"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Summit Stone
Sale 341-08-52

District: Astoria **Date: December 06, 2007**

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$478,816.76	$85,955.87	$564,772.63
		Project Work:	$(177,163.00)
		Advertised Value:	$387,609.63

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District: Astoria **Date: December 06, 2007**

timber description

Location: Portions of Section 35, T5N, R9W and portions of Sections 1, 2, 3, 10 and 11, T4N, R9W, W.M., Clatsop County, Oregon.

Stand Stocking: 100%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	13	0	97
Western Hemlock / Fir	12	0	96
Sitka Spruce	14	0	96
Red Cedar	18	0	96
Alder (Red)	12	0	95

Volume by Grade	2S	3S	4S	Camprur	SM	Total
Douglas - Fir	271	1,151	289	0	4	1,715
Western Hemlock / Fir	357	1,036	288	0	0	1,681
Sitka Spruce	3	180	66	0	0	249
Red Cedar	0	1	0	0	0	1
Alder (Red)	0	0	0	217	0	217
Total	631	2,368	643	217	4	3,863

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District: Astoria **Date: December 06, 2007**

comments: Pond Values Used: 3rd Quarter Calendar Year 2007.

Log Markets: Tillamook, Forest Gove/Willamina, Garibaldi.

HAULING
Hauling costs equivalent to $700 daily truck cost.

Other Costs (Profit and Risk to be added):
100% Branding and Painting @ $1.00/MBF X 3,863 MBF = $3,863
Line Pulling - Areas 2, 5, 8, and 9: 40 hours @ $25/hr = $1,000
Logger's Choice Spurs: 20 Sta @ $89/Sta. = $1,780
TOTAL Other Costs (Profit and Risk to be added) = $6,643

Other Costs (No Profit and Risk added):
Slash piling Area 4: 36 hours @ $120/hr = $4,320
Move-in Excavator for Slash Piling: = $945
Pile Slash at MC cable landings:
$260/landing @ 5 landings = $1,300
TOTAL Other Costs (No Profit and Risk added) = $6,565

"STEWARDSHIP IN FORESTRY"

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Sale 341-08-52

District: Astoria **Date: December 06, 2007**

logging conditions

combination#: 1

Douglas - Fir	18.68%
Western Hemlock / Fir	28.40%
Sitka Spruce	14.48%
Red Cedar	100.00%
Alder (Red)	13.99%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process**: Manual Delimbing
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 6.0 **bd. ft / load:** 3,500
cost / mbf: $119.27

machines: Shovel Logger

combination#: 2

Douglas - Fir	17.13%
Western Hemlock / Fir	28.24%
Sitka Spruce	10.82%
Alder (Red)	10.90%

yarding distance: Short (400 ft) **downhill yarding:** No
logging system: Cable: Small Tower <=40 **Process**: Stroke Delimber
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 6.0 **bd. ft / load:** 3,500
cost / mbf: $134.96

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

combination#: 3

Douglas - Fir	40.44%
Western Hemlock / Fir	27.32%
Sitka Spruce	47.06%
Alder (Red)	47.32%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process**: Manual Delimbing
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 5.0 **bd. ft / load:** 3,500
cost / mbf: $143.12

machines: Shovel Logger

combination#: 4

Douglas - Fir	23.75%
Western Hemlock / Fir	16.05%
Sitka Spruce	27.64%
Alder (Red)	27.79%

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Summit Stone
Sale 341-08-52

District: Astoria **Date: December 06, 2007**

yarding distance:	Medium (800 ft)	**downhill yarding:**	No
logging system:	Cable: Small Tower <=40	**Process:**	Manual Delimbing
tree size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
loads / day:	4.0	**bd. ft / load:**	3,500
cost / mbf:	$192.93		

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

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Summit Stone
Sale 341-08-52

District: Astoria

Date: December 06, 2007

logging costs

Operating Seasons:	2.00	**Profit Risk:**	18.00%
Project Costs:	$177,163.00	**Other Costs (P/R):**	$6,643.00
Slash Disposal:	$0.00	**Other Costs:**	$6,565.00

Miles of Road

Road Maintenance: $6.92

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

Hauling Costs

Species	$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	$0.00	2.0	4.0
Western Hemlock / Fir	$0.00	3.0	3.5
Sitka Spruce	$0.00	3.0	3.5
Red Cedar	$0.00	3.0	3.0
Alder (Red)	$0.00	3.0	3.0

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Summit Stone
Sale 341-08-52

District: Astoria **Date: December 06, 2007**

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
$149.10	$7.13	$2.27	$76.37	$1.72	$42.59	$0.00	$2.00	$1.70	$282.88
Western Hemlock / Fir									
$142.04	$7.20	$2.27	$58.76	$1.72	$38.16	$0.00	$2.00	$1.70	$253.85
Sitka Spruce									
$152.55	$7.20	$2.27	$58.76	$1.72	$40.05	$0.00	$2.00	$1.70	$266.25
Red Cedar									
$119.27	$7.20	$2.27	$68.55	$1.72	$35.82	$0.00	$2.00	$1.70	$238.53
Alder (Red)									
$152.74	$7.27	$2.27	$69.21	$1.72	$41.98	$0.00	$2.00	$1.70	$278.89

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$467.05	$184.17	$0.00
Western Hemlock / Fir	$0.00	$341.64	$87.79	$0.00
Sitka Spruce	$0.00	$325.00	$58.75	$0.00
Red Cedar	$0.00	$1,000.00	$761.47	$0.00
Alder (Red)	$0.00	$675.00	$396.11	$0.00

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Summit Stone
Sale 341-08-52

District: **Astoria** **Date:** **December 06, 2007**

summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	1,715	$184.17	$315,851.55
Western Hemlock / Fir	1,681	$87.79	$147,574.99
Sitka Spruce	249	$58.75	$14,628.75
Red Cedar	1	$761.47	$761.47
Alder (Red)	217	$396.11	$85,955.87

Gross Timber Sale Value

Recovery: $564,772.63

Prepared by: Edward Holloran **Phone:** 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale:	**Summit Stone**	**MBF:**	3,863
Date:	September 5, 2007	**$$/MBF:**	$6.92
By:	Ed Holloran		

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	
Interim	Grader 14G	$570	2	35	$87	$4,185	
Operations	Dump Truck 12CY	$119	2	20	$59	$1,418	
Entries (2)	FE Loader C966	$525	2	10	$79	$1,840	
	Grader 14G	$570	1	57	$84	$5,358	
Final	Dump Truck 12CY (2 @ $119)	$238	2	24	$59	$1,892	
Road	FE Loader C966	$525	1	24	$79	$2,421	
Maintenance	Vibratory Roller	$570	1	57	$79	$5,073	
Haul Route	Water Truck 2,500 gallon	$139	1	57	$70	$4,129	
	Labor			16	$25	$400	
Total							**$26,716**

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	2.5	8.5	3.4	34.0

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	8.5	5.7	56.7
Vibratory Roller	1.5	8.5	5.7	56.7

Cole Mt. Co. Ridge Rd. to Hamlet (0.64 mi.) plus East Summit Rd. to Hwy 53 (1.91 mi.), then the side spurs south of E. Summit Rd (2.15mi.), The Soapstone Lake Trail rd. (0.53 mi.) and the new rocked spurs (2.9 mi.) and finally Bergvick Creek Rd. (0.61mi.)

For a total of 8.5 miles

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Summit Stone

NEW CONSTRUCTION:

	Road segment		Length/Sta		Cost	
Project No. 1	1A-1B, 2A-2B, 2C-2D, 2E-2F					
	3A-3B, 3C-3D, 3E-3F					
	4A-4B, 4C-4D,5A-5B,					
	7A-7B, 8A-8B		160.15		$124,229	
	TOTALS	3.03 miles	160.15	Stations		$124,229

ROAD IMPROVEMENT:

	Road segment		Length/Sta		Cost	
Project No. 2	I1-I2, I3-I4, I5-I6, I11-I12,					
	I15-I16, I17-I18		123.10		$22,974	
Project No. 3	I7-I8, I9-I10, I13-I14		8.78		$10,299	
	TOTALS	2.50 miles	131.88	Stations		$33,273

VACATING:

	Road segment		Length/Sta		Cost	
Project No. 4	V1-V2		11.25		$4,949	
	TOTALS	0.21 miles	11.25	Stations		$4,949

SPECIAL PROJECTS:

	Description	Cost	
Project No. 5	Stream Enhancement SE1 through SE7	$1,840	
	Project Road Maintenance	$7,444	
	TOTALS		$9,284

MOVE IN:

Equipment	Cost	
518 Rubber Tired Skidder	$525	
D-8 Dozer	$1,030	
20 cy Dump Truck w/trailer (2 @ $140 each)	$280	
12cy Dump Trucks (6 @ $119 each)	$714	
Front End Loader - Medium (966)	$570	
Grader (14G)	$570	
Vibratory Roller	$570	
Water Truck (2,500 gal.)	$139	
Excavator - Large - (C330)	$1,030	
TOTAL		$5,428

GRAND TOTAL **$177,163**

Compiled By: Ed Holloran FL Date: 09/26/2007

SUMMARY OF NEW CONSTRUCTION COSTS

SALE NAME: Summit Stone
ROAD: 1A-1B(21+50), 2A-2B (14+75), 2C-2D (7+60), 2E-2F (8+35)
3A-3B (67+00), 3C-3D (3+00), 3E-3F (1+50), 5A-5B(4+00)
7A-7B (3+15), 8A-8B (19+00) = 149.85

Dirt= 4A-4B (8+50),4C-4D(1+80) = 10+30

NEW CONSTRUCTION: 160.15 **STATIONS** 3.03 **MILES**
IMPROVEMENT: _____ **STATIONS** _____ **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate/Acre	=	Cost
Scatter Outside of R/W	16.64	x	$980.00	=	$16,307.20
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING $16,307

EXCAVATION

	Material	Cy/sta/amount	x	Rate	=	Cost
3A-3B	Common Excavation (≤50% slopes)	7,840	x	$1.28	=	$10,035.20
3A-3B	Common Excavation (>50% slopes)	3,020	x	$1.52	=	$4,590.40
3A-3B	Embankment Compaction $$/bcy	12,800	x	$0.45	=	$5,760.00
4C-4D	Embankment Compaction $$/bcy	800	x	$0.45	=	$360.00
3A-3B (17+50)	End Haul (loading and Hauling $$/cy)	500	x	$2.90	=	$1,450.00
3A-3B (45+40)	End Haul (loading and Hauling $$/cy)	1,000	x	$2.90	=	$2,900.00
3A-3B (54+51)	End Haul (loading and Hauling $$/cy)	2,000	x	$2.90	=	$5,800.00
3A-3B (55+00)	End Haul (loading and Hauling $$/cy)	1,000	x	$2.90	=	$2,900.00
3A-3B	End Haul Stumps to station 34+00 $$/sta	12.60	x	$73.75	=	$929.25
3A-3B (65+55)	Waste Material Compaction $$/cy	500	x	$0.25	=	$125.00
4A-4B, 4C-4D	Common (Standard Design) -- Dirt $$/sta.	10.30	x	$89.00	=	$916.70
1A-1B, 2A-2B, 2C-2D, 2E-2F	Common (Standard Design) $$/sta.	53.20	x	$139.00	=	$7,394.80
3C-3D, 3E-3F, 5A-5B	Common (Standard Design) $$/sta.	8.50	x	$139.00	=	$1,181.50
7A-7B, 8A-8B	Common (Standard Design) $$/sta.	22.15	x	$139.00	=	$3,078.85
1A-1B	Cut Slope Rounding -$/sta.	3.50	x	$31.00	=	$108.50
3A-3B	Cut Slope Rounding -$/sta.	18.15	x	$31.00	=	$562.65
8A-8B	Cut Slope Rounding -$/sta.	5.25	x	$31.00	=	$162.75
3A-3B	Side Cast Pull Back(≤20' v.d.material placed-$/sta.)	1.30		$265.00		$344.50
	sta. 35+60 to 36+90					
	Undesigned Landing Construction $$/landing	11	x	$285.00	=	$3,135.00

SUB TOTAL FOR EXCAVATION $51,735

CULVERT MATERIALS AND INSTALLATION

	Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
2A-2B	14+75	18"/CPP	30	$12.25	$367.50					
2C-2D	6+50	18"/CPP	30	$12.25	$367.50					
3A-3B	0+00	18"/CPP	40	$12.25	$490.00					
3A-3B	4+00	18"/CPP	30	$12.25	$367.50					
3A-3B	16+00	18"/CPP	30	$12.25	$367.50					
3A-3B	27+00	18"/CPP	30	$12.25	$367.50					
3A-3B	37+00 **	18"/CPP	30	$12.25	$367.50					
3A-3B	39+50	18"/CPP	30	$12.25	$367.50					
3A-3B	64+00	18"/CPP	35	$12.25	$428.75					
3A-3B	66+95	18"/CPP	40	$12.25	$490.00					
3A-3B	67+00	18"/CPP	40	$12.25	$490.00					
8A-8B	17+30	18"/CPP	30	$12.25	$367.50					

** Requires Dissipator Rock.

Other/miscellaneous:	Description	Quantity/Hrs.	Rate	Cost
3A-3B	Old Stump Relocation/Disposal on 3A-3B near sta. 33+00 (C330 Exc.)	7	$138.00	$966.00
	Mulch & Seed			
1A-1B, 2E-2F, 3A-3B, 8A-8B	Cut Slopes and Fills 6 feet and greater (1.6 acres)			
	310 Bales	310	$4.50	$1,395.00
	160 lbs.	160	$1.65	$264.00
	Waste Areas (1 and 2) -25 bales	25	$4.50	$112.50
	Seed (forage mix) 20lbs.	20	$1.65	$33.00
	Culvert stakes & markers:			
	6' x 2 1/2" White Fiberglass (Carsonite) "I"-Beam post	14	$14.10	$197.40

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $7,807

Subtotal **$75,849**

Compiled by: Ed Holloran Date: 09/24/2007

x:\document\Sunset Unit\ 2008 FYSales\Summit Stone\Sale Prep\Projects\Summary of New Construction-Summit Stone 9-07.xls

SUMMARY OF NEW CONSTRUCTION COSTS

SALE NAME: Summit Stone

SURFACING: Subgrade prep:	Description	Stations/ amount	x	Rate/ sta/amt	Cost	
	Grade, Shape 14' outslope (4A-4B, 4C-4D)	10.30	x	$13.45	$138.54	
	Grade, Shape and Ditch 16' (1A-1B, 2A-2B, 2C-2D, 2E-2F, 3A-3B, 3C-3D, 3E-3F					
	(5A-5B, 7A-7B, 8A-8B)	149.85	x	$18.20	$2,727.27	
	Subgrade Compaction (rocked spurs only)	149.85	x	$14.80	$2,217.78	
			x			$5,083.59

ROAD SEGMENT	1A to 1B			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A to 1B Volume (CY) per		0+00 to 21+50 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Base Rock	4"-0" Crushed	0+00 to 21+50	9	Station	49	Stations	21.50	1054	$3.83	$4,035	
Turnouts	4"-0" Crushed	10+75	9	Turnout	22	Turnouts	3	66	$3.83	$253	
Curve Widening	4"-0" Crushed		9	Curve	11	Curves	3	33	$3.83	$126	
Total Rock for Road Segment:			1A to 1B					1153			$4,414
ROAD SEGMENT	2A to 2B			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A to 2B Volume (CY) per		0+00 to 14+75 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Base Rock	4"-0" Crushed	0+00 to 14+75	8	Station	43	Stations	14.75	634	$3.83	$2,429	
Turnouts	4"-0" Crushed	3+75, 8+50	8	Turnout	19	Turnouts	2	38	$3.83	$146	
Curve Widening	4"-0" Crushed		8	Curve	10	Curves	2	20	$3.83	$77	
Junction	4"-0" Crushed	11+06, 14+24	8	Junction	30	Junctions	2	60	$3.83	$230	
Total Rock for Road Segment:			2A to 2B					752			$2,881
ROAD SEGMENT	2C to 2D			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	2C to 2D Volume (CY) per		0+00 to 7+60 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Base Rock	4"-0" Crushed	0+00 to 7+60	8	Station	43	Stations	7.60	327	$3.83	$1,252	
Turnouts	4"-0" Crushed	3+15	8	Turnout	19	Turnouts	1	19	$3.83	$73	
Turnaround	4"-0" Crushed		8	Turnaround	11	Turnarounds	1	11	$3.83	$42	
Landings	6"-0" Pit-Run	7+60	N/A	Landing	50	Landings	1	50	$4.76	$238	
Total Rock for Road Segment:			2C to 2D					407			$1,605
ROAD SEGMENT	2E to 2F			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	2E to 2F Volume (CY) per		0+00 to 8+35 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Base Rock	4"-0" Crushed	0+00 to 8+35	8	Station	43	Stations	8.35	359	$3.83	$1,375	
Turnouts	4"-0" Crushed	2+50, 6+35	8	Turnout	19	Turnouts	2	38	$3.83	$146	
Curve Widening	4"-0" Crushed		8	Curve	12	Curves	2	24	$3.83	$92	
Turnaround	4"-0" Crushed		8	Turnaround	11	Turnarounds	1	11	$3.83	$42	
Landings	6"-0" Pit-Run	8+35	N/A	Landing	50	Landings	1	50	$4.76	$238	
Total Rock for Road Segment:			2E to 2F					482			$1,893
ROAD SEGMENT	3A to 3B			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	3A to 3B Volume (CY) per		0+00 to 67+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Base Rock	4"-0" Crushed	0+00 to 67+00	9	Station	49	Stations	67.00	3283	$3.83	$12,574	
Turnouts	4"-0" Crushed	3+30, 14+65, 17+90 24+65,29+60,32+15 45+90,49+95,59+25	9	Turnout	22	Turnouts	9	198	$3.83	$758	
Curve Widening (3ft-R)	4"-0" Crushed	13+50 to 15+40	9	Curve	20	Curve	1	20	$3.83	$77	
Curve Widening (5ft-R)	4"-0" Crushed	20+55 to 21+40	9	Curve	16	Curve	1	16	$3.83	$61	
Curve Widening (3ft-R)	4"-0" Crushed	37+55 to 38+80	9	Curve	13	Curve	1	13	$3.83	$50	
Curve Widening (4ft-L)	4"-0" Crushed	49+00 to 50+10	9	Curve	14	Curve	1	14	$3.83	$54	
Curve Widening (3ft-R)	4"-0" Crushed	53+70 to 55+70	9	Curve	21	Curve	1	21	$3.83	$80	
Curve Widening (3ft-L)	4"-0" Crushed	56+40 to 57+50	9	Curve	12	Curve	1	12	$3.83	$46	
Curve Widening (3ft-R)	4"-0" Crushed	58+40 to 59+90	9	Curve	16	Curve	1	16	$3.83	$61	
Curve Widening (3ft-R)	4"-0" Crushed	63+70 to 65+50	9	Curve	19	Curve	1	19	$3.83	$73	
Junctions	4"-0" Crushed	0+00, 6+20, 7+50 16+35,28+80, 38+84,40+30,64+21	9	Junction	30	Junctions	8	240	$3.83	$919	
Junctions	4"-0" Crushed	67+00	9	Junction	60	Junction	1	60	$3.83	$230	
Junctions	1 1/2"-0" Crushed	0+00	4	Junction	22	Junctions	1	22	$4.22	$93	
Junctions	1 1/2"-0" Crushed	67+00	4	Junction	44	Junctions	1	44	$4.22	$186	
Culvert Backfill	1 1/2"-0" Crushed	0+00, 66+95, 67+00	N/A	Culvert	20	Culverts	3	60	$4.22	$253	
Fill Armor (both sides)	24"-6" Riprap	33+00 to 35+10	N/A					500	$7.31	$3,655	
Dissipator Rock	24"-6" Riprap	27+00, 37+00	N/A	Dissipator	10	Dissipators	2	20	$7.31	$146	
Landings	6"-0" Pit-Run	54+90, 64+60	N/A	Landing	50	Landings	2	100	$4.76	$476	
Total Rock for Road Segment:			3A to 3B					4658			$19,792
ROAD SEGMENT	3C to 3D			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	3C to 3D Volume (CY) per		0+00 to 3+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Base Rock	4"-0" Crushed	0+00 to 3+00	8	Station	43	Stations	3.00	129	$3.83	$494	
Landings	6"-0" Pit-Run	3+00	N/A	Landing	50	Landings	1	50	$4.76	$238	
Total Rock for Road Segment:			3C to 3D					179			$732

