



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Sassy Sally
Sale AT-341-None-W00361-01

District: Astoria

Date: December 28, 2018

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,387,798.98	\$149,357.16	\$1,537,156.14
		Project Work:	(\$312,913.00)
		Advertised Value:	\$1,224,243.14



Timber Sale Appraisal Sassy Sally Sale AT-341-None-W00361-01

District: Astoria

Date: December 28, 2018

Timber Description

Location: Portion of Sections 13, 23, and 24 of T4N, R9W, W.M., Clatsop County, Oregon and portions of Sections 7 and 9 of T4N, R8W, W.M., Clatsop County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	23	0	98
Western Hemlock / Fir	16	0	95
Sitka Spruce	17	0	87
Alder (Red)	14	0	96

Volume by Grade	2S	3S & 4S 6"-11"	Other	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	2,815	564	0	0	0	0	0	3,379
Western Hemlock / Fir	92	79	0	0	0	0	0	171
Sitka Spruce	275	301	244	0	0	0	0	820
Alder (Red)	0	0	0	96	189	22	137	444
Total	3,182	944	244	96	189	22	137	4,814

Comments: Pond Values Used: Local Pond Values, December 2018.

Expected Log Markets: Mist, Willamina, Banks, Clatskanie, Tillamook, Forest Grove, Warrenton, Elma, WA, Longview, WA, Vancouver, WA and Chehalis, WA.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
\$855.31/MBF = \$1,100/MBF-\$244.69/MBF

Other Conifers Stumpage Price = Pond Value minus Logging Cost:
\$255.31/MBF = \$500/MBF-\$341.39/MBF

Other Hardwoods Stumpage Price = Pond Value minus Logging Cost:
\$180.69/MBF = \$500/MBF-\$283.88/MBF
Other Costs (with Profit & Risk to be added):

Machine Washing for Invasive Weed Compliance = \$2,000
Ditch Filters:
20 bales of straw @ \$12.06/bale = \$241.20
8 hours of labor @ \$45/hr = \$360
TOTAL Other Costs (with Profit & Risk to be added): \$2,601.20

Other Costs (No Profit & Risk added):
None.

ROAD MAINTENANCE
See attached Road Maintenance Cost Summary Sheet
TOTAL Road Maintenance: = \$3.67/MBF

SLASH PILING
See attached slash piling cost summary sheet.
TOTAL slash piling: = \$7,602.00



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Logging Conditions

Combination#: 1	Douglas - Fir	36.00%
	Western Hemlock / Fir	36.00%
	Sitka Spruce	36.00%
	Alder (Red)	36.00%
Logging System:	Shovel	Process: Manual Falling/Delimbing
yarding distance:	Medium (800 ft)	downhill yarding: No
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF	
loads / day:	11	bd. ft / load: 4200
cost / mbf:	\$85.23	
machines:	Shovel Logger	
Combination#: 2	Douglas - Fir	19.00%
	Western Hemlock / Fir	19.00%
	Sitka Spruce	19.00%
	Alder (Red)	19.00%
Logging System:	Cable: Medium Tower >40 - <70	Process: Manual Delimbing
yarding distance:	Medium (800 ft)	downhill yarding: No
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF	
loads / day:	11	bd. ft / load: 4200
cost / mbf:	\$132.03	
machines:	Log Loader (A) Tower Yarder (Medium)	
Combination#: 3	Douglas - Fir	34.00%
	Western Hemlock / Fir	34.00%
	Sitka Spruce	34.00%
	Alder (Red)	34.00%
Logging System:	Track Skidder	Process: Manual Falling/Delimbing
yarding distance:	Medium (800 ft)	downhill yarding: No
tree size:	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF	
loads / day:	8	bd. ft / load: 4600
cost / mbf:	\$121.07	
machines:	Log Loader (B) Track Skidder	
Combination#: 4	Douglas - Fir	11.00%
	Western Hemlock / Fir	11.00%
	Sitka Spruce	11.00%
	Alder (Red)	11.00%
Logging System:	Cable: Medium Tower >40 - <70	Process: Manual Falling/Delimbing
yarding distance:	Medium (800 ft)	downhill yarding: No
tree size:	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF	
loads / day:	9	bd. ft / load: 4400
cost / mbf:	\$166.67	

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



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Logging Costs

Operating Seasons: 3.00	Profit Risk: 10%
Project Costs: \$312,913.00	Other Costs (P/R): \$2,601.20
Slash Disposal: \$7,602.00	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$3.67

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	5.0
Western Hemlock / Fir	\$0.00	2.0	4.3
Sitka Spruce	\$0.00	2.0	4.4
Alder (Red)	\$0.00	2.0	3.0



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$115.27	\$3.74	\$2.74	\$96.90	\$0.54	\$21.92	\$1.58	\$2.00	\$0.00	\$244.69
Western Hemlock / Fir									
\$115.27	\$3.85	\$2.74	\$115.99	\$0.54	\$23.84	\$1.58	\$2.00	\$0.00	\$265.81
Sitka Spruce									
\$115.27	\$4.15	\$2.74	\$121.98	\$0.54	\$24.47	\$1.58	\$2.00	\$0.00	\$272.73
Alder (Red)									
\$115.27	\$3.82	\$2.74	\$164.66	\$0.54	\$28.70	\$1.58	\$2.00	\$0.00	\$319.31

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$600.00	\$355.31	\$0.00
Western Hemlock / Fir	\$0.00	\$525.00	\$259.19	\$0.00
Sitka Spruce	\$0.00	\$446.98	\$174.25	\$0.00
Alder (Red)	\$0.00	\$655.70	\$336.39	\$0.00



