



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Stone Soup
Sale 341-11-10

District: Astoria

Date: March 15, 2011

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,949,141.92	\$270,878.72	\$2,220,020.64
		Project Work:	\$(245,401.00)
		Advertised Value:	\$1,974,619.64



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timber description

Location: Portions of Sections 10, 11, 14, 15, 22, 23, 26, and 27, T4N, R9W, W.M., Clatsop County, Oregon.

Stand Stocking: 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	98
Western Hemlock / Fir	18	0	93
Sitka Spruce	15	0	92
Red Cedar	9	0	92
Alder (Red)	14	0	94

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	3,781	1,580	222	0	5,583
Western Hemlock / Fir	592	185	22	0	799
Sitka Spruce	238	116	51	0	405
Red Cedar	0	0	1	0	1
Alder (Red)	0	0	0	896	896
Total	4,611	1,881	296	896	7,684



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comments: Pond Values Used: 4th Quarter Calendar Year 2010.

Expected Log Markets: Warrenton, OR; Tillamook, OR; Garibaldi, OR; Forest Grove, OR; Mist, OR; Aberdeen, WA., Longview, WA, Morton, WA.

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$700 daily truck cost.

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

Additional Logging Costs:

Branding and Painting: \$1/MBF x 7,684 MBF = \$7,684

Close Roads in Areas 1 and 5: 20 hours x \$110/hr = \$2,200

Slash & Landing Piling (includes Move-In and Pile Materials) = \$6,615 (see attached appraisal)

Logger's Choice Spur Construction 11 sta. X \$106/sta. = \$1,166

Machine Washing for Invasive Weed Control = \$2,000

TOTAL Other Costs (with Profit & Risk to be added) = \$19,665

Other Costs (No Profit & Risk added):

None.



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logging conditions

combination#: 1

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

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process:** Manual Delimiting
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 9.0 **bd. ft / load:** 3,900
cost / mbf: \$71.36

machines: Shovel Logger

combination#: 2

Douglas - Fir	27.00%
Western Hemlock / Fir	27.00%
Sitka Spruce	27.00%
Red Cedar	27.00%
Alder (Red)	27.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Cable: Medium Tower >40 - <70 **Process:** Manual Delimiting
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 6.0 **bd. ft / load:** 3,700
cost / mbf: \$155.86

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

combination#: 3

Douglas - Fir	11.00%
Western Hemlock / Fir	11.00%
Sitka Spruce	11.00%
Red Cedar	11.00%
Alder (Red)	11.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process:** Manual Delimiting
tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 9.0 **bd. ft / load:** 4,800
cost / mbf: \$57.98

machines: Shovel Logger

combination#: 4

Douglas - Fir	24.00%
Western Hemlock / Fir	24.00%
Sitka Spruce	24.00%
Red Cedar	24.00%
Alder (Red)	24.00%



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yarding distance:	Medium (800 ft)	downhill yarding:	No
logging system:	Cable: Medium Tower >40 - <70	Process:	Manual Delimiting
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
loads / day:	10.0	bd. ft / load:	4,800
cost / mbf:	\$72.08		
machines:	Log Loader (A) Tower Yarder (Medium)		



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logging costs

Operating Seasons:	3.00	Profit Risk:	15.00%
Project Costs:	\$245,401.00	Other Costs (P/R):	\$19,665.00
Slash Disposal:	\$0.00	Other Costs:	\$0.00

Miles of Road

Road Maintenance: \$4.11

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.9
Western Hemlock / Fir	\$0.00	3.0	4.2
Sitka Spruce	\$0.00	2.0	3.9
Red Cedar	\$0.00	1.0	3.5
Alder (Red)	\$0.00	2.0	3.2



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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									
\$92.88	\$4.19	\$1.71	\$42.24	\$2.56	\$21.54	\$0.00	\$5.00	\$0.00	\$170.12
Western Hemlock / Fir									
\$92.88	\$4.40	\$1.71	\$51.69	\$2.56	\$22.99	\$0.00	\$5.00	\$0.00	\$181.23
Sitka Spruce									
\$92.88	\$4.44	\$1.71	\$84.28	\$2.56	\$27.88	\$0.00	\$5.00	\$0.00	\$218.75
Red Cedar									
\$92.88	\$4.44	\$1.71	\$187.82	\$2.56	\$43.41	\$0.00	\$5.00	\$0.00	\$337.82
Alder (Red)									
\$92.88	\$4.36	\$1.71	\$100.82	\$2.56	\$30.35	\$0.00	\$5.00	\$0.00	\$237.68

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$474.68	\$304.56	\$0.00
Western Hemlock / Fir	\$0.00	\$403.47	\$222.24	\$0.00
Sitka Spruce	\$0.00	\$393.05	\$174.30	\$0.00
Red Cedar	\$0.00	\$960.00	\$622.18	\$0.00
Alder (Red)	\$0.00	\$540.00	\$302.32	\$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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	5,583	\$304.56	\$1,700,358.48
Western Hemlock / Fir	799	\$222.24	\$177,569.76
Sitka Spruce	405	\$174.30	\$70,591.50
Red Cedar	1	\$622.18	\$622.18
Alder (Red)	896	\$302.32	\$270,878.72

Gross Timber Sale Value

Recovery: \$2,220,020.64

Prepared by: Edward Holloran

Phone: 503-325-5451

Site Prep Appraisal

Sale Number: 341-11-10
 Sale Name: Stone Soup
 Date: 01/31/2011

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	1.0	3.0
Hemlock/Fir	B	1.5	4.5
Hemlock/Spruce	C	2.0	6.0
Hemlock	D	2.0	6.0
Conifer/Hardwood	E	1.5	4.5
Whole Tree Yarding	F	0.5	0.5

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area	
3	MC	A	1.0	1	\$110.00	\$110.00	
4	MC	A	4.0	4	\$110.00	\$440.00	
5	MC	E	14.0	21	\$110.00	\$2,310.00	
				FALSE	\$110.00	\$0.00	
In-unit Piling						Sub Total =	\$2,860.00

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
3*	2	\$220.00	\$440.00	3	\$5.00	\$15.00
4*	4	\$220.00	\$880.00	12	\$5.00	\$60.00
5*	5	\$220.00	\$1,100.00	63	\$5.00	\$315.00
			\$0.00	FALSE	\$5.00	\$0.00

*Cost includes separating firewood

Materials **Sub Total =** \$390.00

Landing Piling **Sub Total =** \$2,420.00

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

Move-In **Sub Total =** \$945.00

Grand Total = \$6,615.00

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Stone Soup FL
 Date: December 10-2010
 By: Ed Holloran

MBF: 7,684
 \$\$/MBF: \$4.11

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations Entries - 2	Grader 14G	\$675	2	40	\$93	\$5,070
	Dump Truck 12CY	\$141	2	20	\$73	\$1,742
	FE Loader C966	\$675	2	10	\$77	\$2,120
Final Road Maintenance	Grader 14G	\$675	1	50	\$93	\$5,325
	Dump Truck 12CY	\$141	2	80	\$73	\$6,122
	FE Loader C966	\$675	1	20	\$77	\$2,215
	Vibratory Roller	\$675	1	50	\$72	\$4,275
	Water Truck 2,500 gallon	\$165	1	25	\$83	\$2,240
	Backhoe-small	\$279	1	20	\$72	\$1,719
	Labor				20	\$38
Total						\$31,588

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	3.5	14.0	4.0	40.0

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Process - Grader	1.5	7.4	4.9	49.3
Vibratory Roller	1.5	7.4	4.9	49.3

Process and Compact: Cole Mountain Road (via Loop - 0.7 miles)

Cole Mountain Ridge Road (0.3), New Collector (1.3 mi.), Soapstone Lake Road. (0.5 mi.),
 Rocked Logging Spurs in Timber Sale (1.6 mi.), and Access spurs to sale Areas (3.0)

Total Miles = 7.4miles

SUMMARY OF ALL PROJECT COSTS

SALE NAME: **STONE SOUP**

NEW CONSTRUCTION:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	Dirt (1A (sta. 4+55) to 1B, 1C to 1D, 1E to 1F)	31.5	\$7,871
	Rocked (1A to sta. 4+55) 1G-1H, 2A-2B, 2C-2D, 2E-2F, 3A-3B, 4A-4B, 5A-5B, 5C-5D 5E-5F, 5G-5H, 5I-5J, & 5K-5L	81.9	\$119,071
TOTALS	2.1 miles	113.4 Stations	\$126,942

ROAD IMPROVEMENT

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 2	11 to 12, 13 to 14 15 to 16, 17 to 18, and 19-110	154.4	\$57,623
TOTALS	2.9 miles	154.4 Stations	\$57,623

SPECIAL PROJECTS

	<u>Description</u>	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 3	Road Brushing:	34 Road Segments (Refer to cost page)	19.6 miles	\$14,280
Project No. 4	Road Vacating:	V1-V2, V3-V4 V5-V6, & V7-V8	(21+06) + (21+37) (6+81) + (18+10) = 67+34 1.3 mi.	\$23,995
	Project Road Maintenance (9.0 miles)			\$12,000
TOTALS				\$50,275

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
Excavator (C330 - \$1,220 X 2)	\$2,440
Excavator (C312 @ \$699)	\$1,398
Dozer (D8 1 @ \$1220)	\$1,220
Rubber Tired Skidder	\$622
Vibratory Roller	\$675
Front End Loader (C966 X 2 @ \$675)	\$1,350
10-12 yd dump truck (X 6 @ \$141 each)	\$846
20 yd dump truck (X 3 @ \$166 each)	\$498
Large Grader (14G @ \$675)	\$675
Water Truck (2,500 gal @ \$ 165)	\$165
24 yd Off Highway dump truck (1 @ \$672)	\$672
TOTAL	\$10,561

GRAND TOTAL **\$245,401**

Compiled By: Ed Holloran

Date: 12/12/2010

SUMMARY OF NEW CONSTRUCTION COSTS

SALE NAME: Stone Soup
 ROAD: Unsurfaced: 1A-1B(Sta. 4+55 to 21+65), 1C-1D, 1E to 1F
 POINTS: Surfaced: A-B, 1A-1B (0+00 to 4+55), 1G-1H, 2A-2B, 2C-2D, 2E-2F
3A-3B, 4A-4B, 5A-5B, 5C-5D, 5E-5F, 5G-5H, 5I-5J

NEW CONSTRUCTION: 81.86 STATIONS 1.55 MILES
 DIRT CONSTRUCTION: 31.50 STATIONS 0.60 MILES

CLEARING & GRUBBING						
	Method	Acres/amount	x	Rate	=	Cost
Unsurfaced	Scatter outside of r/w - New Roads - \$/ac	3.09	x	\$1,161.00	=	\$3,587.49
Surfaced	Scatter outside of r/w - New Roads - \$/ac	8.83	x	\$1,161.00	=	\$10,251.63
SUB TOTAL FOR CLEARING & GRUBBING						\$13,839

EXCAVATION						
	Material	Cy/amount	x	Rate	=	Cost
Unsurfaced 1A-1B 4.65-21.65, 1C-1D, & 1E-1F	Balanced Construction (dirt) \$/sta	31.50 sta	x	\$106.00	=	\$3,339.00
Surfaced: A-B	Drift to Fills	248 cyds	x	\$1.60	=	\$396.80
	Haul to Waste area	85 cyds	x	\$1.62	=	\$137.70
	Cut Slope Rounding (1+73 - 2+75)	1.02 sta	x	\$37.00	=	\$37.74
	Embankment Compaction	248 cyds	x	\$0.60	=	\$148.80
	Waste Area Compaction	85 cyds	x	\$0.30	=	\$25.50
1A-1B	Balanced Construction \$/sta	5 sta	x	\$106.00	=	\$482.30
1G-1H	Drift earth up to 200' \$/sta	4.40 sta	x	\$165.00	=	\$726.00
2A-2B, 2E-2F, 3A-3B, 4A-4B	Balanced Construction \$/sta	11.65 sta	x	\$106.00	=	\$1,234.90
2C-2D	Balanced Construction \$/sta	2.50 sta	x	\$106.00	=	\$265.00
	Drift earth up to 200' \$/sta	2.75 sta	x	\$165.00	=	\$453.75
5A-5B	Drift earth up to 200' \$/sta	42.60 sta	x	\$165.00	=	\$7,029.00
	End Haul - 38+00 to 15+80 \$/cyd	1,570 cyds	x	\$3.50	=	\$5,495.00
	End Haul - 38+00 to 41+00 \$/cyd	360 cyds	x	\$3.50	=	\$1,260.00
	Compact fill \$/cyd	8,156 cyds	x	\$0.60	=	\$4,893.60
	Cut slope rounding \$/sta	9.75 sta	x	\$37.00	=	\$360.75
5C-5D, 5E-5F, 5G-5H, 5I-5J	Balanced Construction \$/sta	9.38 sta	x	\$106.00	=	\$994.28
5E-5F	End Haul - 0+50 to 13-14 sta 41+5 \$/cyd	420 cyds	x	\$3.50	=	\$1,470.00
	Landing Construction	12.00		\$338.00	=	\$4,056.00
SUB TOTAL FOR EXCAVATION						\$32,806

CULVERT MATERIALS AND INSTALLATION											
	Location	Dia/type	Lineal ft.	Rate	Cost	Seg.	Location	Dia/type	Lineal ft.	Rate	Cost
A-B	0+40	18" CPP	40	\$17.64	\$705.60	5K-5L	20+00	18" CPP	30	\$17.64	\$529.20
1A-1B	0+50	18" CPP	30	\$17.64	\$529.20		26+75	18" CPP	30	\$17.64	\$529.20
1G-1H	0+00	18" CPP	35	\$17.64	\$617.40		31+35	18" CPP	35	\$17.64	\$617.40
	2+90	18" CPP	30	\$17.64	\$529.20		33+70	18" CPP	30	\$17.64	\$529.20
2A-2B	2+75	18" CPP	30	\$17.64	\$529.20		36+25	18" CPP	40	\$17.64	\$705.60
	6+00	18" CPP	30	\$17.64	\$529.20		39+65	18" CPP	40	\$17.64	\$705.60
2C-2D	0+00	18" CPP	35	\$17.64	\$617.40		42+00	18" CPP	30	\$17.64	\$529.20
	1+35	18" CPP	35	\$17.64	\$617.40						
2E-2F	0+00	18" CPP	35	\$17.64	\$617.40						
5A-5B	6+60	18" CPP	30	\$17.64	\$529.20	5K-5L	0+50	18"	35	\$17.64	\$617.40
	10+00	18" CPP	30	\$17.64	\$529.20						

	Description	Quantity	Rate	Cost
Other/miscellaneous:	Grass seed for Waste Areas (lbs.)	10	\$1.40	\$14.00
	abor for seeding (hours)	2	\$38.00	\$76.00
	Straw (Bales)	30	\$10.00	\$300.00
	Disposal of Old Culverts (2) Dump Tr. (hours)	0.5	\$72.50	\$36.25
Culvert stakes & markers:	Fiberglass Culvert Markers - New Roads	19	\$18.00	\$342.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION **\$11,881**
 Costed by: Ed Holloran & Don Mellison Date: 12/10/2009 Subtotal of Clearing, Exc., Culv. **\$58,527**

SURFACING			Stations/		Rate/	Cost
Subgrade prep:	Stations	Description	amount	x	sta/amt	
1A-1B (4+55-21+65), 1C-1D, 1E-1F (dir	31.50	Grade, Shape, Outslope	32	x	\$15.93	\$501.80
A-B; 1A-1B (0+00 to 4+55); 1G-1H; 2A-2	20.53	Grade, Shape, Ditch	21	x	\$21.55	\$442.42
2C-2D, 2E-2F, 3A-3B, 4A-4B,	9.40	Grade, Shape, Ditch	9	x	\$21.55	\$202.57
5A-5B, 5C-5D, 5E-5F, 5G-5H,	51.93	Grade, Shape, Ditch	52	x	\$21.55	\$1,119.09
5I-5J, 7 5K-5L						
All surfaced roads	81.86	Subgrade Compaction	82	x	\$17.52	\$1,434.19
						\$3,700

ROAD SEGMENTS		A-B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	A-B Volume (CY) per	0+00 to 4+08 Number of					
Base Rock	4"-0" Crushed	0+00 to 4+08	6"	station 38	stations 4.08	155	\$6.52	\$1,011		
Turnouts	4"-0" Crushed		8"	turnout 22	turnouts 1	22	\$6.52	\$143		
Curve widening	4"-0" Crushed		8"	curve n/a	curves 2	6	\$6.52	\$39		
Junctions	1 1/2"-0" Crushed		3"	junction 11	junctions 1	11	\$6.52	\$72		
Reclaimed rock	Open gradation		n/a	station n/a	stations 4.08	88	\$1.57	\$138		
Total Rock for Road Segment:		A-B				262				

ROAD SEGMENTS		1A-1B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A-1B Volume (CY) per	0+00 to 21+65 Number of					
Base Rock	4"-0" Crushed	0+00 to 4+55	8"	station 50	stations 4.55	228	\$6.52	\$1,487		
Junctions	4"-0" Crushed	1A & 1C	N/A	junction 33	junctions 2.0	66	\$6.52	\$430		
Junction Surface Rock	1 1/2"-0" Crushed	1A	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Turnouts	4"-0" Crushed	3+55 to 4+55	N/A	turnout 22	turnouts 1.0	22	\$6.52	\$143		
Culvert Bedding	1 1/2"-0" Crushed	0+40	N/A	culvert 11	culverts 1.0	11	\$6.52	\$72		
Total Rock for Road Segment:		1A-1B				349				