SUMMARY OF NEW CONSTRUCTION COSTS

SALE NAME: Summit Stone

ROAD SEGMENT	3E to 3F			POINT TO POINT		Sta. to Sta.				
Application	Rock Size and Type	Location	Depth of Rock (inches)	3E to 3F Volume (CY) per		0+00 to 1+50 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	0+00 to 1+50	8	Station	43	Stations	1.50	65	$3.53	$228
Landings	6"-0" Pit-Run	1+50	N/A	Landing	50	Landings	1	50	$4.76	$238
Total Rock for Road Segment:			3E to 3F					115		$466
ROAD SEGMENT	5A to 5B			POINT TO POINT		Sta. to Sta.				
Application	Rock Size and Type	Location	Depth of Rock (inches)	5A to 5B Volume (CY) per		0+00 to 4+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	0+00 to 4+00	8	Station	43	Stations	4.00	172	$3.83	$659
Turnouts	4"-0" Crushed		8	Turnout	19	Turnouts	1	19	$3.83	$73
Turnaround	4"-0" Crushed		8	Turnaround	11	Turnarounds	1	11	$3.83	$42
Landings	6"-0" Pit-Run	4+00	N/A	Landing	50	Landings	1	50	$4.76	$238
Total Rock for Road Segment:			5A to 5B					252		$1,012
ROAD SEGMENT	7A to 7B			POINT TO POINT		Sta. to Sta.				
Application	Rock Size and Type	Location	Depth of Rock (inches)	7A to 7B Volume (CY) per		0+00 to 3+15 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	0+00 to 3+15	8	Station	43	Stations	3.15	230	$3.83	$881
Junctions	4"-0" Crushed	0+00	8	Junction	30	Junction	1	30	$3.83	$115
Junctions	1 1/2"-0" Crushed	0+00	4	Junction	22	Junctions	1	22	$4.22	$93
Landings	6"-0" Pit-Run	3+15	N/A	Landing	50	Landings	1	50	$4.76	$238
Total Rock for Road Segment:			7A to 7B					332		$1,327
ROAD SEGMENT	8A to 8B			POINT TO POINT		Sta. to Sta.				
Application	Rock Size and Type	Location	Depth of Rock (inches)	8A to 8B Volume (CY) per		0+00 to 19+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Crushed	0+00 to 19+00	8	Station	43	Stations	19.00	817	$3.83	$3,129
Turnouts	4"-0" Crushed	2+95, 5+40, 8+20, 13+70	8	Turnout	19	Turnouts	4	76	$3.83	$291
Turnaround	4"-0" Crushed	17+50	8	Turnaround	11	Turnarounds	1	11	$3.83	$42
Landings	6"-0" Pit-Run	19+00	N/A	Landing	50	Landings	1	50	$4.76	$238
Total Rock for Road Segment:			8A to 8B					954		$3,700
								9,283		

	24"-6"rr	6"-0" pr	4"-0"	1 1/2"-0"	3/4"-0"	Total
SUB TOTAL FOR SURFACING	520	450	8,165	148	0	9,283

PROCESSING:

Description	No.sta	Rate/sta	Cost
Water, Process & Compact Crushed Rock (1 lift < 9"):	83	$41.40	$3,416
Vibratory Roller, Grader (14G),Water Truck (2 lifts)- Junctions 3A , 3B and 7A	4	$41.40	$166

$3,581

$46,485

SPECIAL PROJECTS:

	No. sta./ft./cy.	Rate per sta./ft./cy.	Cost
Placement of Dissipator Rock and Fill Aromor (520cyds. X $2.00/cyd):	520	$2.00	$1,040
Develop Pit-Run (pr) rock 6"-0" (450 cy)	450	$1.90	$855
Development of Riprap is on Rock Haul sheet ($3.10/cy)			

SUB TOTAL FOR SPECIAL PROJECTS $1,895

$1,895

GRAND TOTAL Cost per Mile $40,957 $124,229

Compiled By: Ed Holloran Date: 09/24/2007

SUMMARY OF ROAD IMPROVEMENT COSTS - Project No. 2

SALE NAME: Summit Stone
ROAD: Road Improvement I1-I2 (31+90), I3-I4 (33+90), I5-I6 (16+20) I11-I12 (10+50), I15-I16 (28+20), I17-I18 (2+40)

NEW CONSTRUCTION: _____ STATIONS _____ MILES
IMPROVEMENT: 123.10 STATIONS 2.33 MILES

BRUSHING

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

SUB TOTAL FOR BRUSHING

CLEARING & GRUBBING

	Method	Sta.-Acres/Amount	x	Sta./Amount	=	Cost
	Misc. Roadside clearing $/acre	0.50	x	$980.00	=	$490.00
I15-I16	Load & Haul Rootwads from Landing to WA4:					
	Dump Truck $/hour	4.00	x	$59.00	=	$236.00
	Load w/excavator $/hour	4.00	x	$120.00	=	$480.00
	Waste Area management	2.00	x	$120.00	=	$240.00

SUB TOTAL FOR CLEARING & GRUBBING $1,446

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
Undesigned landing Construction $/Landing	1	x	$285.00	=	$285.00
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION $285

CULVERT MATERIALS AND INSTALLATION

Location		Dia/type	Lineal ft.	Rate	Cost	Location		Dia/type	Lineal ft.	Rate	Cost
I1-I2	12+30 **	18"CPP	30	$12.25	$367.50	I17-I18	0+00 **	18"CPP	30	$12.25	$367.50
I1-I2	19+40 **	18"CPP	30	$12.25	$367.50						
I1-I2	28+00 **	18"CPP	30	$12.25	$367.50						
I5-I6	0+00	18"CPP	35	$12.25	$428.75						
I5-I6	4+20 **	18"CPP	30	$12.25	$367.50						
I11-I12	2+35 **	18"CPP	30	$12.25	$367.50						
I15-I16	3+65 **	18"CPP	30	$12.25	$367.50						
I15-I16	5+50 **	18"CPP	30	$12.25	$367.50						
I15-I16	6+50 **	18"CPP	35	$12.25	$428.75						
I15-I16	13+30 **	18"CPP	30	$12.25	$367.50						
I15-I16	17+00	18"CPP	35	$12.25	$428.75						
I15-I16	21+30 **	24"CPP	30	$21.00	$630.00						
I15-I16	23+50	18"CPP	30	$12.25	$367.50						

** Requires Dissipator rock

Other/miscellaneous:	Description	Quantity	Rate	Cost
Culvert stakes & markers	6' x 2 1/2" White Fiberglass (Carsonite)	14	$14.10	$197.40

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $5,421

Subtotal **$7,152**

Compiled by: Ed Holloran Date: 09/26/2007

SUMMARY OF ROAD IMPROVEMENT COSTS

SALE NAME: Summit Stone

SURFACING			Stations/ amount		Rate/ sta/amt	Cost	
Subgrade prep:	Description						
I1-I2, I3-I4, I5-I6, I11-I12, I15-I16, I17-I18:	Grade, Shape and Ditch 16'		123.10	x	$18.20	$2,240.42	
	Subgrade Compaction		123.10	x	$14.80	$1,821.88	
	Ditch Cleanout (load and haul ditch material)		20.00	x	$16.80	$336.00	
							$4,398.30

ROAD SEGMENT	I1 to I2			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I1 to I2 Volume (CY) per		0+00 to 31+90 Number of					
Leveling Rock	4"-0" Crushed		N/A					110	$3.83	$421	
Turnouts	4"-0" Crushed	2+25, 7+70, 13+10 18+80, 29+00, 31+90	6	Turnout	14	Turnouts	8	112	$3.83	$429	
Junctions	4"-0" Crushed	15+90, 25+00	6	Junction	22	Junctions	2	44	$3.83	$169	
Turnaround	4"-0" Crushed	31+90	6	Turnaround	11	Turnaround	1	11	$3.83	$42	
Culvert Backfill	1 1/2"-0" Crushed	12+30, 19+40, 28+00	N/A	Culvert	20	Culverts	3	60	$4.22	$253	
Dissipator	24"-6" Riprap	12+30,19+40,28+00	N/A	Dissapator	10	Dissapators	3	30	$7.31	$219	
Total Rock for Road Segment:			I1 to I2					367			$1,314

ROAD SEGMENT	I3 to I4			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) per		0+00 to 33+90 Number of					
Leveling Rock	1 1/2"-0" Crushed		N/A					66	$4.22	$279	
Surface Rock	1 1/2"-0" Crushed	21+10 to 32+25	3	Station	16	Stations	11.15	178	$4.22	$753	
Turnouts	1 1/2"-0" Crushed	14+95, 20+70	3	Turnout	22	Turnouts	2	44	$4.22	$186	
Junctions	1 1/2"-0" Crushed	33+90	3	Junction	11	Junctions	1	11	$4.22	$46	
Total Rock for Road Segment:			I3 to I4					299			$1,263

ROAD SEGMENT	I5 to I6			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I5 to I6 Volume (CY) per		0+00 to 16+20 Number of					
Leveling Rock	4"-0" Crushed		N/A					110	$3.83	$421	
Base Rock	4"-0" Crushed	4+10 to 6+10	6	Station	33	Stations	2.00	66	$3.83	$253	
Turnouts	4"-0" Crushed	11+05	6	Turnout	14	Turnouts	1	14	$3.83	$54	
Turnaround	4"-0" Crushed	15+25	6	Turnaround	11	Turnaround	1	11	$3.83	$42	
Culvert Backfill	1 1/2"-0" Crushed	0+00, 4+20	N/A	Culvert	20	Culverts	2	40	$4.22	$169	
Dissipator	24"-6" Riprap	4+20	N/A	Dissapator	10	Dissapator	1	10	$7.31	$73	
Total Rock for Road Segment:			I5 to I6					251			$939

ROAD SEGMENT	I11 to I12			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I11 to I12 Volume (CY) per		0+00 to 10+50 Number of					
Leveling Rock	4"-0" Crushed		N/A					22	$3.83	$84	
Base Rock	4"-0" Crushed		6	Station	33	Stations	10.50	346	$3.83	$1,325	
Turnouts	4"-0" Crushed	4+65, 8+50	6	Turnout	14	Turnouts	2	28	$3.83	$107	
Culvert Backfill	1 1/2"-0" Crushed	2+35	4	Culvert	20	Culverts	1	20	$4.22	$84	
Dissipator	24"-6" Riprap	2+35	N/A	Dissapator	10	Dissapator	1	10	$7.31	$73	
Total Rock for Road Segment:			I11 to I12					426			$1,601

ROAD SEGMENT	I15 to I16			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I15 to I16 Volume (CY) per		0+00 to 28+20 Number of					
Leveling Rock	4"-0" Crushed		N/A					88	$3.83	$337	
Surface Rock	1 1/2"-0" Crushed	0+00 to 19+00	3	Station	16	Stations	19.00	304	$4.22	$1,283	
Turnouts	4"-0" Crushed	10+30	6	Turnout	14	Turnouts	1	14	$3.83	$54	
Turnouts	1 1/2"-0" Crushed	10+30	3	Turnout	7	Turnouts	1	7	$4.22	$30	
Turnaround	4"-0" Crushed	28+20	6	Turnaround	10	Turnaround	1	10	$3.83	$38	
Landing	4"-0" Crushed	18+50	N/A	Landing	60	Landings	1	60	$3.83	$230	
Culvert Backfill	1 1/2"-0" Crushed	3+65, 5+50, 6+50 13+30, 17+00, 21+30 23+50	N/A	Culvert	20	Culverts	7	140	$4.22	$591	
Dissipator	24"-6" Riprap	3+65, 5+50, 6+50	N/A	Dissapator	10	Dissapators	3	30	$7.31	$219	
Dissipator	24"-6" Riprap	13+30	N/A	Dissapator	30	Dissapator	1	30	$7.31	$219	
Dissipator	24"-6" Riprap	21+30	N/A	Dissapator	40	Dissapator	1	40	$7.31	$292	
Total Rock for Road Segment:			I15 to I16					723			$3,293

ROAD SEGMENT	I17 to I18			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I17 to I18 Volume (CY) per		0+00 to 2+40 Number of					
Base Rock	4"-0" Crushed	0+00 to 1+50	8	Station	43	Stations	1.50	65	$3.83	$247	
Junctions	4"-0" Crushed	0+00	8	Junction	30	Junction	1	30	$3.83	$115	
Junctions	1 1/2"-0" Crushed	0+00	4	Junction	22	Junctions	1	22	$4.22	$93	
Culvert Backfill	1 1/2"-0" Crushed	0+00	N/A	Culvert	20	Culvert	1	20	$4.22	$84	
Dissipator Rock	24"-6" Riprap	0+00	N/A	Dissapator	10	Dissapator	1	10	$7.31	$73	
Total Rock for Road Segment:			I17 to I18					147			$612

2,213

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Summit Stone

Processing:

Description	No. sta.	Rate/sta	Cost	
Water, Process & Compact Crushed Rock (1 lift < 8")	26	$41.40	$1,062	
Vibratory Roller, Grader (14G), Water Truck (2 Lifts) - I15-I16 (0+00-19+00)	19	$41.40	$787	
				$1,848.51

	24"-6"rr	6"-0"pr	4"-0"	1 1/2"-0"	3/4"-0"	Total	
SUB TOTAL FOR SURFACING	160	0	1,141	912	0	2,213	$15,269

SPECIAL PROJECTS:

Description	Hours-Cy	Rate/Hr.-Cy	Cost
Placement of Riprap on I15-I16 at 13+30 & 21+30	4	$138.00	$552
Develpoment of Riprap (24"-0") on Rock Haul sheets ($3.10/cy)			

SUB TOTAL FOR SPECIAL PROJECTS $552

GRAND TOTAL Cost per Mile $9,854 **$22,974**

Compiled By: Ed Holloran Date: 09/26/2007

SUMMARY OF ROAD REPAIR COSTS - Project No. 3

SALE NAME: Summit Stone
ROAD: East Summit
POINTS: I7-I8, I9-I10, I13-I14

NEW CONSTRUCTION: _____ STATIONS _____ MILES
IMPROVEMENT: 8.78 STATIONS 0.17 MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
I7 to I8 - 9 hr Excavator ($/hr)	9	x	$138.00	=	$1,242.00
(Shape Slope and Riprap Placement)		x		=	
I9 to I10 - End-haul Excavation ($/bcy)	130	x	$3.80	=	$494.00
(Load, Haul, and Compact Waste)		x		=	
I13 to I14 - 7 hr Excavator ($/hr)	7	x	$138.00	=	$966.00
(Shape Slopes and Riprap Placement)		x		=	
		x		=	
Re-Establish Ditch lines ($$/sta.)	1.40	x	$40.00	=	$56.00
(Load & Haul waste Material $18.20 + $16.80		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION $2,758

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:				

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

Subtotal of Clearing, Exc., Culv. ***$2,758***

SUMMARY OF ROAD REPAIR COSTS - Project No. 3

SALE NAME: Summit Stone
ROAD: East Summit
POINTS: I7-I8, I9-I10, I13-I14

NEW CONSTRUCTION: ____ STATIONS 0.00 MILES
IMPROVEMENT: 8.78 STATIONS 0.17 MILES

SURFACING

Subgrade prep:

Description	Stations/ amount	x	Rate/ sta/amt	Cost
Grade, Shape and Ditch 16'		x		
Subgrade Compaction		x		

ROAD SEGMENT	I7 to I8			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I7 to I8 Volume (CY) per		0+00 to 3+93 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Surface Rock	3/4"-0" Crushed	2+63 to 3+93	5	station	27	stations	1.30	35	$4.22	$148	
Fill Armor	24"-6" Riprap	2+70 to 3+86	N/A					560	$7.31	$4,094	
Total Rock for Road Segment:			I7 to I8					595			$4,241
ROAD SEGMENT	I9 to I10			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I9 to I10 Volume (CY) per		0+00 to 1+40 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Slope Armor	24"-6" Riprap	0+00 to 1+40	N/A					122	$7.31	$892	
Total Rock for Road Segment:			I9 to I10					122			$892
ROAD SEGMENT	I13 to I14			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I13 to I14 Volume (CY) per		0+00 to 3+45 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Surface Rock	3/4"-0" Crushed	2+55 to 3+45	5	station	27	stations	0.90	25	$4.22	$106	
Fill Armor	24"-6" Riprap	2+60 to 3+40	N/A					240	$7.31	$1,754	
Total Rock for Road Segment:			I13 to I14					265			$1,860

Processing:

Description	No.sta	Rate/sta	Cost
Water, Process & Compact:	2.20	$41.40	$91

	24"-6" rr	6"-0" pr	4"-0"	1 1/2"-0"	3/4"-0"	Total		
SUB TOTAL FOR SURFACING	922				60	982	982	$7,084

SPECIAL PROJECTS

Description	Cost
Straw Bales - Sediment Filter (16 bales @ $4.50 per bale)	$72.00
Seeding and Mulching (0.8 acres @ $460 per acre)	$276.00
Straw Bales - Mulch (18 bales @ $4.50 per bale)	$81.00

SUB TOTAL FOR SPECIAL PROJECTS $429

Subtotal of Surfacing & Spec. Proj. *$7,513*
Subtotal of Clearing, Exc.,Culv. *$2,758*

GRAND TOTAL **$10,271**

Compiled By: S. Bushnell & Ed Holloran

Date: 09/26/2007

CRUSHED ROCK COST

SALE NAME: Summit Stone
PROJECT: Project No 1, 2, & 3
QUARRY: Hamlet Stockpile
ROCK TYPE: 3/4"-0" & 1 1/2"-0"Crushed
DATE: 09/24/2007
BY: Ed Holloran & Scott B.