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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
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,379	\$355.31	\$1,200,592.49
Western Hemlock / Fir	171	\$259.19	\$44,321.49
Sitka Spruce	820	\$174.25	\$142,885.00
Alder (Red)	444	\$336.39	\$149,357.16

Gross Timber Sale Value

Recovery: \$1,537,156.14

Prepared By: John Tillotson

Phone: 503-325-5451

Site Prep Appraisal

Sale Name: Sassy Sally
Date: 01/26/2018
 Updated 8/20/2018 JT

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

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	F	48.0	24	\$129.00	\$3,096.00
					In-unit Piling	Sub Total = \$3,096.00
Sale Area	Number of Landings to be Piled	Cost/Landing Pile	Total Cost/Area	Number of In-Unit Piles	Material Cost/Pile	Total Cost/Area
1	6	\$516.00	\$3,096.00	24	\$5.00	\$120.00
*Cost includes separating firewood					Materials	Sub Total = \$120.00
					Landing Piling	Sub Total = \$3,096.00
Move-In Allowance	Number of Move-In's	Total Move-In Allowance			Move-In	Sub Total = \$1,290.00
\$1,290.00	1	\$1,290.00				
Grand Total =						\$7,602.00

*Cost includes separating firewood

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Sassy Sally
Date: 01/26/18, updated 8/20/18 by JT
By: Bryce Rodgers

MBF: 4,814
\$/MBF: \$3.67

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations	Grader 14G	\$875	1	10	\$113	\$2,005
	Dump Truck 12CY	\$184	1	5	\$89	\$629
	FE Loader	\$875	1	2	\$94	\$1,063
Final Road Maintenance	Grader 14G	\$875	1	35	\$113	\$4,830
	Dump Truck 12CY	\$184	2	15	\$89	\$1,703
	FE Loader C966	\$875	1	6	\$94	\$1,439
	Vibratory Roller	\$875	1	35	\$87	\$3,920
	Water Truck 2,500 gallon	\$214	1	15	\$101	\$1,729
	Labor			8	\$45	\$360
Total						\$17,678

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	3.0	3.00	1.0	10

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	6.5	4.3	35
Vibratory Roller	1.5	6.5	4.3	35

Process and compact: All crushed rock roads
Suess Alley 1.4
Cole Mountain Ridge/ Cole Mountain 2.6
Sally Ridge .6
Progeny Ridge .9
Unnamed spurs 1
Grade & Process Total = 6.5 miles

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Sassy Sally

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
1A-1B(1+00), 1C-1D(3+75)		
1E-1F(5+00), 3A-3B(17+50)	34.75	
3C-3D(7+50)		\$39,586.00
1G-1H(11+80), 2A-2B(3+50)	16.30	
2C-2D(1+00)		
Road Maint.		\$1,120.19
Move-In		\$3,281.45
TOTALS	51.05	\$43,988

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
1I-1J(155+50), 13-14(31+25)		
15-16(65+00), 17-18(35+00)	286.75	\$53,991.00
Road Maint.		\$1,527.81
Move-In		\$4,475.55
TOTALS		\$59,994

SPECIAL PROJECTS (Move-In and Road Maint. are included separately as needed, for each Special Project):

<u>Description</u>	<u>Cost</u>
Proj. 3 Road Brushing	\$25,913.00
Proj. 4 Rock Crushing	\$183,018.00
TOTAL	\$208,931

GRAND TOTAL **\$312,913**

Compiled By: FL COOY VALENCIA

Date: 1/14/2019

Move In and Maintenance Calculator for Construction and Improvement

SALE NAME: Sassy Sally

Project No. 1: ROAD CONSTRUCTION:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>		
1A-1B(1+00), 1C-1D(3+75)				
1E-1F(5+00), 3A-3B(17+50)	34.75			
3C-3D(7+50)		\$39,586.00		
1G-1H(11+80), 2A-2B(3+50)	16.30			
2C-2D(1+00)				
TOTALS	51.05	0.97	Miles	\$39,586

Project No. 2: ROAD IMPROVEMENT:

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>		
I1-I2(155+50), I3-I4(31+25)				
I5-I6(65+00), I7-I8(35+00)	286.75	\$53,991.00		
TOTALS	286.75	5.43	Miles	\$53,991

MOVE IN (Construction & Improvement Only)

<u>Equipment</u>	<u>Cost</u>
Dozer (D8)	\$1,581.00
Excavator (C330)	\$1,581.00
Excavator (C315)	\$905.00
Skidder (C518)	\$806.00
Dump Trucks (12cy x 5)	\$920.00
Grader (14G)	\$875.00
Vibratory Roller	\$875.00
Water Truck (2,500 gallon)	\$214.00
TOTAL	\$7,757.00

ROAD MAINTENANCE (Construction & Improvement Only)

Suess Alley Road	\$2,648.00
TOTAL	\$2,648.00

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Sassy Sally
 ROAD: 1A-1B (1.0),1C-1D (3.75),1E-1F (5.0),3A-3B(17.5),3C-3D(7.5)
 POINTS: 1G-1H (11.8),2A-2B (3.5),2C-2D (1.0),

NEW CONSTRUCTION: 34.75 STATIONS 0.66 MILES
 DIRT CONSTRUCTION: 16.30 STATIONS 0.31 MILES

CLEARING & GRUBBING						
Method	Acres/amount	x	Rate	=	Cost	
Scatter outside of R/W	4.70	x	\$ 1,503	=	\$7,064.10	
SUB TOTAL FOR CLEARING & GRUBBING					\$7,064	