ROAD SEGMENT		1G-1H		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	1G-1H Volume (CY) per	0+00 to 4+40 Number of					
Base Rock	4"-0" Crushed	0+00 to 4+40	8"	station 50	stations 4.4	220	\$6.52	\$1,434		
Junctions	4"-0" Crushed	1G	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Junction Surface Rock	1 1/2"-0" Crushed	1G	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Turnouts	4"-0" Crushed	2+00 to 3+00	N/A	turnout 22	turnouts 1.0	22	\$6.52	\$143		
Culvert Bedding	1 1/2"-0" Crushed	0+00	N/A	culvert 22	culverts 1.0	22	\$6.52	\$143		
Landings	6"-0" pit run	4+40		landing 50	landings 1.0	50	\$7.20	\$360		
Total Rock for Road Segment:		1G-1H				358				

ROAD SEGMENT		2A-2B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A-2B Volume (CY) per	0+00 to 7+50 Number of					
Base Rock	4"-0" Crushed	0+00 to 7+50	8"	station 50	stations 7.5	375	\$6.52	\$2,445		
Junctions	4"-0" Crushed	2A	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Turnaround	4"-0" Crushed	6+50	N/A	turnaround 22	turnaround 1.0	22	\$6.52	\$143		
Landings	6"-0" pit run	7+50		landing 50	landings 1.0	50	\$7.20	\$360		
Total Rock for Road Segment:		2A-2B				469				

ROAD SEGMENT		2C-2D		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	2C-2D Volume (CY) per	0+00 to 5+25 Number of					
Base Rock	4"-0" Crushed	0+00 to 5+25	8"	station 50	stations 5.25	262	\$6.52	\$1,708		
Junctions	4"-0" Crushed	2C	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Culvert Bedding	1 1/2"-0" Crushed	0+00	N/A	culvert 22	culverts 1.0	22	\$6.52	\$143		
Turnouts	4"-0" Crushed	2+00 to 3+00	N/A	turnout 22	turnouts 1.0	22	\$6.52	\$143		
Landings	6"-0" pit run	5+25		landing 50	landings 1.0	50	\$7.20	\$360		
Total Rock for Road Segment:		2C-2D				378				

ROAD SEGMENT		2E-2F		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	2E-2F Volume (CY) per	0+00 to 2+40 Number of					
Base Rock	4"-0" Crushed	0+00 to 2+40	8"	station 50	stations 2.4	135	\$6.52	\$880		
Junctions	4"-0" Crushed	3E	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Culvert Bedding	1 1/2"-0" crushed	0+00	N/A	culvert 11	culverts 1.0	11	\$6.52	\$72		
Turnouts	4"-0" Crushed	2+00 to 3+00	N/A	turnout 22	turnouts 1.0	22	\$6.52	\$143		
Culvert Bedding	1 1/2"-0" crushed	0+00	N/A	culvert 22	culverts 1.0	22	\$6.52	\$143		
Landings	6"-0" pit run	5+25		landing 50	landings 1.0	50	\$7.20	\$360		
Total Rock for Road Segment:		2E-2F				262				

ROAD SEGMENT		3A to 3B		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	3A to 3B Volume (CY) per	0+00 to 0+75 Number of					
Base Rock	4"-0" Crushed	0+00 to 0+75	8"	station 50	stations 0.75	38	\$6.52	\$248		
Junctions	4"-0" Crushed	3A	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Junction Surface Rock	1 1/2"-0" Crushed	3A	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Landings	6"-0" pit run	0+75		landing 80	landings 1.0	80	\$7.20	\$576		
Total Rock for Road Segment:		3A to 3B				162				

ROAD SEGMENT		4A-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-4B Volume (CY) per	0+00 to 1+00 Number of					
Base Rock	4"-0" Crushed	0+00 to 1+00	8"	station 50	stations 1.0	50	\$6.52	\$326		
Junctions	4"-0" Crushed	3A	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Junction Surface Rock	1 1/2"-0" Crushed	3A	N/A	junction 22	junctions 1.0	22	\$6.52	\$143		
Landings	6"-0" pit run	1+00		landing 80	landings 1.0	80	\$7.20	\$576		
Total Rock for Road Segment:		4A-4B				174				

						\$1,111		
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						\$1,189		
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ROAD SEGMENT			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
5A-5B			5A-5B		0+00 to 42+55				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 42+55	10	station 63	stations 42.55		2,684	\$6.52	\$17,500
Surface Rock	1 1/2"-0" crushed	0+00 to 42+55	3	station 19	stations 42.55		810	\$6.52	\$5,281
Curve Widening	4"-0" Crushed	10 curves	10	station 63	stations 2.3		145	\$6.52	\$945
Curve Widening-Surfacing	1 1/2"-0" Crushed	same as above	3	station 19	stations 2.3		44	\$6.52	\$287
Road widening-2 ft-through cut	4"-0" Crushed	34+45 to 36+00	10	station 63	stations 0.3		19	\$6.52	\$124
Road widening-2 ft-through cut	1 1/2"-0" Crushed	34+45 to 36+00	3	station 19	stations 0.3		6	\$6.52	\$39
Fill Widening (2ft/side on 3 and 1 ft/side on 2)	4"-0" Crushed	7+64 to 8+50, 12+25 to 13+65, 15+12 to 16+37, 31+26 to 32+41, 36+15 to 36+50	10	station 63	stations 1.4		88	\$6.52	\$574
Fill Widening-Surfacing	1 1/2"-0" Crushed	same as above	3	station 19	stations 1.4		27	\$6.52	\$176
Turnouts (plus taper)	4"-0" Crushed	0+00 to 10+00, 11+30 to 12+70, 20+55 to 21+30, 27+33 to 29+05, 37+00 to 38+60, 40+65 to 41+95	10	N/A	N/A	N/A	325	\$6.52	\$2,119
Turnout Surface Rock	1 1/2"-0" Crushed	same as above	3	N/A	N/A	N/A	100	\$6.52	\$652
Junction Surface Rock	1 1/2"-0" Crushed	5C, 5E, 5G, 5I	N/A	junction 22	junctions 4		88	\$6.52	\$574
Dissipator Rock	24"-6" riprap	26+75, 31+25, 36+25, 39+66, 42+00	N/A	culvert 11	culverts 5		55	\$11.72	\$645
Fill Armor	24"-6" riprap	12+53, 12+53 to 13+64, 15+12 to 16+36, 36+22 to 36+48	N/A	fill 5	fills 5.0		500	\$11.72	\$5,860
Landings	6"-0" pit run			landing 80	landings 1		80	\$7.20	\$576
Total Rock for Road Segment:			5A-5B				4,971		

\$35,351

ROAD SEGMENT			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
5C-5D			5C-5D		0+00 to 2+00				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 2+00	8	station 50	stations 2		100	\$6.52	\$652
Junctions	4"-0" Crushed	0+00	N/A	junction 33	junctions 1		33	\$6.52	\$215
Total Rock for Road Segment:			5C-5D				133		

\$867

ROAD SEGMENT			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
5E-5F			5E-5F		0+00 to 1+00				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 1+00	8	station 50	stations 1		50	\$6.52	\$326
Junctions	4"-0" Crushed	0+00	N/A	junction 33	junctions 1		33	\$6.52	\$215
Landings	6"-0" pit run	1+00		landing 80	landings 1		80	\$7.20	\$576
Total Rock for Road Segment:			5E-5F				163		

\$1,117

ROAD SEGMENT			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
5G-5H			5G-5H		0+00 to 2+85				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 2+85	8	station 50	stations 2.85		143	\$6.52	\$932
Junctions	4"-0" Crushed	0+00	N/A	junction 33	junctions 1		33	\$6.52	\$215
Landings	6"-0" pit run	2+85		landing 80	landings 1		80	\$7.20	\$576
Total Rock for Road Segment:			5G-5H				256		

\$1,724

ROAD SEGMENT			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
5I-5J			5I-5J		0+00 to 1+43				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 1+43	8	station 50	stations 1.43		72	\$6.52	\$466
Junctions	4"-0" Crushed	0+00	N/A	junction 33	junctions 1		33	\$6.52	\$215
Total Rock for Road Segment:			5I-5J				105		

\$681

ROAD SEGMENT			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
5K-5L			5K-5L		0+00 to 2+10				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of				
Base Rock	4"-0" Crushed	0+00 to 2+10	8	station 50	stations 2.1		105	\$6.52	\$685
Junctions	4"-0" Crushed	0+00	N/A	junction 33	junctions 1		33	\$6.52	\$215
Culvert Bedding	1 1/2"-0" crushed	0+00	N/A	culvert 22	culverts 1.0		22	\$6.52	\$143
Total Rock for Road Segment:			5K-5L				138		

\$1,043

Processing:	Description	No. sta	Rate/sta	Cost
	Crushed Rock process and compact + Water Truck 4"-0" rock 1 lift	81.86	\$49.02	\$4,013
	Crushed Surface Rock process and compact + Water Truck	43.05	\$49.02	\$2,110

SUB TOTAL FOR SURFACING	36"-0" rr	24"-6" rr	6"-0" pr	4"-0"	1 1/2"-0"	Open G	Total		
	0	555	600	6,695	1,262	88	8,200	8,200	\$66,286

SPECIAL PROJECTS	Description	cy/amount	Cost	per amount =	Cost
	Geo-textiles - 6 1/2 oz. (woven) x 16' wide - fills on 5A-5B	500	\$1.50	/lf	\$750.00
	6"-0" Develop pit run rock at Cole Mtn.	600	\$2.30	/cy	\$1,380.00

SUB TOTAL FOR SPECIAL PROJECTS \$2,130

Subtotal of Surfacing & Spec. Proj. \$68,416
Subtotal of Clearing, Exc., Culv. \$58,527

GRAND TOTAL \$126,942

Compiled By: Ed Holloran & Don Mellison

Date: 12/10/2010

SUMMARY OF ROAD IMPROVEMENT COSTS

SALE NAME: Stone Soup
 ROAD: I1-12 (7+65); I3-14 (44+2); I5-16 (56+00); I7-18 (25+36); I9-110 (21+15)
 POINTS:

NEW CONSTRUCTION: STATIONS _____ MILES _____
 IMPROVEMENT: 154.36 STATIONS _____ 2.92 MILES _____

CLEARING & GRUBBING							
	Method	Acres/amount	/	x	Rate	=	Cost
I1-12	Scatter outside of r/w - New Roads - \$/ac	0.37		x			
	Haul stumps to Waste (acres)						
	Dump truck	1.5	hr.	x	\$73	=	\$109.50
	C330 Excavator	1	hr.	x	\$144	=	\$144.00
3+30-3+75	Scatter debris, ob on old road (C330)	2	hr.	x	\$144	=	\$288.00
	Shift road into hill (C330)	1.5	hr.	x	\$144	=	\$216.00
	Dump truck	1.0	hr.	x	\$73	=	\$73.00
I3-14	Scatter (0+00-5+27,19+64-24+10,32+11-35+34)	0.90	ac.	x	\$1,161	=	\$1,044.90
	Scatter (38+57-39+37,40+09-)	4.5	hr.	x	\$144	=	\$648.00
I5 to 16	Construct ditchouts (C330)	1	hr.	x	\$144.00	=	\$144.00
	Improve turnouts (C330)	0.5	hr.	x	\$144.00	=	\$72.00
I9 to I10	Sta. (0+00 - 2+54) Scarification	2.54	sta.	x	\$21.40	=	\$54.36
	Construct/Improve turnouts (C330)	1.25	hr.	x	\$144.00	=	\$180.00
	Improve ditchout (C330)	0.25	hr.	x	\$144.00	=	\$36.00
SUB TOTAL FOR CLEARING & GRUBBING							\$3,010

EXCAVATION							
	Material	Cy/amount	/	x	Rate	=	Cost
I1 to I2	Waste material on old road	1,476	cyd.	x	\$1.62	=	\$2,391.12
	Drift material to fills	34	cyd.	x	\$1.60	=	\$54.40
	Compact fills	34	cyd.	x	\$0.60	=	\$20.40
	Compact waste material on old road	1,476	cyd.	x	\$0.30	=	\$442.80
3+30-3+75	Cut slope rounding	3.57	sta.	x	\$37	=	\$132.09
	Shift road into hill						
	C330 Excavator	1	hr.	x	\$144	=	\$144.00
	Dump truck	1	hr.	x	\$73	=	\$73.00
I3 to I4	Existing turnout improvement (14G)	1	hr.	x	\$93	=	\$93.00
	Common Drift 0+00-5+27,19+64-24+10,32+11-35+34	786	cyd.	x	\$1.60	=	\$1,256.00
	Embankment Compaction 00-5+27,19+64-24+10,32+11-35+34	639	cyd.	x	\$0.60	=	\$383.40
0+00-5+27	Blend 4-way Jct (D8 Cat)	2	hr.	x	\$147	=	\$294.00
12+59	Unplug culvert (C330)	0.5	hr.	x	\$144	=	\$72.00
19+64-24+10	Haul Waste	251	cyd.	x	\$1.62	=	\$406.62
	Cut slope rounding 3+60-5+27,20+69-21+30, 21+69-23+40	3.92	sta.	x	\$37.00	=	\$145.04
	Cut slope rounding 33+20-33+70,38+57-39+37,40+25-41+90	2.6	cyd.	x	\$37.00	=	\$96.20
	Haul Waste 32+11-35+34,36+57-39+37,40+09-41+46	380	cyd.	x	\$1.62	=	\$615.60
33+40	Remove & salvage culvert (C330)	1.5	hr.	x	\$144	=	\$216.00
32+11-34+83	Reclaim crushed rock (C330)	44	cyd.	x	\$1.90	=	\$83.60
38+57-39+37	Construct turnout (C330)	0.5	hr.	x	\$144	=	\$72.00
	Raise grade with Seg 5A-5B waste						
	Common Drift	334	cyd.	x	\$1.60	=	\$534.40
40+77	Embankment Compaction	334	cyd.	x	\$0.60	=	\$200.40
	Junction work (C330)	1.5	hr.	x	\$144	=	\$216.00
	Construct ditchouts (C330)	1	hr.	x	\$144	=	\$144.00
	Waste area compaction	786	cyd.	x	\$0.30	=	\$235.80
I5 to I6	Construct ditchouts (C330)	1	hr.	x	\$144.00	=	\$144.00
	Improve turnouts (C330)	0.5	hr.	x	\$144.00	=	\$72.00
I7 to I8	(0+00-2+54) Reclaim crushed rock	86	cyd.	x	\$1.90	=	\$162.20
	(0+00-2+54) Rip subgrade	2.54	sta.	x	\$21.40	=	\$54.36
I9 to I10	Construct/Improve turnouts (C330)	1.25	hr.	x	\$144.00	=	\$180.00
	Improve ditchout (C330)	0.25	hr.	x	\$144.00	=	\$36.00
SUB TOTAL FOR EXCAVATION							\$8,975

CULVERT MATERIALS AND INSTALLATION											
	Location	Dia/type	Lineal ft.	Rate	Cost	Seg.	Location	Dia/type	Lineal ft.	Rate	Cost
I1 to I2	0+08	18" CPP	50	\$17.64	\$882.00	I5-16	7+93	18"	40	\$17.64	\$705.60
	0+70	18" CPP	40	\$17.64	\$705.60	I5-16	9+85	18"	40	\$17.64	\$705.60
	2+40	18" CPP	40	\$17.64	\$705.60						
	5+00	18" CPP	40	\$17.64	\$705.60	I9-110	4+68	18" CPP	40	\$17.64	\$705.60
I3-14	6+62	18"	40	\$17.64	\$705.60						
											\$5,821.20
Other/miscellaneous:		Description		Quantity	Rate	Cost					
Culvert stakes & markers:		Fiberglass Culvert Marker - Rd Imp. (5+1-3)		8	\$18.00	\$144.00					
		Culvert Disposal C330		1.5	\$144.00	\$216.00					
		Dump truck		1.0	\$73.00	\$73.00					
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION											\$6,254

Costed by: Don Mellison & Ed Holloran Date: 10/07/2010 & 12-10-2010 Subtotal of Clearing, Exc., Culv. \$18,239

SURFACING				Stations/		Rate/	Cost	
Subgrade prep:	Stations	Description	amount	x	sta/amt			
11-12	0+00 to 0+46	Grade, Shape, and Ditch 22'	0.46	x	\$24.04	\$11.06		
11-12 (0+46-12+67), 13-14, 15-16, 17-18, 19-110		Grade, Shape, and Ditch 16'	153.90	x	\$21.55	\$3,316.55		
11-12	0+00 to 2+50	Pull second through-cut ditch	2.50	x	\$7.00	\$17.50		
11-12	0+00 to 0+46	Subgrade Compaction 22'	0.46	x	\$22.14	\$10.18		
11-12 (0+46 to 12+67), 13-14, 15-16, 17-18, 19-110		Subgrade Compaction 16'	153.90	x	\$17.52	\$2,696.33		
13-14		Ditchline re-establishment, load-haul to waste area (6+62-12+59, 16+30-19+64, 25+65-32+11)	15.77	x	\$19.89	\$313.67		
19 to 110	10+60 to 21+15	Grade sod off road, reclaim crushed rock	10.55	x	\$10.00	\$105.50		
							\$6,471	