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
1A-1B	21.50									
2A-2B	14.75									
2C-2D	8.60									
2E-2F	8.35									
3A-3B	67.00	126		0.50	0.40	0.40	0.30	0.25	0.25	2.10
3C-3D	3.00									
3E-3F	1.50									
5A-5B	4.00									
7A-7B	3.15	22		0.50	0.50	0.90	1.00	0.37	0.14	3.41
8A-8B	19.00									
I1-I2	31.90	60		0.50	0.50	0.80	0.70	0.30	0.17	2.97
I3-I4	33.90	299			0.20	0.10	0.20	0.18	0.15	0.83
I5-I6	16.20	40		0.25	0.25	0.10	0.30	0.20	0.21	1.31
I7-I8	3.93	35		0.50	0.50	0.40	0.30	0.20	0.20	2.10
I9-I10	1.40			0.50	0.40	0.40	0.20	0.20	0.20	1.90
I11-I12	10.50	20		0.50	0.60	0.70	0.20	0.20	0.16	2.36
I13-I14	3.45	25		0.50	0.60	0.80	0.70	0.30	0.14	3.04
I15-I16	28.20	451		2.00	1.30	0.80	0.70	0.35	0.18	5.33
I17-I18	2.40	42		0.50	0.50	0.90	1.00	0.40	0.14	3.44
TOTAL	282.73	1,120								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL				**0.96**	**0.73**	**0.53**	**0.50**	**0.28**	**0.18**	**3.18**
								Average Round Trip Distance (miles)	6.36	

ROCK HAUL:

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

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

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

Ave haul: $3.06 /cy
Load: $0.42 /cy
Spread: $0.74 /cy

Production: cy/day = 926

CRUSHED ROCK HAUL COSTS 1,120 cy @ **$4.22 /cy**

CRUSHED ROCK COST

SALE NAME: Summit Stone
PROJECT: Project No 1, 2, & 3
QUARRY: Hamlet Stockpile
ROCK TYPE: 4"-0" Crushed
DATE: 09/24/2007
BY: Ed Holloran & Scott B.

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
1A-1B	21.50	1,153		0.50	0.50	0.90	0.90	0.30	0.20	3.30
2A-2B	14.75	752		0.50	0.50	0.90	0.90	0.20	0.16	3.16
2C-2D	8.60	357		0.50	0.50	0.90	0.90	0.30	0.17	3.27
2E-2F	8.35	432		0.50	0.50	0.90	0.90	0.30	0.22	3.32
3A-3B	67.00	3,912		0.50	0.40	0.40	0.70	0.40	0.18	2.58
3C-3D	3.00	129		0.50	0.50	0.80	0.70	0.25	0.17	2.92
3E-3F	1.50	65		0.50	0.50	0.70	0.60	0.20	0.18	2.68
5A-5B	4.00	202		0.50	0.40	0.70	0.50	0.20	0.18	2.48
7A-7B	3.15	260		0.50	0.60	1.00	1.10	0.40	0.14	3.74
8A-8B	19.00	904		0.50	0.60	0.80	0.60	0.30	0.18	2.98
I1-I2	31.90	277		0.50	0.70	1.00	0.90	0.50	0.21	3.81
I3-I4	33.90									
I5-I6	16.20	201		0.50	0.20	0.20	0.30	0.25	0.19	1.64
I7-I8	3.93									
I9-I10	1.40									
I11-I12	10.50	396		0.50	0.60	0.70	0.50	0.20	0.20	2.70
I13-I14	3.45									
I15-I16	28.20	172		2.00	1.30	0.80	0.80	0.35	0.17	5.42
I17-I18	1.50	95		0.50	0.60	1.00	1.10	0.40	0.20	3.80
TOTAL	281.83	9,307								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL				**0.53**	**0.49**	**0.65**	**0.75**	**0.34**	**0.18**	**2.94**
								Average Round Trip Distance (miles)	5.88	

ROCK HAUL:

Truck type: D20 No. trucks: 2
Delay min.: 8 Efficiency: 85%

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

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

Ave haul: $2.71 /cy
Load: $0.42 /cy
Spread: $0.69 /cy

Production: cy/day = 1,456

CRUSHED ROCK HAUL COSTS 9,307 cy @ **$3.83 /cy**

PIT RUN ROCK COST

SALE NAME: Summit Stone
PROJECT: Project No.'s 1, 2 & 3
QUARRY: Munce
ROCK TYPE: 6"-0" Pit Run
DATE: 09/24/2007
BY: Ed Holloran & Scott B.

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
2C-2D	8.60	50		0.90	1.10	0.90	0.90	0.40	0.24	4.44
2E-2F	8.35	50		0.90	1.10	0.90	0.90	0.50	0.19	4.49
3A-3B	67.00	100		0.90	1.10	0.80	0.90	0.30	0.20	4.20
3C-3D	3.00	50		0.90	1.10	0.80	0.70	0.25	0.19	3.94
3E-3F	1.50	50		0.90	1.10	0.70	0.60	0.25	0.13	3.68
5A-5B	4.00	50		0.90	1.10	0.70	0.50	0.20	0.11	3.51
7A-7B	3.15	50		0.90	1.10	1.00	1.10	0.55	0.17	4.82
8A-8B	19.00	50		0.90	1.10	0.90	0.80	0.30	0.15	4.15
TOTAL	114.60	450								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL				0.90	1.10	0.83	0.81	0.34	0.18	4.16
								Average Round Trip Distance (miles)	8.32	

ROCK HAUL:

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

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

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

Ave haul: $3.81 /cy
Load: $0.95 /cy
Spread: /cy
Development Cost on Summary sheet
$1.90/cy
Production: cy/day = 496

PIT RUN ROCK HAUL COSTS 450 cy @ **$4.76 /cy**

RIP RAP ROCK COST

SALE NAME: Summit Stone
PROJECT: Project No.'s 1, 2 & 3
QUARRY: Munce

ROCK TYPE: Rip Rap

DATE: 09/26/2007
BY: Ed Holloran & Scott B.

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
3A-3B	67.00	520		0.90	1.10	0.60	0.50	0.30	0.17	3.57
I1-I2	31.90	30		0.90	1.10	1.00	1.10	0.55	0.15	4.80
I3-I4	33.90									
I5-I6	16.20	10		0.90	0.80	0.50	0.20	0.15	0.08	2.63
I7-I8	3.93	560		0.90	1.10	0.60	0.50	0.15	0.10	3.35
I9-I10	1.40	122		0.90	1.10	0.50	0.50	0.15	0.10	3.25
I11-I12	10.50	10		0.90	1.10	0.80	0.50	0.30	0.09	3.69
I13-I14	3.45	240		0.90	1.10	1.00	0.90	0.20	0.05	4.15
I15-I16	28.20	100		2.40	1.70	0.90	0.90	0.35	0.16	6.41
I17-I18	1.50	10		0.50	0.60	1.00	1.10	0.40	0.20	3.80
TOTAL	197.98	1,602								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL				0.99	1.13	0.68	0.60	0.23	0.12	3.75
							Average Round Trip Distance (miles)		7.50	

ROCK HAUL:

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

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

Ave haul: $3.26 /cy
Load: $0.95 /cy
Develop: $3.10 /cy

Production: cy/day = 579

RIP RAP ROCK HAUL COSTS 1,602 cy @ **$7.31 /cy**

WASTE HAUL COST

SALE NAME: Summit Stone
PROJECT: I9-I10, I11-I12, I13-I14
W/A: East Summit Spur
MATERIAL: Waste
DATE: 05/10/2007
BY: S. Bushnell

		Cubic Yards							
Segment	Stations	Waste						Misc	Total
I11-I12		1,200							1,200
Grand Total		1,200							1,200

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	
I11-I12		1,200				0.10	0.05	0.10	0.05	0.30
TOTAL		1,200								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL						0.10	0.05	0.10	0.05	0.30
						Average Round Trip Distance (miles)			0.60	

ROCK HAUL:

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

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

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

Ave haul: $0.82 /cy
Load: $0.96 /cy *
Compact: $0.31 /cy **

Production: cy/day = 1,152

WASTE HAUL COSTS 1,200 cy @ **$2.09 /cy**

* (1200 yd / 1152 yd per day x 8hr per day x $138 per hour / 1200 yd)
**(2hr per day x 2 days x $94 per hour / 1200 yd)

Project No. 4

Summit Stone
POINTS V1 TO V2 Old East Summit Spur and Jc

Location/Description	C330 #1	C330 #2	D-7 CAT	10 CY Truck	Labor	Straw Mulch & Seed*	Total
Sta. 0+00 to 2+00 Roadblock and waterbar	0.4						
Sta 2+00 to 6+65 Sidecast Pullback	4				2	10	
Sta 6+65 to 8+33 Waterbar	0.3						
Sta 8+33 to 9+30 Puncheon Removal	16		12	12	3	15	
Sta 9+30 to 11+25 Waterbar	0.3						
Total	21 hr	0 hr	12 hr	12 hr	5 hr	25 bales	
Rate	$138 /hr	$138 /hr	$94 /hr	$59 /hr	$18 /hr	$5.00 each	
Cost	$2,898	$0	$1,128	$708	$90	$125	$4,949

***Cost for bales/seed includes bales of straw and grass seed @ 100 lbs/ac.**

S. Bushnell

SUMMIT STONE

Project No. 5 - Stream Enhancement

Location	Site	Number of Trees	Falling hours *	Excavator Hours **	Labor Hours ***	Location Cost
North of bridge	SE1	1	1	0.0		$45.00
South of bridge	SE2	4	1	2.0	2.0	$335.00
Area 8A	SE 3 - 6	15	3	7.0	6.0	$1,125.00
Area 8A	SE7	1	1	2.0	2.0	$335.00
Project Total			$270.00	$1,320.00	$250.00	**$1,840.00**

Operator is to select 3 of the 4 sites between SE3 through SE6 to install 3 installations.

* Faller + saw rate/Hour = $45.00
** Shovel rate/Hour = $87.50
*** Common Labor/Hour = $25.00

Project Work Road Maintenance Cost Summary

Sale: **Summit Stone**
Date: August 22, 2007
By: Ed Holloran

Type	Equipment/Rationale	Hours	Rate	Cost	
Post-Projects Road	Grader 14G	31.5	$84	$2,646	
	Dump Truck 12CY (2 trucks)	10	$59	$590	
	FE Loader C966	5	$79	$395	
	Vibratory Roller	27	$79	$2,133	
	Water Truck 2500 gallon	24	$70	$1,680	
					Total **$7,444**

Production Rates

Miles/day	Distance(miles)	Days	Hours
Prep. roads by Grader	9	4	0.4	4.4
Grader - Processing	1.50	4	2.7	26.7
Vibratory Roller	1.50	4	2.7	26.7

Munce stockpile to Hamlet Co. Rd. (1.44 mi.), East Summit Rd. (0.84mi.),
Then The West end of East Summit Road (0.55 mi.), the spur to Pt. I7 (0.26 mi.), also
and the spur to Pt. I11 (0.28 mi.). Depending on when I3 to I4 is improved it may need re done (.64 mi.)
TOTAL MILES for MAINTENANCE = 3.37 miles or 4.01 miles

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SUMMIT STONE
FY 2008
TIMBER CRUISE REPORT

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5, 6, 7, 8, 8A, 9, and 10 R/W are located in portions of Section 35, T5N, R9W, and portions of Sections 1, 2, 3, 10, and 11 in T4N, R9W, W.M., all in Clatsop County, Oregon.

   All timber sale areas are posted with white ODF "TIMBER SALE BOUNDARY" signs and pink ribbon. Common Area Boundaries between Areas 1 and 2, Areas 2 and 3, Areas 3 and 4, Areas 4 and 5, Areas 8 and 9 and Areas 8 and 8A are posted with yellow ODF "AREA BOUNDARY" signs and pink ribbon. The Right-of-Ways are posted with orange ODF "RIGHT-OF-WAY BOUNDARY" signs and orange ribbon.

2. **Fund Distribution:**
   Fund: BOF (78.5%) CSL (21.5%)
   Tax Code: 10-02 (46%) 10-14 (54%)
   Land Cost Recovery: $4,307.85 for Section 35, T5N, R9W, W.M. (Longview Fibre Land Exchange)

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acreage	New R/W Acreage	Existing R/W Acreage	Stream Buffer Acreage	Non-Thinnable Acreage	Net Acreage
1	PC	27.2	0.0	0.0	0.0	0.0	**27.2**
2	PC	49.5	-2.4	-0.3	-2.2	0.0	**44.6**
3	PC	76.6	-3.5	0.0	-6.4	-1.2	**65.5**
4	MC	70.0	0.0	0.0	-10.0	0.0	**60.0**
5	PC	112.2	-0.1	-7.0	-4.0	-3.1	**98.0**
6	PC	13.5	0.0	-0.7	0.0	0.0	**12.8**
7	PC	18.4	-0.5	-1.1	-1.6	0.0	**15.2**
8	PC	47.3	-0.9	-0.7	-2.5	-1.1	**42.1**
8A	PC	4.1	0.0	-0.2	0.0	0.0	**3.9**
9	PC	21.2	0.0	0.0	-1.7	0.0	**19.5**
10	R/W	2.3					**9.7**
TOTALS		**442.3**	**9.7***	**-10.0**	**-28.4**	**-5.4**	**398.5**

*** 2.3 acres of R/W located outside of Sale Area on Road Segments 1A-1B, 3A-3B and 8A-8B.**

4. **Cruisers and Cruise Dates:** Area 1 through Area 3 and Area 5 through Area 9 were cruised by Ed Holloran, Jason McCoy, Nate Agalzoff, Bryce Rodgers, Kraig Kirkpatrick, John Tillotson along with assistance from Andrew Gustafson and Garret Binion. Area 4 was cruised by John Tillotson and Dave Horning. Area 8A was cruised by Ed Holloran and John Tillotson (cut trees) and Dan Goody and Bryce Rodgers (leave trees). The cruise for Area 10 R/W was calculated using total cruise per acre volumes for partial harvest Areas 1, 2, 3, 5, 6, 7, 8 and 9 and applying road R/W acreage. Acreage for R/W in modified-clearcut Area 4 was included in the total net acreage for this sale area. The field cruise was done from 6-26-07 to 6-28-07, and Area 4 on 7/03/07, and Area 8A on 8/29/07.

5. **Cruise Method and Computation:** All cruises used Corvallis Micro Technology (CMT) data collectors or Allegro data collectors or cruise cards. These were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

   Areas 1, 2, 3, 5, 6, 7, 8 and 9 (Partial Cut – Auto Mark), were variable plot cruised with a 20.0 BAF for conifer and 100% cruise on hardwoods (cruised all hardwoods and cedar that fell in all plots). 88 plots were sampled on a cruise grid of 6 chains by 6 chains, with a 1 cruise plot for every 2 count plots (1:3 ratio) with 37 grade plots.

Area 4 (Modified Clear Cut), was variable plot cruised with a 33.61 BAF for conifer and 100% cruise on hardwoods, (cruised all hardwoods and cedar that fell in all plots). 34 plots were sampled on a cruise grid of 4 chains by 5 chains, with a count/cruise plot ratio of 2:1 with 19 grade plots.

Area 8A (Partial Cut – Individual Mark). All cut trees were cruised and graded. The residual trees were sample cruised: 1 in 10 for Douglas-fir, 1 in 5 for the Western Red Cedar and Hardwoods and 1 in 2 for Sitka Spruce and Western Hemlock, and 100% for True firs.

All "take" and "leave" trees were measured and graded on cruise plots in all areas except Area 8A. All hardwoods were graded as camp run.

6. **Timber Description:**
Areas 1, 2, 3, 5, 6, 7, 8 and 9 (Partial Cut – Auto Mark Thinning) – These stands range from 38 to 55 years old, consisting of Douglas-fir dominated mixed conifer stands with patches of alder. These stands will be harvested to an SDI of 32, with a basal area target of 170ft^2, while removing approximately 111 trees per acre and 6.6 MBF/acre. The average "take" tree size is 12.2" DBH and 34 feet to a merchantable top (6" d.i.b. or 40% of the diameter at 16 feet).

Area 4 (Modified Clearcut) – This stand is approximately 35 to 50 years old, consisting of Douglas-fir dominated mixed conifer stands with alder located along the streams and scattered in the stand. This stand averages 13.1 inches in DBH, with an average merchantable height of 41 feet. The average volume (net) to be harvested is 24.8 MBF/acre with approximately 257 trees per acre.

Area 8A (Partial Cut – Individual Tree Mark). This stand is approximately 50 to 79 years old, consisting of Douglas-fir dominated mixed conifer stand with scattered alder dispersed within the stand and along the stream. This stand will be harvested to an SDI of 36 with a basal area target of 200ft^2, while removing approximately 20 trees per acre and 10.5 MBF/acre. The average "take" tree size is 22.9" DBH and 75 feet to a merchantable top (6" d.i.b. or 40% of the diameter at 16 feet).

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
1, 2, 3, 5, 6, 7, 8 and 9	45	12	24.1	2.6
4	50	9	27.8	4.8

The statistics for Areas 1, 2, 3, 4, 5, 6, 7, 8 and 9 are "Take" and "Leave" stands combined.