EXCAVATION						
Material	Cy/amount	x	Rate	=	Cost	
1A-1B Balanced Construction \$/sta.	1.00	x	\$138.00	=	\$138.00	
Landing \$/landing	1.00	x	\$438.00	=	\$438.00	
1C-1D Balanced Construction \$/sta.	3.75	x	\$138.00	=	\$517.50	
Landing \$/landing	1.00	x	\$438.00	=	\$438.00	
1E-1F Balanced Construction \$/sta.	5.00	x	\$138.00	=	\$690.00	
Landing \$/landing	1.00	x	\$438.00	=	\$438.00	
1G-1H Balanced Construction \$/sta.	11.80	x	\$138.00	=	\$1,628.40	
Landing \$/landing	1.00	x	\$438.00	=	\$438.00	
2A-2B Balanced Construction \$/sta.	3.50	x	\$138.00	=	\$483.00	
Landing \$/landing	1.00	x	\$438.00	=	\$438.00	
2C-2D Balanced Construction \$/sta.	1.00	x	\$138.00	=	\$138.00	
Landing \$/landing	1.00	x	\$438.00	=	\$438.00	
3A-3B Common Drift \$/cy	2,989	x	\$2.02	=	\$6,037.78	
End-Haul Excavation \$/CY	500	x	\$4.50	=	\$2,250.00	
Embankment Compaction \$/CY	3,489	x	\$0.79	=	\$2,756.31	
Dissipator Rock Placement (C315) \$/hr.	2.00	x	\$114.00	=	\$228.00	
Cutslope Rounding \$/sta.	8.00	x	\$49.00	=	\$392.00	
3C-3D Balanced Construction \$/sta.	7.50	x	\$138.00	=	\$1,035.00	
Landing \$/landing	2.00	x	\$438.00	=	\$876.00	
SUB TOTAL FOR EXCAVATION					\$19,798	

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
1E to 1F									
0+00	18"CPP	30	\$21.95	\$658.50					
1G to 1H									
7+95	18" CMP	30	\$9.89	\$296.70	* Installation Only				
3A to 3B									
5+00	18"CPP	30	\$21.95	\$658.50					
10+00	18"CPP	30	\$21.95	\$658.50					
Other/miscellaneous:			Description	Quantity	Rate	Cost			
Culvert stakes & markers:			6' X 2 1/2" white fiberglass posts	3	\$23.00	\$69.00			
SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION						\$2,341			

Subtotal of Clearing, Exc., Culv. **\$29,203**

SURFACING				Stations/ amount		x	Rate/ sta/amt	Cost		
Subgrade prep:				Description						
				Grade, Shape and Ditch 16'			\$27.91	\$969.87		
				Grade Shape and Outslope 14'			\$20.63	\$336.27		
				Subgrade Compaction		x	\$22.69	\$788.48		
ROAD SEGMENT 1A to 1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				1A to 1B		0+00 to 1+00				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed	0+00 to 1+00	8	station	50	stations	1.00	50	\$3.09	\$155
Junction Rock	4"-0" crushed	0+00	N/A	junction	22	junctions	1.00	22	\$3.09	\$68
Landing	6"-0" pit-run	1+00	N/A	landing	88	landings	1.00	88	\$3.33	\$293
Total Rock for Road Segment:				1A to 1B				160		\$516
ROAD SEGMENT 1C to 1D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				1C to 1D		0+00 to 3+75				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed	0+00 to 3+75	8	station	50	stations	3.75	188	\$3.09	\$579
Junction Rock	4"-0" crushed	0+00	N/A	junction	22	junctions	1.00	22	\$3.09	\$68
Landings	6"-0" pit-run	3+75	N/A	landing	88	landings	1.00	88	\$3.33	\$293
Total Rock for Road Segment:				1C to 1D				298		\$940
ROAD SEGMENT 1E to 1F				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				1E to 1F		0+00 to 5+00				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed	0+00 to 5+00	8	station	50	stations	5.00	250	\$3.09	\$773
Junction Rock	4"-0" crushed	0+00	N/A	junction	22	junctions	1.00	22	\$3.09	\$68
Culvert Bedding/Backfill	1 1/2"-0" crushed	0+00	N/A	culvert	33	culverts	1.00	33	\$3.92	\$129
Landings	6"-0" pit-run	5+00	N/A	landing	88	landings	1.00	88	\$3.33	\$293
Total Rock for Road Segment:				1E to 1F				393		\$1,263
ROAD SEGMENT 1G to 1H				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				1G to 1H		0+00 to 11+80				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Junction Rock	4"-0" crushed	0+00	N/A	junction	22	junctions	1.00	22	\$3.09	\$68
Total Rock for Road Segment:				1G to 1H				22		\$68
ROAD SEGMENT 2A to 2B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				2A to 2B		0+00 to 3+50				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Junction Rock	4"-0" crushed	0+00	N/A	junction	22	junctions	1.00	22	\$3.09	\$68
Total Rock for Road Segment:				2A to 2B				22		\$68
ROAD SEGMENT 2C to 2D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				2C to 2D		0+00 to 1+00				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Junction Rock	4"-0" crushed	0+00	N/A	junction	22	junctions	1.00	22	\$3.09	\$68
Total Rock for Road Segment:				2C to 2D				22		\$68
ROAD SEGMENT 3A to 3B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				3A to 3B		0+00 to 17+50				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed	0+00 to 17+50	8	station	50	stations	17.50	875	\$3.09	\$2,704
Turnouts	4"-0" crushed	7+00, 15+50	8	turnout	22	turnouts	2.00	44	\$3.09	\$136
Traction Rock	1 1/2"-0" crushed	0+00 to 17+50	2	station	13	stations	17.50	228	\$3.92	\$892
Dissipator	24"-6" riprap	5+00, 10+00	N/A	culvert	11	culverts	2.00	22	\$3.23	\$71
Junction Rock	4"-0" crushed	0+00, 17+50	N/A	junction	22	junctions	2.00	44	\$3.09	\$136
Total Rock for Road Segment:				3A to 3B				1,213		\$3,939
ROAD SEGMENT 3C to 3D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				3C to 3D		0+00 to 7+50				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of					
Base Rock	4"-0" crushed	0+00 to 7+50	8	station	50	stations	7.50	375	\$3.09	\$1,159
Turnaround	4"-0" crushed	0+30	N/A	turnaround	22	turnarounds	1.00	22	\$3.09	\$68
Landings	6"-0" pit-run	4+50, 7+50	N/A	landing	88	landings	2.00	176	\$3.33	\$586
Total Rock for Road Segment:				3C to 3D				573		\$1,813
Processing:				Description		No.sta	Rate/sta	Cost		
				Water, Process & Compact Base Rock (4"-0"):		34.75	\$63.48	\$2,205.93		
				Water, Process & Compact Traction Rock:		17.50	\$63.48	\$1,110.90		
				24"-6" rr	6"-0"pr	4"-0" crushed	1 1/2"-0" crushed	Total		
SUB TOTAL FOR SURFACING				22	440	1,980	261	2,702	2,702	\$14,086
SPECIAL PROJECTS										
				Description		Cost				

