER			151.0	32.9	19	29	39					
SNAG			136.5	29.8	12	17	22					
WHEMLOCK			253.1	55.2	7	16	25					
BL MAPLE			257.6	56.1	4	8	13					
TOTAL			37.0	8.1	202	220	238	57	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			51.2	11.2	213	240	267					
R ALDER			141.4	30.8	28	40	52					
SNAG			135.1	29.5	24	35	45					
WHEMLOCK			251.3	54.8	10	22	34					
BL MAPLE			257.6	56.1	2	5	9					
TOTAL			21.9	4.8	326	342	358	20	5	2		
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			60.6	13.2	25,862	29,797	33,732					
R ALDER			143.9	31.4	2,528	3,684	4,839					
SNAG												
WHEMLOCK			251.2	54.7	1,423	3,144	4,866					
BL MAPLE			257.6	56.1	109	248	387					
TOTAL			46.9	10.2	33,100	36,873	40,646	92	23	10		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SALTY	DATE 5/1/2012				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
03N	08W	03	AREA 4	TAKE	72.00	22	169	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	22	169	7.7							
CRUISE	12	84	7.0	14,602	.6					
DBH COUNT										
REFOREST										
COUNT	10	78	7.8							
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
DOUG FIR	71	149.5	17.2	60		240.0	30,244	29,797	8,073	8,073
R ALDER	9	29.0	15.9	48		40.0	3,697	3,684	1,151	1,151
WHEMLOCK	3	16.0	15.8	72		21.8	3,263	3,144	885	885
BL MAPLE	1	8.3	11.0	25		5.5	248	248	91	91
TOTAL	84	202.8	16.7	58		307.3	37,452	36,873	10,199	10,199
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	81.9	9.7	267	296	325					
R ALDER	76.3	26.9	114	156	197					
WHEMLOCK	24.3	16.8	169	203	237					
BL MAPLE										
TOTAL	84.5	9.2	249	274	300	285	71	32		
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	63.7	13.9	129	150	170					
R ALDER	151.0	32.9	19	29	39					
WHEMLOCK	253.1	55.2	7	16	25					
BL MAPLE	257.6	56.1	4	8	13					
TOTAL	42.6	9.3	184	203	222	76	19	8		
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	51.2	11.2	213	240	267					
R ALDER	141.4	30.8	28	40	52					
WHEMLOCK	251.3	54.8	10	22	34					
BL MAPLE	257.6	56.1	2	5	9					
TOTAL	33.0	7.2	285	307	329	45	11	5		
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	60.6	13.2	25,862	29,797	33,732					
R ALDER	143.9	31.4	2,528	3,684	4,839					
WHEMLOCK	251.2	54.7	1,423	3,144	4,866					
BL MAPLE	257.6	56.1	109	248	387					
TOTAL	46.9	10.2	33,100	36,873	40,646	92	23	10		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT SALTY				DATE	5/1/2012	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	08W	27	5	R/W	12.00	64	410	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
PLOTS		TREES								
TOTAL		64		410						6.4
CRUISE		29		139		4.8		1,711		
DBH COUNT								8.1		
REFOREST										
COUNT		35		225		6.4				
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK		93	93.8	18.6	68	177.5	32,538	30,773	7,717	7,502
DOUG FIR		12	11.4	25.5	96	40.6	8,410	8,010	1,891	1,838
R ALDER		29	36.2	12.8	38	32.5	3,055	2,886	899	856
S SPRUCE		3	.4	41.6	91	3.8	734	694	170	165
WR CEDAR		2	.7	21.9	71	1.9	208	208	65	65
TOTAL		139	142.6	18.2	63	256.3	44,944	42,570	10,741	10,425
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	
WHEMLOCK		96.7		10.0		499	555	610		
DOUG FIR		31.8		9.6		687	760	833		
R ALDER		69.8		13.2		94	108	122		
S SPRUCE		33.8		23.4		1,538	2,007	2,476		
WR CEDAR		4.9		4.6		277	290	303		
TOTAL		107.1		9.1		461	507	553	458	114
									51	
CL: 68.1 %		COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%		S.E.%		LOW	AVG	HIGH	5	10
									15	
WHEMLOCK		79.3		9.9		85	94	103		
DOUG FIR		186.1		23.2		9	11	14		
R ALDER		157.2		19.6		29	36	43		
S SPRUCE		333.4		41.6		0	0	1		
WR CEDAR		455.8		56.9		0	1	1		
TOTAL		40.8		5.1		135	143	150	66	17
									7	
CL: 68.1 %		COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%		S.E.%		LOW	AVG	HIGH	5	10
									15	
WHEMLOCK		72.1		9.0		162	178	193		
DOUG FIR		186.9		23.3		31	41	50		
R ALDER		151.7		19.0		26	33	39		
S SPRUCE		313.4		39.1		2	4	5		
WR CEDAR		454.5		56.8		1	2	3		
TOTAL		44.4		5.5		242	256	270	79	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	
WHEMLOCK		72.0		9.0		28,005	30,773	33,540		
DOUG FIR		187.1		23.4		6,138	8,010	9,881		
R ALDER		162.5		20.3		2,300	2,886	3,471		
S SPRUCE		315.8		39.4		420	694	967		
WR CEDAR		457.0		57.1		89	208	327		
TOTAL		54.6		6.8		39,665	42,570	45,475	119	30
									13	