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

Species	DBH	Net Vol.	Special Mill	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	12.5	1,715	4	271	1,151	289	0	5.7	**44.4**
Western Hemlock	12.5	1,681	0	357	1,036	288	0	2.3	**43.5**
Sitka Spruce	13.7	249	0	3	180	66	0	1.8	**6.4**
Western Red Cedar	18.1	1	0	0	1	0	0	2.0	**<0.1**
Alder	12.2	217	0	0	0	0	217	7.0	**5.6**
TOTAL	**12.6**	**3,863**	**4**	**631**	**2,368**	**643**	**217**	**4.1**	**100**

9. **Prepared by:** Edward M. Holloran **Date:** September 20, 2007

Approved by: Dave Gooch **Date:** 9/24/07

10. Attachments: Species, Sort, Grade Reports (5 pages)
Statistics Stand Summary Reports (10 pages)
Log Stock Table Reports (4 pages)
Leave Tree Stand Table Reports (3 pages)
Cruise Plans & Maps (10 pages)

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TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T04N R09W S02 Ty0002
THRU
T04N R09W S11 Ty0001

Project: SUMMST
Acres 398.50

Date 9/19/2007
Time 12:53:37PM

Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
H		DOCU		100.0	53											6		0.00	3.8
H		DO2S	21	.9	903	895	357		4	87	9	2		41	56	35	206	1.52	4.3
H		DO3S	61	1.5	2,639	2,600	1,036		87	13		5	1	54	41	33	80	0.69	32.4
H		DO4S	18	.0	723	723	288	1	99	0		95	5	0	0	17	24	0.39	29.7
H	**Totals**		44	2.3	4,318	4,218	1,681	0	71	27	2	20	1	42	37	25	60	0.67	70.2
D		DOCU		100.0	160											12		0.00	7.9
D		DO2S	15	2.8	699	680	271		1	89	10	18	0	32	50	32	198	1.61	3.4
D		DO3S	67	2.1	2,953	2,889	1,151	1	93	5		2	2	52	43	34	65	0.62	44.4
D		DO4S	17	1.9	739	725	289	8	92			84	7	6	4	18	24	0.41	29.7
D		DOSM	1	.0	11	11	4				100			23	77	37	738	3.60	.0
D	**Totals**		44	5.6	4,563	4,305	1,716	2	78	18	2	18	3	41	38	26	50	0.60	85.6
A		DOCU		100.0	35											5		0.00	1.9
A		DOCR	100	1.3	552	545	217		95	3	2	35	17	32	17	22	43	0.59	12.8
A	**Totals**		6	7.2	586	545	217		95	3	2	35	17	32	17	20	37	0.57	14.7
S		DOCU		100.0	4											19		0.00	.1
S		DO2S	1	2.0	9	9	3			35	65	14		25	61	34	483	3.23	.0
S		DO3S	72	.1	452	452	180		86	12	2	0	0	46	53	36	80	0.75	5.6
S		DO4S	27	3.8	172	165	66		71	11	18	99	0	1		17	39	0.68	4.2
S	**Totals**		6	1.8	637	626	249		81	12	7	27	0	34	39	28	63	0.74	9.9
SN		DOCU		100.0	0											57		0.00	.0
SN	**Totals**			100.0	0											57		0.00	.0
C		DO2S	44	6.0	1	1	0				100	42		58		23	434	4.13	.0
C		DO3S	44		1	1	0		59	41				55	45	36	109	1.51	.0
C		DO4S	12	28.7	0	0	0		100			100				16	21	0.53	.0
C	**Totals**		0	7.1	2	2	1		38	18	45	31		50	19	24	95	1.42	.0
Totals				4.1	10,107	9,695	3,864	1	76	20	2	20	3	40	36	25	54	0.63	180.4

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SUMMST

Page 1
Date 8/23/2007
Time 11:47:52AM

T04N R09W S11 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
04N	09W	11	PCTAKE	0001	324.90	88	169	1	W

T04N R09W S11 T0001

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU		100.0	133											12		0.00	7.9
D		DO	2S	8	.9	290	287	93			100		9		36	55	33	193	1.59	1.5
D		DO	3S	73	1.5	2,453	2,417	786 785	2	95	3		3	1	49	47	34	64	0.61	38.0
D		DO	4S	19		607	607	197	12	88			82	8	5	5	18	25	0.42	24.4
D	**Totals**			50	4.9	3,482	3,311	1,076	4	85	11		18	2	40	40	26	46	0.56	71.8
H		DO	CU		100.0	35											4		0.00	3.5
H		DO	2S	3		81	81	26			100				100		32	190	1.41	.4
H		DO	3S	73	2.3	1,664	1,626	528		86	14		7		53	40	32	79	0.72	20.5
H		DO	4S	24		517	517	168		100			100				17	22	0.36	23.2
H	**Totals**			34	3.2	2,296	2,223	722		86	14		28		43	29	23	47	0.59	47.7
S		DO	3S	71		387	387	126		100					43	57	36	71	0.69	5.5
S		DO	4S	29	4.6	165	158	51		63	14	23	100				17	43	0.73	3.7
S	**Totals**			8	1.4	552	545	177		89	4	7	29		31	40	28	59	0.70	9.2
A		DO	CU		100.0	27											6		0.00	1.5
A		DO	CR	100	1.6	509	501	163		99	1		32	10	40	18	22	40	0.57	12.6
A	**Totals**			8	6.6	536	501	163		99	1		32	10	40	18	20	36	0.55	14.0
Type Totals					4.2	6,867	6,580	2,138	2	87	11	1	23	2	40	35	25	46	0.58	142.6

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SUMMST

Page 1
Date 8/23/2007
Time 10:26:05AM

T04N R09W S02 T0002

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
04N	09W	02	CCTAKE	0002	60.00	34	140	1	W

T04N R09W S02 T0002

Spp	ST	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
H		DO	CU		100.0	149											15		0.00	5.4
H		DO	2S	34	1.0	4,952	4,904	294		5	86	9	3		36	61	35	203	1.50	24.2
H		DO	3S	53	.5	7,708	7,670	460		87	13		3	2	55	40	34	80	0.65	95.3
H		DO	4S	13		1,819	1,819	109	1	99			87	13			18	28	0.43	63.9
H	**Totals**			58	1.6	14,628	14,393	863 864	0	61	36	3	13	3	42	42	28	76	0.73	188.7
D		DO	CU		100.0	287											10		0.00	8.2
D		DO	2S	26	4.3	2,447	2,342	141			88	12	27		29	44	30	187	1.56	12.6
D		DO	3S	58	3.9	5,395	5,187	311		90	10			5	63	32	34	67	0.64	77.1
D		DO	4S	16	6.5	1,453	1,358	82		100			89	3	8		17	23	0.38	58.7
D	**Totals**			36	7.3	9,583	8,888	534 533		68	29	3	21	4	45	30	26	57	0.65	156.5
S		DO	3S	76		634	634	38		55	45				54	46	37	111	0.98	5.7
S		DO	4S	24		191	191	11		100			100				17	30	0.54	6.4
S	**Totals**			3		825	825	49 50		65	35		23		41	35	26	68	0.83	12.1
A		DO	CU		100.0	77											4		0.00	4.5
A		DO	CR	100		718	718	43		84	6	10	46	43		11	24	55	0.66	13.0
A	**Totals**			3	9.7	796	718	43 43		84	6	10	46	43		11	19	41	0.63	17.5
Type Totals					3.9	25,832	24,824	1,489	0	64	33	3	17	4	42	37	27	66	0.70	374.8

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SUMMST

Page 1
Date 8/30/2007
Time 11:13:26AM

T04N R09W S11 T0ITS

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
04N	09W	11	8A	0ITS	3.90	2	78	1	W

T04N R09W S11 T0ITS

Spp	ST	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU		100.0	451											22		0.00	1.5
D		DO	2S	66	2.0	4,631	4,536	18		3	38	59	3	1	8	88	36	393	2.37	11.5
D		DO	3S	15	1.3	1,008	995	4		80	20		10	15	25	50	32	95	0.89	10.5
D		DO	4S	2	2.3	110	108	0		100			64	26	10		20	28	0.51	3.8
D		DO	SM	17	.0	1,136	1,136	4				100			23	77	37	738	3.60	1.5
D	**Totals**			65	7.7	7,336	6,774	26		16	28	56	5	3	13	79	32	234	1.67	29.0
S		DO	CU		100.0	185											12		0.00	1.3
S		DO	2S	11	6.9	259	241	1				100	51			49	28	470	3.59	.5
S		DO	3S	82	1.5	1,833	1,805	7		8	47	44	3		51	46	33	271	1.99	6.7
S		DO	4S	7	5.2	149	141	1		100			40		60		24	42	0.74	3.3
S	**Totals**			21	9.8	2,426	2,187	9		13	39	48	11		46	43	28	185	1.66	11.8
H		DO	CU		100.0	38											6		0.00	.3
H		DO	2S	91	2.3	1,326	1,295	6 5			30	70			27	73	36	459	2.63	2.8
H		DO	3S	5		72	72	0		100					57	43	36	70	0.63	1.0
H		DO	4S	4	5.0	51	49	0		74	26		100				16	32	0.70	1.5
H	**Totals**			14	4.8	1,487	1,415	6		8	29	64	3		28	69	29	251	1.88	5.6
A		DO	CR	100		92	92	0		47	53		14		67	19	27	72	0.92	1.3
A	**Totals**			1		92	92	0		47	53		14		67	19	27	72	0.92	1.3
Type Totals					7.7	11,341	10,469	41		14	31	55	6	2	22	70	30	220	1.67	47.7

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SUMMST

Page 1
Date 9/20/2007
Time 11:31:43AM

T04N R09W S11 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
04N	09W	11	PCRW	0001	9.70	88	410	1	W

T04N R09W S11 T0001

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU		00.0	185											11		0.00	9.1
D		DO	2S	24	1.1	2,011	1,988	19		7	85	8	5	3	49	43	34	217	1.68	9.2
D		DO	3S	63	1.9	5,375	5,271	51	2	92	6		2	1	39	58	35	73	0.69	71.9
D		DO	4S	13		1,009	1,009	10	7	93			85	7	3	5	17	24	0.42	41.8
D	**Totals**			41	3.6	8,580	8,268	80	2	72	24	2	13	2	37	48	28	63	0.70	131.9
H		DO	CU		00.0	57											4		0.00	4.8
H		DO	2S	34	1.0	3,244	3,212	31			93	7	1		43	56	36	244	1.71	13.1
H		DO	3S	53	2.1	4,975	4,869	47		87	13		4	1	46	49	33	89	0.81	54.5
H		DO	4S	13		1,122	1,122	11	2	98			88	4	1	7	17	24	0.42	47.3
H	**Totals**			46	2.1	9,397	9,203	89	0	58	39	3	13	1	39	46	26	77	0.84	119.7
S		DO	CU		00.0	102											22		0.00	1.6
S		DO	2S	17		257	257	2			48	52			34	66	36	488	3.12	.5
S		DO	3S	64	1.2	957	946	9		77	16	7		5	53	42	35	94	0.85	10.1
S		DO	4S	19	4.3	285	272	3		78	8	14	98	2			17	35	0.62	7.9
S	**Totals**			7	7.8	1,601	1,475	14		63	20	16	18	4	40	38	27	74	0.82	20.0
A		DO	CU		00.0	47											5		0.00	2.4
A		DO	CR	100	1.9	1,122	1,100	11		83	17		31	11	35	23	23	47	0.63	23.2
A	**Totals**			5	5.8	1,168	1,100	11		83	17		31	11	35	23	21	43	0.62	25.7
SN		DO	CU		00.0	17											57		0.00	.2
SN	**Totals**				00.0	17											57		0.00	.2
C		DO	2S	44	6.0	42	39	0				100	42		58		23	434	4.13	.1
C		DO	3S	44		38	38	0		59	41				55	45	36	109	1.51	.3
C		DO	4S	12	28.7	15	10	0		100			100				16	21	0.53	.5
C	**Totals**			0	7.1	94	87	1		38	18	45	31		50	19	24	95	1.42	.9
Type Totals					3.5	20,857	20,134	195	1	65	30	3	15	2	38	45	26	67	0.76	298.4

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	PC	0001	324.90	88	965	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	88	965	11.0		
CRUISE	50	410	8.2	66,119	.6
DBH COUNT					
REFOREST					
COUNT	38	417	11.0		
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
HEMLEAV	94	41.6	16.2	52		59.8	7,031	6,907	1,972	1,965
DOUGLEAV	86	33.8	16.3	55		49.1	5,141	5,002	1,521	1,512
DOUG FIR	90	59.9	12.2	33		48.6	3,482	3,311	1,085	1,053
WHEMLOCK	33	32.4	11.8	35		24.8	2,296	2,223	647	639
SPRUCELV	15	6.4	16.1	45		9.1	1,072	948	295	264
S SPRUCE	15	8.3	13.4	34		8.2	552	545	181	181
R ALDER	31	10.3	11.9	30		8.0	536	501	164	156
ALDRLEAV	32	8.1	13.2	35		7.7	629	596	187	183
SNAG	8	2.0	15.9	44		2.7	17		10	
CEDLEAV	6	.8	18.1	32		1.4	94	87	32	32
TOTAL	*410*	*203.5*	*14.1*	*41*		*219.3*	*20,851*	*20,120*	*6,093*	*5,986*

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
HEMLEAV	82.1	8.8	38	42	45			
DOUGLEAV	92.8	9.9	30	34	37			
DOUG FIR	109.1	11.6	53	60	67			
WHEMLOCK	175.3	18.7	26	32	38			
SPRUCELV	222.7	23.7	5	6	8			
S SPRUCE	325.2	34.7	5	8	11			
R ALDER	282.3	30.1	7	10	13			
ALDRLEAV	260.5	27.8	6	8	10			
SNAG	287.6	30.7	1	2	3			
CEDLEAV	697.0	74.3	0	1	1			
TOTAL	*34.0*	*3.6*	*196*	*204*	*211*	*46*	*12*	*5*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
HEMLEAV	76.5	8.2	55	60	65			
DOUGLEAV	86.0	9.2	45	49	54			
DOUG FIR	104.1	11.1	43	49	54			
WHEMLOCK	170.9	18.2	20	25	29			
SPRUCELV	221.0	23.6	7	9	11			
S SPRUCE	311.5	33.2	5	8	11			
R ALDER	289.2	30.8	6	8	10			
ALDRLEAV	243.3	25.9	6	8	10			
SNAG	253.1	27.0	2	3	3			
CEDLEAV	433.2	46.2	1	1	2			
TOTAL	*18.5*	*2.0*	*215*	*219*	*224*	*14*	*3*	*2*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
HEMLEAV	79.3	8.5	6,323	6,907	7,491			
DOUGLEAV	86.5	9.2	4,541	5,002	5,464			

STATISTICS

PROJECT SUMMST

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	PC	0001	324.90	88	965	1	W

CL: 68.1%
SD: 1.0

	COEFF VAR.	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	105.9	11.3	2,937	3,311	3,685			
WHEMLOCK	177.9	19.0	1,802	2,223	2,645			
SPRUCELV	228.7	24.4	717	948	1,179			
S SPRUCE	343.5	36.6	345	545	744			
R ALDER	319.8	34.1	330	501	672			
ALDRLEAV	234.2	25.0	447	596	744			
SNAG								
CEDLEAV	430.3	45.9	47	87	127			
TOTAL	*24.1*	*2.6*	*19,603*	*20,120*	*20,638*	*23*	*6*	*3*

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	PCTAKE	0001	324.90	88	394	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	88	394	4.5		
CRUISE	37	169	4.6	36,031	.5
DBH COUNT					
REFOREST					
COUNT	40	218	5.4		
BLANKS	11				
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	90	59.9	12.2	33		48.6	3,482	3,311	1,085	1,053
WHEMLOCK	33	32.4	11.8	35		24.8	2,296	2,223	647	639
S SPRUCE	15	8.3	13.4	34		8.2	552	545	181	181
R ALDER	31	10.3	11.9	30		8.0	536	501	164	156
TOTAL	*169*	*110.9*	*12.2*	*34*		*89.5*	*6,867*	*6,580*	*2,076*	*2,029*

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	109.1	11.6	53	60	67			
WHEMLOCK	175.3	18.7	26	32	38			
S SPRUCE	325.2	34.7	5	8	11			
R ALDER	282.3	30.1	7	10	13			
TOTAL	*65.2*	*6.9*	*103*	*111*	*119*	*170*	*42*	*19*

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	104.1	11.1	43	49	54			
WHEMLOCK	170.9	18.2	20	25	29			
S SPRUCE	311.5	33.2	5	8	11			
R ALDER	289.2	30.8	6	8	10			
TOTAL	*63.5*	*6.8*	*83*	*90*	*96*	*161*	*40*	*18*

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	105.9	11.3	2,937	3,311	3,685			
WHEMLOCK	177.9	19.0	1,802	2,223	2,645			
S SPRUCE	343.5	36.6	345	545	744			
R ALDER	319.8	34.1	330	501	672			
TOTAL	*70.7*	*7.5*	*6,084*	*6,580*	*7,076*	*200*	*50*	*22*

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	PCLEAVE	0001	324.90	88	573	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	88	573	6.5		
CRUISE	50	241	4.8	30,088	.8
DBH COUNT					
REFOREST					
COUNT	38	249	6.6		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
HEMLEAV	94	41.6	16.2	52		59.8	7,031	6,907	1,972	1,965
DOUGLEAV	86	33.8	16.3	55		49.1	5,141	5,002	1,521	1,512
SPRUCELV	15	6.4	16.1	45		9.1	1,072	948	295	264
ALDRLEAV	32	8.1	13.2	35		7.7	629	596	187	183
SNAG	8	2.0	15.9	44		2.7	17		10	
CEDLEAV	6	.8	18.1	32		1.4	94	87	32	32
TOTAL	*241*	*92.6*	*16.0*	*51*		*129.8*	*13,984*	*13,540*	*4,016*	*3,956*

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
HEMLEAV	82.1	8.8	38	42	45			
DOUGLEAV	92.8	9.9	30	34	37			
SPRUCELV	222.7	23.7	5	6	8			
ALDRLEAV	260.5	27.8	6	8	10			
SNAG	287.6	30.7	1	2	3			
CEDLEAV	697.0	74.3	0	1	1			
TOTAL	*16.9*	*1.8*	*91*	*93*	*94*	*11*	*3*	*1*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
HEMLEAV	76.5	8.2	55	60	65			
DOUGLEAV	86.0	9.2	45	49	54			
SPRUCELV	221.0	23.6	7	9	11			
ALDRLEAV	243.3	25.9	6	8	10			
SNAG	253.1	27.0	2	3	3			
CEDLEAV	433.2	46.2	1	1	2			
TOTAL			*130*	*130*	*130*			

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
HEMLEAV	79.3	8.5	6,323	6,907	7,491			
DOUGLEAV	86.5	9.2	4,541	5,002	5,464			
SPRUCELV	228.7	24.4	717	948	1,179			
ALDRLEAV	234.2	25.0	447	596	744			
SNAG								
CEDLEAV	430.3	45.9	47	87	127			
TOTAL			*13,540*	*13,540*	*13,540*			

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	02	CC	0002	60.00	34	261	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	34	261	7.7		
CRUISE	19	150	7.9	16,455	.9
DBH COUNT					
REFOREST					
COUNT	15	111	7.4		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	66	121.1	13.2	45		115.7	14,628	14,393	3,889	3,844
DOUG FIR	59	118.9	12.9	36		107.7	9,583	8,888	2,736	2,667
S SPRUCE	7	9.6	14.4	35		10.9	825	825	264	264
DOUGLEAV	7	8.3	14.0	50		8.9	888	753	266	241
R ALDER	8	7.8	13.6	43		7.9	796	718	223	206
HEMLEAV	2	2.9	17.8	62		4.9	739	739	193	193
SNAG	1	5.7	8.0	20		2.0	113		34	
TOTAL	*150*	*274.3*	*13.1*	*41*		*258.0*	*27,572*	*26,316*	*7,606*	*7,415*