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Sassy Sally
ROAD: 11-12 (155.5), 13-14 (31.25), 15-16 (65.0), 17-18 ()
POINTS:

NEW CONSTRUCTION: STATIONS
IMPROVEMENT: 286.75 STATIONS 5.43 MILES

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
SUB TOTAL FOR CLEARING & GRUBBING					\$0

EXCAVATION					
Material	Cy/amount	x	Rate	=	Cost
11 to 12					
31+60 Install ditch filter (C315)hrs.	1.00	x	\$114.00	=	\$114.00
68+10 Clean culvert inlet/outlet (C315)hrs.	1.00		\$114.00	=	\$114.00
100+50 Install ditch filter (C315)hrs.	1.00	x	\$114.00	=	\$114.00
		x			
		x			
17-18					
29+75 Scatter ditch waste materials Sta.	1.00	x	\$13.95	=	\$13.95
Clean culvert inlets (C315)hrs.	1.0	x	\$114.00	=	\$114.00
		x			
SUB TOTAL FOR EXCAVATION					\$470

CULVERT MATERIALS AND INSTALLATION									
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
11 to 12									
35+30	18"cpp	30	\$21.95	\$658.50					
108+10	18"cpp	30	\$21.95	\$658.50					
									\$1,317.00

	Description	Quantity	Rate	Cost
Other/miscellaneous:	11-12 (121+90) Cut off end of culvert	1.00	\$45.00	\$45.00
Culvert stakes & markers:	6' X 2 1/2" white fiberglass posts	5.00	\$23.00	\$115.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION \$1,477
Subtotal of Clearing, Exc., Culv. \$1,947

SURFACING					Stations/ amount		Rate/ sta/amt		Cost			
subgrade prep:		Description			260.25		x		\$27.91 \$7,263.58			
		Grade, Shape and Ditch 16'			260.25		x		\$22.69 \$5,905.07			
		Subgrade Compaction										
ROAD SEGMENT				I1 to I2		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I1 to I2		0+00 to 155+50						
Application		Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Surfacing		1 1/2"-0" crushed	0+00 to 155+50	3	station	19	stations	155.5	2,955	\$3.92	\$11,582	
Surface Leveling Rock		1 1/2"-0" crushed	N/A	N/A	load	11	loads	10	110	\$3.92	\$431	
Ditch Filter		6"-0" pit-run	31+60, 100+50	N/A	filter	11	filters	2	22	\$3.33	\$73	
Bedding		1 1/2"-0" crushed	35+30, 108+10	N/A	culvert	33	culverts	2	66	\$3.92	\$259	
Turnouts		1 1/2"-0" crushed	2+60, 23+30, 25+00, 30+00, 42+50, 57+75, 62+20, 83+60, 96+80, 115+90, 130+30, 133+40,	3	turnout	11	turnouts	12	132	\$3.92	\$517	
Turnaround		1 1/2"-0" crushed	133+70	3	load	22	loads	1	22	\$3.92	\$86	
Total Rock for Road Segment:				I1 to I2				3,307				\$12,949
ROAD SEGMENT				I3 to I4		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I3 to I4		0+00 to 31+25						
Application		Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Surfacing		4"-0" crushed	0+00 to 31+25	4	station	25	stations	31.25	781	\$3.09	\$2,414	
Turnouts		4"-0" crushed	7+40, 14+50, 17+90, 20+60	4	turnout	11	turnouts	4	44	\$3.09	\$136	
Total Rock for Road Segment:				I3 to I4				825				\$2,550
ROAD SEGMENT				I5 to I6		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I5 to I6		0+00 to 65+00						
Application		Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Surfacing		4"-0" crushed	0+00 to 48+50	4	station	25	stations	65	1,625	\$3.09	\$5,021	
Subgrade Leveling Rock		4"-0" crushed	N/A	N/A	load	11	loads	10	110	\$3.09	\$340	
			5+20, 12+60, 25+30, 36+80, 43+90, 48+50									
Turnouts		4"-0" crushed			turnout	11	turnouts	6	66	\$3.09	\$204	
Total Rock for Road Segment:				I5 to I6				1,801				\$5,565
ROAD SEGMENT				I7 to I8		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				I7 to I8		0+00 to 35+00						
Application		Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Surfacing		4"-0" crushed	26+50-35+00	4	station	25	stations	8.5	213	\$3.09	\$657	
Total Rock for Road Segment:				I7 to I8				213				\$657
Processing:		Description			No.sta		Rate/sta		Cost			
		Water, Process & Compact:			270.25		\$63.48		\$17,155			
					6"-0"pr		4"-0" crushed		1 1/2"-0" crushed			
									Total			
SUB TOTAL FOR SURFACING					22		2,839		3,285			
							</					