ROAD SEGMENT 11 to 12											
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost	
				1 to 12	Volume (CY) per	0+00 to 7+65	Number of				
Subgrade Reinforcement	12"-6" riprap	0+00 - 0+46	12"	station	119	stations	0.46	55	\$11.72	\$645	
Subgrade Reinforcement	12"-6" riprap	0+46 - 2+40	12"	station	86	stations	1.94	167	\$11.72	\$1,957	
Subgrade Reinforcement	12"-6" riprap	Flares	12"	flare	9	flares	2	18	\$11.72	\$211	
Base Rock	4"-0" crushed	0+00 - 0+46	8"	station	80	stations	0.46	37	\$6.52	\$240	
Base Rock	4"-0" crushed	0+46 - 2+40	8"	station	50	stations	1.94	97	\$6.52	\$632	
Base Rock	4"-0" crushed	Flares	8"	flare	6	flares	1	6	\$6.52	\$39	
Surface Rock	3/4"-0" crushed	0+00 - 0+46	4"	station	40	stations	0.46	18	\$9.60	\$177	
Surface Rock	3/4"-0" crushed	0+46 - 7+65	4"	station	25	stations	7.19	180	\$9.60	\$1,726	
Surface Rock	3/4"-0" crushed	Flares	4"	flare	3	flares	1	3	\$9.60	\$29	
Curve widening	3/4"-0" crushed		4"	curve	12	curves	2	24	\$9.60	\$230	
Turnouts	3/4"-0" crushed		4"	turnout	11	turnouts	3	33	\$9.60	\$317	
Bedding/backfill rock	1 1/2"-0" crushed	0+08,0+70,2+40	n/a	culvert	n/a	culverts	4	170	\$6.52	\$1,108	
Dissipator Rock	24"-6" riprap	0+70	n/a	dissipator	11	dissipators	1	11	\$11.72	\$129	
Total Rock for Road Segment:				11 to 12				819			

\$7,440

ROAD SEGMENT 13 to 14											
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost	
				13 to 14	Volume (CY) per	0+00 to 44+20	Number of				
Base Rock	4"-0" crushed	1+15-2+00, 2+89-5+10, 32+11-35+34, 40+09-41+46	8"	station	50	stations	7.56	378	\$6.52	\$2,465	
Base Rock	4"-0" crushed	6+62,21+00, 21+86, 22+86	8"	station	n/a	stations	n/a	88	\$6.52	\$574	
Base Rock	4"-0" crushed	38+57 - 39+37	8"	station	n/a	stations	n/a	11	\$6.52	\$72	
Curve Widening	4"-0" crushed	1+68-3+85, 4+51-5+27	8"	curve	n/a	curves	2	57	\$6.52	\$372	
Turnouts	4"-0" crushed	21+00,25+45, 28+45, 38+57	8"	turnout	22	turnouts	4	88	\$6.52	\$574	
Junctions	4"-0" crushed	40+77	8"	junction	n/a	junctions	1	33	\$6.52	\$215	
Surface Course	1 1/2"-0" crushed	0+00 - 5+27, 19+00 - 44+20	4"	station	25	stations	30.47	762	\$6.52	\$4,967	
Curve Widening	1 1/2"-0" crushed		4"	curve	n/a	curves	12	110	\$6.52	\$717	
Turnouts	1 1/2"-0" crushed		4"	turnout	11	turnouts	5	55	\$6.52	\$359	
Bedding / Backfill	1 1/2"-0" crushed	6+62	n/a	culvert	33	culverts	1	33	\$6.52	\$215	
Junctions	1 1/2"-0" crushed	33+19, 40+77	4"	junction	n/a	junctions	2	66	\$6.52	\$430	
Leveling Rock	1 1/2"-0" crushed		n/a	n/a	n/a	n/a	n/a	100	\$6.52	\$652	
Dissipator Rock	24"-6" riprap	6+62	n/a	dissipator	11	dissipators	1	11	\$11.72	\$129	
Backfill culvert trench	reclaimed	32+97	n/a	n/a	n/a	n/a	n/a	22	\$1.57	\$35	
Light Vehicle radius	reclaimed	34+47	n/a	n/a	n/a	n/a	n/a	22	\$1.57	\$35	
Total Rock for Road Segment:				13 to 14				1836			

\$11,808

ROAD SEGMENT 15 to 16											
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost	
				15 to 16	Volume (CY) per	0+00 - 56+00	Number of				
Turnouts	4"-0" crushed	32+99	8"	turnout	11	turnouts	1	11	\$6.52	\$72	
Bedding backfill	1 1/2"-0" crushed	7+93, 8+96		culvert	33	culverts	2	66	\$6.52	\$430	
Leveling Rock	4"-0" crushed			n/a	n/a	n/a	n/a	132	\$6.52	\$861	
Dissipator Rock	24"-6" riprap	7+93, 8+96		culvert	11	culverts	2	22	\$11.72	\$258	
Total Rock for Road Segment:				15 to 16				231			

\$1,621

ROAD SEGMENT 17 to 18											
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost	
				17 to 18	Volume (CY) per	0+00 - 25+36	Number of				
Leveling Rock	1 1/2"-0" crushed		N/A					165	\$6.52	\$1,076	
Total Rock for Road Segment:				17 to 18				165			

\$1,076

ROAD SEGMENT 19 to 110											
Application	Rock Size and Type	Location	Depth of Rock (inches)	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt	Cost	
				19 to 110	Volume (CY) per	0+00 - 21+15	Number of				
Turnouts	4"-0" crushed		8"	turnout	n/a	turnouts	2	33	\$6.52	\$215	
Leveling Rock	1 1/2"-0" crushed		n/a	station	n/a	stations	n/a	33	\$6.52	\$215	
Culvert Bedding/Backfill	1 1/2"-0" crushed	4+61	n/a	culvert	33	culverts	1	33	\$6.52	\$215	
Turnouts	1 1/2"-0" crushed		n/a	turnout	8	turnouts	2	16	\$6.52	\$104	
Total Rock for Road Segment:				19 to 110				115			

\$750

Processing:	Description	Gradation	# Lifts	No. sta	Rate/sta	Cost
	Process and compact	12"-6"	1	13.00	\$51.39	\$668
	Crushed Rock process and compact + Water	4"-0"	1	31.86	\$49.02	\$1,562
	Crushed Rock process and compact + Water	3/4"-0", 1 1/2"-0"	1	145.65	\$49.02	\$7,140

SUB TOTAL FOR SURFACING	Reclaimed	24"-6" riprap	8"-0" crushed	4"-0" crushed	1 1/2"-0" crushed	3/4"-0" crushed	Total	Rate/ Sta./ amt	Cost
	44	284	0	971	1609	258	3166	3,166	\$38,535

SPECIAL PROJECTS				
Description	cy/amount	Cost	per amount =	Cost
Geotextile Woven fabric 6 1/2 oz./16 feet wide				
11-12 (046-3+30), 13-14 (41+30- 43+23), 11-12(0+00 to 0+46 overlap)	569	\$1.50	/L. ft.	\$853.50

SUB TOTAL FOR SPECIAL PROJECTS \$854

Subtotal of Surfacing & Spec. Proj. \$39,388
Subtotal of Clearing, Exc., Culv. \$18,239

GRAND TOTAL \$57,628

Compiled By: Don Mellison & Ed Holloran Date: 04/04/2010 & 12/10/2010

RIP RAP ROCK COST

SALE NAME: Stone Soup
 PROJECT: Nos. 1, 2
 QUARRY: Cole Mountain

MATERIAL: Riprap

DATE: 4-14-10 & 12-09-10
 BY: D. Mellison & E. Holloran

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	
11 - 12	8+38	251		0.56	0.20	2.00	2.39	0.30	0.30	5.75
13 - 14	44+35	11				2.76	3.00	0.30	0.30	6.36
15 - 16	56+00	22				2.85	3.00	0.30	0.30	6.45
5A-5B	42+60	555		0.65	3.40	0.60	0.30	0.60	0.28	5.83
TOTAL		839								
CUBIC YARD WEIGHTED HAUL				0.60	2.31	1.11	1.03	0.50	0.29	AVERAGE HAUL 5.83
Average Round Trip Distance (miles)									11.66	

ROCK HAUL:

Truck type: <u>D12</u>	No. trucks: <u>1</u>	Ave haul: \$6.23 /cy
Delay min.: <u>6</u>	Efficiency: <u>85%</u>	Load: \$1.79 /cy
Truck type: <u>D10</u>	No. trucks: <u>3</u>	Develop: \$3.70 /cy
Delay min.: <u>5</u>	Efficiency: <u>85%</u>	

Production: cy/day = 374

RIP RAP ROCK HAUL COSTS 839 cy @ \$11.72 /cy

RIP RAP ROCK COST

SALE NAME: Stone Soup
 PROJECT: Nos. 1, 2, & 3
 QUARRY: Sale Area to Waste Area

MATERIAL: Waste

DATE: 10/07/2010
 BY: d.mellison

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		
V1 - V2		500							0.05	0.05	0.10
A - B	4+08	85						0.06	0.05	0.05	0.16
I3 - I4	19+64-24+10	251								0.03	0.03
	32+11-35+34	245							0.11	0.05	0.16
	38+57-39+37	90						0.16	0.05	0.05	0.26
	40+09-41+46	200						0.19	0.05	0.05	0.29
TOTAL		1,371						0.04	0.05	0.05	AVERAGE HAUL 0.14
CUBIC YARD WEIGHTED HAUL											
Average Round Trip Distance (miles)										0.28	

ROCK HAUL:

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

Ave haul: \$0.85 /cy
 Load: \$0.72 /cy
 Compaction: /cy

Production: cy/day = 683

Wast Haul Costs

1,371 cy @ \$1.57 /cy

Project Work Road Maintenance Cost Summary

Sale: Stone Soup
Date: December 9, 2010
By: Ed Holloran

Type	Equipment/Rationale	Hours	Rate	Cost
Projects Road Maintenance	Grader 14G	48	\$93	\$4,464
	Vibratory Roller	48	\$72	\$3,456
	Water Truck	24	\$83	\$1,992
	Dump Truck	16	\$73	\$1,168
	Front End Loader (C966)	8	\$77	\$616
	Labor	8	\$38	\$304
Total				\$12,000

Production Rates
 Grader - Processing
 Vibratory Roller

Miles/day	Distance (miles)	Days	Hours
1.5	8.9	5.9	47.5
1.5	8.9	5.9	47.5

Fall Creek Quarry road to North Fork Road (0.92 mi.), NF Jct Highway 53 (3.9 mi.), Hwy 53 to Cole Mtn. Quarry (2.1 mi.), Cole Mtn. Rdg. Rd. to Soapstone Lake Rd. (0.59 mi.), Soapstone Lake Rd. (0.51), Soapstone Lake Rd. to Point 5A (0.22 mi.), Hamlet Stockpile Rd. (0.3 mi.), and West Sally Ridge Rd. (0.44 mi.)

TOTAL MILES for MAINTENANCE =9.0 miles

**Stone Soup Timber Sale
Brushing Costs**

12/12/10

Brushing Segment	Road Name	Miles	Brushing Intensity	\$/Mile	Segment Cost (\$)	Comments
I1 to I2		0.1	Maint (L)	\$600	\$84	To Point 5B
B1 - B2	Cole Mountain	0.2	Maint (L)	\$600	\$90	Hwy 53 to Point B2
B2 - B3	Cole Mountain	0.2	Maint (L)1/2	\$300	\$69	
B3 - B4	Cole Mountain	0.2	Maint (L)	\$600	\$120	
B4 - B5		1.0	Maint (M)	\$900	\$864	
B6	West Sally Ridge	0.9	Maint (LM)	\$700	\$609	
B7		0.2	Maint (ML)	\$800	\$144	
B8		0.0	Maint (L)	\$600	\$24	
B9		0.1	Maint (M)	\$900	\$90	
I3 to I5		0.4	Maint (L)	\$600	\$216	
I5 to I6	Homestead Spur	1.1	Maint (L)	\$600	\$636	
B10		0.3	Maint (L)	\$600	\$198	
I5 - B11	Cole Mt Ridge	3.8	Maint (LM)	\$700	\$2,653	
I5 to I7		0.3	Maint (LM)	\$700	\$182	
I7 to I8		0.5	Maint (LM)	\$700	\$336	
I7 to I9		0.2	Maint (LM)	\$700	\$105	
I9 to I4		0.1	Maint (L)	\$600	\$36	
I9 to I10		0.4	Maint (LM)	\$700	\$280	
I3 - B12	Cole Mountain	2.6	Maint (L)	\$600	\$1,530	I3 to Property Line
B12 - B13	Cole Mountain	0.8	Maint (ML)	\$800	\$664	Property Line to Fall CK Rd
B13 - B14	Fall Creek	1.4	Maint (VL)	\$400	\$544	Cole Mt. Jct. to Prop. Line
B15		0.7	Maint (VL)	\$400	\$260	
B16		0.1	Maint (L)	\$600	\$66	
B17		0.7	Maint (LM)	\$700	\$455	
B18		0.1	Maint (ML)	\$800	\$48	
B19		0.8	Maint (MH)	\$1,100	\$902	
B20		0.0	Maint (LM)	\$700	\$21	
B21		0.1	Maint (ML)	\$800	\$72	
B22		1.3	M	\$1,250	\$1,613	
B23		0.3	MH	\$1,375	\$371	
B24		0.1	H	\$1,500	\$165	
B25		0.1	H	\$1,500	\$75	
B26		0.2	MH	\$1,375	\$303	
B27	Soapstone Lake	0.7	Maint (L)	\$600	\$444	
B28	Spur in Area 2	0.0	Maint (L)	\$600	\$12	Cole Mtn Rdg. R. to landing
TOTALS		19.6		\$728	\$14,280	

SUMMARY OF ROAD VACATING

Road Segment		Cost
V1-V2	=	\$10,621
V3-V4	=	\$2,393
V5-V6, V7-V8 V9, V10, V11	=	\$10,981
Total	=	\$23,995

**Stone Soup Timber Sale
Vacating Costs (Segment V1 to V2)**

Work Description	Station	C.Y.s	C330	D24 trk	D10 trk	D-8	Labor	Straw	H. Seed	W.Loader
Begin vacating / block road	0+00									
			1.5		5					1.25
Begin Side Cast Pull back	1+35									
			0.50				1	8	0.03	
End Side Cast Pull back	1+96									
Waterbar construction	2+86					0.25				
Begin fill removal	4+00									
		656	5.5	5.5		5.5	2.5	20	0.10	
End fill removal	4+64									
Begin fill removal	5+30									
		200	1.5			1.5		6	0.03	
End fill removal	5+74									
Begin fill / culvert removal	6+94									
		512	4.75	4.25		4.25	2	16	0.08	
End fill / culvert removal	7+55									
Waterbar construction	9+74					0.25				
Waterbar construction	11+00					0.25				
Begin fill / culvert removal	15+16									
		442	4.25	3.75		3.75	1.75	14	0.07	
End fill / culvert removal	15+74									
Waterbar construction	16+91					0.25				
Begin fill removal	19+19									
		494	4.25	4.25		4.25	2	16	0.08	
End fill removal	19+75									
Haul off old culverts			1		3.5					
Block old road, end vacate	21+06		0.5							
Total Quantity (Hours)			23.75	17.75	8.5	20.25	9.25	80	0.39	1.25
Total Cubic yards		2,304								
Rates			\$144.00	\$119.00	\$73.00	\$147.00	\$38.00	\$10.00	\$545.00	\$102
Total Dollars			\$3,420	\$2,112	\$621	\$2,977	\$352	\$800	\$213	\$128

Total Segment Cost

\$10,621

**Stone Soup Timber Sale
Vacating Costs (Segment V3 to V4)**

Work Description	Station	C.Y.s	C330	D24 trk	D10 trk	D-8	Labor	Straw	H. Seed	W.Loader
Begin vacating, block road	0+00		0.50							
Construct Waterbar			0.25							
Construct Waterbar			0.25							
Remove fill and culvert	4+46	50	0.75					1	0.03	
Construct Waterbar			0.25							
Remove fill and culvert	7+40	50	0.75					1	0.03	
Remove fill and culvert	9+26	150	2					4	0.06	
Construct Waterbar			0.25							
Block Road and Waterbar	13+28		3							
Sidecast pullback	15+05		2				0.5	4		
Remove fill	19+61		2				1	8		
Haul off culverts			1		3					
End	20+10									
Total Quantity (Hours)			13	0	3	0	1.5	18	0.12	0.0
Total Cubic yards		250								
Rates			\$144.00	\$119.00	\$73.00	\$147.00	\$38.00	\$10.00	\$545.00	\$102
Total Dollars			\$1,872	\$0	\$219	\$0	\$57	\$180	\$65	\$0