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
WHEMLOCK	75.0	12.9	106	121	137			
DOUG FIR	80.6	13.8	102	119	135			
S SPRUCE	268.4	46.0	5	10	14			
DOUGLEAV	328.0	56.2	4	8	13			
R ALDER	488.4	83.8	1	8	14			
HEMLEAV	314.0	53.9	1	3	4			
SNAG	406.0	69.6	2	6	10			
TOTAL	*35.7*	*6.1*	*257*	*274*	*291*	*51*	*13*	*6*

CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	72.0	12.3	101	116	130			
DOUG FIR	69.9	12.0	95	108	121			
S SPRUCE	281.9	48.3	6	11	16			
DOUGLEAV	298.6	51.2	4	9	13			
R ALDER	513.2	88.0	1	8	15			
HEMLEAV	296.3	50.8	2	5	7			
SNAG	406.0	69.6	1	2	3			
TOTAL	*16.9*	*2.9*	*251*	*258*	*265*	*11*	*3*	*1*

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	79.4	13.6	12,433	14,393	16,353			
DOUG FIR	73.8	12.6	7,764	8,888	10,012			
S SPRUCE	269.8	46.3	443	825	1,207			
DOUGLEAV	293.6	50.4	374	753	1,133			
R ALDER	518.6	88.9	79	718	1,357			
HEMLEAV	297.0	50.9	362	739	1,115			
SNAG								
TOTAL	*27.8*	*4.8*	*25,063*	*26,316*	*27,569*	*31*	*8*	*3*

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	02	CCTAKE	0002	60.00	34	245	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	34	245	7.2		
CRUISE	19	140	7.4	15,446	.9
DBH COUNT					
REFOREST					
COUNT	15	105	7.0		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	66	121.1	13.2	45		115.7	14,628	14,393	3,889	3,844
DOUG FIR	59	118.9	12.9	36		107.7	9,583	8,888	2,736	2,667
S SPRUCE	7	9.6	14.4	35		10.9	825	825	264	264
R ALDER	8	7.8	13.6	43		7.9	796	718	223	206
TOTAL	*140*	*257.4*	*13.1*	*41*		*242.2*	*25,832*	*24,824*	*7,113*	*6,982*

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
WHEMLOCK	75.0	12.9	106	121	137			
DOUG FIR	80.6	13.8	102	119	135			
S SPRUCE	268.4	46.0	5	10	14			
R ALDER	488.4	83.8	1	8	14			
TOTAL	*38.2*	*6.6*	*241*	*257*	*274*	*58*	*15*	*6*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	72.0	12.3	101	116	130			
DOUG FIR	69.9	12.0	95	108	121			
S SPRUCE	281.9	48.3	6	11	16			
R ALDER	513.2	88.0	1	8	15			
TOTAL	*22.1*	*3.8*	*233*	*242*	*251*	*20*	*5*	*2*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	79.4	13.6	12,433	14,393	16,353			
DOUG FIR	73.8	12.6	7,764	8,888	10,012			
S SPRUCE	269.8	46.3	443	825	1,207			
R ALDER	518.6	88.9	79	718	1,357			
TOTAL	*32.7*	*5.6*	*23,433*	*24,824*	*26,215*	*43*	*11*	*5*

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	02	CCLEAVE	0002	60.00	34	16	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	34	16	.5		
CRUISE	5	10	2.0	1,009	1.0
DBH COUNT					
REFOREST					
COUNT	5	6	1.2		
BLANKS	24				
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	7	8.3	14.0	50		8.9	888	753	266	241
HEMLEAV	2	2.9	17.8	62		4.9	739	739	193	193
SNAG	1	5.7	8.0	20		2.0	113		34	
TOTAL	*10*	*16.8*	*13.1*	*42*		*15.8*	*1,740*	*1,492*	*493*	*433*

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	328.0	56.2	4	8	13			
HEMLEAV	314.0	53.9	1	3	4			
SNAG	406.0	69.6	2	6	10			
TOTAL	*233.2*	*40.0*	*10*	*17*	*24*	*2,176*	*544*	*242*

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	298.6	51.2	4	9	13			
HEMLEAV	296.3	50.8	2	5	7			
SNAG	406.0	69.6	1	2	3			
TOTAL	*197.4*	*33.9*	*10*	*16*	*21*	*1,558*	*390*	*173*

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	293.6	50.4	374	753	1,133			
HEMLEAV	297.0	50.9	362	739	1,115			
SNAG								
TOTAL	*196.1*	*33.6*	*990*	*1,492*	*1,993*	*1,538*	*385*	*171*

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/23/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	PCRW	0001	9.70	88	965	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	88	965	11.0		
CRUISE	50	410	8.2	1,965	20.9
DBH COUNT					
REFOREST					
COUNT	38	417	11.0		
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	176	94.3	13.8	41		97.7	8,580	8,268	2,594	2,554
WHEMLOCK	127	72.3	14.6	45		84.5	9,397	9,203	2,638	2,624
S SPRUCE	30	14.9	14.6	39		17.3	1,601	1,475	472	441
R ALDER	63	18.3	12.5	32		15.7	1,168	1,100	351	340
SNAG	8	2.0	15.9	44		2.7	17		10	
WR CEDAR	6	.8	18.1	32		1.4	94	87	32	32
TOTAL	*410*	*202.6*	*14.1*	*41*		*219.3*	*20,857*	*20,134*	*6,096*	*5,991*

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	88.2	9.4	85	94	103			
WHEMLOCK	101.5	10.8	65	72	80			
S SPRUCE	251.4	26.8	11	15	19			
R ALDER	232.6	24.8	14	18	23			
SNAG	287.6	30.7	1	2	3			
WR CEDAR	697.0	74.3	0	1	1			
TOTAL	*27.0*	*2.9*	*197*	*203*	*208*	*29*	*7*	*3*

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	82.2	8.8	89	98	106			
WHEMLOCK	93.2	9.9	76	85	93			
S SPRUCE	242.7	25.9	13	17	22			
R ALDER	228.3	24.3	12	16	19			
SNAG	253.1	27.0	2	3	3			
WR CEDAR	433.2	46.2	1	1	2			
TOTAL	*18.5*	*2.0*	*215*	*219*	*224*	*14*	*3*	*2*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	82.9	8.8	7,538	8,268	8,999			
WHEMLOCK	95.8	10.2	8,262	9,203	10,143			
S SPRUCE	253.9	27.1	1,076	1,475	1,875			
R ALDER	233.2	24.9	827	1,100	1,374			
SNAG								
WR CEDAR	430.3	45.9	47	87	127			
TOTAL	*28.7*	*3.1*	*19,518*	*20,134*	*20,750*	*33*	*8*	*4*

TC TSTATS

STATISTICS

PROJECT SUMMST

DATE 8/30/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	8A	0ITS	3.90	2	78	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	2	78	39.0		
CRUISE	2	78	39.0	78	100.0
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	45	11.5	23.5	82		34.7	7,336	6,774	1,624	1,526
S SPRUCE	20	5.1	22.8	66		14.6	2,426	2,187	582	543
WHEMLOCK	9	2.3	23.1	74		6.7	1,487	1,415	317	310
R ALDER	4	1.0	15.6	35		1.4	92	92	32	32
TOTAL	*78*	*20.0*	*22.9*	*75*		*57.4*	*11,341*	*10,469*	*2,555*	*2,411*

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	40.9	38.3	7	12	16			
S SPRUCE	28.3	26.5	4	5	6			
WHEMLOCK	47.1	44.2	1	2	3			
R ALDER	141.4	132.6		1	2			
TOTAL	*18.1*	*17.0*	*17*	*20*	*23*	*23*	*6*	*3*

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	37.8	35.4	22	35	47			
S SPRUCE	31.7	29.7	10	15	19			
WHEMLOCK	15.1	14.1	6	7	8			
R ALDER	141.4	132.6		1	3			
TOTAL	*20.0*	*18.7*	*47*	*57*	*68*	*28*	*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	29.9	28.0	4,878	6,774	8,671			
S SPRUCE	42.6	39.9	1,314	2,187	3,061			
WHEMLOCK	28.2	26.4	1,041	1,415	1,789			
R ALDER	141.4	132.6		92	215			
TOTAL	*15.5*	*14.5*	*8,950*	*10,469*	*11,989*	*17*	*4*	*2*

STATISTICS INVALID — INDIVIDUAL TREE SAMPLE CRUISE

TC TSTATS

STATISTICS

PROJECT SUMMST

PAGE 1
DATE 8/30/2007

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	11	8AL	0ITS	3.90	1	47	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	47	47.0		
CRUISE	1	47	47.0	47	100.0
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	10	2.6	27.0	98		10.2	2,905	2,833	558	555
S SPRUCE	11	2.8	25.7	64		10.2	1,992	1,636	425	379
WHEMLOCK	13	3.3	21.8	77		8.6	1,803	1,792	399	399
WR CEDAR	8	2.1	27.2	70		8.3	1,200	1,200	317	317
R ALDER	5	1.3	13.4	39		1.3	85	85	31	31
TOTAL	*47*	*12.1*	*24.2*	*73*		*38.6*	*7,985*	*7,546*	*1,729*	*1,681*

CONFIDENCE LIMITS OF THE SAMPLE

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

Area 8A Leave Volumn Calculations

Species	Sample Trees	Trees/ Acre	AVG DBH	Bole Length	Basal Area	Gross BF/AC	Net BF/AC
Douglas fir	10	2.6	27.0	98	10.2	2,905	2,833
S. Spruce	11	2.8	25.7	64	10.2	1,992	1,636
W. Hemlock	13	3.3	21.8	77	8.6	1,803	1,792
W.R. Cedar	8	2.1	27.2	70	8.3	1,200	1,200
Red Alder	5	1.3	13.4	39	1.3	85	85
TOTAL	**47**	**12.1**	**24.2**	**73**	**38.6**	**7,985**	**7,546**

Area 8A Leave Volumn Calculations

Species	Exp. Factor	Trees	Trees/ Acre	AVG DBH	Bole Length	Basal Area	Gross BF/AC	Net BF/AC	Relative Density	SDI
Douglas fir	10	105	26	27.0	98	102.0	29,050	28,330	10.100	0.2123
S. Spruce	2	22	5.6	25.7	64	20.4	3,984	3,272	4.517	0.0317
W. Hemlock	2	28	6.6	21.8	77	17.2	3,606	3,584	4.147	0.0328
W.R. Cedar	5	44	10.5	27.2	70	41.5	6,000	6,000	6.442	0.0744
Red Alder	5	29	6.5	13.4	39	6.5	425	425	2.550	0.0148
TOTAL		**228**	**55.2**	**24.2**	**73**	**187.6**	**43,065**	**41,611**	**27.755**	**0.366**
										36.603

TC PLOGSTVB

Log Stock Table - MBF

T04N R09W S02 Ty0002
THRU
T04N R09W S11 Ty0001

Project: SUMMST
Acres 398.50

Page 1
Date 9/20/2007
Time 11:45:28AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
H		DO	CU	2	0	100.0														
H		DO	CU	3	0	100.0														
H		DO	CU	4	12	100.0														
H		DO	CU	6	4	100.0														
H		DO	CU	8	0	100.0														
H		DO	CU	10	1	100.0														
H		DO	CU	30	4	100.0														
H		DO	2S	16	8		8	.5						8	0					
H		DO	2S	32	148		147	8.7				10	5	95	5	31	1			
H		DO	2S	36	1		1	.1						1	1					
H		DO	2S	40	203	1.2	200	11.9						151	31	15	2	1		
H		DO	3S	16	50		50	3.0			20	24	6							
H		DO	3S	22	0		0	.0				0								
H		DO	3S	24	9		9	.5					9							
H		DO	3S	26	0		0	.0			0									
H		DO	3S	32	570	2.2	557	33.1			150	89	185	85	49					
H		DO	3S	36	25		25	1.5			25									
H		DO	3S	38	8		8	.5			8									
H		DO	3S	40	390		387	23.0			165	132	88	2		1				
H		DO	4S	12	0	16.7	0	.0						0						
H		DO	4S	14	0		0	.0				0								
H		DO	4S	16	244		244	14.5		0	217	19	8							
H		DO	4S	18	1		1	.1			1									
H		DO	4S	20	27		27	1.6			27									
H		DO	4S	24	2		2	.1			2									
H		DO	4S	28	4		4	.2			4									
H		DO	4S	30	9		9	.5		1	7									
H		DO	4S	32	0		0	.0		0										
H		DO	4S	40	1		1	.0			1									
H		Totals			1,721	2.3	1,681	43.5		2	626	274	301	342	85	47	3	1		
D		DO	CU	2	6	100.0														
D		DO	CU	4	2	100.0														
D		DO	CU	6	4	100.0														
D		DO	CU	8	3	100.0														
D		DO	CU	10	0	100.0														
D		DO	CU	16	39	100.0														

TC PLOGSTVB

Log Stock Table - MBF

T04N R09W S02 Ty0002
THRU
T04N R09W S11 Ty0001

Project: SUMMST
Acres 398.50

Date 9/20/2007
Time 11:45:28AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
D		DO	CU	26	0	100.0														
D		DO	CU	27	0	100.0														
D		DO	CU	34	8	100.0														
D		DO	CU	60	2	100.0														
D		DO	2S	16	41	4.5	39	2.3						8	14	17				
D		DO	2S	20	9		9	.5					0	0	0	8				
D		DO	2S	30	1		1	.0						0	1					
D		DO	2S	32	86	1.1	85	5.0					1	37	34	13				
D		DO	2S	40	141	3.5	137	8.0					1	119	4	7	4	2		
D		DO	3S	14	8	20.0	7	.4					7							
D		DO	3S	16	20	11.5	18	1.0			0	7		10						
D		DO	3S	20	0		0	.0				0	0							
D		DO	3S	22	0		0	.0			0									
D		DO	3S	24	10		10	.6			3	7	0							
D		DO	3S	26	10		10	.6					10							
D		DO	3S	28	7		7	.4			7									
D		DO	3S	30	0		0	.0			0		0	0						
D		DO	3S	32	618	2.9	600	34.9		16	345	112	79	48						
D		DO	3S	34	0		0	.0			0									
D		DO	3S	36	51		51	3.0			51	0								
D		DO	3S	38	0		0	.0			0									
D		DO	3S	40	452		449	26.2			273	125	49	2						
D		DO	4S	12	0		0	.0			0									
D		DO	4S	14	0		0	.0			0									
D		DO	4S	16	227	1.8	223	13.0		24	166	31	2							
D		DO	4S	18	2		2	.1			2									
D		DO	4S	20	19		19	1.1			19	0								
D		DO	4S	21	0		0	.0			0									
D		DO	4S	24	9		9	.6			3	7								
D		DO	4S	26	9		9	.5			9									
D		DO	4S	32	18	9.2	16	1.0			16									
D		DO	4S	36	0		0	.0			0									
D		DO	4S	40	10		10	.6			10									
D		DO	SM	32	1		1	.1								0	1			
D		DO	SM	40	3		3	.2								1	2	1		
D		Totals			1,818	5.6	1,716	44.4		40	904	289	149	225	54	45	7	4		

TC PLOGSTVB

Log Stock Table - MBF

T04N R09W S02 Ty0002
THRU
T04N R09W S11 Ty0001

Project: SUMMST
Acres 398.50

Date 9/20/2007
Time 11:45:28AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
A		DO	CU	1	0	100.0														
A		DO	CU	2	2	100.0														
A		DO	CU	4	3	100.0														
A		DO	CU	5	0	100.0														
A		DO	CU	6	3	100.0														
A		DO	CU	7	3	100.0														
A		DO	CU	8	1	100.0														
A		DO	CR	8	9	9.0	8	3.8				6		2						
A		DO	CR	10	11		11	5.0				8	0		3					
A		DO	CR	12	0	25.0	0	.0					0							
A		DO	CR	16	39	3.6	38	17.3			17	16	0	1		4				
A		DO	CR	18	2		2	1.1			2									
A		DO	CR	20	16		16	7.3			4	7	5							
A		DO	CR	21	0		0	.0			0									
A		DO	CR	24	19		19	8.9			19	0			0					
A		DO	CR	30	16		16	7.6			2	9	6							
A		DO	CR	32	70		69	31.9			45	15	9	0	0					
A		DO	CR	36	0		0	.2			0									
A		DO	CR	40	37		37	16.9			20		17		0					
A		Totals			234	7.2	217	5.6			109	61	36	3	4	4				
S		DO	CU	4	0	100.0														
S		DO	CU	8	0	100.0														
S		DO	CU	10	0	100.0														
S		DO	CU	16	0	100.0														
S		DO	CU	24	1	100.0														
S		DO	CU	30	0	100.0														
S		DO	CU	41	0	100.0														
S		DO	2S	16	1	12.7	0	.2										0		
S		DO	2S	32	1		1	.3							0		0			
S		DO	2S	40	2		2	.8								1		1		
S		DO	3S	16	0		0	.0						0						
S		DO	3S	20	0		0	.1					0							
S		DO	3S	28	0		0	.2						0						
S		DO	3S	30	0		0	.0			0									
S		DO	3S	32	83		83	33.4			42	18	1	11	9	2	1			
S		DO	3S	40	96		96	38.5			43	39	11	0	0	2	1			

TC PLOGSTVB

Log Stock Table - MBF

T04N R09W S02 Ty0002
THRU
T04N R09W S11 Ty0001

Project: SUMMST
Acres 398.50

Date 9/20/2007
Time 11:45:28AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
S		DO	4S	14	0		0	.0				0								
S		DO	4S	16	58	4.4	56	22.3			29	7		7		12				
S		DO	4S	20	10		10	4.0			10	0								
S		DO	4S	24	0	25.0	0	.0			0									
S		DO	4S	32	0	10.3	0	.1			0	0								
S		DO	4S	34	0		0	.0				0								
S		Totals			254	1.8	249	6.5			124	65	12	19	9	17	2	1		
SN		DO	CU	57	0	100.0														
SN		Totals			0	100.0														
C		DO	2S	16	0	13.2	0	18.7									0			
C		DO	2S	32	0		0	26.1									0			
C		DO	3S	32	0		0	23.8			0				0					
C		DO	3S	40	0		0	19.5			0		0							
C		DO	4S	16	0	28.7	0	11.9			0									
C		Totals			1	7.1	1	.0			0		0		0		0			
Total		All Species			4,028	4.1	3,864	100.0		41	1763	689	498	589	153	113	12	6		

TC TSTNDSUM

Stand Table Summary

Project SUMMST

T04N R09W S11 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	09W	11	PCLEAVE	0001	324.90	88	241

T04N R09W S11 T0001

Date: 8/23/200'