Bryce Rodgers

Date: 01/23/2018

BRUSHING COST ANALYSIS
Sassy Sally Brushing
 341-18-51
 Cody Valencia
 01/19/2018 updated 12/11/2018

Brushing Type	\$/mi.
Light (1)	956.00
Medium (2)	1,237.00
Heavy (3)	1,743.00
Move-in cost	\$361.00

Total Cost= \$25,912.50

Total Miles= 21.80

Avg. \$/mi.= \$1,188.56

Page 1 of 2

Road Segment	Road Name	Measured Feet	Miles	Brushing Type	\$	Notes
B1 to B2		1407	0.27	1	\$254.75	
B3		335	0.06	2	\$78.48	
B4		1235	0.23	1	\$223.61	
B5 to B6		300	0.06	3	\$99.03	
B7	Nugent Spur	4745	0.90	3	\$1,566.39	
B8		2380	0.45	2	\$557.59	
B9		3075	0.58	2	\$720.41	
B10		150	0.03	2	\$35.14	
B11		2585	0.49	3	\$853.34	
B12		330	0.06	1	\$59.75	
B13		300	0.06	3	\$99.03	
B14		815	0.15	2	\$190.94	
B15		650	0.12	3	\$214.57	
B16	Spur 13	7125	1.35	1	\$1,290.06	
B17		365	0.07	1	\$66.09	
B18		250	0.05	1	\$45.27	
B19		520	0.10	3	\$171.66	
B20 to B21		2060	0.39	1	\$372.98	
B22		550	0.10	1	\$99.58	
B23		1210	0.23	1	\$219.08	
B24		410	0.08	1	\$74.23	
B25		935	0.18	2	\$219.05	
B26 to B27		3000	0.57	1	\$543.18	
B28		1880	0.36	1	\$340.39	
B29		350	0.07	1	\$63.37	
B30		265	0.05	3	\$87.48	
B31		1760	0.33	2	\$412.33	
B32 to B33	Cole Mountain Road	4720	0.89	1	\$854.61	
B33 to B34	East Sally Ridge Road	4445	0.84	2	\$1,041.38	
B35		550	0.10	1	\$99.58	
B36		850	0.16	1	\$153.90	
B37		950	0.18	2	\$222.57	
B38		1975	0.37	3	\$651.97	
B39 to B40	Sally Creek Road	2875	0.54	1	\$520.55	
B41 to B42	Sally Creek Road	3465	0.66	1	\$627.38	
B43		980	0.19	1	\$177.44	
B44 to B45		1200	0.23	1	\$217.27	
B46		1495	0.28	1	\$270.69	
B47		185	0.04	1	\$33.50	
B48 to B49		1820	0.34	1	\$329.53	
B50		2600	0.49	1	\$470.76	
B51		2295	0.43	1	\$415.53	
B52		2675	0.51	2	\$626.70	
B53		1370	0.26	1	\$248.05	
B54		200	0.04	1	\$36.21	
B55		300	0.06	1	\$54.32	
B56		430	0.08	1	\$77.86	
B57		220	0.04	1	\$39.83	
B58 to B59		490	0.09	1	\$88.72	
B60		3635	0.69	1	\$658.16	
B61 to B62		700	0.13	1	\$126.74	
B63		810	0.15	1	\$146.66	

BRUSHING COST ANALYSIS	Brushing Type	\$/mi.
Sassy Sally Brushing	<i>Light (1)</i>	<i>956.00</i>
341-18-51	<i>Medium (2)</i>	<i>1,237.00</i>
Cody Valencia	<i>Heavy (3)</i>	<i>1,743.00</i>
01/19/2018 updated 12/11/2018		

[illegible]

BRUSHING COST ANALYSIS
Sassy Sally Brushing
 341-18-51
 Cody Valencia
 01/19/2018 updated 12/11/2018

Brushing Type	\$/mi.
Light (1)	956.00
Medium (2)	1,237.00
Heavy (3)	1,743.00
Move-in cost	\$361.00