TC PLOGSTVB		Log Stock Table - MBF																	
T03N R08W S03 TyTAKE72.00 T04N R08W S27 TyR/W12.00 T04N R08W S27 TyTAKE217.00					Project: SALTY Acres 301.00										Page 1 Date 4/12/2012 Time 1:03:02PM				
S T Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
D	DO	2S	12	14		14	.4							14					
D	DO	2S	16	20		20	.5									20			
D	DO	2S	20	20	20.0	16	.4									16			
D	DO	2S	24	24		24	.6							24					
D	DO	2S	32	1,305		1,298	34.3					22	360	99	397	421			
D	DO	2S	34	23	5.9	22	.6						22						
D	DO	2S	36	49	5.5	46	1.2						46						
D	DO	2S	40	1,361	2.0	1,335	35.3					21	357	253	698	5			
D	DO	3S	12	11		11	.3							11					
D	DO	3S	16	3		3	.1			3		0							
D	DO	3S	24	31		31	.8				31								
D	DO	3S	28	7		7	.2			4	3								
D	DO	3S	30	17		17	.5				17								
D	DO	3S	32	373	1.6	368	9.7			120	121	127							
D	DO	3S	34	53	3.8	51	1.3			27		24							
D	DO	3S	36	16		16	.4			16									
D	DO	3S	40	373		373	9.9			159	152	58			5				
D	DO	4S	12	15		15	.4			2	9	4							
D	DO	4S	13	2		2	.0				2								
D	DO	4S	14	9		9	.2			9									
D	DO	4S	16	61		61	1.6			25	36								
D	DO	4S	18	5		5	.1			5									
D	DO	4S	19	1		1	.0			1									
D	DO	4S	20	15		15	.4			15									
D	DO	4S	24	17		17	.5			8	10								
D	DO	4S	25	3		3	.1			3									
D	DO	4S	26	3		3	.1			3									
D	DO	4S	28	5		5	.1			5									
D	Totals			3,835	1.3	3,786	31.9			401	381	255	785	377	1124	462			
A	DO	CR	16	45		45	4.9			39	6								
A	DO	CR	18	13		13	1.4				13								
A	DO	CR	20	97		96	10.4			69	8	19							
A	DO	CR	24	175		175	18.9			42	42	48	44						
A	DO	CR	30	122		122	13.1			18		76	28						
A	DO	CR	32	259		257	27.7			77	15	72	59		35				
A	DO	CR	34	12		12	1.3			12									
A	DO	CR	40	206		206	22.3			65		78	63						