Time: 11:47:11AM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
HL		8	1	89	20	1.822	.64	1.82	5.0	20.0		9	36		30	12
HL		9	1	85	20	1.439	.64	1.44	5.0	20.0		7	29		23	9
HL		10	2	82	63	2.332	1.27	2.33	14.0	45.0		33	105		106	34
HL		11	1	91	97	.964	.64	1.93	13.0	55.0		25	106		81	34
HL		12	6	89	57	4.858	3.82	7.29	13.0	44.4		95	324		308	105
HL		13	3	88	54	2.070	1.91	3.45	14.0	54.0		48	186		157	61
HL		14	9	89	67	5.353	5.72	8.33	20.1	67.9		168	565		545	184
HL		15	6	88	73	3.109	3.82	6.22	20.0	74.2		124	461		404	150
HL		16	4	87	69	1.822	2.54	3.64	22.4	80.0		82	291		265	95
HL		17	4	87	84	1.614	2.54	3.63	26.2	95.6		95	347		309	113
HL		18	13	88	79	4.678	8.27	9.36	31.7	108.1		297	1,011		963	329
HL		19	10	88	76	3.230	6.36	6.46	33.3	111.0		215	717		700	233
HL		20	11	87	83	3.206	6.99	6.41	40.5	141.4		260	906		844	295
HL		21	5	87	71	1.322	3.18	2.38	42.8	142.2		102	338		331	110
HL		22	5	87	78	1.204	3.18	2.41	46.9	173.0		113	417		367	135
HL		23	5	87	81	1.102	3.18	2.20	52.3	182.0		115	401		374	130
HL		24	4	89	78	.810	2.54	1.62	54.3	200.0		88	324		285	105
HL		25	3	87	81	.560	1.91	1.12	61.2	228.3		68	256		222	83
HL		29	1	86	73	.139	.64	.28	77.5	310.0		21	86		70	28
HL		Totals	94	88	68	41.631	59.77	72.31	27.2	95.5		1,965	6,907		6,385	2,244
DL		8	1	88	66	1.635	.57	1.64	8.0	30.0		13	49		43	16
DL		10	2	85	74	2.093	1.14	2.09	14.5	45.0		30	94		99	31
DL		11	3	88	87	2.595	1.71	5.19	9.7	36.7		50	190		163	62
DL		12	4	86	87	2.907	2.28	5.09	14.1	51.4		72	262		234	85
DL		13	3	87	63	1.858	1.71	1.86	22.7	53.3		42	99		137	32
DL		14	3	88	81	1.602	1.71	3.20	17.0	55.0		54	176		177	57
DL		15	6	84	73	2.791	3.42	4.65	21.0	64.0		98	298		317	97
DL		16	6	86	70	2.453	3.42	4.09	23.7	72.0		97	294		315	96
DL		17	9	87	77	3.259	5.14	6.16	26.1	85.9		161	529		522	172
DL		18	13	87	77	4.199	7.42	8.40	27.7	93.5		232	785		755	255
DL		19	7	86	84	2.029	4.00	4.06	33.8	114.3		137	464		446	151
DL		20	6	87	72	1.570	3.42	2.88	35.2	114.5		101	330		329	107
DL		21	8	87	77	1.899	4.57	3.80	38.8	125.6		147	477		479	155
DL		22	7	86	83	1.514	4.00	3.03	43.8	148.6		133	450		431	146
DL		23	2	85	74	.396	1.14	.79	45.3	147.5		36	117		116	38
DL		24	3	85	86	.545	1.71	1.27	44.7	165.7		57	211		185	68
DL		26	1	88	70	.155	.57	.15	68.0	180.0		11	28		34	9
DL		27	1	86	91	.144	.57	.29	72.5	265.0		21	76		68	25
DL		30	1	89	85	.116	.57	.23	87.0	320.0		20	74		66	24
DL		Totals	86	86	77	33.760	49.09	58.86	25.7	85.0		1,512	5,002		4,914	1,625
SL		9	1	87	20	1.372	.61	1.37	7.0	30.0		10	41		31	13
SL		13	2	85	67	1.315	1.21	1.97	18.7	60.0		37	118		120	38
SL		15	1	82	67	.494	.61									
SL		16	3	86	59	1.302	1.82	2.17	23.4	72.0		51	156		165	51
SL		17	2	89	79	.769	1.21	1.54	29.7	107.5		46	165		149	54
SL		20	1	82	59	.278	.61	.56	28.0	95.0		16	53		51	17
SL		22	1	89	57	.230	.61	.46	36.0	125.0		17	57		54	19
SL		23	1	82	69	.210	.61	.42	47.0	140.0		20	59		64	19
SL		24	1	81	101	.193	.61	.19	107.0	400.0		21	77		67	25
SL		25	1	86	79	.178	.61	.36	51.0	215.0		18	76		59	25
SL		41	1	86	113	.066	.61	.20	151.7	726.7		30	144		98	47

TC TSTNDSUM

Stand Table Summary

Project SUMMST

T04N R09W S11 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	09W	11	PCLEAVE	0001	324.90	88	241

Date: 8/23/200'
Time: 11:47:11AM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
SL		Totals	15	86	58	6.406	9.09	9.23	28.6	102.6		264	948		857	308
AL		9	1	87	74	.547	.24	.55	14.0	60.0		8	33		25	11
AL		10	2	86	40	.885	.48	.89	10.5	40.0		9	35		30	12
AL		11	5	86	40	1.830	1.21	2.20	9.5	31.7		21	70		68	23
AL		12	3	86	61	.922	.72	1.54	12.0	40.0		18	61		60	20
AL		13	5	86	45	1.310	1.21	1.57	15.8	43.3		25	68		81	22
AL		14	3	87	55	.678	.72	1.13	15.8	42.0		18	47		58	15
AL		15	5	86	51	.984	1.21	1.38	20.7	62.9		29	87		93	28
AL		16	2	86	52	.346	.48	.69	17.7	67.5		12	47		40	15
AL		18	1	87	50	.137	.24	.14	38.0	60.0		5	8		17	3
AL		20	2	86	66	.221	.48	.44	34.8	130.0		15	58		50	19
AL		23	1	87	61	.084	.24	.17	42.5	155.0		7	26		23	8
AL		24	1	91	73	.077	.24	.15	52.0	210.0		8	32		26	10
AL		27	1	86	65	.061	.24	.12	60.5	195.0		7	24		24	8
AL		Totals	32	86	50	8.081	7.73	10.96	16.7	54.4		183	596		594	194
CL		10	1	78	28	.417	.23	.83	4.5	10.0		4	8		12	3
CL		17	1	82	57	.144	.23	.14	36.0	60.0		5	9		17	3
CL		25	1	81	63	.067	.23	.13	43.5	130.0		6	17		19	6
CL		29	1	86	58	.050	.23	.10	55.5	195.0		5	19		18	6
CL		30	1	83	56	.046	.23	.05	107.0	180.0		5	8		16	3
CL		32	1	83	79	.041	.23	.08	87.5	310.0		7	25		23	8
CL		Totals	6	80	43	.764	1.36	1.34	24.2	65.2		32	87		105	28
SN		11	1	85	61	.517	.34									
SN		13	1	89	48	.370	.34									
SN		14	1	82	40	.319	.34									
SN		16	2	86	52	.488	.68									
SN		18	1	85	74	.193	.34									
SN		36	1	81	17	.048	.34									
SN		45	1	88	17	.031	.34									
SN		Totals	8	85	52	1.966	2.73									
Totals			241	87	68	92.607	129.77	152.70	25.9	88.7		3956	13,540		12,854	4,399

TC TSTNDSUM

Stand Table Summary

Project SUMMST

T04N R09W S11 T0ITS

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	09W	11	8AL	0ITS	3.90	1	47

T04N R09W S11 T0ITS

Page: 1
Date: 8/30/200'
Time: 8:18:09AM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
D		12	1	89	25	.256	.20	.26	10.0	20.0		3	5		0	0
D		15	1	88	142	.256	.31	.77	21.3	93.3		16	72		1	0
D		16	1	88	80	.256	.36	.51	21.0	75.0		11	38		0	0
D		20	1	91	142	.256	.56	.77	40.3	140.0		31	108		1	0
D		21	2	90	125	.513	1.23	1.54	39.5	173.3		61	267		2	1
D		24	1	91	147	.256	.81	.77	60.7	276.7		47	213		2	1
D		38	1	89	153	.256	2.02	.77	151.7	803.3		117	618		5	2
D		39	1	88	150	.256	2.13	1.03	112.2	605.0		115	621		4	2
D		43	1	88	169	.256	2.59	1.03	151.5	870.0		155	892		6	3
D		Totals	10	89	126	2.564	10.20	7.44	74.7	381.0		555	2,833		22	11
H		11	1	91	49	.256	.17	.26	14.0	50.0		4	13		0	0
H		12	1	89	61	.256	.20	.26	19.0	60.0		5	15		0	0
H		14	1	89	64	.256	.27	.51	15.0	55.0		8	28		0	0
H		16	2	89	96	.513	.72	1.03	28.5	112.5		29	115		1	0
H		22	3	88	109	.769	2.03	2.05	46.8	188.8		96	387		4	2
H		24	3	88	105	.769	2.42	1.79	62.3	257.1		112	462		4	2
H		27	1	89	121	.256	1.02	.77	68.3	340.0		53	262		2	1
H		36	1	89	121	.256	1.81	.77	121.3	663.3		93	510		4	2
H		Totals	13	89	96	3.333	8.64	7.44	53.7	241.0		399	1,792		16	7
S		12	1	88	46	.256	.20	.26	16.0	50.0		4	13		0	0
S		14	2	89	67	.513	.55	1.03	17.2	62.5		18	64		1	0
S		16	2	88	68	.513	.72	.77	28.0	80.0		22	62		1	0
S		17	1	88	75	.256	.40	.51	29.0	100.0		15	51		1	0
S		24	1	88	134	.256	.81	1.03	46.5	200.0		48	205		2	1
S		28	1	88	82	.256	1.10	.26	47.0	70.0		12	18		0	0
S		34	1	82	41	.256	1.62	.26	125.0	210.0		32	54		1	0
S		36	1	88	121	.256	1.81	.77	119.3	610.0		92	469		4	2
S		46	1	86	121	.256	2.96	.77	178.0	910.0		137	700		5	3
S		Totals	11	87	81	2.821	10.16	5.64	67.1	290.0		379	1,636		15	6
C		11	1	87	30	.256	.17	.26	9.0	20.0		2	5		0	0
C		16	1	88	108	.256	.36	.51	29.5	110.0		15	56		1	0
C		17	1	84	67	.256	.40	.51	21.5	70.0		11	36		0	0
C		22	1	87	85	.256	.68	.51	45.5	165.0		23	85		1	0
C		26	1	83	107	.256	.95	.77	50.0	200.0		38	154		1	1
C		29	1	73	111	.256	1.18	.51	89.0	245.0		46	126		2	0
C		31	1	88	97	.256	1.34	.51	101.0	380.0		52	195		2	1
C		48	1	82	106	.256	3.22	.77	168.3	706.7		129	544		5	2
C		Totals	8	84	89	2.051	8.30	4.36	72.8	275.3		317	1,200		12	5
A		12	1	87	54	.256	.20	.26	20.0	60.0		5	15		0	0
A		13	1	87	50	.256	.24	.26	20.0	60.0		5	15		0	0
A		14	3	86	54	.769	.82	1.28	16.0	42.0		21	54		1	0
A		Totals	5	86	53	1.282	1.26	1.79	17.1	47.1		31	85		1	0
Totals			47	87	93	12.051	38.56	26.67	63.0	283.0		1681	7,546		66	29

x10
x2
x2
x5
x5

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: SUMMIT STONE **Area(s)** 1,2,3,5,6,7,8, AND 9

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

Approx. Cruise Acres: *300* **Estimated CV%** (*Net BF* or) 45 **SE% Objective** (*Net BF* or) 12

Planned Sale Volume: 2 MMBF **Estimated Sale Area Value/Acre:** $1,500

A. Cruise Goals: (a) Grade minimum **150** conifer and **50** hardwood trees: (b) Sample ***X*** cruise plots; (c) Other goals (***X*** Determine "automark" thinning standards; ***X*** Determine log grades for sale value; ***X*** Determine snag and leave tree species and sizes; ____ Determine LWD (down wood) cubic feet and decay classes; ____ Determine "diameter limit" harvest parameters;)
Basal Area leave target ***130*** sq. ft. Cruiser needs to select ***6*** or ***7*** leave trees per plot.

All Cedar and True Fir are reserve timber.

Cruise all Hardwoods, Cedar and True Fir.

For Leave Trees favor Western Hemlock over Douglas-fir.

B. Cruise Design:

1. **Plot Cruises:** BAF ***20*** (***Full point***; Half point) (circle one)
   Fixed Plot Size ____ Plot Radius ____ feet
   Cruise Line Direction(s) ***1,2,3,5,6 and 7 N<->S, 8 and 9 E<->W***
   Cruise Line Spacing ***6*** (chains)
   Cruise Plot Spacing ***6*** (chains)
   Grade/Count Ratio ***1:3***
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 ½" 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 ***½ Log at TCD*** for ***Conifers and to nearest 8' and 10' multiple for hardwoods***.

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" ½ log(1 log =32') lengths for conifers. Record log segments in 8' and 10' foot multiples for hardwoods***. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

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

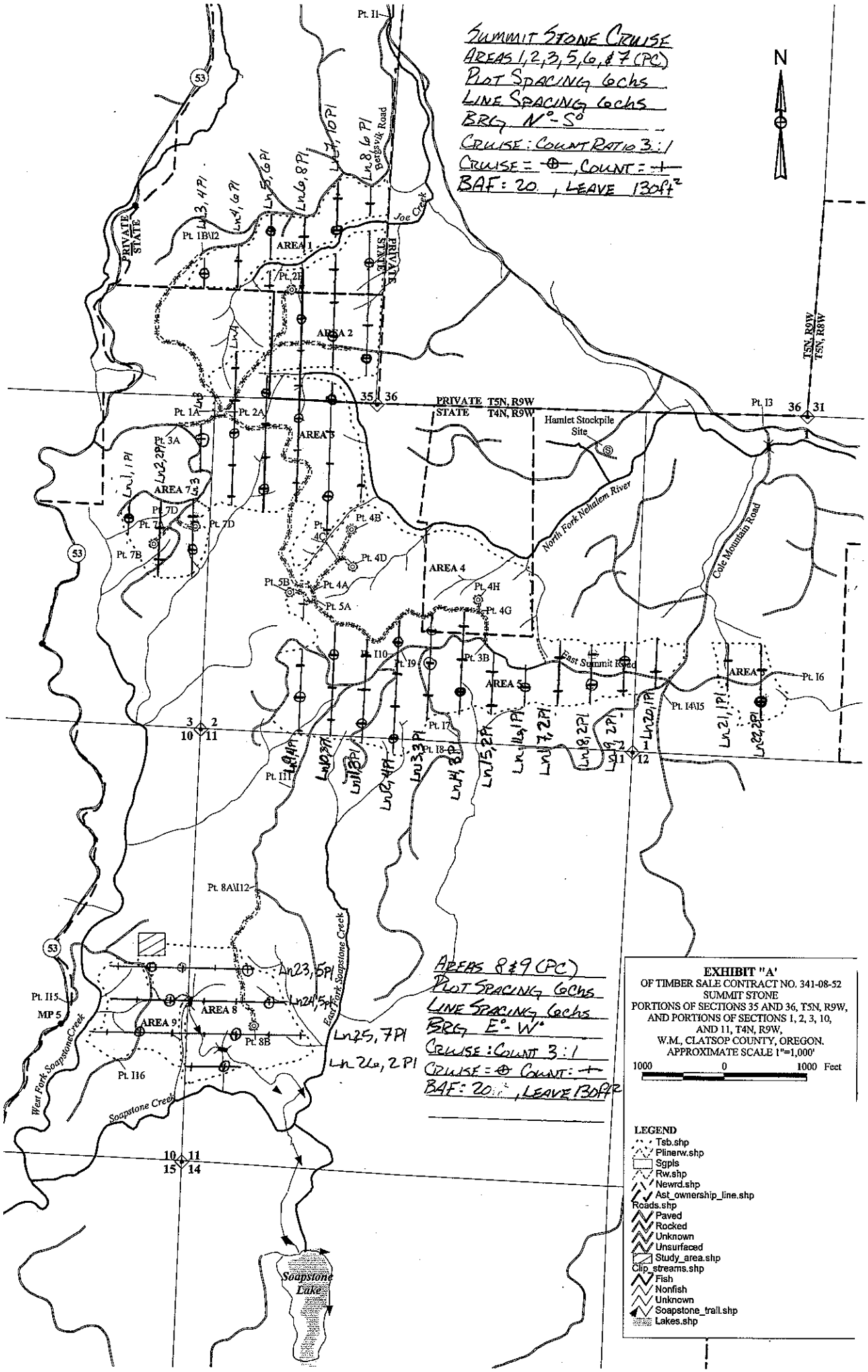
7. Deductions: Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results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

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at 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: **John Tillotson**
Approved by: _____
Date: _____


SUMMIT STONE CRUISE
AREAS 1,2,3,5,6,&7 (PC)
PLOT SPACING 6chs
LINE SPACING 6chs
BRG N°-S°
CRUISE: COUNT RATIO 3:1
CRUISE = ⊕, COUNT = +
BAF: 20, LEAVE 130ft²
N
Pt. I1
Ln3, 4Pl
Ln4, 6Pl
Ln5, 6Pl
Ln6, 8Pl
Ln7, 10Pl
Ln8, 6Pl
Bertsvik Road
Joe Creek
PRIVATE
STATE
Pt. 1B\I2
AREA 1
Pt. 2B
AREA 2
Ln4
Pt. 1A
Pt. 2A
AREA 3
Pt. 3A
Ln1, 1Pl
Ln2, 2Pl
AREA 7
Pt. 7D
Pt. 7A
Pt. 7B
Pt. 4C
Pt. 4B
Pt. 4D
AREA 4
Pt. 5B
Pt. 4A
Pt. 5A
Pt. 4H
Pt. 4G
Pt. I10
Pt. I9
Pt. 3B
AREA 5
Pt. I7
Pt. I8
Pt. I1
Ln9, 4Pl
Ln10, 3Pl
Ln11, 3Pl
Ln12, 4Pl
Ln13, 4Pl
Ln14, 8Pl
Ln15, 2Pl
Ln16, 4Pl
Ln17, 2Pl
Ln18, 2Pl
Ln19, 2Pl
Ln20, 1Pl
Ln21, 1Pl
Ln22, 2Pl
AREA 6
Pt. I6
Pt. I4\I5
East Summit Road
North Fork Nehalem River
Cole Mountain Road
Hamlet Stockpile Site
PRIVATE T5N, R9W
STATE T4N, R9W
T5N, R9W
T5N, R9W
Pt. I3
35
36
31
1
2
3
10
11
12
Pt. 8A\I12
East Fork Soapstone Creek
Ln23, 5Pl
Ln24, 5Pl
Ln25, 7Pl
Ln26, 2Pl
AREA 8
AREA 9
Pt. 8B
Pt. I15
MP 5
Pt. I16
West Fork Soapstone Creek
Soapstone Creek
Soapstone Lake
15
14
AREAS 8&9 (PC)
PLOT SPACING 6chs
LINE SPACING 6chs
BRG E°-W°
CRUISE: COUNT 3:1
CRUISE = ⊕ COUNT: +
BAF: 20, LEAVE 130ft²
EXHIBIT "A'
OF TIMBER SALE CONTRACT NO. 341-08-52
SUMMIT STONE
PORTIONS OF SECTIONS 35 AND 36, T5N, R9W,
AND PORTIONS OF SECTIONS 1, 2, 3, 10,
AND 11, T4N, R9W,
W.M., CLATSOP COUNTY, OREGON.
APPROXIMATE SCALE 1"=1,000'
1000 0 1000 Feet
LEGEND
Tsb.shp
Plinerw.shp
Sgpls
Rw.shp
Newrd.shp
Ast_ownership_line.shp
Roads.shp
Paved
Rocked
Unknown
Unsurfaced
Study_area.shp
Clip_streams.shp
Fish
Nonfish
Unknown
Soapstone_trail.shp
Lakes.shp

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: Summit Stone **Area(s)** 4

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

Approx. Cruise Acres: 63 **Estimated CV%** 50 (Net BF or) BA/Acre **SE% Objective** 9 (Net BF or) BA/Acre

Planned Sale Volume: 1.8 MMBF **Estimated Sale Area Value/Acre:** $ 3,000

A. Cruise Goals: (a) Grade minimum 100 conifer and ALL hardwood trees: (b) Sample X 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 N/A sq. ft. Cruiser needs to select or leave trees per plot.