Total Cost= \$25,912.50
Total Miles= 21.80
Avg. \$/mi.= \$1,188.56

Page 1 of 2

Road Segment	Road Name	Measured Feet	Miles	Brushing Type	\$	Notes
B1 to B2		1407	0.27	1	\$254.75	
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B4		1235	0.23	1	\$223.61	
B5 to B6		300	0.06	3	\$99.03	
B7	Nugent Spur	4745	0.90	3	\$1,566.39	
B8		2380	0.45	2	\$557.59	
B9		3075	0.58	2	\$720.41	
B10		150	0.03	2	\$35.14	
B11		2585	0.49	3	\$853.34	
B12		330	0.06	1	\$59.75	
B13		300	0.06	3	\$99.03	
B14		815	0.15	2	\$190.94	
B15		650	0.12	3	\$214.57	
B16	Spur 13	7125	1.35	1	\$1,290.06	
B17		365	0.07	1	\$66.09	
B18		250	0.05	1	\$45.27	
B19		520	0.10	3	\$171.66	
B20 to B21		2060	0.39	1	\$372.98	
B22		550	0.10	1	\$99.58	
B23		1210	0.23	1	\$219.08	
B24		410	0.08	1	\$74.23	
B25		935	0.18	2	\$219.05	
B26 to B27		3000	0.57	1	\$543.18	
B28		1880	0.36	1	\$340.39	
B29		350	0.07	1	\$63.37	
B30		265	0.05	3	\$87.48	
B31		1760	0.33	2	\$412.33	
B32 to B33	Cole Mountain Road	4720	0.89	1	\$854.61	
B33 to B34	East Sally Ridge Road	4445	0.84	2	\$1,041.38	
B35		550	0.10	1	\$99.58	
B36		850	0.16	1	\$153.90	
B37		950	0.18	2	\$222.57	
B38		1975	0.37	3	\$651.97	
B39 to B40	Sally Creek Road	2875	0.54	1	\$520.55	
B41 to B42	Sally Creek Road	3465	0.66	1	\$627.38	
B43		980	0.19	1	\$177.44	
B44 to B45		1200	0.23	1	\$217.27	
B46		1495	0.28	1	\$270.69	
B47		185	0.04	1	\$33.50	
B48 to B49		1820	0.34	1	\$329.53	
B50		2600	0.49	1	\$470.76	
B51		2295	0.43	1	\$415.53	
B52		2675	0.51	2	\$626.70	
B53		1370	0.26	1	\$248.05	
B54		200	0.04	1	\$36.21	
B55		300	0.06	1	\$54.32	
B56		430	0.08	1	\$77.86	
B57		220	0.04	1	\$39.83	
B58 to B59		490	0.09	1	\$88.72	
B60		3635	0.69	1	\$658.16	
B61 to B62		700	0.13	1	\$126.74	
B63		810	0.15	1	\$146.66	
SUBTOTAL		80222	15.19		\$ 17,147.71	

BRUSHING COST ANALYSIS
 Sassy Sally Brushing
 341-18-51
 Cody Valencia
 01/19/2018 updated 12/11/2018

Brushing Type	\$/mi.
<i>Light (1)</i>	956.00
<i>Medium (2)</i>	1,237.00
<i>Heavy (3)</i>	1,743.00

Road Segment	Road Name	Measured Feet	Miles	Brushing Type	\$	Notes
B64		2230	0.42	2	\$522.45	
B65		365	0.07	2	\$85.51	
B66		1340	0.25	2	\$313.94	
B67		265	0.05	2	\$62.08	
B68		235	0.04	1	\$42.55	
B69		1920	0.36	2	\$449.82	
B70		3250	0.62	3	\$1,072.87	
B71		6115	1.16	2	\$1,432.62	
B72		230	0.04	3	\$75.93	
B73		240	0.05	3	\$79.23	
B74		490	0.09	1	\$88.72	
B75		2600	0.49	2	\$609.13	
B76		600	0.11	1	\$108.64	
B77		400	0.08	2	\$93.71	
B78		950	0.18	2	\$222.57	
B79		2900	0.55	1	\$525.08	
B80		400	0.08	1	\$72.42	
B81		4500	0.85	3	\$1,485.51	
B82		300	0.06	1	\$54.32	
B83		350	0.07	1	\$63.37	
B84		350	0.07	1	\$63.37	
B85		3300	0.63	1	\$597.50	
B86		1560	0.30	1	\$282.45	
SUBTOTAL		34890.00	6.61		\$8,403.78	
TOTAL		115112	21.80		\$ 25,551.50	

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 3	Timber Sale Name: Sassy Sally
Quarry: Cole Mountain Quarry	Swell: _____
Location: SW 1/4, SE 1/4, Sec. 14, T4N, R9W	Shrink: 16%
County: Clatsop	
By: C.Bangs	Loading Hopper: Yes
Date: 11/30/2018	

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"		CR			
4"-0"	30%	CR	5,000	4,819	10,619
6"-0"		PR		462	462
24"-6"		RR		22	22
36"		RR			
TOTAL CUBIC YARDS OF ROCK:			5,000	5,303	11,103

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Dump Trucks	1	\$184	\$184	Off Highway Dump Truck	1	\$622	\$622
Screening Plants	1	\$622	\$622	Loader	1	\$905	\$905
D8 Cat	1	\$1,581	\$1,581	2 Stage Crusher	1	\$2,445	\$2,445
D6 Cat	1	\$875	\$875				
Drill & Compressor	1	\$1,581	\$1,581				
Powder	1	\$395	\$395		1		
Excavator	1	\$1,581	\$1,581				
Loading Hopper	1	\$622	\$622				
SUB TOTAL FOR MOBILIZATION				\$11,413			

EQUIPMENT SET UP	TIMES	RATE	COST
2 Stage Crusher	1	\$2,445	\$2,445
Screening Plants	1	\$330	\$330
Loading Hopper	1	\$330	\$330
Original Calibration	1	\$612	\$612

SUB TOTAL FOR SET UP COSTS \$3,717

TOTAL MOBILIZATION & SET UP COSTS \$15,130

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Clear, Load, Haul to Waste Area	20.0	hr	\$189	\$3,780
Slash and Stumps(1 ORtruck, 1 exc.)	10.0	hr	\$143	\$1,430
Pile & Burn Slash and Stumps(1 exc)	20.0	hr	\$189	\$3,780
Move-in Fire Truck for the burning of the Clearing Debris	1.0	ea	\$200	\$200

TOTAL CLEARING & GRUBBING COSTS \$9,190

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread)	12,000	bcy	\$3.00	\$36,000

TOTAL EXCAVATION COSTS \$36,000

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping	10%	1,110	\$2.92	\$3,242
crushed	10,619	96%	Drill & shoot	90%	12,860	\$3.03	\$38,965
pit run	462	4%	Oversize red	10%	1,108	\$5.80	\$6,427
rip rap	22	0%	Other				
Total	11,103						
reject	3,186	28.7%					

TOTAL ROCK DEVELOPMENT COSTS \$48,634

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate			
Calibrate			
Test	5	\$57.30	\$287
Test			

TOTAL CALIBRATION & TESTING COSTS \$287

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	13,805	\$0.78	\$10,748
Shot Rock Handling	90	\$175.00	\$15,750
(Excavator) hrs.			