Total Segment Cost

\$2,393

**Stone Soup
Project No. 4 - VACATING**

Location/Description	C330 #1	C330 #2	D-8 CAT	CY's	Dump Tr.	Pump	Labor	Straw Mulch	Seed	Total
POINTS V5 TO V6										
Station 0+00 to 7+10 plus 30 feet Open & Roadblock & waterbar	3									
Sta. 3+30 to 3+50 Fill Removal - de-water	4					2	2	4	8	
Sta. 6+25 to 6+65 Fill Removal - de-water	3					3	3	4	8	
Total Portion of V5-V6	10 hr	0 hr	0 hr	0 cy	0 hr	5 hr	5 hr	8 bales	16 lbs.	
POINTS V7 TO V8										
Station 0+00 to 17+10 + 66 ft. Open & Roadblock & waterbar	5									
Sta. 0+00 to -0+66 ft. Sta. 1+80 to 2+05 Fill Removal	1							2	4	
Sta. 2+80 to 3+15 Fill Removal	1.5							2	4	
Sta. 3+15 to 3+65 - 50 feet Side Cast Pullback	2							6	12	
Sta. app. 7+00 Ditch Draw so water will flow across old road	0.5									
Sta. 8+40 to 9+20 Fill Removal - de-water	4					4	4	10	20	
Sta. app. 11+65 Ditch Draw so water will flow across old road	0.5									
Sta. app. 12+10 Ditch Draw so water will flow across old road	0.5									
Sta. app. 15+75 Ditch Draw so water will flow across old road	0.5									
Sta. app. 16+75 Ditch Draw so water will flow across old road	0.5									
Total Portion of V7-V8	16 hr	0 hr	0 hr	0 cy	0 hr	4 hr	4 hr	20 bales	40 lbs.	
POINT V9										
Sta. 1+96 junction to fill removal - 30 feet Fill Removal from two sides - de-water See V7-V8 sta. 0+00	14		6			8	9	19	30	
Total V9	14 hr	0 hr	6 hr	0 cy	0 hr	8 hr	9 hr	19 bales	30 lbs.	
POINT V10										
from Station 5+85 - 18 feet to Fill Removal Work from two sides and de-water See V7-V8 sta. 4+30	4		2			4	4	6	12	
Total V10	4 hr	0 hr	2 hr	0 cy	0 hr	4 hr	4 hr	6 bales	12 lbs.	
POINT V11										
Sta 17+70 to 19+30 (Type F Fill removal) Work from two sides and de-water Access from V3-V4 and from V7-V8	6		2			4	4	10		
Total V11	6 hr	0 hr	2 hr	0 cy	0 hr	4 hr	4 hr	10 bales	10 lbs.	
Totals	50 hr	0 hr	10 hr	0 cy	0 hr	25 hr	26 hr	63 bales	108 lbs.	
Rate	\$144 /hr	\$144 /hr	\$147 /hr		\$73 /hr	\$9 /hr	\$38 /hr	\$14 each*	\$2 /Lb	
Total Cost	\$7,200	\$0	\$1,470		\$0	\$225	\$988	\$882	\$216	\$10,981
Ed Holloran										
12/09/2010										
2 lbs of seed/bale of straw @ \$2.00/lb.										

**STONE SOUP
FY 2011
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5 and 6 R/W are located in portions of Section 10, 11, 14, 15, 22, 23, 26, and 27, T4N, R9W, W.M., Clatsop County, Oregon.

All timber sale areas are posted with ODF "Timber Sale Boundary", signs and pink ribbon. Area 6 R/W's are posted with ODF "Right-of-Way Boundary" signs.

2. **Fund Distribution: Fund:** BOF 268 Ac. (99%) CSL 3 Ac. (1%)
Tax Code: 10-02: 5% & 10-04: 95%

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acres	GTRA Acres	Non-Merch Areas	New R/W Acres	Stream Buffer Acres	Existing R/W Acres	Net Acreage
1	PC	110	-6	-2	-3.6	-15		83
2	PC	107			-1.5	-11	-2	93
3	MC	18		-3	-0.2			15
4	MC	39			-0.2	-5	-1	33
5	MC	50			-2.6	-12		35
6	R/W	4*						12
TOTALS		328	-6	-5		-43	-3	271

* Approximately 4 acres of R/W is outside of the timber sale boundary.

4. **Cruisers and Cruise Dates:** Area 1 was cruised by Jay Morey, Bryce Rodgers, Kraig Kirkpatrick, Jon Long and Ed Holloran. Area 2 was cruised by Jay Morey, Peter Stone, Jon Long, Bryce Rodgers, and Kraig Kirkpatrick. Area 3 was cruised by Jon Long. Area 4 was cruised by Bryce Rodgers, and Kraig Kirkpatrick. Area 5 was cruised by Jay Morey, Peter Stone, Jon Long, Bryce Rodgers, Kraig Kirkpatrick, and Ed Holloran. All areas were cruised in September and October, 2010.
5. **Cruise Method and Computation:** Cruises used Corvallis MicroTechnology (CMT) and Juniper Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program at the Astoria District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria District office.

Area 1 (Partial Cut), was a variable plot cruise with a 40 BAF for conifers over 20 inches in DBH and a 27.78 BAF for hardwoods and conifer under 20 inches DBH. 59 plots were sampled on a cruise grid of 3 chains by 5 chains, with a count/cruise ratio of 1:1.

Area 2 (Partial Cut), was a variable plot cruise with a 40 BAF for conifers and a 33.36 BAF for hardwoods. 47 plots were sampled on a cruise grid of 4 chains by 5 chains, with a count/cruise ratio of 1:1.

Areas 3 and 4 (Modified Clear Cuts), were variable plot cruised with a 40 BAF for all species. 27 plots were sampled on a cruise grid of 3 chains by 6 chains, with a count/cruise ratio of 1:1.

Area 5 (Modified Clear Cut), was a variable plot cruise with a 40 BAF for all species. 40 plots were sampled on a cruise grid of 3 chains by 3 chains, with a count/cruise ratio of 1:1.

Area 6 R/W, was calculated applying road R/W acreage using cruise per acre volumes from the Area cruises and expanding them as clearcuts for all of the R/W's. The are approximately 3 acres located within the Modified Clearcut, 5 acres in the Partial Cuts and 4 acres outside of the timber sale.

<u>AREAS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1	STONSUP	A1	PC01, TAKE, STAY
2	STONSUP	A2	PC02, TAKE, STAY
4	STONSUP	A34	MC34, TAKE, STAY
5	STONSUP	A5	0MC5, TAKE, STAY
6 RW	STONSUP	ARW	R/W

6. Timber Description:

Area 1, (Partial Cut) This stand has a mix of two stands. One stand is approximately 40 years old and one is approximately 87 years old, consisting of Douglas-fir dominant mixed conifer stands with patches and stringers of hardwoods along the draws and streams. The average "take" volume per acre is 13 MBF, tree size is 13" DBH and 43 feet to a merchantable top (6" D.I.B. or 40% of the diameter at 16 feet). This stand will be harvested to an SDI of approximately 30%, with a basal area target of 120-140 ft², retaining approximately 62 trees per acre. All trees greater than 30 inches DBH are leave trees.

Area 2 (Partial Cut) – This stand is approximately 70 years old, consisting of Douglas-fir dominant mixed conifer stands and larger patches and stringers of hardwoods along the draws and streams. The average "take" volume per acre is approximately 20 MBF, tree size is 16" DBH and 59 feet to a merchantable top (6" D.I.B. or 40% of the diameter at 16 feet). This stand will be harvested to an SDI of approximately 35%, with a basal area target of 160 to 170 ft², while retaining approximately 74 trees per acre. All alder 12 inches and over are to be removed.

Areas 3 and 4 (Modified Clearcuts) – These stands are approximately 72 years old, consisting of Douglas-fir dominant conifer stands with traces of hardwoods. The average "take" tree size is approximately 20" in DBH, with an average merchantable height of 82 feet to a merchantable top (6" D.I.B. or 40% of the diameter at 16 feet). The average (net) volume to be harvested is approximately 52 MBF/acre.

Area 5 (Modified Clearcut) – This stand is approximately 70 years old, consisting of Douglas-fir dominant conifer stands with some older remnant trees and patches of hardwoods. The average "take" tree size is approximately 21" DBH and 62 feet to a merchantable top (6" D.I.B. or 40% of the diameter at 16 feet). The average (net) volume to be harvested is approximately 48 MBF/acre

Area 6 R/W – The R/W is the same type timber as Areas 1, 2, and 5. The average volume to remove from Area 6 R/W is approximately 50 MBF per acre, with a trees size of 18" DBH and a merchantable tree height of 61 feet (6" D.I.B. or 40% of the diameter at 16 feet). There are approximately 11.9 acres of R/W.

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
1	70	12	41.5	5.5
2	60	12	31.3	4.6
3 & 4	50	12	40.9	8.0
5	50	10	50.9	8.0

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 "Species, Sort Grade-Board Feet Volumes (Project)" and the "Stand Table Summary" attached, of the thinning and regeneration harvest areas combined.) Volumes do not include "ingrowth." The majority of defect and breakage was culled out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	18	5,583	3,781	1,580	222	-	2.2	72.6
Hemlock	18	799	592	185	22	-	7.4	10.4
Spruce	15	405	238	116	51	-	8.2	5.3
Cedar	9	1	-	-	1	-	1.4	*
Alder	14	896	-	-	-	896	5.9	11.7
TOTAL		7,684					3.5	100

9. Prepared by: Edward M. Holloran

Date: January 5, 2011

10. Approved by: 

Date: 1/31/11

11. Attachments: Cruise Plans & Maps (12 pages)
 Species, Sort, Grade Reports (6 pages)
 Statistics Reports (10 pages)
 Stand Table Summary Reports (3 pages)
 Take - Log Stock Table Reports (4 pages)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Stone Soup Area(s) PC - 1
 StoneSup T04N R09W SEC: 15 for Area 1 TYPE: PC01 TRACT: A1 Age 60

Harvest Type: MCC PC CT "Automark Thinning" (circle one) Total Sale Acres 273
 (Net BF or Net BF or)

Approx. Cruise Acres: 93 Estimated CV% 70 BA/Acre SE% Objective 12% BA/Acre

Planned Sale Volume: 7,496 MBF Estimated Sale Value/Acre: \$4,778

Planned Area Sale Volume: 1,260 MBF Estimated Sale Area Value/Acre: \$2,100

- A. Cruise Goals:** (a) Grade minimum 90 conifer and 20 hardwood trees:
 (b) Sample 61 cruise plots; (c) Other goals (___ Determine "automark" thinning standards; X Determine log grades for sale value; ___ Determine snag and leave tree species and sizes; ___ Determine LWD (down wood) cubic feet and decay classes; ___ Determine "diameter limit" harvest parameters;)
X Basal Area leave target **A1- Trees under 20" dbh 120 to 140 sq. ft.** Cruiser needs to select **4 or 5** leave trees per plot. **If plot has trees over 20" dbh the leave target is 170 to 190 sq. ft.** Cruiser needs to select a total leave tree count that will match the required BA (multiple the BAF times the trees left for that size – leave biggest and best).

B. Cruise Design:

1. Plot Cruises: BAF B3- 27.78(10bars-10 to a +4) Trees under 20" (Full point; Half point)

BAF B2- 40 (12 bars - 0 to a) Trees over 19.9" (circle one)

Fixed Plot Size ___ Plot Radius ___ feet

Cruise Line Direction(s) A1 - EAST/WEST

Cruise Line Spacing 5 chains 330 feet.

Cruise Plot Spacing 3 chains 198 feet.

Grade/Count Ratio 1 Cruise Plot / 1 Count Plot

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

C. Tree Measurements:

- Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods. Record dbh to nearest $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 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.
- Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7", 7" for hardwoods, or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 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'. Use 8' and 10' multiples for Hardwoods. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: use R = Camp Run

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

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

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

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

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

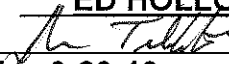
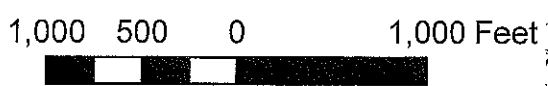
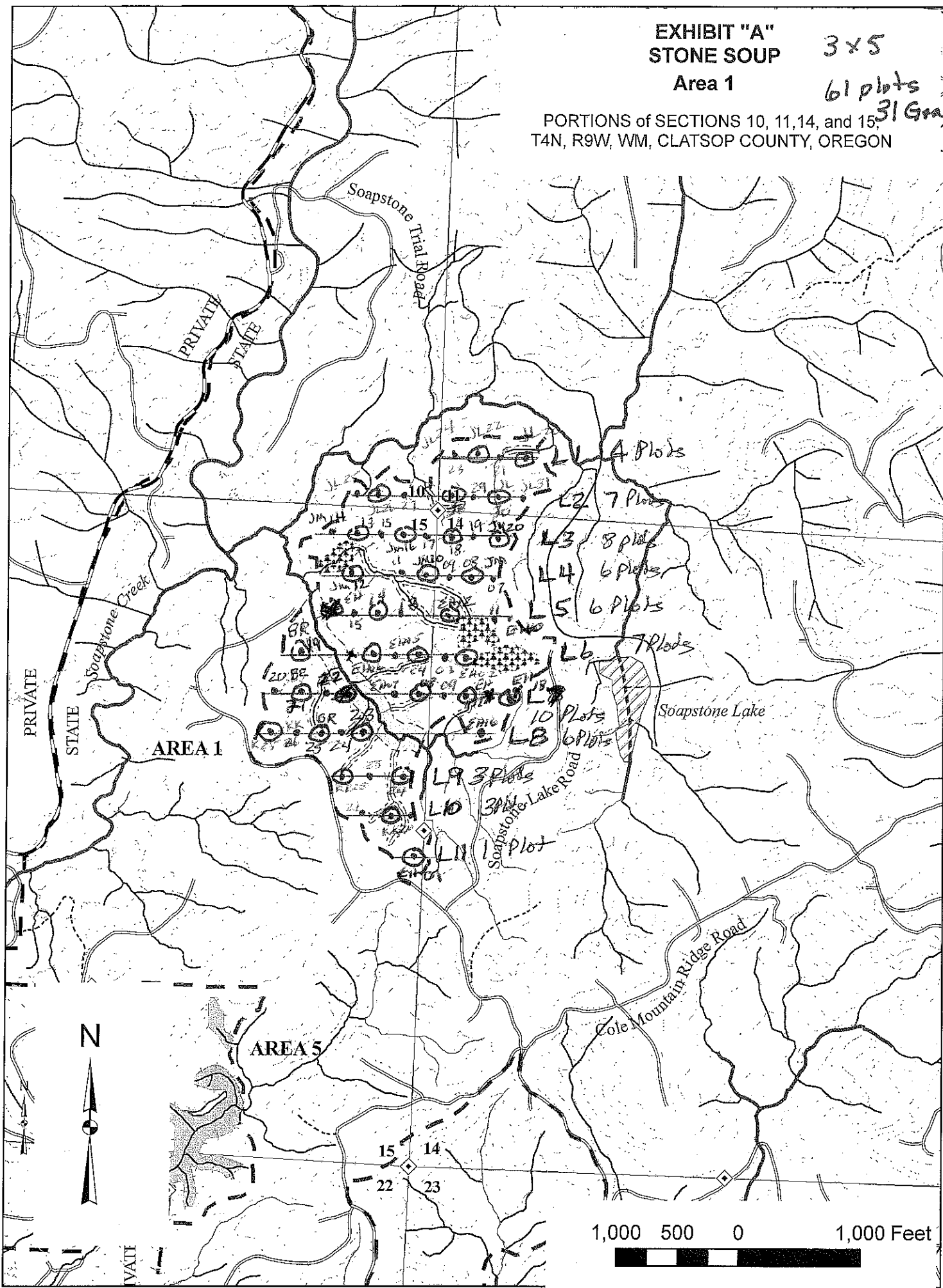
Cruise Design by: ED HOLLORAN
Approved by: 
Date: Submitted: 9-29-10
Approved: 9/29/10

EXHIBIT "A"
STONE SOUP
Area 1

3x5
61 plots
31 Grade

PORTIONS of SECTIONS 10, 11, 14, and 15,
T4N, R9W, WM, CLATSOP COUNTY, OREGON



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Stone Soup Area(s) PC - 2
 StoneSup T04N R09W SEC: 26 for Area 2 TYPE: PC02 TRACT: A2 Age 70

Harvest Type: MCC PC CT "Automark Thinning" (circle one) Total Sale Acres 273
Net BF or Net BF or

Approx. Cruise Acres: 94 Estimated CV% 60 BA/Acre SE% Objective 12% BA/Acre

Planned Sale Volume: 7,496 MBF Estimated Sale Value/Acre: \$4,778

Planned Area Sale Volume: 1,568 MBF Estimated Sale Area Value/Acre: \$2,800

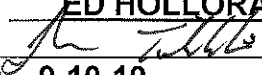
- A. Cruise Goals:** (a) Grade minimum 70 conifer and 40 hardwood trees;
 (b) Sample 50 cruise plots; (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters;)
X Basal Area leave target A2- 160 to 180 sq. ft. Cruiser needs to select 4 or 5 leave trees per plot.
In Area 2: Cut all Alder 12 Inches DBH and over.