B. Cruise Design:

1. **Plot Cruises:** BAF 33.61 (Full point; Half point) (circle one)
   Fixed Plot Size ____ Plot Radius ____ feet
   Cruise Line Direction(s) 125°
   Cruise Line Spacing 4.5 (chains) (feet)
   Cruise Plot Spacing 4.5 (chains) (feet)
   Grade/Count Ratio 1:2
2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir ____ Hemlock ____ Spruce ____ True Fir ____ Cedar ____ Hardwood ____

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is ***8*** " for conifers and ***8*** " for hardwoods. Record dbh to nearest ½" 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 ***½ Log at TCD*** for ***Conifers and to nearest 8' and 10' multiple for hardwoods***.

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" ½ log(1 log =32') lengths for conifers. Record log segments in 8' and 10' foot multiples for hardwoods***. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

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

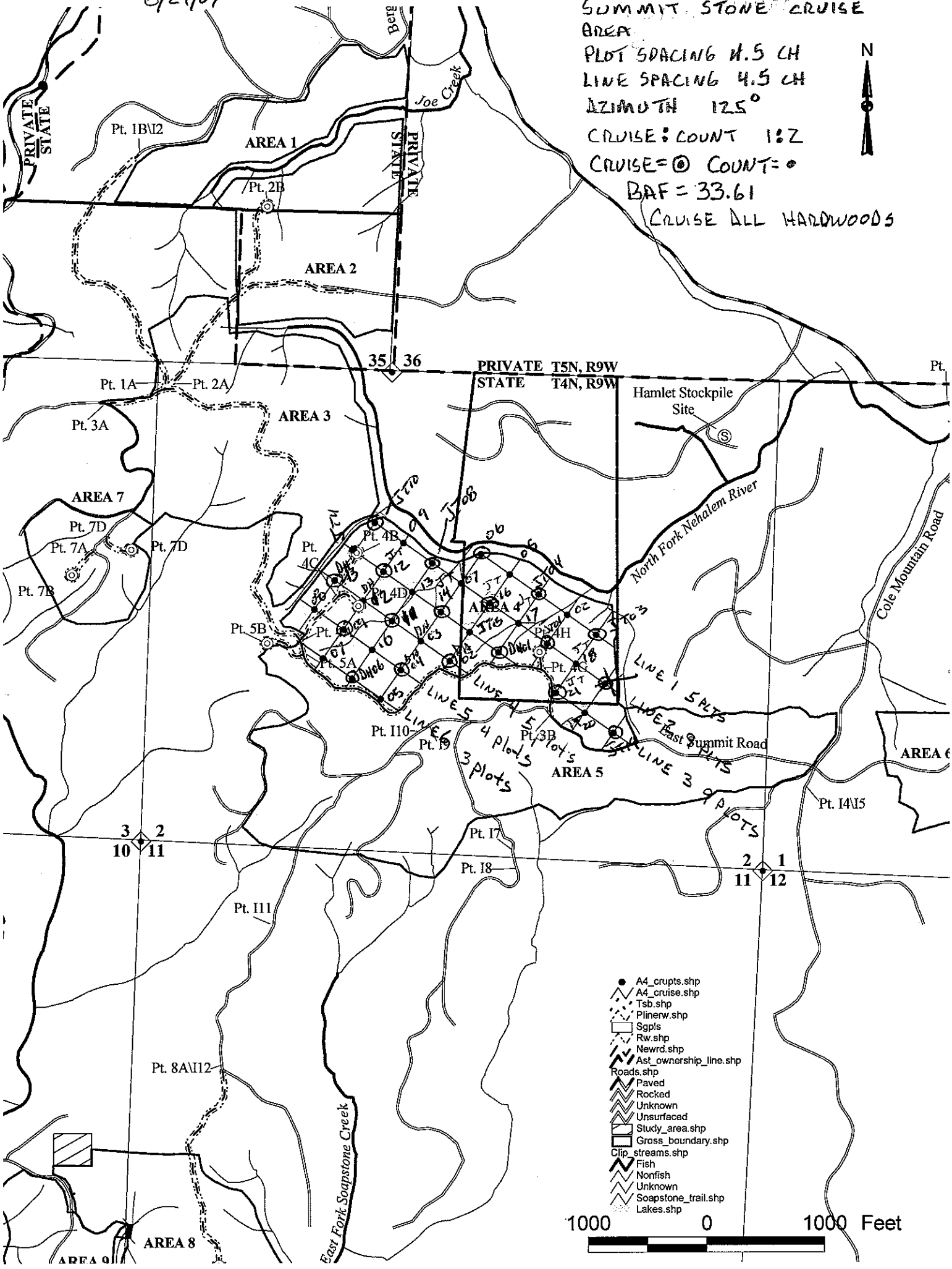
7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally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

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at 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: John Tillotson
Approved by: _____
Date: _____


6/29/07
SUMMIT STONE CRUISE
AREA
PLOT SPACING 4.5 CH
LINE SPACING 4.5 CH
AZIMUTH 125°
CRUISE: COUNT 1:2
CRUISE=① COUNT=•
BAF = 33.61
CRUISE ALL HARDWOODS
N
PRIVATE
STATE
Joe Creek
Pt. 1B\I2
AREA 1
Pt. 2B
AREA 2
35
36
PRIVATE T5N, R9W
STATE T4N, R9W
Pt. 1A
Pt. 2A
Pt. 3A
AREA 3
Hamlet Stockpile Site
AREA 7
Pt. 7D
Pt. 7A
Pt. 7B
Pt. 4B
Pt. 4C
Pt. 4D
Pt. 5B
Pt. 5A
AREA 4
Pt. 4H
Pt. 4G
North Fork Nehalem River
Cole Mountain Road
LINE 1 5 PLTS
LINE 2 5 PLTS
LINE 3 4 PLOTS
LINE 4 5 PLOTS
LINE 5 4 PLOTS
LINE 6 3 PLOTS
Pt. I10
Pt. I9
Pt. 3B
East Summit Road
AREA 5
AREA 6
Pt. I4\I5
Pt. I7
Pt. I8
Pt. I11
Pt. 8A\I12
East Fork Soapstone Creek
AREA 8
AREA 9
3
10
2
11
2
11
1
12
A4_crupts.shp
A4_cruise.shp
Tsb.shp
Plinerw.shp
Sgpls
Rw.shp
Newrd.shp
Ast_ownership_line.shp
Roads.shp
Paved
Rocked
Unknown
Unsurfaced
Study_area.shp
Gross_boundary.shp
Clip_streams.shp
Fish
Nonfish
Unknown
Soapstone_trail.shp
Lakes.shp
1000 0 1000 Feet

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: SUMMIT STONE **Area(s)** 8A

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

Approx. Cruise Acres: 3.9 **Estimated CV%** (Net BF or) 45 **SE% Objective** (Net BF or) 12

Planned Sale Volume: 2 MMBF **Estimated Sale Area Value/Acre:** $1,500

A. Cruise Goals: (a) Grade minimum **50** conifer and **5** hardwood trees: (b) Sample **X** cruise plots; (c) Other goals (**X** Determine "automark" thinning standards; **X** Determine log grades for sale value; **X** Determine snag and leave tree species and sizes; ____ Determine LWD (down wood) cubic feet and decay classes; ____ Determine "diameter limit" harvest parameters;)

Basal Area leave target ***200*** sq. ft.

All Cedar and True Fir are reserve timber.

Cruise all Hardwoods, Cedar and True Fir.

B. Cruise Design:

1. **Plot Cruises:** BAF ____ (Full point; Half point) (circle one)
   Fixed Plot Size ____ Plot Radius ____ feet
   Cruise Line Direction(s) ____.
   Cruise Line Spacing ____ (chains)
   Cruise Plot Spacing ____ (chains)
   Grade/Count Ratio ____
2. **ITS Cut Trees (Sample Tree) Cruises:** Measure-grade ratios: All Marked Trees 100%

   ITS Leave Trees (Sample Tree) Cruises: Measure-grade ratios: D-fir **1:10** Hemlock **1:2** Spruce **1:2** True Fir **1:1** Cedar **1:5** Hardwood **1:5**

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is ***8*** " for conifers and ***8*** " for hardwoods. Record dbh to nearest ½" 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 ***½ Log at TCD*** for ***Conifers and to nearest 8' and 10' multiple for hardwoods***.

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" ½ log(1 log =32') lengths for conifers. Record log segments in 8' and 10' foot multiples for hardwoods***. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

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

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

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at 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.

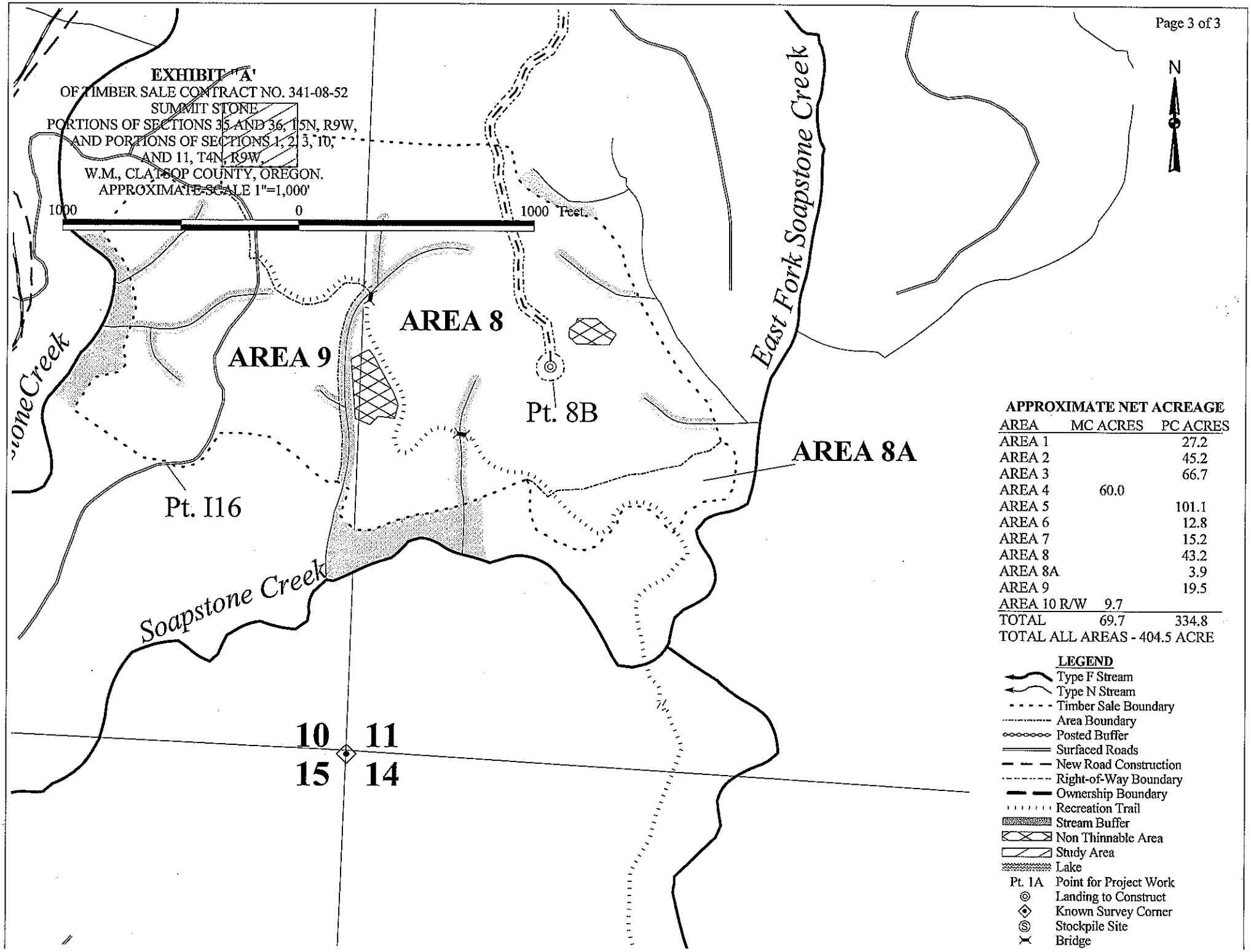
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: **John Tillotson & Ed Holloran**
Approved by: _____
Date: _____

EXHIBIT "A'
OF TIMBER SALE CONTRACT NO. 341-08-52
SUMMIT STONE
PORTIONS OF SECTIONS 35 AND 36, 15N, R9W,
AND PORTIONS OF SECTIONS 1, 2, 3, 10,
AND 11, T4N, R9W,
W.M., CLATSOP COUNTY, OREGON.
APPROXIMATE SCALE 1"=1,000'

1000 0 1000 Feet.