TOTAL FEEDING & LOADING COSTS \$26,498

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed	10,619	3 stage w/s	110	\$2.48	\$26,320
1-1/2"-0"	crushed		3 stage w/s	120		
4"-0"	crushed		2 stage w/s	140		

TOTAL ROCK CRUSHING COSTS \$26,320

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer	2	\$128.00	\$256.00
Compactor		\$87.00	
Grader		\$79.00	
Excavator		\$175.00	

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

\$256.00

SUB TOTAL

\$256

HAUL & STOCKPILE

STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. _____					
2. _____					
3. Cole Mountain Stockpile	4"-0"	2	5,800	\$2.13	\$12,363
4. _____					
5. _____					
6. _____					

SUB TOTAL

\$12,363

TOTAL STOCKPILING COSTS

\$12,619

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	\$6,340
\$1.99 /CY 3,186 CY	
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access	\$2,000

TOTAL MISCELLANEOUS COSTS

\$8,340

10) GRAND TOTAL:

\$183,018

\$/Cubic Yard

\$17.23

Footnotes:

HAUL and STOCKPILE COST

SALE NAME: Sassy Sally
 QUARRY: Cole Mountain Quarry

ROCK TYPE: Crushed

Location 1. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
							0.10
Truck type: <u>D20</u> No. trucks: <u>1</u> Delay min.: <u>10</u> Efficiency: <u>75%</u> Ave haul: \$1.30 /cy Load: \$0.00 /cy Stockpile: \$0.83 /cy Truck type: <u>D12</u> No. trucks: <u>1</u> Delay min.: <u>8</u> Efficiency: <u>75%</u> Production: cy/day = 1,241 Truck type: <u> </u> No. trucks: <u> </u> Delay min.: <u>10</u> Efficiency: <u>75%</u> Production: cy/day = 1,241							
Location 1. 0			Haul and Stockpile Cost			\$2.13 /cy	

Location 2. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
			7.50		1.30		
Truck type: <u>D20</u> No. trucks: <u> </u> Delay min.: <u>15</u> Efficiency: <u>75%</u> Ave haul: #DIV/0! /cy Load: \$0.00 /cy Stockpile: #N/A /cy Truck type: <u>D12</u> No. trucks: <u> </u> Delay min.: <u>12</u> Efficiency: <u>75%</u> Production: cy/day = 0 Truck type: <u>D10</u> No. trucks: <u> </u> Delay min.: <u>10</u> Efficiency: <u>75%</u> Production: cy/day = 0							
Location 2. 0			Haul and Stockpile Cost			#DIV/0! /cy	

Location 3. Cole Mountain Stockpile 4"-0"	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
							0.10
Truck type: <u>D20</u> No. trucks: <u>1</u> Delay min.: <u>10</u> Efficiency: <u>75%</u> Ave haul: \$1.30 /cy Load: \$0.00 /cy Stockpile: \$0.83 /cy Truck type: <u>D12</u> No. trucks: <u>1</u> Delay min.: <u>8</u> Efficiency: <u>75%</u> Production: cy/day = 1,241 Truck type: <u>D10</u> No. trucks: <u> </u> Delay min.: <u>10</u> Efficiency: <u>75%</u> Production: cy/day = 1,241							
Location 3. Cole Mountain Stockpile			Haul and Stockpile Cost			\$2.13 /cy	

HAUL and STOCKPILE COST

Location 4. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
				1.00	1.00		
Truck type: <u>D20</u> No. trucks: <u> </u> Delay min.: <u>15</u> Efficiency: <u>75%</u> Truck type: <u>D12</u> No. trucks: <u> </u> Delay min.: <u>12</u> Efficiency: <u>75%</u> Truck type: <u>D10</u> No. trucks: <u> </u> Delay min.: <u>10</u> Efficiency: <u>75%</u>							
				Ave haul: #DIV/0! /cy Load: \$0.00 /cy Stockpile: #N/A /cy Production: cy/day = 0			
Location 4.		0		Haul & Stockpile Cost		#DIV/0! /cy	

Location 5. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
							0.10
Truck type: <u>D20</u> No. trucks: <u>2</u> Delay min.: <u>15</u> Efficiency: <u>75%</u> Truck type: <u>D12</u> No. trucks: <u> </u> Delay min.: <u>12</u> Efficiency: <u>75%</u> Truck type: <u>D10</u> No. trucks: <u> </u> Delay min.: <u>10</u> Efficiency: <u>75%</u>							
				Ave haul: \$1.71 /cy Load: \$0.00 /cy Stockpile: \$0.83 /cy Production: cy/day = 1,054			
Location 5.		0		Haul & Stockpile Cost		\$2.54 /cy	

Location 6. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
				1.00	1.00		
Truck type: <u>D20</u> No. trucks: <u> </u> Delay min.: <u>15</u> Efficiency: <u>75%</u> Truck type: <u>D12</u> No. trucks: <u> </u> Delay min.: <u>12</u> Efficiency: <u>75%</u> Truck type: <u>D10</u> No. trucks: <u> </u> Delay min.: <u>10</u> Efficiency: <u>75%</u>							
				Ave haul: #DIV/0! /cy Load: \$0.00 /cy Stockpile: #N/A /cy Production: cy/day = 0			
Location 6.		0		Haul & Stockpile Cost		#DIV/0! /cy	