TC PLOGSTVB				Log Stock Table - MBF																
T03N R08W S03 TyTAKE 72.00 T04N R08W S27 TyR/W 12.00 T04N R08W S27 TyTAKE 217.00				Project: SALTY										Page 2						
				Acres 301.00										Date 4/12/2012						
														Time 1:03:02PM						
S T Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
A	Totals			929		926	7.8			321	83	293	194	35						
M	DO	CR	24	18		18	100.0			18										
M	Totals			18		18	.2			18										
H	DO	2S	18	2	16.7	2	.0								2					
H	DO	2S	20	39	7.4	36	.5							36						
H	DO	2S	32	1,099	2.6	1,070	15.3					30	272	167	361	128	113			
H	DO	2S	34	25		25	.4						25							
H	DO	2S	40	3,676	1.4	3,623	51.7						645	1165	714	803	214	81		
H	DO	3S	18	18		18	.3					12	6							
H	DO	3S	20	12		12	.2				5	7								
H	DO	3S	22	14		14	.2					14								
H	DO	3S	24	30		30	.4				7	24								
H	DO	3S	28	58		58	.8			58	0									
H	DO	3S	30	9		9	.1				9									
H	DO	3S	32	524	4.5	501	7.1			157	66	277								
H	DO	3S	33	0		0	.0				0									
H	DO	3S	34	106		106	1.5			51		56								
H	DO	3S	36	17		17	.2			17										
H	DO	3S	40	1,222		1,210	17.3			289	181	680	1	1	56		2			
H	DO	4S	9	0		0	.0				0									
H	DO	4S	12	0		0	.0				0									
H	DO	4S	16	121		121	1.7			105	11	6								
H	DO	4S	18	33		33	.5			23	10									
H	DO	4S	20	33		33	.5			32	0									
H	DO	4S	22	6		6	.1				6									
H	DO	4S	24	38		38	.5			38										
H	DO	4S	26	21		21	.3			21										
H	DO	4S	28	25		25	.4			25										
H	Totals			7,131	1.7	7,010	59.1			816	296	1106	949	1332	1168	932	330	81		
S	DO	2S	40	48		48	40.3								48					
S	DO	3S	17	0		0	.1							0						
S	DO	3S	18	3		3	2.9							3						
S	DO	3S	32	51		51	42.9								17		34			
S	DO	3S	40	16		16	13.7							15			2			
S	Totals			119		119	1.0							18		65		36		

TC PLOGSTVB		Log Stock Table - MBF																	
T03N R08W S03 TyTAKE 72.00		Project: SALTY														Page 3			
T04N R08W S27 TyR/W 12.00		Acres 301.00														Date 4/12/2012			
T04N R08W S27 TyTAKE 217.00																Time 1:03:02PM			
S T Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
C	DO	2S	32	2		2	79.1							2					
C	DO	3S	32	0		0	7.8			0									
C	DO	3S	40	0		0	13.1			0									
C	Totals			2		2	.0			1				2					
Total	All Species			12,035	1.4	11,861	100.0			1557	761	1654	1927	1729	2327	1460	330	117	