- B. Cruise Design:** BAF 33.61 for Alder (12 inches and over)
 1. Plot Cruises: BAF 40 for conifer (Full point) Half point) (circle one)
 Fixed Plot Size Plot Radius feet
 Cruise Line Direction(s) A2 - NORTH/SOUTH
 Cruise Line Spacing 5 chains 330 feet.
 Cruise Plot Spacing 4 chains 264 feet.
 Grade/Count Ratio 1 Cruise Plot / 1 Count Plot
 2. ITS (Sample Tree) Cruises: Measure-grade ratios: D-fir Hemlock
 Spruce True Fir Cedar Hardwood

C. Tree Measurements:

- Diameter:** Minimum DBH to cruise is 8" for conifers and 8" for hardwoods. Record dbh to nearest $\frac{1}{2}$ " for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate. **Cut all Alder 12 Inches DBH and over.**
- 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.
- Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7", 7" for hardwoods, or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 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.

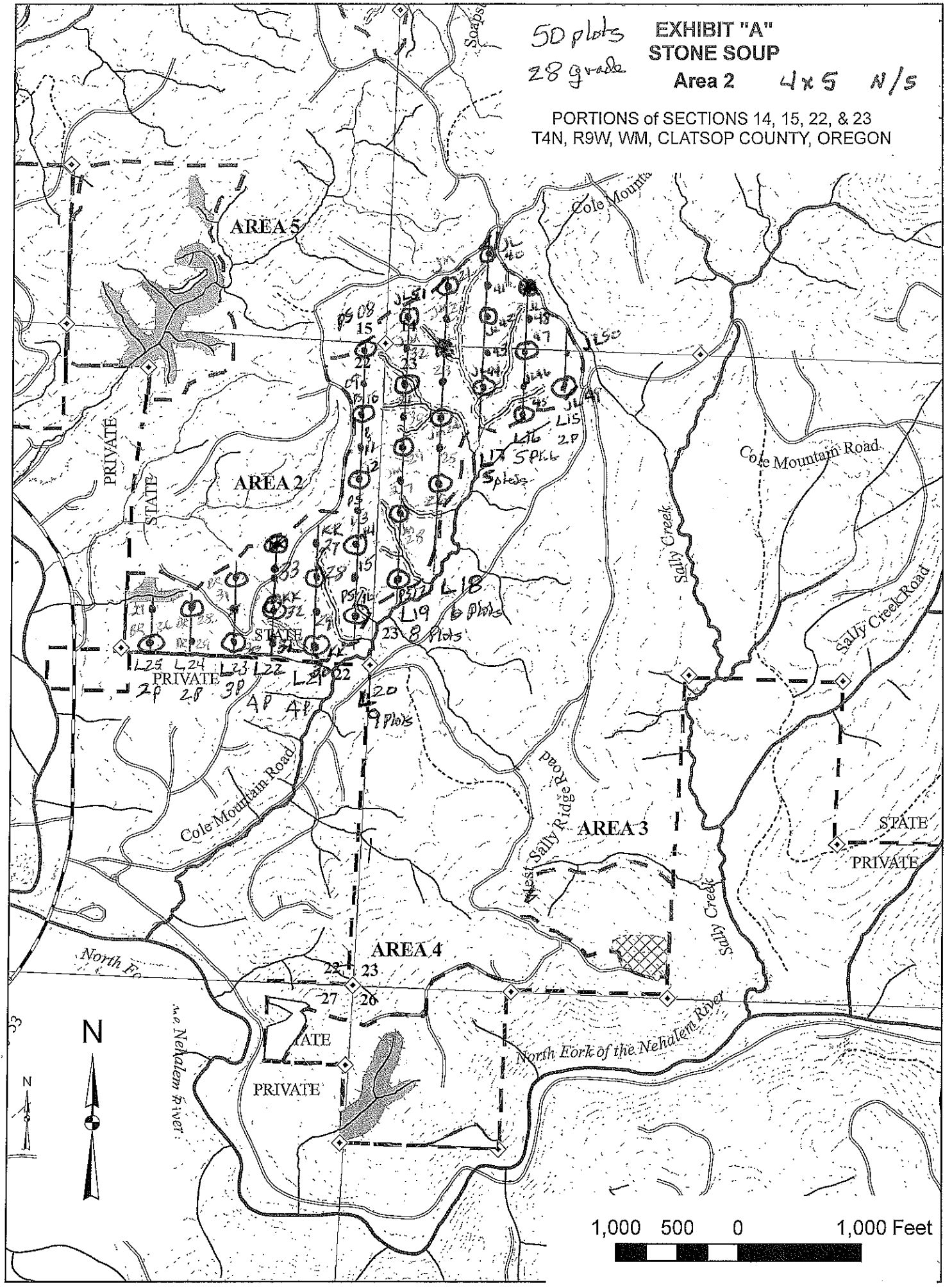
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Use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

Cruise Design by: ED HOLLORAN
 Approved by: 
 Date: Submitted: 9-10-10
 Approved: 9/29/10

50 plots
28 grade

EXHIBIT "A"
STONE SOUP
Area 2 4x5 N/S

PORTIONS of SECTIONS 14, 15, 22, & 23
T4N, R9W, WM, CLATSOP COUNTY, OREGON



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Stone Soup Area(s) MC - 3, 4,
StoneSup T04N R09W SEC 23 Type: MC34 Tract: A34 Age 70
Harvest Type: MCC PC CT "Automark Thinning" (circle one) Total Sale Acres 273
Approx. Cruise Acres: 48 Estimated CV% 50 Net BF/Acre or SE% Objective 12% Net BF/Acre

Planned Sale Volume: 7,496 MBF Estimated Sale Value/Acre: \$4778
Planned Area Sale Volume: 2,088 MBF Estimated Sale Area Value/Acre: \$2,800

A. Cruise Goals: (a) Grade minimum 100 conifer and 10 hardwood trees:
(b) Sample 27 cruise plots; (c) Other goals (___ Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; ___ Determine LWD (down wood) cubic feet and decay classes; ___ Determine "diameter limit" harvest parameters;)
Basal Area leave target ___ sq. ft. Cruiser needs to select ___ or leave trees per plot.

B. Cruise Design:

1. Plot Cruises: BAF 40.0 (Full point) Half point) (circle one)
Fixed Plot Size ___ Plot Radius ___ feet
Cruise Line Directions A 3-NORTH/SOUTH A 4-EAST/WEST
Cruise Line Spacing 6 chains 396 feet.
Cruise Plot Spacing 3 chains 198 feet.
Grade/Count Ratio 1 CRUISE/ 1COUNT

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

C. Tree Measurements:

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

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Use 8' and 10' multiples for hardwoods. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: Use R = Camp Run

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

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

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

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

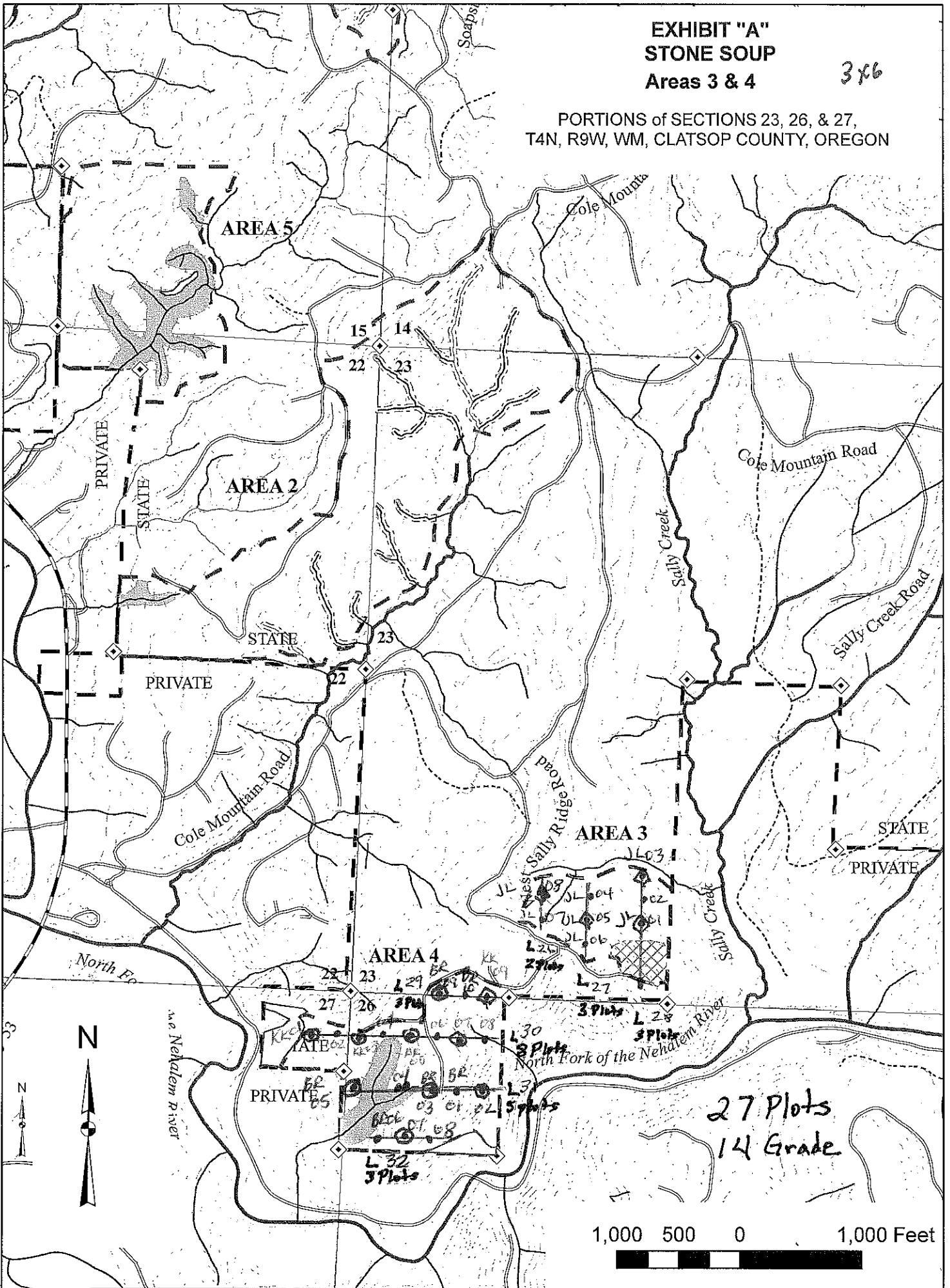
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: ED HOLLORAN
Approved by: 
Date: Submitted: 9-9-10 Approved: 9/29/10

EXHIBIT "A"
STONE SOUP
Areas 3 & 4

3x6

PORTIONS of SECTIONS 23, 26, & 27,
T4N, R9W, WM, CLATSOP COUNTY, OREGON



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Stone Soup Area(s) MC 5
StoneSup T04N R09W SEC 15 Type: MC5 Tract: A5 Age 70
Harvest Type: (MCC) PC CT "Automark Thinning" (circle one) Total Sale Acres 273
Approx. Cruise Acres: 38 Estimated CV% 50 ^{Net BF or} BA/Acre SE% Objective 10% ^{Net BF or} BA/Acre

Planned Sale Volume: 7,496 MBF Estimated Sale Value/Acre: \$4,778
Planned Area Sale Volume: 2,580 MBF Estimated Sale Area Value/Acre: \$12,000

A. Cruise Goals: (a) Grade minimum 100 conifer and 50 hardwood trees:
(b) Sample 40 cruise plots; (c) Other goals (___ Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; ___ Determine LWD (down wood) cubic feet and decay classes; ___ Determine "diameter limit" harvest parameters;)
___ Basal Area leave target ___ sq. ft. Cruiser needs to select ___ or ___ leave trees per plot.

B. Cruise Design:

1. Plot Cruises: BAF 40.0 (Full point) Half point) (circle one)
Fixed Plot Size ___ Plot Radius ___ feet
Cruise Line Directions A 5 - EAST/WEST
Cruise Line Spacing 3 chains 198 feet.
Cruise Plot Spacing 3 chains 198 feet.
Grade/Count Ratio 1 CRUISE/ 1COUNT

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

C. Tree Measurements:

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

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Use 8' and 10' multiples for hardwoods. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: Use R = Camp Run

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

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

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

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

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

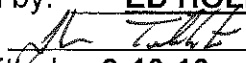
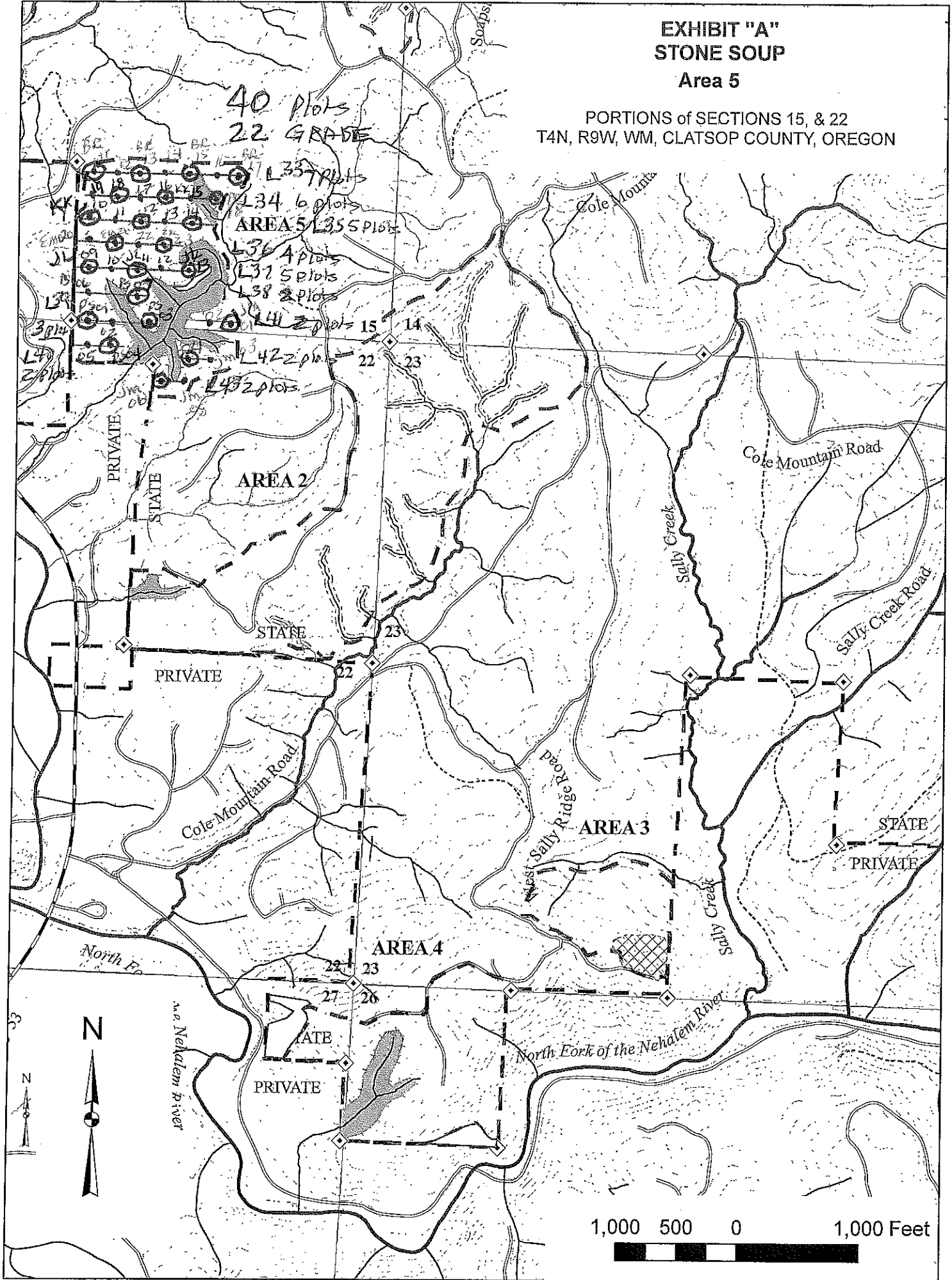
Cruise Design by: ED HOLLORAN
Approved by: 
Date: Submitted: 9-10-10 Approved: 9/24/10

EXHIBIT "A"
STONE SOUP
Area 5

PORTIONS of SECTIONS 15, & 22
T4N, R9W, WM, CLATSOP COUNTY, OREGON



Species, Sort Grade - Board Foot Volumes (Project)