N



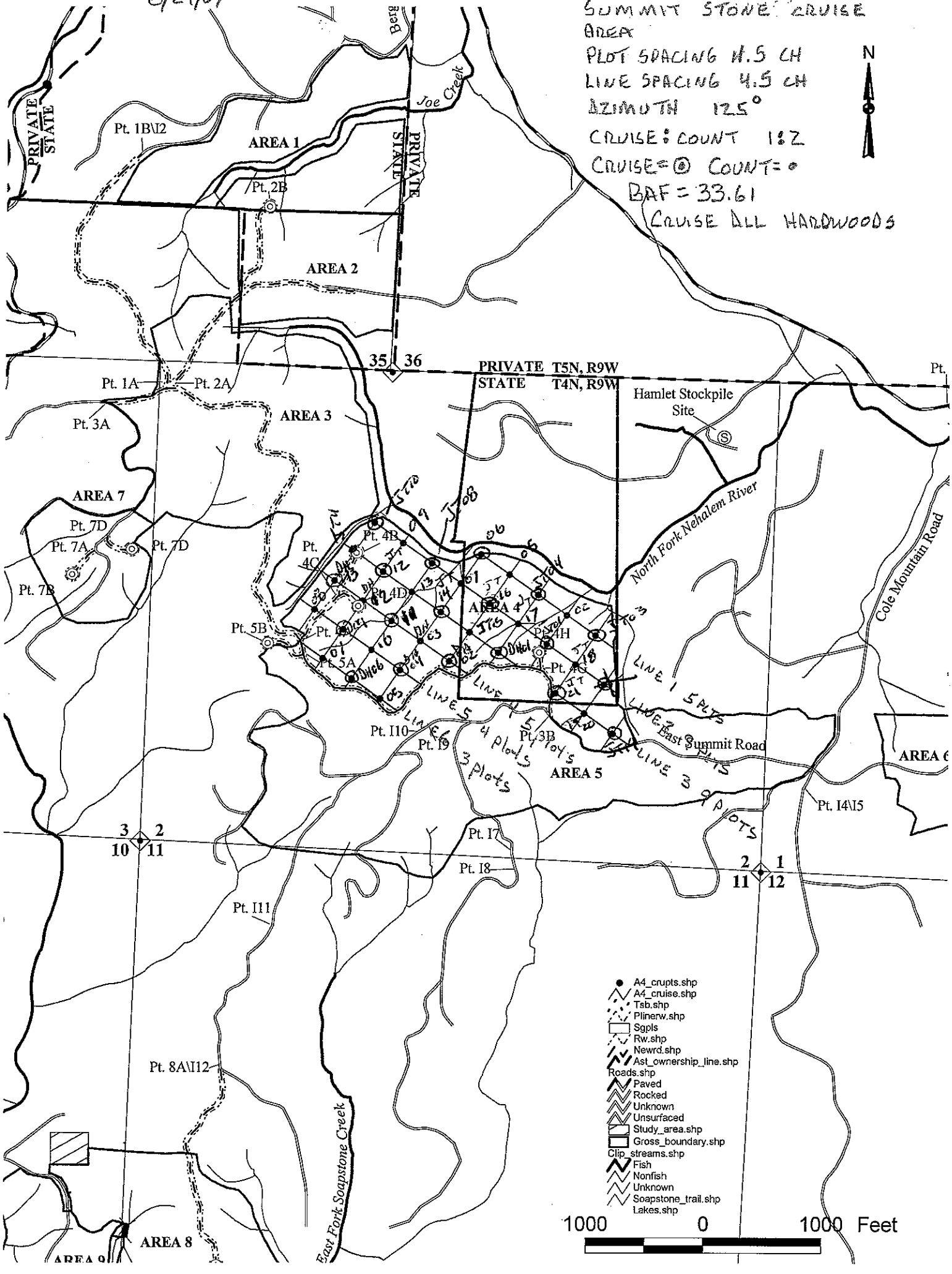
APPROXIMATE NET ACREAGE

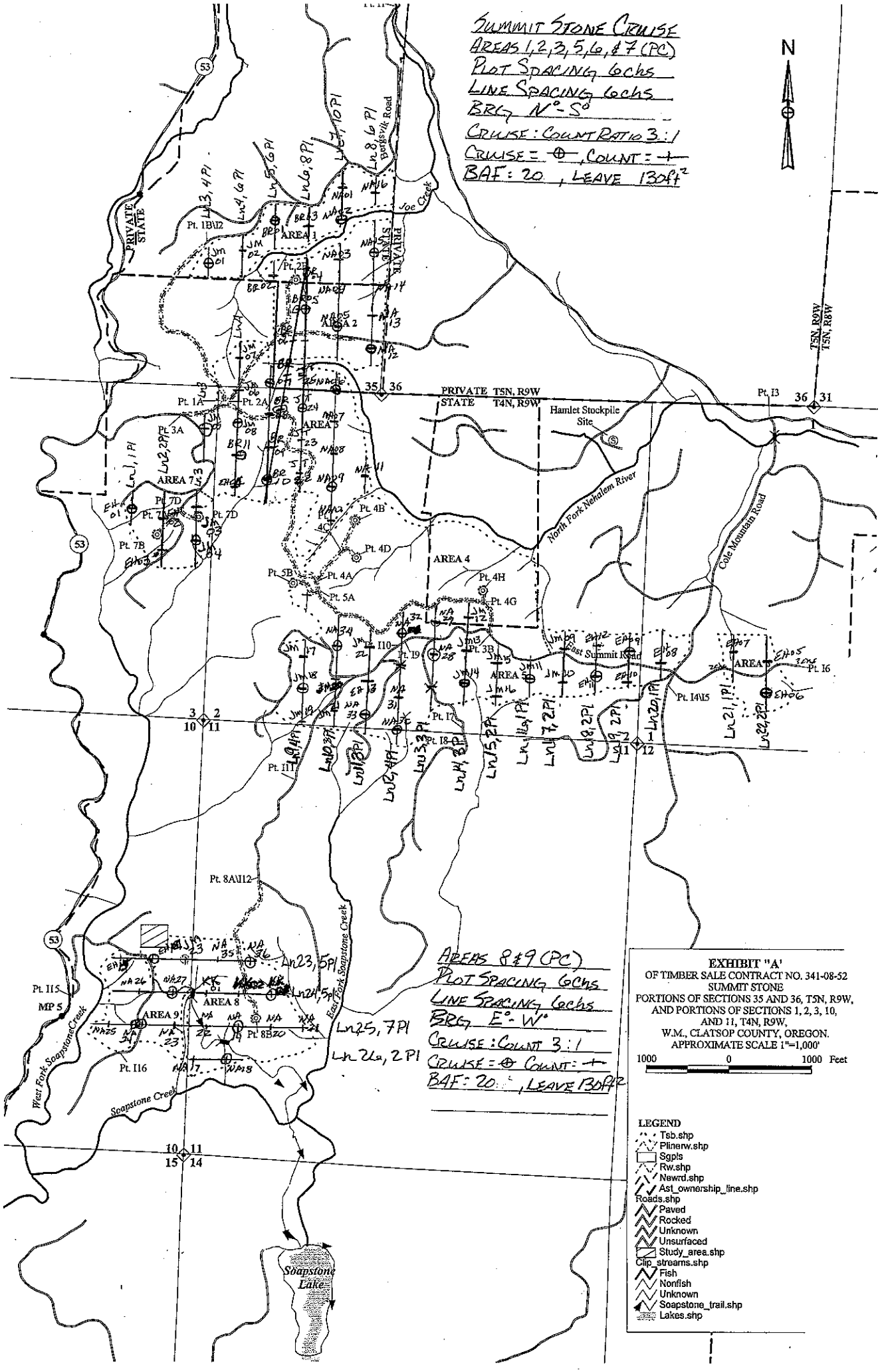
AREA	MC ACRES	PC ACRES
AREA 1		27.2
AREA 2		45.2
AREA 3		66.7
AREA 4	60.0	
AREA 5		101.1
AREA 6		12.8
AREA 7		15.2
AREA 8		43.2
AREA 8A		3.9
AREA 9		19.5
AREA 10 R/W	9.7	
TOTAL	69.7	334.8

TOTAL ALL AREAS - 404.5 ACRE

LEGEND

- Type F Stream
- Type N Stream
- Timber Sale Boundary
- Area Boundary
- Posted Buffer
- Surfaced Roads
- New Road Construction
- Right-of-Way Boundary
- Ownership Boundary
- Recreation Trail
- Stream Buffer
- Non Thinnable Area
- Study Area
- Lake
- Pt. 1A Point for Project Work
- Landing to Construct
- Known Survey Corner
- Stockpile Site
- Bridge

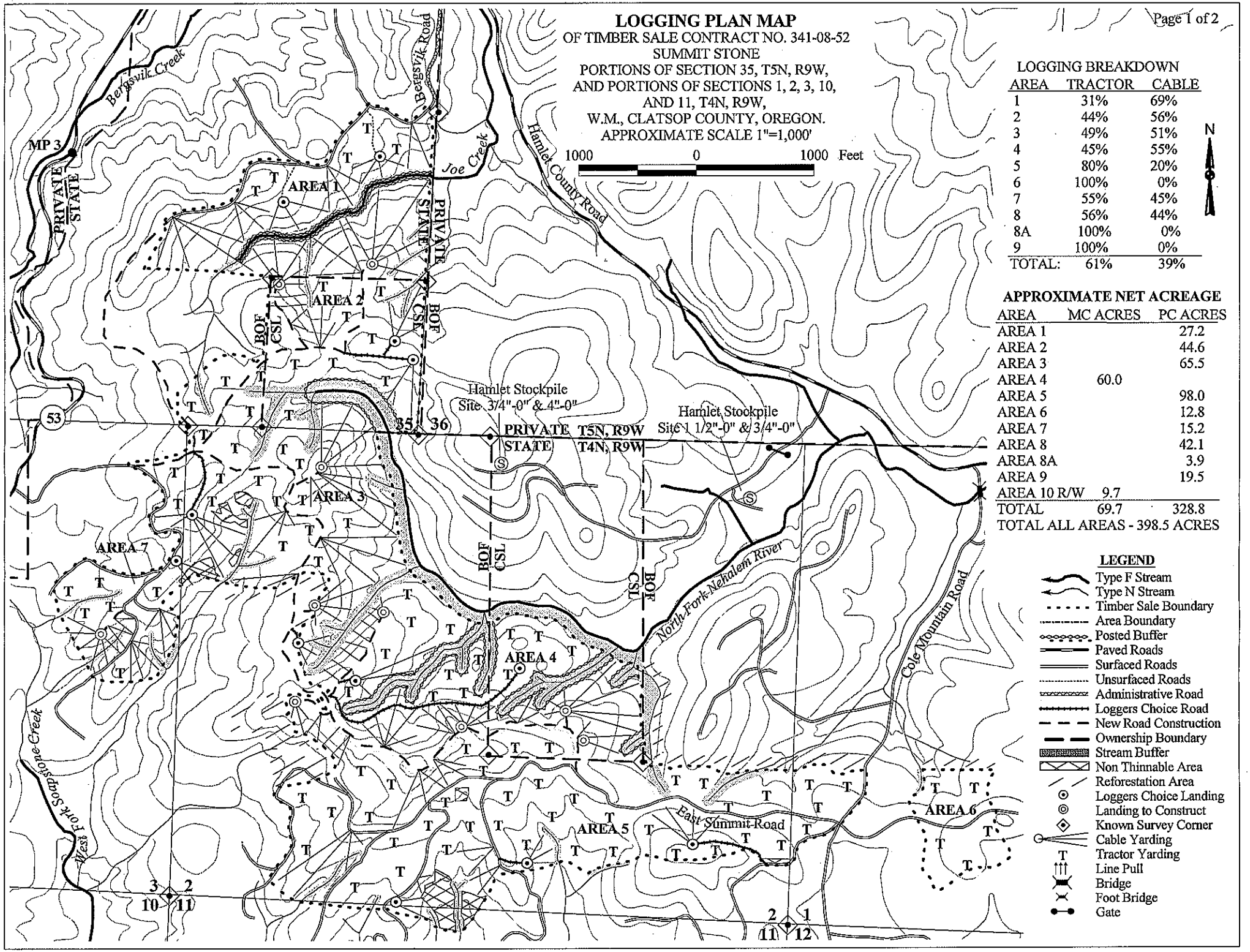

6/29/07
SUMMIT STONE CRUISE AREA
PLOT SPACING 4.5 CH
LINE SPACING 4.5 CH
AZIMUTH 125°
CRUISE: COUNT 1:2
CRUISE=0 COUNT=0
BAF = 33.61
CRUISE ALL HARDWOODS
N
PRIVATE
STATE
Joe Creek
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
AREA 8
Pt. 1B\I2
Pt. 2B
Pt. 1A
Pt. 2A
Pt. 3A
Pt. 4B
Pt. 4C
Pt. 4D
Pt. 4H
Pt. 5A
Pt. 5B
Pt. 7A
Pt. 7B
Pt. 7D
Pt. I10
Pt. I9
Pt. 3B
Pt. I4\I5
Pt. I7
Pt. I8
Pt. I11
Pt. 8A\I12
35
36
PRIVATE T5N, R9W
STATE T4N, R9W
Hamlet Stockpile Site
North Fork Nehalem River
Cole Mountain Road
East Summit Road
LINE 1 5 PLTS
LINE 2 5 PLTS
LINE 3 4 PLOTS
LINE 4 5 PLOTS
LINE 5 4 Plots
LINE 6 3 Plots
3 2
10 11
2 1
11 12
East Fork Soapstone Creek
A4_crupts.shp
A4_cruise.shp
Tsb.shp
Plinerw.shp
Sgpls
Rw.shp
Newrd.shp
Ast_ownership_line.shp
Roads.shp
Paved
Rocked
Unknown
Unsurfaced
Study_area.shp
Gross_boundary.shp
Clip_streams.shp
Fish
Nonfish
Unknown
Soapstone_trail.shp
Lakes.shp
1000 0 1000 Feet


SUMMIT STONE CRUISE
AREAS 1,2,3,5,6,&7 (PC)
PLOT SPACING 6chs
LINE SPACING 6chs
BRG N°-S°
CRUISE:COUNT RATIO 3:1
CRUISE = ⊕, COUNT = +
BAF: 20, LEAVE 130ft²
N
T5N, R9W
T5N, R8W
PRIVATE T5N, R9W
STATE T4N, R9W
Hamlet Stockpile Site
North Fork Nehalem River
Cole Mountain Road
East Summit Road
Borgsvik Road
Joe Creek
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 7
AREA 8
AREA 9
Pt. 1B\12
Pt. 1A
Pt. 2A
Pt. 2B
Pt. 3A
Pt. 3B
Pt. 4A
Pt. 4B
Pt. 4C
Pt. 4D
Pt. 4G
Pt. 4H
Pt. 5A
Pt. 5B
Pt. 7B
Pt. 7C
Pt. 7D
Pt. I3
Pt. I4\I5
Pt. I6
Pt. I7
Pt. I8
Pt. I9
Pt. I10
Pt. I11
Pt. I15
Pt. I16
Pt. 8A\I12
Pt. 8B
MP 5
West Fork Soapstone Creek
East Fork Soapstone Creek
Soapstone Creek
Soapstone Lake
AREAS 8&9 (PC)
PLOT SPACING 6chs
LINE SPACING 6chs
BRG E°-W°
CRUISE:COUNT 3:1
CRUISE = ⊕ COUNT = +
BAF: 20, LEAVE 130ft²
EXHIBIT "A"
OF TIMBER SALE CONTRACT NO. 341-08-52
SUMMIT STONE
PORTIONS OF SECTIONS 35 AND 36, T5N, R9W,
AND PORTIONS OF SECTIONS 1, 2, 3, 10,
AND 11, T4N, R9W,
W.M., CLATSOP COUNTY, OREGON.
APPROXIMATE SCALE 1"=1,000'
1000 0 1000 Feet
LEGEND
Tsb.shp
Plinerw.shp
Sgpls
Rw.shp
Newrd.shp
Ast_ownership_line.shp
Roads.shp
Paved
Rocked
Unknown
Unsurfaced
Study_area.shp
Clip_streams.shp
Fish
Nonfish
Unknown
Soapstone_trail.shp
Lakes.shp

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-08-52
SUMMIT STONE
PORTIONS OF SECTION 35, T5N, R9W,
AND PORTIONS OF SECTIONS 1, 2, 3, 10,
AND 11, T4N, R9W,
W.M., CLATSOP COUNTY, OREGON.
APPROXIMATE SCALE 1"=1,000'

1000 0 1000 Feet



LOGGING BREAKDOWN

AREA	TRACTOR	CABLE
1	31%	69%
2	44%	56%
3	49%	51%
4	45%	55%
5	80%	20%
6	100%	0%
7	55%	45%
8	56%	44%
8A	100%	0%
9	100%	0%
TOTAL:	61%	39%

N

APPROXIMATE NET ACREAGE

AREA	MC ACRES	PC ACRES
AREA 1		27.2
AREA 2		44.6
AREA 3		65.5
AREA 4	60.0	
AREA 5		98.0
AREA 6		12.8
AREA 7		15.2
AREA 8		42.1
AREA 8A		3.9
AREA 9		19.5
AREA 10 R/W	9.7	
TOTAL	69.7	328.8

TOTAL ALL AREAS - 398.5 ACRES

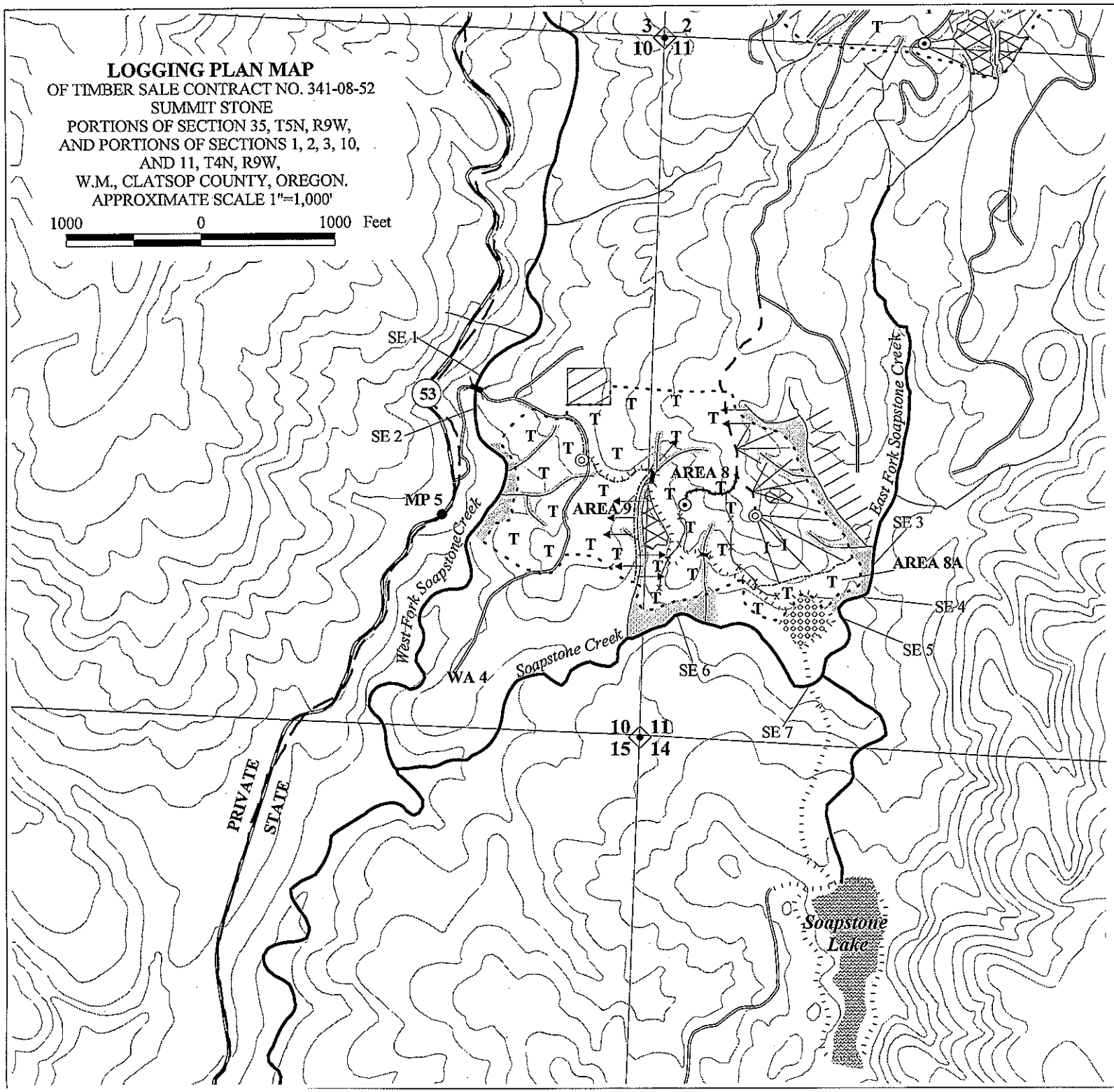
LEGEND

- Type F Stream
- Type N Stream
- Timber Sale Boundary
- Area Boundary
- Posted Buffer
- Paved Roads
- Surfaced Roads
- Unsurfaced Roads
- Administrative Road
- Loggers Choice Road
- New Road Construction
- Ownership Boundary
- Stream Buffer
- Non Thinnable Area
- Reforestation Area
- Loggers Choice Landing
- Landing to Construct
- Known Survey Corner
- Cable Yarding
- T Tractor Yarding
- Line Pull
- Bridge
- Foot Bridge
- Gate

LOGGING PLAN MAP

OF TIMBER SALE CONTRACT NO. 341-08-52
SUMMIT STONE
PORTIONS OF SECTION 35, T5N, R9W,
AND PORTIONS OF SECTIONS 1, 2, 3, 10,
AND 11, T4N, R9W,
W.M., CLATSOP COUNTY, OREGON.
APPROXIMATE SCALE 1"=1,000'

1000 0 1000 Feet



LOGGING BREAKDOWN

AREA	TRACTOR	CABLE
1	31%	69%
2	44%	56%
3	49%	51%
4	45%	55%
5	80%	20%
6	100%	0%
7	55%	45%
8	56%	44%
8A	100%	0%
9	100%	0%
TOTAL:	61%	39%

APPROXIMATE NET ACREAGE

AREA	MC ACRES	PC ACRES
AREA 1		27.2
AREA 2		44.6
AREA 3		65.5
AREA 4	60.0	
AREA 5		98.0
AREA 6		12.8
AREA 7		15.2
AREA 8		42.1
AREA 8A		3.9
AREA 9		19.5
AREA 10 R/W	9.7	
TOTAL	69.7	328.8

TOTAL ALL AREAS - 398.3 ACRES

LEGEND

- Type F Stream
- Type N Stream
- Timber Sale Boundary
- Area Boundary
- Posted Buffer
- Paved Roads
- Surfaced Roads
- Unsurfaced Roads
- Loggers Choice Road
- New Road Construction
- Designated Skid Trail
- Ownership Boundary
- Recreation Trail
- Stream Buffer
- Non Thinnable Area
- Study Area
- Loggers Choice Landing
- Landing to Construct
- Known Survey Corner
- Cable Yarding
- T — Tractor Yarding
- Line Pull
- I — Intermediate Support Area
- Bridge
- Foot Bridge
- SE 1 — Stream Enhancement
- Cultural Resource Area