TC PSTNDSUM		Stand Table Summary										Page 1			
												Date: 4/12/2012			
T03N R08W S03 TyTAKE 72.00 T04N R08W S27 TyR/W 12.00 T04N R08W S27 TyTAKE 217.00					Project SALTY					Time: 1:05:47PM					
					Acres 301.00					Grown Year:					
S Spec T			Tot					Average Log		Net Net		Totals			
	DBH	Sample Trees	FF 16'	Av Ht	Trees/Acre	BA/Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
H	9	2	91	22	3.434	1.52	3.43	6.0	30.0		21	103		62	31
H	10	2	83	37	3.082	1.52	3.08	8.0	20.0		25	62		74	19
H	11	4	89	66	4.597	3.03	4.60	17.0	60.0		78	276		235	83
H	12	4	87	51	3.863	3.03	3.86	18.5	55.0		71	212		215	64
H	13	2	88	84	1.646	1.52	3.29	15.5	55.0		51	181		154	54
H	14	8	86	87	5.676	6.07	11.35	20.5	71.3		233	809		700	243
H	15	14	89	87	10.252	12.58	20.50	23.9	91.1		490	1,868		1,476	562
H	16	12	88	93	6.518	9.10	11.95	30.5	111.8		365	1,336		1,099	402
H	17	6	90	92	2.887	4.55	5.77	33.0	116.7		191	674		574	203
H	18	14	89	99	6.178	10.92	13.26	34.9	125.3		463	1,661		1,394	500
H	19	12	91	108	4.622	9.10	12.33	35.9	148.8		442	1,834		1,331	552
H	20	16	92	99	5.562	12.14	12.52	43.6	173.9		546	2,176		1,643	655
H	21	10	89	95	3.153	7.58	7.57	42.8	167.5		324	1,268		974	382
H	22	12	89	103	3.448	9.10	8.62	47.8	190.7		412	1,643		1,240	495
H	23	8	89	111	2.103	6.07	5.26	52.7	221.0		277	1,162		834	350
H	24	10	84	101	1.980	6.22	4.49	45.9	177.2		206	796		620	240
H	25	2	88	91	.445	1.52	.89	56.5	225.0		50	200		151	60
H	26	6	88	122	.864	3.19	2.57	65.3	297.7		168	766		505	230
H	27	2	91	121	.382	1.52	1.14	69.3	346.7		79	397		239	119
H	28	3	86	125	.373	1.59	1.12	73.9	339.2		83	379		249	114
H	29	6	88	118	.992	4.55	2.98	77.3	377.8		230	1,124		693	338
H	30	4	86	122	.618	3.03	1.55	91.2	418.0		141	646		424	194
H	31	2	88	118	.289	1.52	.87	92.3	456.7		80	396		241	119
H	32	4	88	95	.543	3.03	1.09	106.7	475.0		116	516		349	155
H	33	10	86	113	1.277	7.58	3.58	100.6	460.0		360	1,645		1,083	495
H	34	2	86	103	.241	1.52	.48	111.0	515.0		53	248		161	75
H	36	2	89	125	.215	1.52	.64	127.0	640.0		82	412		246	124
H	40	2	88	152	.174	1.52	.52	181.3	910.0		95	475		285	143
H	44	1	85	152	.007	.08	.02	211.0	1093.3		5	24		14	7
H	Totals	182	89	87	75.419	136.21	149.32	38.4	156.0		5,736	23,288		17,265	7,010
D	10	2	84	19	3.125	1.62	3.13	6.0	20.0		19	63		56	19
D	11	1	79	64	1.225	.81	1.23	16.0	50.0		20	61		59	18
D	12	4	88	69	4.209	3.23	7.30	12.0	40.1		88	293		264	88
D	13	3	86	69	2.632	2.43	3.51	18.3	57.5		64	202		193	61
D	14	6	86	93	4.538	4.85	7.56	20.7	74.0		157	560		471	168
D	15	2	87	88	1.318	1.62	2.64	20.2	67.5		53	178		161	54
D	16	5	87	88	2.895	4.04	5.21	26.4	93.3		138	486		415	146
D	17	3	85	77	1.539	2.43	2.56	28.6	90.0		73	231		221	69
D	18	7	87	91	3.203	5.66	5.95	33.8	112.3		201	668		605	201
D	19	8	87	95	3.982	7.84	7.96	34.1	117.1		272	933		817	281
D	20	4	89	98	1.482	3.23	2.59	39.6	147.1		103	382		309	115
D	21	3	88	94	1.008	2.43	2.35	37.6	144.3		88	340		266	102
D	22	4	84	90	1.225	3.23	2.76	42.2	152.2		116	420		350	126
D	23	4	87	106	1.121	3.23	2.80	47.9	189.0		134	530		404	159
D	24	7	87	116	1.809	5.68	4.91	51.3	208.3		252	1,023		759	308
D	25	5	85	96	1.186	4.04	2.61	52.0	201.8		136	527		408	159
D	26	8	87	118	2.498	9.21	7.50	55.2	236.7		414	1,774		1,246	534
D	27	6	89	121	1.910	7.59	5.53	65.2	297.9		361	1,647		1,085	496
D	28	6	85	120	1.776	7.59	4.95	62.0	288.8		307	1,429		924	430
D	30	2	81	123	.192	.94	.58	69.9	297.1		40	171		121	52
D	31	2	86	125	.570	2.99	1.71	81.7	386.7		140	661		420	199
D	Totals	92	86	88	43.446	84.71	85.33	37.2	147.4		3,175	12,577		9,556	3,786