T04N R09W S15 TyTAKE THRU T04N R09W S26 TyTAKE	Project: STONESUP Acres 270.80	Page 1 Date 1/5/2011 Time 8:14:44AM
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S Spp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre		
									Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf			
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
H	DOCU				100.0	198											12		0.00	2.5		
H	DO2S	74			1.5	2,218	2,185	592			2	31	66		0	0	11	88	38	466	2.64	4.7
H	DO3S	23			.7	689	684	185			94	4	3		3	1	21	75	37	85	0.71	8.1
H	DO4S	3				80	80	22			100				74	26			19	25	0.48	3.2
H	Totals			10	7.4	3,185	2,950	799			26	24	50		3	1	13	82	31	160	1.25	18.4
D	DOCU				100.0	159													12		0.00	4.3
D	DO2S	67			1.0	14,100	13,961	3,781				1	48	50	0	2	27	71	37	355	2.15	39.3
D	DO3S	29			2.2	5,966	5,835	1,580			0	94	5	1	1	6	32	61	36	85	0.69	68.9
D	DO4S	4			3.2	847	820	222			3	96	1		51	37	11	2	21	27	0.43	30.2
D	Totals			73	2.2	21,072	20,615	5,583			0	31	34	34	2	4	28	65	32	144	1.11	142.8
A	DOCU				100.0	151													12		0.00	4.3
A	DOCR	100			1.6	3,365	3,310	896			0	78	18	4	13	26	30	30	28	70	0.76	47.4
A	Totals			12	5.9	3,516	3,310	896			0	78	18	4	13	26	30	30	26	64	0.74	51.7
S	DOCU				100.0	102													16		0.00	3.6
S	DO2S	58			.9	888	880	238					42	58	3		12	84	38	452	2.74	1.9
S	DO3S	29			3.8	446	429	116				82	18		1	10	55	34	34	84	0.86	5.1
S	DO4S	13			3.9	195	187	51			1	95		5	46	28	1	25	21	33	0.55	5.7
S	Totals			5	8.2	1,631	1,496	405			0	35	30	35	8	6	23	63	26	91	0.98	16.4
C	DO4S	100				4	4	1				100				100			13	20	0.35	.2
C	Totals			0		4	4	1				100				100			13	20	0.35	.2
SN	DOCU				100.0	0													28		0.00	.0
SN	Totals				100.0	0													28		0.00	.0
Totals					3.5	29,407	28,375	7,684			0	37	31	32	4	7	26	63	30	124	1.04	229.4

T04N R09W S15 TTAKE
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt **T04N R09W S15 TTAKE**
 04N 09W 15 A1 TAKE 83.00 57 115 1 BdFt
 W

Spp	Sp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln Ft	Bd Ft	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU		00.0	125										10		0.00	7.4	
D		DO	2S	28	.5	2,412	2,399	199		59	41		2	3	35	60	34	282	1.92	8.5
D		DO	3S	59	2.0	5,138	5,036	418		99	1		1	7	30	62	36	73	0.58	69.2
D		DO	4S	13	1.5	1,036	1,020	85	5	95			66	26	8		19	25	0.38	40.8
D	Totals			66	2.9	8,710	8,455	702	1	70	17	12	9	8	29	54	29	67	0.63	125.8
H		DO	CU		00.0	251										13		0.00	6.5	
H		DO	2S	46	.6	1,234	1,226	102		7	69	24			7	93	39	277	1.77	4.4
H		DO	3S	47		1,235	1,235	102		100					24	76	37	77	0.59	16.1
H		DO	4S	7		185	185	15		100			76	24			19	23	0.44	7.9
H	Totals			21	8.9	2,904	2,646	220		57	32	11	5	2	14	79	29	76	0.72	35.0
A		DO	CU		00.0	272										13		0.00	10.2	
A		DO	CR	100	.7	1,165	1,157	96	1	85	4	10	52	10	19	19	22	46	0.59	25.4
A	Totals			9	19.5	1,438	1,157	96	1	85	4	10	52	10	19	19	19	32	0.48	35.6
S		DO	CU		00.0	122										12		0.00	2.6	
S		DO	2S	40	4.2	221	211	18			64	36	36			64	30	321	2.39	.7
S		DO	3S	48	1.1	258	255	21		9	91				38	29	33	183	1.53	1.4
S		DO	4S	12		61	61	5		100			52	48			17	28	0.69	2.2
S	Totals			4	20.2	661	528	44		16	69	15	21	24	14	41	20	77	1.06	6.8
Type Totals					6.8	13,713	12,786	1,061	0	67	21	12	13	8	24	55	27	63	0.64	203.3

T04N R09W S26 TTAKE										T04N R09W S26 TTAKE			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
04N	09W	26	A2	TAKE	93.00	47	100	1	W				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU		00.0	138											18		0.00	3.3	
D		DO	2S	55	.5	7,508	7,470	695		1	66	32		0	2	53	45	35	273	1.82	27.4
D		DO	3S	41	3.3	5,608	5,422	504	1	96	4			0	2	32	65	37	88	0.70	61.6
D		DO	4S	4	8.5	504	462	43		100				45	34	21		22	26	0.46	17.5
D	Totals			67	2.9	13,759	13,353	1,242	0	43	39	18		2	3	43	51	33	122	0.95	109.8
A		DO	CU		00.0	166												10		0.00	2.6
A		DO	CR	100	2.0	4,590	4,496	418		78	22			7	28	38	27	30	73	0.76	61.4
A	Totals			22	5.5	4,756	4,496	418		78	22			7	28	38	27	29	70	0.75	64.0
S		DO	CU		00.0	126												15		0.00	6.3
S		DO	2S	38		706	706	66			100						100	40	289	1.79	2.4
S		DO	3S	41	4.9	813	774	72		100						65	35	35	73	0.77	10.6
S		DO	4S	21	5.0	393	374	35		100			49	25		26		22	31	0.51	11.9
S	Totals			9	9.1	2,038	1,853	172		62	38			10	5	27	58	26	59	0.72	31.3
H		DO	2S	63		191	191	18			100						100	40	360	1.87	.5
H		DO	3S	37		109	109	10		100							100	40	63	0.71	1.7
H	Totals			1		300	300	28		36	64						100	40	133	0.99	2.3
Type Totals					4.1	20,853	20,003	1,860	0	53	35	12		4	9	40	47	31	96	0.87	207.3

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)							Page 1												
		Project: STONESUP							Date	12/8/2010											
									Time	9:31:49AM											
T04N R09W S23 TTAKE							T04N R09W S23 TTAKE														
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
04N	09W	23	A34	TAKE	47.90	27	85	1	W												
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
D		DO	CU	100.0		285												8		0.00	2.5
D		DO	2S	77	1.1	37,485	37,068	1,776		2	49	49		2	17	81		38	366	2.13	101.3
D		DO	3S	19	1.6	9,187	9,042	433		91	9		0	8	32	60		35	89	0.76	102.0
D		DO	4S	4	2.3	1,488	1,454	70	2	98			36	50	9	5		22	30	0.47	49.1
D	Totals			91	1.8	48,446	47,564	2,278	0	22	40	38	1	5	20	74		33	187	1.34	255.0
A		DO	CR	100	1.6	2,202	2,167	104		70	30		11	4	28	57		28	101	1.01	21.4
A	Totals			4	1.6	2,202	2,167	104		70	30		11	4	28	57		28	101	1.01	21.4
H		DO	CU	100.0		175												6		0.00	1.0
H		DO	2S	60	2.6	1,171	1,140	55		9	39	53				100		40	384	2.15	3.0
H		DO	3S	37	1.9	705	692	33		100			3		12	85		35	113	0.91	6.1
H		DO	4S	3	.0	38	38	2		100			100					17	20	0.53	1.9
H	Totals			4	10.5	2,089	1,870	90		44	23	32	3		5	92		31	156	1.26	12.0
S		DO	2S	84		339	339	16				100				100		34	390	2.79	.9
S		DO	3S	16		61	61	3		100						100		34	70	1.03	.9
S	Totals			1		400	400	19		15		85				100		34	230	1.91	1.7
Type Totals					2.1	53,136	52,001	2,491	0	25	39	37	2	4	20	74		33	179	1.32	290.1

T04N R09W S15 TTAKE										T04N R09W S15 TTAKE			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
04N	09W	15	A5	TAKE	35.00	40	141	1	W				

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					Net	Def%	Gross		Net	Net MBF	Log Scale Dia.				Log Length				Ln		Bd	CF/Lf
											BdFt	4-5	6-11	12-16	17+	12-20	21-30	31-35				
D	DO	CU			00.0	55											6		0.00	.4		
D	DO	2S	85	.9	21,828	21,637	757				30	70	1	0	19	80	38	489	2.79	44.3		
D	DO	3S	13		3,279	3,279	115			89	6	5	3	10	33	54	35	99	0.86	33.2		
D	DO	4S	2		362	362	13			94	6		62	38			19	31	0.52	11.8		
D	Totals			53	1.0	25,524	25,278	885		13	27	60	2	2	21	76	34	282	1.89	89.6		
A	DO	CU			00.0	26											2		0.00	1.3		
A	DO	CR	100	1.2	6,358	6,283	220			78	12	10	11	41	20	28	27	71	0.80	88.2		
A	Totals			13	1.6	6,384	6,283	220		78	12	10	11	41	20	28	27	70	0.80	89.5		
H	DO	CU			00.0	697											8		0.00	2.1		
H	DO	2S	91	1.6	11,805	11,614	406			0	17	83	1	1	15	84	37	592	3.31	19.6		
H	DO	3S	8	1.5	918	905	32			81	19		12	3	31	53	33	90	0.92	10.1		
H	DO	4S	1		121	121	4			100			53	47			21	40	0.68	3.0		
H	Totals			26	6.7	13,542	12,640	442		7	17	76	2	1	16	81	33	363	2.41	34.8		
S	DO	CU			00.0	92											32		0.00	1.5		
S	DO	2S	95	.9	3,456	3,426	120				7	93	1		6	93	38	843	4.78	4.1		
S	DO	3S	4		161	161	6			90	10		20	56	23		24	98	1.40	1.6		
S	DO	4S	1		16	16	1			100			100				16	30	0.75	.5		
S	Totals			8	3.3	3,724	3,602	126		4	8	88	2	3	5	90	32	464	3.17	7.8		
Type Totals					2.8	49,174	47,803	1,673		19	21	60	3	7	18	72	31	216	1.64	221.7		

T04N R09W S15 TR/W										T04N R09W S15 TR/W			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
04N	09W	15	ARW	R/W	11.90	47	212	1	W				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D		DO	CU		00.0	350											12		0.00	9.4	
D		DO	2S	74	1.8	30,287	29,752	354		1	42	57		0	3	37	60	35	358	2.24	83.2
D		DO	3S	23	2.6	9,476	9,230	110	0	91	3	5		1	7	40	52	35	95	0.78	97.3
D		DO	4S	3	3.7	1,052	1,013	12		87	13			44	48	9		21	31	0.50	32.9
D	Totals			80	2.8	41,165	39,995	476	0	24	32	44	1	5	37	56	32	179	1.34	222.9	
A		DO	CU		00.0	155											10		0.00	2.5	
A		DO	CR	100	2.1	5,012	4,908	58		81	19			8	27	35	29	29	65	0.69	75.2
A	Totals			10	5.0	5,167	4,908	58	81	19			8	27	35	29	29	63	0.68	77.6	
S		DO	CU		00.0	212											18		0.00	9.9	
S		DO	2S	43	1.9	1,626	1,595	19			76	24				32	68	37	307	1.97	5.2
S		DO	3S	33	4.6	1,285	1,225	15		91	9					52	48	36	80	0.81	15.3
S		DO	4S	24	2.2	886	867	10	2	74		23		31	30	4	34	22	43	0.64	20.2
S	Totals			7	8.0	4,009	3,687	44	1	48	36	16	7	7	32	53	27	73	0.82	50.6	
H		DO	2S	57	1.2	946	934	11			67	33			11	89	39	437	2.46	2.1	
H		DO	3S	41	2.0	676	663	8		32	6	62			6	20	75	39	179	1.32	3.7
H		DO	4S	2		23	23	0		100				100				16	60	1.00	.4
H	Totals			3	1.5	1,645	1,620	19	15	41	45	1	2	15	82	37	260	1.71		6.2	
SN		DO	CU		00.0	6											28		0.00	.6	
SN	Totals				00.0	6											28		0.00	.6	
C		DO	4S	100		87	87	1		100				100			13	20	0.35	4.4	
C	Totals			0		87	87	1		100				100			13	20	0.35	4.4	
Type Totals					3.4	52,079	50,298	599	0	31	31	37	3	8	35	54	31	139	1.14	362.3	

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
04N	09	15	A1	PC01	THR	270.80	218	1,775	1	W
04N	09W	26	A2	PC02						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	218	1775	8.1		
CRUISE	131	941	7.2	46,496	2.0
DBH COUNT					
REFOREST					
COUNT	87	743	8.5		
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	383	67.8	17.9	70		118.6	21,072	20,615	5,118	5,080
DOUGLEAV	164	26.1	22.0	82		69.0	13,741	13,342	3,140	3,110
R ALDER	142	32.2	14.0	44		34.2	3,516	3,310	1,033	998
WHEMLOCK	63	10.6	17.7	55		18.1	3,185	2,950	746	707
S SPRUCE	60	12.3	14.6	36		14.2	1,631	1,496	449	419
SPRUCELV	33	6.3	21.7	46		16.0	2,829	2,502	649	586
SNAG	27	3.0	22.8	46		8.6	395		117	
HEMLEAV	29	4.7	22.0	76		12.4	2,336	2,250	557	549
CEDLEAV	18	3.1	16.1	23		4.4	444	408	124	119
ALDRLEAV	20	5.3	11.9	35		4.1	372	328	107	99
WR CEDAR	2	.2	8.5	14		.1	4	4	1	1
TOTAL	941	171.7	17.9	60		299.8	49,524	47,205	12,039	11,668

CONFIDENCE LIMITS OF THE SAMPLE
 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

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		119.3	8.1	62	68	73			
DOUGLEAV		150.8	10.2	23	26	29			
R ALDER		206.4	14.0	28	32	37			
WHEMLOCK		271.2	18.4	9	11	13			
S SPRUCE		379.9	25.7	9	12	15			
SPRUCELV		401.0	27.2	5	6	8			
SNAG		397.3	26.9	2	3	4			
HEMLEAV		306.5	20.8	4	5	6			
CEDLEAV		598.4	40.5	2	3	4			
ALDRLEAV		481.1	32.6	4	5	7			
WR CEDAR		1048.8	71.0	0	0	0			
TOTAL		77.1	5.2	163	172	181	238	59	26

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		119.9	8.1	109	119	128			
DOUGLEAV		146.4	9.9	62	69	76			
R ALDER		204.6	13.9	29	34	39			
WHEMLOCK		224.5	15.2	15	18	21			
S SPRUCE		313.5	21.2	11	14	17			
SPRUCELV		271.0	18.4	13	16	19			
SNAG		284.5	19.3	7	9	10			
HEMLEAV		295.4	20.0	10	12	15			
CEDLEAV		445.8	30.2	3	4	6			
ALDRLEAV		404.4	27.4	3	4	5			
WR CEDAR		1041.6	70.5	0	0	0			
TOTAL		61.2	4.1	287	300	312	150	37	17

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT STONESUP		DATE 1/5/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	15	A1	PC01	83.00	57	494	1	W	
				TREES	ESTIMATED TOTAL	PERCENT SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		57	494	8.7						
CRUISE		31	257	8.3	16,087		1.6			
DBH COUNT										
REFOREST										
COUNT		26	231	8.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUGLEAV	600	77	36.5	19.5	75	106.125	17.7	75.8	14,113	13,673
DOUG FIR		69	74.7	13.0	50		68.9	8,710	8,455	2,322
SPRUCELV	700	19	3.4	40.7	90	32.12	4.6	30.9	6,757	5,868
HEMLEAV	800	20	13.2	20.2	73	40.66	5.1	29.1	5,060	4,877
WHEMLOCK		15	23.4	13.4	45		22.9	2,904	2,646	784
R ALDER		25	29.1	11.1	24		19.5	1,438	1,157	387
CEDLEAV	700	9	2.5	23.5	28	9.81	1.4	7.5	766	679
ALDRLEAV	800	12	6.1	14.3	34	10.81	1.4	6.8	662	531
S SPRUCE		6	4.2	15.5	34		30.2	5.5	150.1	661
SNAG		5	8	32.0	51		4.7	198		61
TOTAL		257	193.8	16.0	52		271.6	41,269	38,414	10,087
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	85.6	11.3	32	37	41					
DOUG FIR	97.0	12.8	65	75	84					
SPRUCELV	161.1	21.3	3	3	4					
HEMLEAV	154.9	20.5	10	13	16					
WHEMLOCK	178.5	23.6	18	23	29					
R ALDER	222.0	29.4	21	29	38					
CEDLEAV	466.8	61.8	1	2	4					
ALDRLEAV	316.8	42.0	4	6	9					
S SPRUCE	305.0	40.4	2	4	6					
SNAG	327.9	43.4	0	1	1					
TOTAL	43.7	5.8	183	194	205	77	19	9		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	78.9	10.5	68	76	84					
DOUG FIR	93.5	12.4	60	69	77					
SPRUCELV	148.3	19.6	25	31	37					
HEMLEAV	146.0	19.3	24	29	35					
WHEMLOCK	178.7	23.7	18	23	28					
R ALDER	205.0	27.2	14	19	25					
CEDLEAV	333.0	44.1	4	8	11					
ALDRLEAV	258.4	34.2	4	7	9					
S SPRUCE	337.4	44.7	3	5	8					
SNAG	271.6	36.0	3	5	6					
TOTAL	27.9	3.7	262	272	282	31	8	3		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	92.4	12.2	12,000	13,673	15,346					
DOUG FIR	103.4	13.7	7,297	8,455	9,614					