TC		PSTNDSUM										Stand Table Summary										Page		2	
																						Date:		4/12/2012	
T03N R08W S03 TyTAKE					72.00					Project					SALTY					Time:		1:05:47PM			
T04N R08W S27 TyR/W					12.00					Acres					301.00					Grown Year:					
T04N R08W S27 TyTAKE					217.00																				
S Spc	T	DBH	Sample Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	T o t a l s											
				FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF									
A		8	2	87	20	2.443	.85	2.44	5.0	20.0		12	49			37	15								
A		9	4	87	29	3.860	1.71	3.86	6.5	25.0		25	96			76	29								
A		10	8	86	43	6.253	3.41	6.25	10.0	32.5		63	203			188	61								
A		12	6	87	71	3.257	2.56	4.34	17.3	52.5		75	228			225	69								
A		13	4	86	58	3.232	2.98	5.54	13.9	40.0		77	222			232	67								
A		14	5	86	72	2.590	2.77	4.38	17.9	61.8		78	271			236	82								
A		15	7	87	77	2.951	3.62	5.90	20.9	74.4		123	439			371	132								
A		16	13	87	68	4.425	6.18	8.09	23.8	78.7		192	637			579	192								
A		17	9	86	63	2.838	4.47	4.05	28.8	101.0		117	409			351	123								
A		18	2	87	81	.482	.85	.96	32.5	105.0		31	101			94	30								
A		19	3	87	39	.973	1.92	.97	26.8	51.1		26	50			78	15								
A		20	3	87	84	.878	1.92	1.76	41.7	140.5		73	247			220	74								
A		25	1	86	64	.312	1.06	.62	53.5	200.0		33	125			100	38								
A		Totals	67	87	55	34.493	34.29	49.18	18.8	62.6		927	3,077			2,789	926								
S		32	2	88	110	.170	.95	.34	131.5	615.0		45	209			135	63								
S		49	2	78	115	.073	.95	.22	181.0	826.7		39	180			119	54								
S		54	1	67	112	.003	.05	.01	229.3	770.0		2	7			6	2								
S		Totals	5	85	112	.246	1.95	.57	152.1	698.8		86	397			260	119								
M		11	1	87	34	1.977	1.30	1.98	11.0	30.0		22	59			65	18								
M		Totals	1	87	34	1.977	1.30	1.98	11.0	30.0		22	59			65	18								
C		21	1	84	100	.016	.04	.03	44.5	150.0		1	5			4	1								
C		23	1	81	85	.013	.04	.03	46.5	140.0		1	4			4	1								
C		Totals	2	83	93	.028	.07	.06	45.4	145.5		3	8			8	2								
Totals			349	87	80	155.610	258.54	286.44	34.7	137.6		9,948	39,406			29,943	11,861								

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-13-49

SALTY DOG

PORTIONS OF SECTIONS 27 AND 34,
T4N, R8W, W.M., CLATSOP COUNTY, OREGON

AND PORTIONS OF SECTIONS 3, 4, AND 10,
T3N, R8W, W.M., TILLAMOOK COUNTY, OREGON

Page 1 of 2

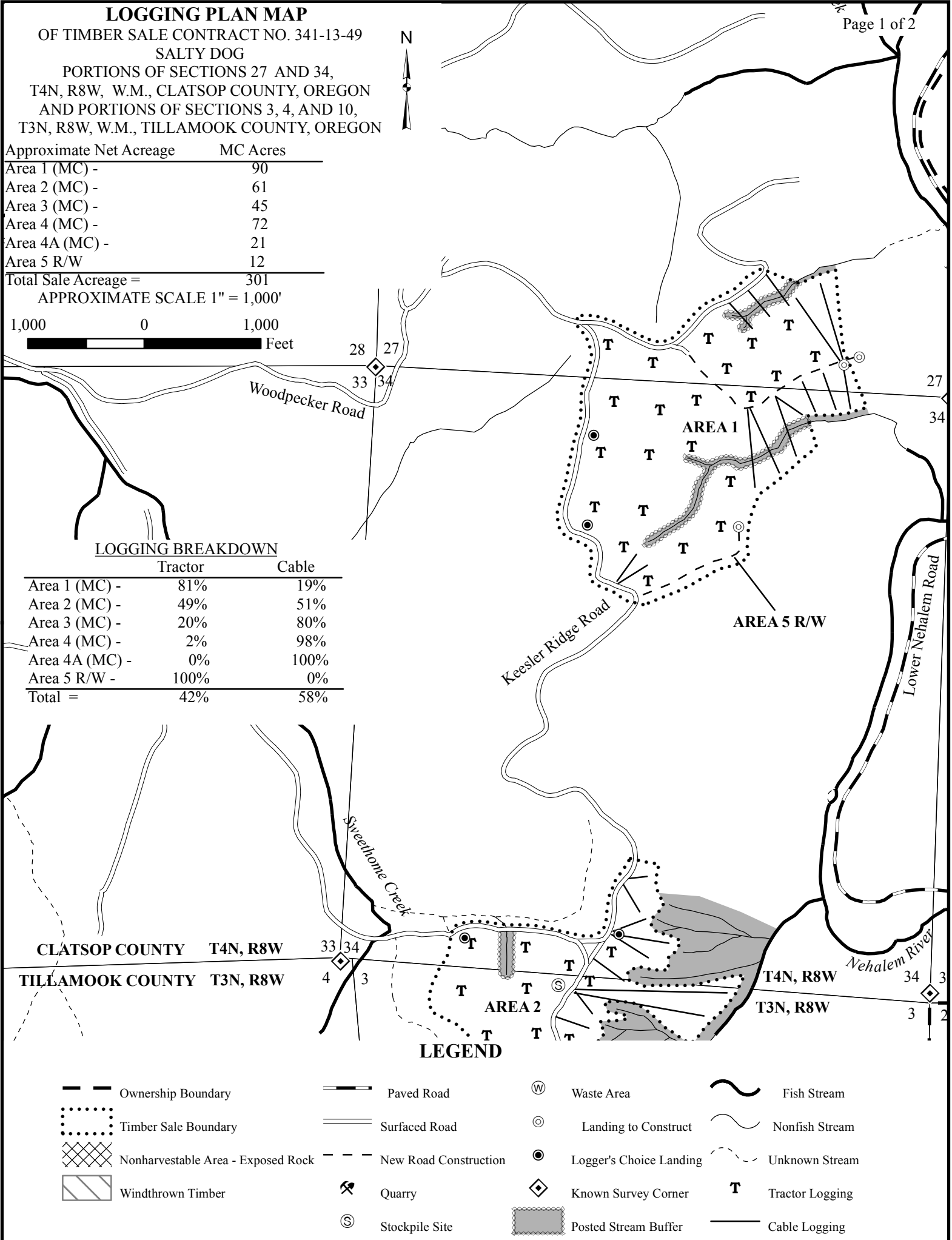
Approximate Net Acreage	MC Acres
Area 1 (MC) -	90
Area 2 (MC) -	61
Area 3 (MC) -	45
Area 4 (MC) -	72
Area 4A (MC) -	21
Area 5 R/W	12
Total Sale Acreage =	301

APPROXIMATE SCALE 1" = 1,000'

1,000 0 1,000
Feet

LOGGING BREAKDOWN

	Tractor	Cable
Area 1 (MC) -	81%	19%
Area 2 (MC) -	49%	51%
Area 3 (MC) -	20%	80%
Area 4 (MC) -	2%	98%
Area 4A (MC) -	0%	100%
Area 5 R/W -	100%	0%
Total =	42%	58%



LEGEND

- | | | | |
|------------------------------------|-----------------------|-------------------------|-----------------|
| Ownership Boundary | Paved Road | Waste Area | Fish Stream |
| Timber Sale Boundary | Surfaced Road | Landing to Construct | Nonfish Stream |
| Nonharvestable Area - Exposed Rock | New Road Construction | Logger's Choice Landing | Unknown Stream |
| Windthrown Timber | Quarry | Known Survey Corner | Tractor Logging |
| | Stockpile Site | Posted Stream Buffer | Cable Logging |