STATISTICS
PROJECT STONESUP

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	15	A1	PC01	83.00	57	494	1	W
CL:	68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
SPRUCELV		149.1	19.7	4,709	5,868	7,027			
HEMLEAV		144.9	19.2	3,941	4,877	5,813			
WHEMLOCK		180.0	23.8	2,015	2,646	3,277			
R ALDER		225.7	29.9	811	1,157	1,503			
CEDLEAV		362.5	48.0	353	679	1,005			
ALDRLEAV		272.4	36.1	339	531	723			
S SPRUCE		438.3	58.1	221	528	834			
SNAG									
TOTAL		<i>41.5</i>	<i>5.5</i>	<i>36,301</i>	<i>38,414</i>	<i>40,527</i>	<i>69</i>	<i>17</i>	<i>8</i>

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT STONESUP		DATE 1/5/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	26	A2	PC02	93.00	47	387	1	W	
				TREES	ESTIMATED TOTAL	PERCENT SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		47	387	8.2						
CRUISE		28	212	7.6	17,619	1.2				
DBH COUNT										
REFOREST										
COUNT		19	162	8.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUGLEAV	600	84	43.4	23.6	87	171.45	28.6	131.9	27,055	26,299
DOUG FIR		47	51.9	17.4	73		86.0	13,759	13,353	3,520
R ALDER		36	34.2	14.9	56		41.5	4,756	4,496	1,420
S SPRUCE		15	25.0	13.0	34		23.0	2,038	1,853	633
SPRUCELV	700	12	15.0	14.8	37	28.09	4.0	17.9	1,965	1,828
HEMLEAV	800	3	1.4	29.6	89	7.95	1.0	6.8	1,461	1,431
ALDRLEAV	800	8	9.9	10.3	36	10.38	1.3	5.7	492	481
SNAG		3	2.6	15.4	60			3.4	6	13
WHEMLOCK		2	1.7	16.5	54			2.6	300	300
CEDLEAV	700	2	4.4	8.5	14	3.39	0.5	1.7	87	87
TOTAL		212	189.5	17.6	62		35.4	320.4	164	51,920
									50,128	12,882
										12,651
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	61.1	8.9	40	43	47					
DOUG FIR	100.9	14.7	44	52	60					
R ALDER	176.4	25.7	25	34	43					
S SPRUCE	234.1	34.1	16	25	33					
SPRUCELV	208.7	30.4	10	15	20					
HEMLEAV	388.7	56.7	1	1	2					
ALDRLEAV	299.6	43.7	6	10	14					
SNAG	336.8	49.1	1	3	4					
WHEMLOCK	407.0	59.4	1	2	3					
CEDLEAV	482.9	70.4	1	4	7					
TOTAL	46.4	6.8	177	189	202	86	21	10		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	47.3	6.9	123	132	141					
DOUG FIR	93.1	13.6	74	86	98					
R ALDER	174.1	25.4	31	41	52					
S SPRUCE	231.7	33.8	15	23	31					
SPRUCELV	222.9	32.5	12	18	24					
HEMLEAV	393.5	57.4	3	7	11					
ALDRLEAV	282.5	41.2	3	6	8					
SNAG	331.4	48.3	2	3	5					
WHEMLOCK	387.1	56.5	1	3	4					
CEDLEAV	479.5	69.9	1	2	3					
TOTAL	25.9	3.8	308	320	333	27	7	3		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	48.7	7.1	24,432	26,299	28,165					
DOUG FIR	95.4	13.9	11,495	13,353	15,211					

STATISTICS
PROJECT STONESUP

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	26	A2	PC02	93.00	47	387	1	W
CL: 68.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER	182.9	26.7	3,297	4,496	5,696				
S SPRUCE	261.7	38.2	1,146	1,853	2,561				
SPRUCELV	270.6	39.5	1,106	1,828	2,549				
HEMLEAV	399.7	58.3	597	1,431	2,265				
ALDRLEAV	289.5	42.2	278	481	684				
SNAG									
WHEMLOCK	423.0	61.7	115	300	485				
CEDLEAV	482.9	70.4	26	87	149				
TOTAL	31.3	4.6	47,839	50,128	52,418	39	10	4	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT STONESUP		DATE 12/8/2010				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	23	A34	MC34	47.90	27	205	1	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		27	205	7.6						
CRUISE		18	103	5.7	6,264	1.6				
DBH COUNT										
REFOREST										
COUNT		9	77	8.6						
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
DOUG FIR	76	103.6	20.7	85		241.5	48,446	47,564	11,462	11,418
SNAG	13	9.4	21.5	37		23.7	1,388		435	
R ALDER	3	10.7	16.7	59		16.3	2,202	2,167	605	605
WHEMLOCK	5	5.0	20.9	77		11.9	2,089	1,870	499	469
HEMLEAV	3	.9	30.5	104		4.4	1,125	1,058	235	235
S SPRUCE	1	.9	25.0	70		3.0	400	400	113	113
SPRUCELV	1	.2	34.0	66		1.5	204	200	52	52
CEDLEAV	1	.2	38.0	105		1.5	269	256	70	70
TOTAL	103	130.8	20.6	79		303.7	56,123	53,514	13,473	12,962
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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	65.9	12.9	90	104	117					
SNAG	196.8	38.6	6	9	13					
R ALDER	255.1	50.0	5	11	16					
WHEMLOCK	247.9	48.6	3	5	7					
HEMLEAV	519.6	102.0		1	2					
S SPRUCE	360.3	70.7	0	1	1					
SPRUCELV	519.6	102.0		0	0					
CEDLEAV	519.6	102.0		0	0					
TOTAL	40.2	7.9	120	131	141	67	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		
DOUG FIR	58.9	11.6	214	241	269					
SNAG	157.0	30.8	16	24	31					
R ALDER	247.9	48.6	8	16	24					
WHEMLOCK	244.4	47.9	6	12	18					
HEMLEAV	519.6	102.0		4	9					
S SPRUCE	360.3	70.7	1	3	5					
SPRUCELV	519.6	102.0		1	3					
CEDLEAV	519.6	102.0		1	3					
TOTAL	26.9	5.3	288	304	320	30	8	3		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	60.2	11.8	41,942	47,564	53,186					
SNAG										
R ALDER	247.6	48.6	1,114	2,167	3,220					
WHEMLOCK	242.6	47.6	980	1,870	2,760					
HEMLEAV	519.6	102.0		1,058	2,136					
S SPRUCE	360.3	70.7	117	400	682					
SPRUCELV	519.6	102.0		200	403					
CEDLEAV	519.6	102.0		256	517					

STATISTICS
PROJECT STONESUP

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	23	A34	MC34	47.90	27	205	1	W
CL:	68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
TOTAL		40.9	8.0	49,222	53,514	57,806	69	17	8

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT STONESUP		DATE 1/5/2011				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	15	A5	0MC5	35.00	40	302	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	40	302	7.6							
CRUISE	26	157	6.0	4,260	3.7					
DBH COUNT										
REFOREST										
COUNT	14	111	7.9							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	60	36.2	24.8	87		121.0	25,524	25,278	5,745	5,737
R ALDER	34	59.3	14.7	42		70.0	6,384	6,283	1,944	1,939
WHEMLOCK	36	14.0	27.9	84		59.5	13,542	12,640	2,854	2,733
S SPRUCE	11	4.0	28.9	65		18.0	3,724	3,602	828	796
SNAG	3	.8	53.6	33		13.0	663		125	
CEDLEAV	6	6.5	16.8	33		10.0	1,020	966	284	284
DOUGLEAV	3	.4	42.5	107		4.0	960	922	198	198
HEMLEAV	3	.4	35.8	91		3.0	653	594	139	130
SPRUCELV	1	.0	64.0	124		1.0	365	311	60	52
TOTAL	<i>157</i>	<i>121.7</i>	<i>21.2</i>	<i>61</i>		<i>299.5</i>	<i>52,836</i>	<i>50,596</i>	<i>12,179</i>	<i>11,871</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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	141.6	22.4	28	36	44					
R ALDER	124.9	19.7	48	59	71					
WHEMLOCK	144.3	22.8	11	14	17					
S SPRUCE	237.4	37.5	2	4	5					
SNAG	168.7	26.7	1	1	1					
CEDLEAV	392.9	62.1	2	7	11					
DOUGLEAV	309.7	49.0	0	0	1					
HEMLEAV	402.8	63.7	0	0	1					
SPRUCELV	632.5	100.0	0	0	0					
TOTAL	<i>54.8</i>	<i>8.7</i>	<i>111</i>	<i>122</i>	<i>132</i>	<i>120</i>	<i>30</i>	<i>13</i>		
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	123.1	19.5	97	121	145					
R ALDER	120.5	19.1	57	70	83					
WHEMLOCK	133.9	21.2	47	60	72					
S SPRUCE	194.6	30.8	12	18	24					
SNAG	161.7	25.6	10	13	16					
CEDLEAV	347.9	55.0	4	10	16					
DOUGLEAV	303.8	48.0	2	4	6					
HEMLEAV	355.7	56.2	1	3	5					
SPRUCELV	632.5	100.0	0	1	2					
TOTAL	<i>33.7</i>	<i>5.3</i>	<i>284</i>	<i>300</i>	<i>315</i>	<i>45</i>	<i>11</i>	<i>5</i>		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	120.9	19.1	20,444	25,278	30,112					
R ALDER	127.2	20.1	5,019	6,283	7,547					
WHEMLOCK	143.9	22.8	9,764	12,640	15,517					
S SPRUCE	200.7	31.7	2,459	3,602	4,745					
SNAG										

TC TSTATS		STATISTICS					PAGE 2		
		PROJECT STONESUP					DATE 1/5/2011		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	15	A5	0MC5	35.00	40	302	1	W
CL: 68.1%	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CEDLEAV	311.6	49.3	490	966	1,442				
DOUGLEAV	305.2	48.3	477	922	1,367				
HEMLEAV	362.4	57.3	254	594	934				
SPRUCELV	632.5	100.0	0	311	621				
TOTAL	<i>50.9</i>	<i>8.0</i>	<i>46,528</i>	<i>50,596</i>	<i>54,664</i>	<i>103</i>	<i>26</i>	<i>11</i>	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT STONESUP		DATE 12/8/2010				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	15	ARW	R/W	11.90	47	387	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	47	387	8.2							
CRUISE	28	212	7.6	2,265	9.4					
DBH COUNT										
REFOREST										
COUNT	19	162	8.5							
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
DOUG FIR	131	93.2	20.7	80		217.9	41,165	39,995	9,712	9,623
R ALDER	44	46.6	13.6	50		47.2	5,167	4,908	1,550	1,513
S SPRUCE	27	39.9	13.7	35		40.9	4,009	3,687	1,195	1,109
WHEMLOCK	5	3.7	21.5	65		9.4	1,645	1,620	399	399
SNAG	3	2.6	15.4	60		3.4	6		13	
WR CEDAR	2	4.4	8.5	14		1.7	87	87	19	19
TOTAL	212	190.4	17.6	61		320.4	52,079	50,298	12,890	12,663
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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	71.9	10.5	83	93	103					
R ALDER	175.8	25.6	35	47	59					
S SPRUCE	195.3	28.5	29	40	51					
WHEMLOCK	337.8	49.3	2	4	6					
SNAG	336.8	49.1	1	3	4					
WR CEDAR	482.9	70.4	1	4	7					
TOTAL	46.8	6.8	177	190	203	88	22	10		
CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	57.9	8.4	199	218	236					
R ALDER	169.1	24.7	36	47	59					
S SPRUCE	198.5	28.9	29	41	53					
WHEMLOCK	335.9	49.0	5	9	14					
SNAG	331.4	48.3	2	3	5					
WR CEDAR	479.5	69.9	1	2	3					
TOTAL	25.9	3.8	308	320	333	27	7	3		
CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	56.0	8.2	36,730	39,995	43,260					
R ALDER	176.9	25.8	3,641	4,908	6,175					
S SPRUCE	248.9	36.3	2,349	3,687	5,026					
WHEMLOCK	336.7	49.1	824	1,620	2,416					
SNAG										
WR CEDAR	482.9	70.4	26	87	149					
TOTAL	32.2	4.7	47,937	50,298	52,658	41	10	5		

TC		PSTNDSUM		Stand Table Summary						Page		1			
										Date:		1/5/2011			
T04N R09W S15 TyTAKE THRU T04N R09W S26 TyTAKE				Project				STONESUP		Time:		7:59:30AM			
				Acres				270.80		Grown Year:					
S Spec T	Sample DBH	FF Trees	Tot Av Ht		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net		Totals		
			16'					Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
D	9	5	84	33	3.313	1.43	2.67	6.5	22.4		17	60		47	16
D	10	9	86	74	5.191	2.83	5.19	13.8	53.9		72	280		194	76
D	11	10	85	68	4.061	2.62	4.38	14.1	49.0		62	215		167	58
D	12	17	83	84	6.890	5.41	11.62	13.8	47.5		161	552		436	150
D	13	19	85	97	7.281	6.71	13.19	17.9	61.6		236	813		639	220
D	14	10	86	85	3.113	3.33	6.23	17.4	56.7		108	353		294	96
D	15	21	86	95	6.060	7.44	12.35	22.1	76.5		273	945		740	256
D	16	16	85	99	3.922	5.48	7.33	26.5	94.6		194	693		525	188
D	17	10	86	99	2.074	3.27	4.50	28.2	99.9		127	450		344	122
D	18	18	86	107	2.712	4.79	6.14	32.0	114.1		196	700		532	190
D	19	19	87	110	3.592	7.07	8.79	34.7	127.6		305	1,121		827	304
D	20	21	87	116	2.986	6.51	8.00	35.3	133.9		282	1,071		764	290
D	21	14	85	115	1.928	4.64	4.93	40.6	154.4		200	761		542	206
D	22	21	86	126	2.695	7.11	7.69	44.1	182.1		339	1,400		918	379
D	23	13	86	121	1.347	3.89	3.68	48.6	195.3		179	718		484	195
D	24	19	86	123	2.110	6.63	6.15	50.2	207.0		309	1,273		836	345
D	25	14	86	131	1.324	4.51	3.99	55.9	236.0		223	942		604	255
D	26	23	87	134	1.840	6.79	5.45	62.1	270.5		338	1,474		916	399
D	27	7	86	141	.631	2.51	1.89	70.3	307.6		133	582		360	158
D	28	19	86	139	1.439	6.15	4.32	74.2	331.1		320	1,430		867	387
D	29	7	86	134	.465	2.13	1.39	78.3	358.4		109	500		296	135
D	30	10	86	143	.704	3.45	2.23	82.3	387.1		183	862		496	233
D	31	4	84	136	.222	1.17	.67	88.6	403.0		59	269		160	73
D	32	10	84	138	.512	2.86	1.58	90.2	412.1		143	653		387	177
D	33	5	85	138	.223	1.33	.67	99.4	457.3		67	306		180	83
D	34	12	86	141	.413	2.60	1.33	102.4	495.9		136	658		368	178
D	35	4	83	141	.101	.68	.30	112.0	508.9		34	155		92	42
D	36	11	85	141	.306	2.17	.92	119.1	586.6		110	539		297	146
D	37	2	85	148	.111	.83	.33	129.7	645.5		43	214		117	58
D	38	6	84	142	.136	1.07	.44	124.5	614.9		55	272		149	74
D	40	2	87	146	.024	.21	.09	130.2	717.9		11	62		30	17
D	41	1	90	184	.029	.27	.12	158.0	942.5		18	109		49	30
D	42	1	85	144	.008	.07	.02	169.0	830.0		4	19		10	5
D	48	2	87	152	.027	.34	.09	215.7	1120.5		19	97		51	26
D	57	1	77	157	.015	.27	.04	305.7	1476.7		14	66		37	18
D	Totals	383	86	99	67.804	118.55	138.71	36.6	148.6		5,080	20,615		13,755	5,583
A	8	3	86	20	1.504	.53	.14	6.0	20.0		1	3		2	1
A	9	4	87	20	2.164	.96	1.62	6.0	30.0		10	49		26	13
A	10	3	87	21	.963	.53	.96	7.2	30.0		7	29		19	8
A	11	15	86	36	3.846	2.52	3.63	11.5	36.6		42	133		113	36
A	12	16	86	73	4.783	3.76	7.38	15.5	49.5		114	365		309	99
A	13	22	86	69	5.487	5.06	9.11	16.2	51.7		148	471		400	127
A	14	12	86	76	3.444	3.68	6.23	20.4	71.7		127	446		345	121
A	15	14	86	75	2.700	3.31	4.82	23.6	79.1		114	382		308	103
A	16	11	86	66	2.402	3.35	4.30	24.1	75.7		104	325		280	88
A	17	7	86	78	1.068	1.68	1.86	30.2	97.9		56	182		152	49
A	18	8	86	77	1.002	1.77	1.75	29.3	94.3		51	165		139	45
A	19	13	86	69	1.516	2.99	2.90	32.4	103.5		94	300		254	81
A	21	6	86	74	.552	1.33	1.10	41.3	143.3		46	158		124	43
A	22	1	87	57	.091	.24	.18	29.5	130.0		5	24		14	6
A	24	4	86	74	.551	1.73	1.10	53.3	192.1		59	212		159	57
A	28	1	86	69	.062	.27	.12	70.5	250.0		9	31		24	8
A	29	1	87	59	.058	.27	.12	66.5	245.0		8	28		21	8

TC		PSTNDSUM		Stand Table Summary						Page		2			
										Date:		1/5/2011			
T04N R09W S15 TyTAKE THRU T04N R09W S26 TyTAKE				Project STONESUP				Time: 7:59:30AM							
				Acres 270.80				Grown Year:							
S Spec T	Sample DBH	FF Trees	Tot Av Ht		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
			16'					Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
A	32	1	85	42	.048	.27	.05	102.0	160.0		5	8		13	2
A	Totals	142	86	60	32.243	34.22	47.36	21.1	69.9		998	3,310		2,703	896
H	9	1	77	17	.950	.42									
H	10	1	85	63	.769	.42	.77	14.0	50.0		11	38		29	10
H	11	3	88	55	2.031	1.26	1.40	17.0	60.0		24	84		64	23
H	12	2	86	73	.810	.64	1.34	14.2	48.1		19	65		52	18
H	13	3	89	71	1.366	1.26	2.28	17.6	62.0		40	141		108	38
H	14	2	80	59	.487	.52	.49	27.0	60.0		13	29		36	8
H	15	1	92	82	.342	.42	.68	23.0	90.0		16	62		43	17
H	16	1	92	96	.300	.42	.60	29.0	115.0		17	69		47	19
H	18	3	88	93	.597	1.06	1.32	32.6	110.9		43	146		116	40
H	20	2	85	95	.376	.82	.75	43.8	146.0		33	110		89	30
H	21	2	90	99	.216	.52	.43	53.5	215.0		23	93		63	25
H	22	5	85	94	.781	2.06	1.64	51.1	192.4		84	316		227	86
H	23	1	89	94	.075	.22	.15	63.0	240.0		9	36		26	10
H	24	3	87	108	.287	.90	.77	50.7	213.5		39	164		105	44
H	25	1	85	118	.064	.22	.19	48.3	216.7		9	41		25	11
H	26	4	85	103	.235	.87	.53	71.8	274.4		38	145		103	39
H	28	2	81	109	.149	.64	.40	60.2	237.5		24	94		65	25
H	29	1	87	127	.047	.22	.14	82.7	390.0		12	55		32	15
H	30	3	83	119	.146	.72	.39	74.5	334.9		29	132		80	36
H	31	1	82	122	.041	.22	.12	86.0	350.0		11	43		29	12
H	32	2	92	123	.078	.43	.23	99.7	511.7		23	119		63	32
H	33	2	84	107	.073	.43	.18	107.6	474.0		20	86		53	23
H	34	2	86	124	.069	.43	.17	108.8	560.0		19	96		51	26
H	36	2	80	145	.061	.43	.18	116.2	575.0		21	106		58	29
H	37	3	83	143	.087	.65	.26	131.6	665.6		34	174		93	47
H	40	1	85	127	.025	.22	.07	155.3	780.0		12	58		31	16
H	41	1	80	138	.024	.22	.07	113.3	623.3		8	44		22	12
H	42	1	82	125	.009	.08	.03	163.3	770.0		4	20		11	5
H	44	1	82	152	.021	.22	.06	209.0	1056.7		13	65		35	18
H	45	2	85	148	.029	.32	.09	208.0	1082.2		18	96		50	26
H	47	2	78	135	.036	.43	.11	143.5	760.0		15	82		42	22
H	48	1	89	132	.017	.22	.05	235.0	1280.0		12	66		33	18
H	68	1	89	144	.009	.22	.03	507.3	2856.7		13	74		35	20
H	Totals	63	86	74	10.607	18.11	15.93	44.4	185.1		707	2,950		1,915	799
S	9	3	88	19	1.829	.81									
S	10	4	85	18	2.173	1.19	1.09	7.0	30.0		8	33		21	9
S	11	6	80	31	1.559	1.01	1.46	10.6	28.2		16	41		42	11
S	12	5	84	53	1.594	1.25	1.59	19.2	48.9		31	78		83	21
S	13	1	78	63	.072	.07	.07	27.0	60.0		2	4		5	1
S	14	10	86	62	2.477	2.65	3.33	20.8	58.3		69	194		188	53
S	16	3	78	44	.472	.66	.52	27.9	45.5		14	24		39	6
S	17	2	82	63	.376	.59	.75	24.0	85.0		18	64		49	17
S	18	2	89	102	.335	.59	.67	41.5	150.0		28	101		75	27
S	20	2	88	80	.173	.38	.38	36.6	134.3		14	51		37	14
S	22	4	87	118	.367	.97	.96	52.5	211.9		50	203		136	55
S	24	1	81	59	.067	.21	.20	29.0	83.3		6	17		16	5
S	25	2	86	86	.173	.59	.35	66.4	231.1		23	80		62	22
S	26	4	82	79	.329	1.21	.74	51.2	179.7		38	133		103	36
S	27	2	85	122	.070	.28	.21	68.4	294.9		14	62		39	17
S	31	1	80	79	.040	.21	.08	97.5	345.0		8	28		21	8

T04N R09W S15 TyTAKE
THRU
T04N R09W S26 TyTAKE

Project **STONESUP**
Acres **270.80**

Time: **7:59:30AM**
Grown Year:

S Sp	DBH	Sample Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
			FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
S	32	1	91	134	.038	.21	.11	112.7	596.7		13	68			35	18
S	33	1	90	134	.036	.21	.11	121.0	653.3		13	70			35	19
S	34	1	83	91	.011	.07	.02	128.0	490.0		3	10			7	3
S	38	1	78	99	.027	.21	.05	168.5	580.0		9	31			25	8
S	45	1	77	111	.019	.21	.06	168.3	716.7		10	41			26	11
S	54	1	85	146	.013	.21	.04	321.7	1730.0		13	69			35	19
S	58	1	78	121	.012	.21	.03	299.7	1353.3		10	47			28	13
S	69	1	78	121	.008	.21	.02	427.3	1980.0		10	48			28	13
S	Totals	60	85	47	12.271	14.21	12.85	32.6	116.5		419	1,496			1,135	405
C	8	1	83	17	.107	.04	.11	4.0	20.0		0	2			1	1
C	9	1	88	17	.085	.04	.08	5.0	20.0		0	2			1	0
C	Totals	2	85	17	.192	.07	.19	4.4	20.0		1	4			2	1
SN	14	1	88	60	.047	.05										
SN	15	1	89	113	.041	.05										
SN	18	1	89	30	.028	.05										
SN	Totals	3	89	71	.115	.15										
Totals		653	86	81	123.232	185.32	215.05	33.5	131.9		7,205	28,375			19,510	7,684

Log Stock Table - MBF

T04N R09W S15 TyTAKE
THRU
T04N R09W S26 TyTAKE

Project: STONESUP
Acres 270.80

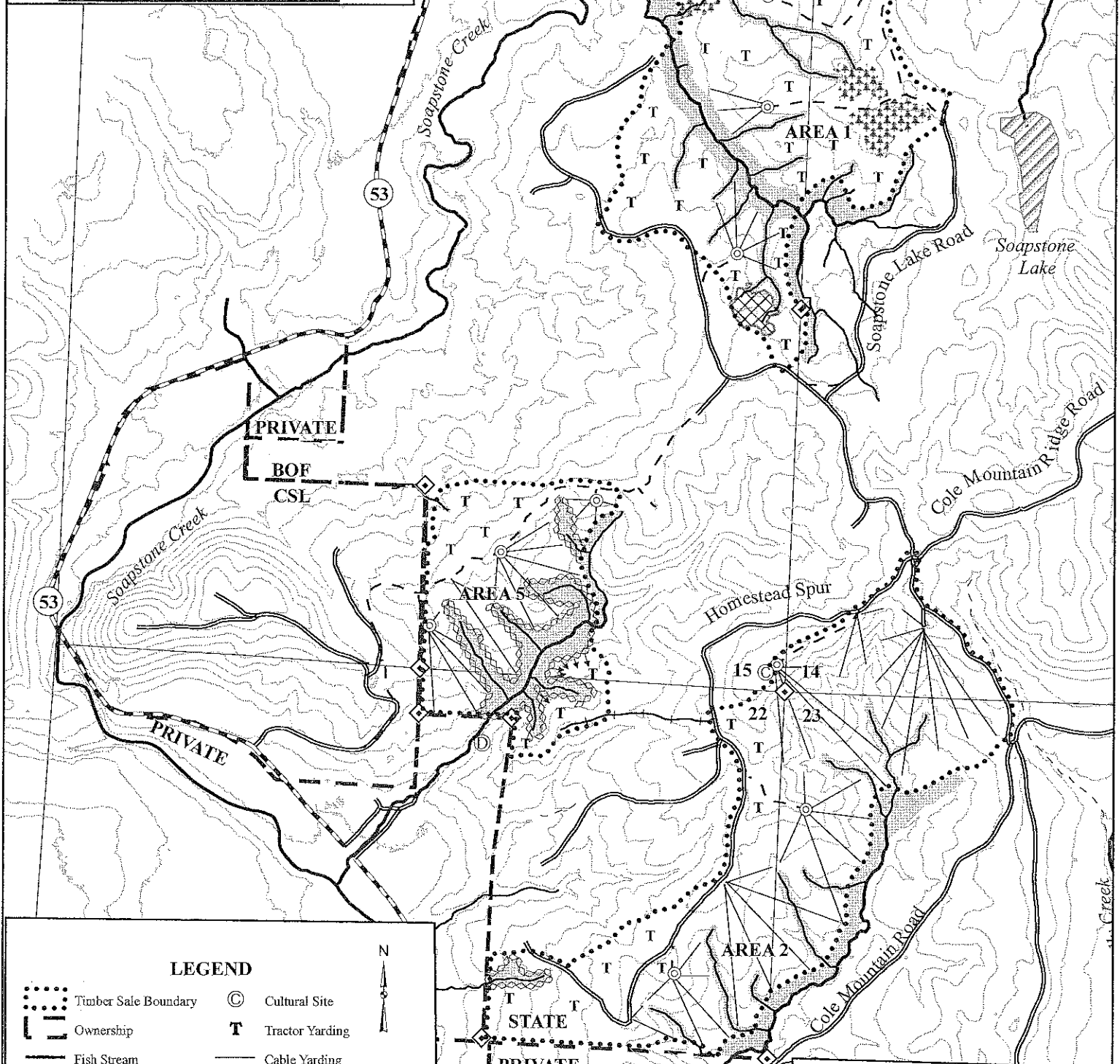
Page 4
Date 1/5/2011
Time 7:58:06AM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-21	22-29	30-39	40+	
S		DO	CU	25	1	100.0															
S		DO	CU	32	3	100.0															
S		DO	2S	16	8	5.6	8	1.9							1		7				
S		DO	2S	32	13	1.4	13	3.2					1	6			5				
S		DO	2S	34	16		16	4.0								16					
S		DO	2S	40	203		201	49.7					37	29	54			43	18	19	
S		DO	3S	16	1		1	.1							1						
S		DO	3S	18	1		1	.1													
S		DO	3S	24	1		1	.2					1								
S		DO	3S	26	2		2	.5					2								
S		DO	3S	30	8		8	2.0							8						
S		DO	3S	32	65	6.8	61	15.0			15	24	14		7						
S		DO	3S	34	3		3	.7													
S		DO	3S	36	7		7	1.7			2				5						
S		DO	3S	40	33		33	8.2			16	16	1								
S		DO	4S	12	1		1	.2													
S		DO	4S	13	2		2	.5			2										
S		DO	4S	16	17		17	4.1		0	15	1									
S		DO	4S	18	4		4	1.1			3	1									
S		DO	4S	24	13		13	3.1			9	4									
S		DO	4S	26	2		2	.4			2										
S		DO	4S	32	0		0	.1					0								
S		DO	4S	40	15	13.9	13	3.1			10								2		
S		Totals			442	8.2	405	5.3			0	74	50	19	44	52	71	12	45	18	19
C		DO	4S	12	0		0	44.1			0										
C		DO	4S	13	1		1	55.9			1										
C		Totals			1		1	.0			1										
SN		DO	CU	28	0	100.0															
SN		Totals			0	100.0															
Total		All Species			7,963	3.5	7,684	100.0			10	1077	832	897	1024	931	1581	417	780	98	37

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-11-10
 STONE SOAP
 PORTIONS of SECTIONS 14, 15, 22, & 23
 T4N, R9W, WM, CLATSOP COUNTY, OREGON.
 APPROXIMATE SCALE 1"= 1,000'

1,000 500 0 1,000 Feet



LEGEND

- Timber Sale Boundary
- Ownership
- Fish Stream
- Non Fish Stream
- Unknown Stream
- Posted Buffers
- Un Posted Buffers
- Green Tree Area
- Non-Merchantable Area
- Domestic Water Source
- Cultural Site
- Tractor Yarding
- Cable Yarding
- Line Pull
- Landings
- Loggers Choice Road
- New Road Construction
- Highway
- Rocked Road

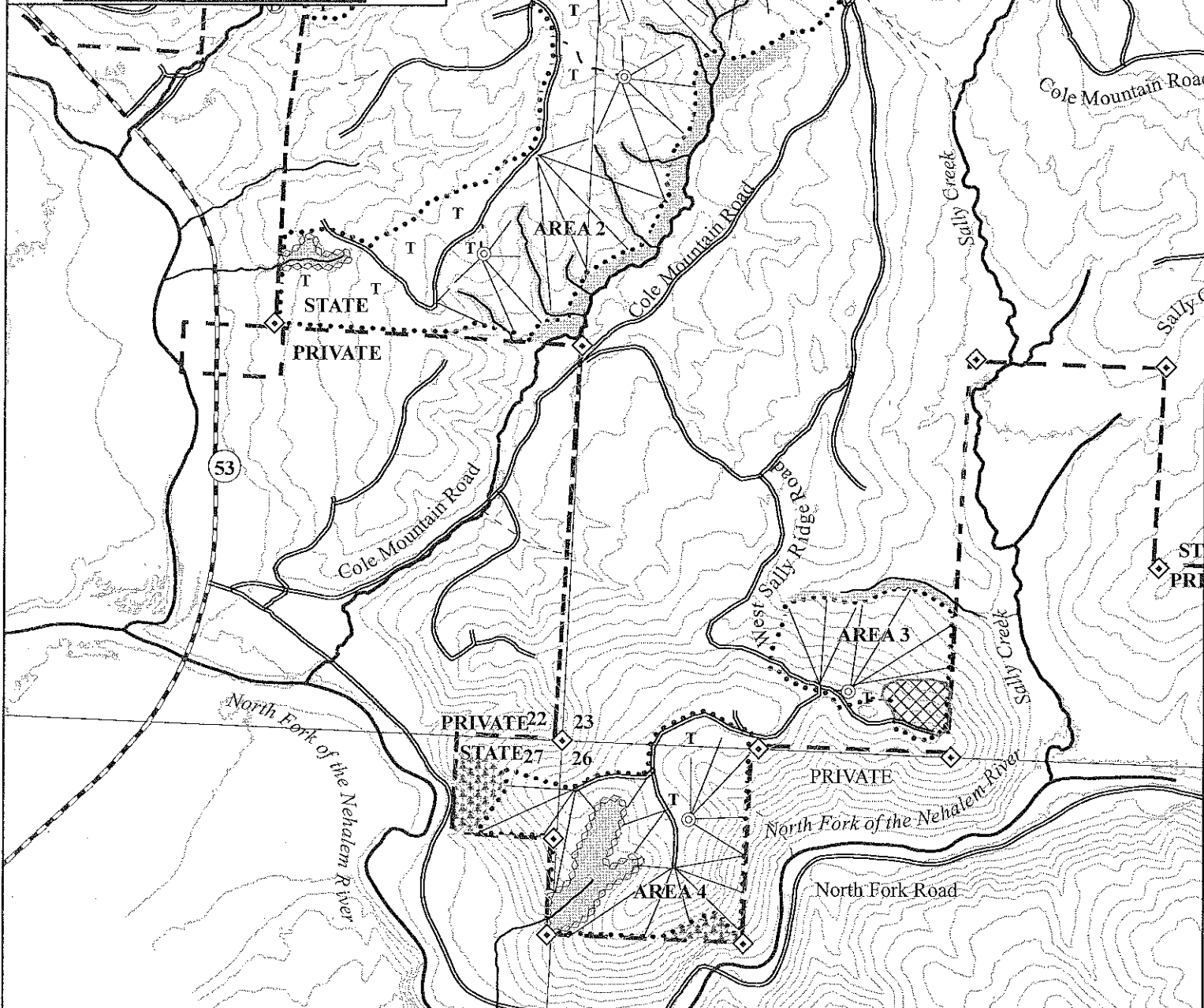
LOGGING BREAKDOWN		
AREA	TRACTOR	CABLE
AREA 1	94%	6%
AREA 2	27%	73%
AREA 3	7%	93%
AREA 4	12%	88%
AREA 5	40%	60%
TOTAL	49%	51%

APPROXIMATE NET ACRES		
AREA	MC ACRES	PC ACRES
AREA 1		83
AREA 2		93
AREA 3	15	
AREA 4	33	
AREA 5	35	
AREA 6 R/W	12	
TOTAL ACRES	95	176
TOTAL ALL AREAS - 271 ACRES		

LOGGING PLAN MAP

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