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-13-49

SALTY DOG

PORTIONS OF SECTIONS 27 AND 34,
T4N, R8W, W.M., CLATSOP COUNTY, OREGON

AND PORTIONS OF SECTIONS 3, 4, AND 10,
T3N, R8W, W.M., TILLAMOOK COUNTY, OREGON

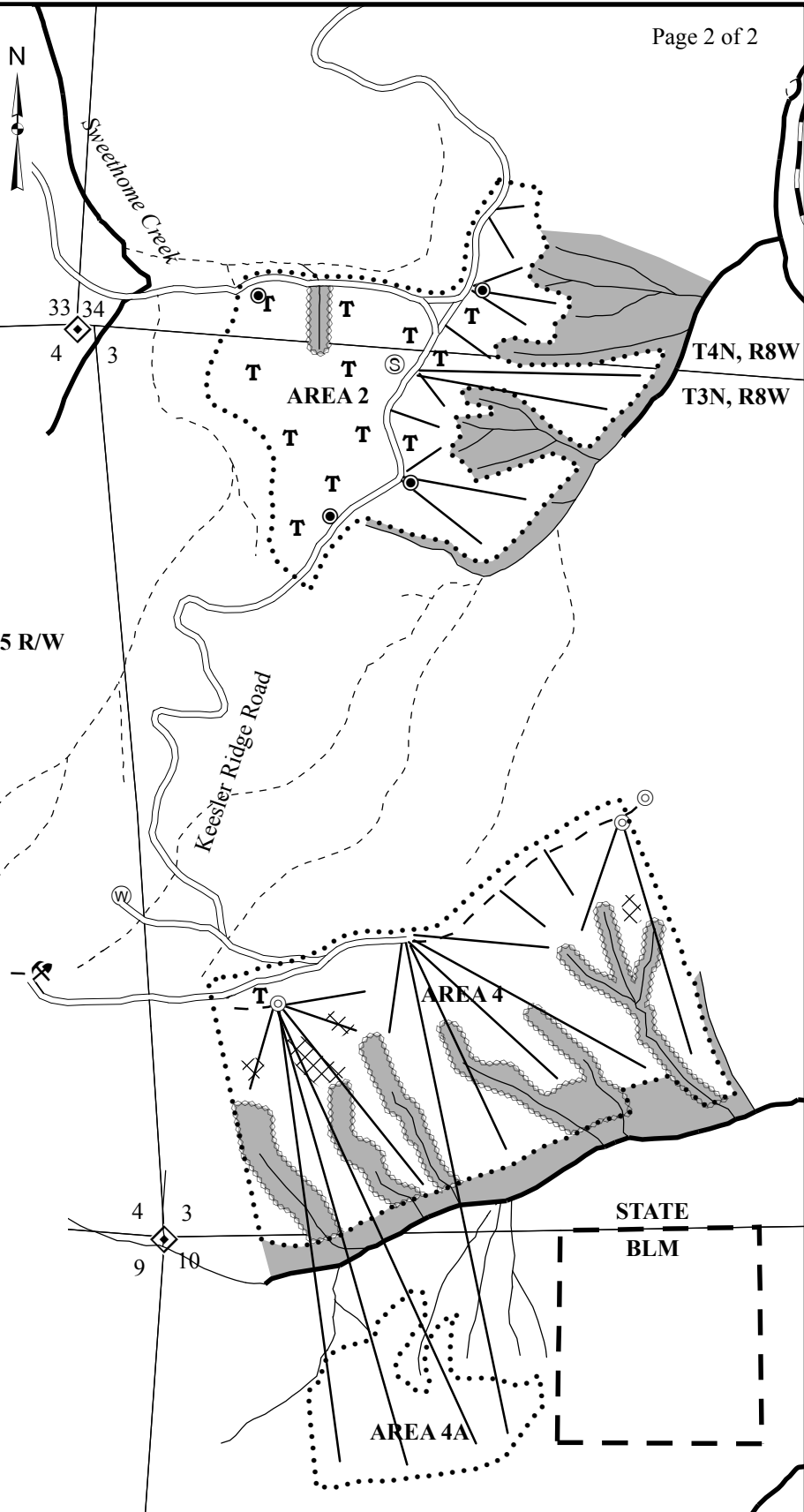
APPROXIMATE SCALE 1" = 1,000'

Page 2 of 2

1,000 0 1,000 Feet

CLATSOP COUNTY T4N, R8W

TILLAMOOK COUNTY T3N, R8W



Approximate Net Acreage	MC Acres
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LEGEND

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	Timber Sale Boundary		Surfaced Road		Landing to Construct		Nonfish Stream
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			Stockpile Site		Posted Stream Buffer		Cable Logging