Projects Road Maintenance Cost Summary

Sale: Sassy Sally
Date: 23-Jan-18
By: Bryce Rodgers

Type	Equipment/Rationale			Hours	Rate	Cost
Project Work	Grader 14G			8	\$113	\$904
Final Haul	Dump Truck 12CY			2	\$89	\$178
Road	FE Loader C966			4	\$94	\$376
Maintenance	Vibratory Roller			8	\$87	\$696
	Water Truck 2,500 gallon			4	\$101	\$404
	Labor			2	\$45	\$90
Total						\$2,648

Production Rates

Grader

Vibratory Roller

Miles/day	Distance(miles)	Days
1.5	1.50	1.0
1.5	1.50	1.0

NOTE: Suess Alley Road	1.50	Miles
		Miles
		Miles
		Miles
	TOTAL=	1.50 Miles

**Sassy Sally
FY 2018
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, 3, and 4 are located in portions of Sections 13 and 24 of T4N, R9W and Portions of Sections 7 and 18 of T4N, R8W, W.M., Clatsop County, Oregon
2. **Fund Distribution: Fund:** BOF 99.99% CSL 0.01%
The percent break down for the BOF is:
Tax Code: 10-04 99%
10-02 1%
3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Stream Buffer Acres	New R/W Acres	Existing RW Acres	Net Acreage	Survey Method
1	Modified Clearcut	86	8	2	0	76	GIS
2	Partial Cut	21	2	<1	0	19	GIS
3	R/W (Out-of-unit)	2	N/A	N/A	N/A	2	Length x Width
3	R/W (In-unit)	3	N/A	N/A	N/A	3	Length x Width
4	Partial Cut	47	0	0	1	46	GIS
TOTALS		159	10	2	1	146	

4. **Cruisers and Cruise Dates:** Areas 1, 2, and 4 were cruised by Bryce Rodgers, John Choate, Cody Valencia and Ella Salkeld from January 12th through January 18th, 2018.
5. **Cruise Method and Computation:** Area 1 is a modified clearcut unit. A variable plot cruise with a 54.45 BAF for conifers and a 40 BAF was used for hardwoods was used for this Area. The plots were located on a 4 chain by 4 chain grid, with a count/grade plot ratio of 1:1. A total of 41 plots were sampled.

Area 2 is a partial cut unit. A variable plot cruise with a 40 BAF was used for this Area. The plots were located on a 3 chain by 2 chain grid, with a count/grade plot ratio of 1:1. A total of 35 plots were sampled.

Area 4 is a partial cut unit. A variable plot cruise with a 54.45 BAF for conifers and a 33.61 BAF was used for hardwoods was used for this Area. The plots were located on a 3 chain by 3 chain grid, with a count/grade plot ratio of 2:1. A total of 46 plots were sampled.

Area 3 Right-of-way volume was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Areas 1.

Cruisers used Allegro 2 data collectors that were downloaded to the Atterbury Super A.C.E. program at the Astoria District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria District office.

<u>AREA</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1	Sassy	A1	00MC, TK
2	Sassy	A2	00PC, TK, LV
4	Sassy	A4	00PC, TK, LV
3 (R/W)	Sassy	A5	R/W

Timber Description: Area 1 is an approximately 80 year old stand of Douglas-fir, with Sitka spruce, red alder, and some western hemlock. The average take Douglas-fir tree size is approximately 24 inches DBH, with an average merchantable tree height of 82 feet. The average Sitka spruce tree size is approximately 19 inches in DBH, with an average merchantable tree height of 58 feet. The average red

alder take tree size for harvest is approximately 14 inches DBH, with an average merchantable tree height of 38 feet. The average western hemlock take tree size is 16 inches in DBH, with an average height of 115 feet. The average volume per acre to be harvested (net) is approximately 47 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp.

Area 2 is approximately an 80 year old stands of Douglas-fir and red alder, with some Sitka Spruce. The average take Douglas-fir tree size is approximately 18 inches DBH, with an average merchantable tree height of 68 feet. The average take red alder tree size for harvest is approximately 17 inches DBH, with an average merchantable tree height of 56 feet. The average volume per acre to be harvested (net) is approximately 22 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp. This unit was cruised to a leave basal area of 155 square feet, with an SDI of 33.

Area 4 is an approximately 72 year old stand of Douglas-fir, with some Sitka spruce and red alder. The average take Douglas-fir tree size is approximately 22 inches DBH, with an average merchantable tree height of 85 feet. The average Sitka spruce take tree size is approximately 11 inches in DBH, with an average merchantable tree height of 23 feet. The average red alder take tree size for harvest is approximately 14 inches DBH, with an average merchantable tree height of 41 feet. The average volume per acre to be harvested (net) is approximately 12 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp. This unit was cruised to a leave basal area of 140 square feet, with an SDI of 30.

Area 3 R/W is similar to the timber description mentioned above in the timber sale Area 1. The average volume is 47 MBF/Acre (net).

Cedar is a reserved species.

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
1	50	8	53.2	8.3
2	60	8	25.9	4.4
4	50	8	73.7	10.9

The statistics are for all areas and Take and Leave trees combined based on Net BF/Acre.

7. Take Volumes by Species and Log Grades for All Sale Areas by MBF: (See "Species, Sort Grade-Board Feet Volumes (Project)", "Statistics (Project)", and the "Stand Table Summary" attached). Volumes do not include "in-growth." The majority of defect and breakage was taken out during the cruise.

Conifer

Species	DBH	Net Vol. MBF	2 Saw	3Saw	4 Saw	% D & B	% Sale
Douglas-fir	23	3,379	2,815	476	88	1.6	70
Sitka Spruce	17	820	519	206	95	1.5	17
Western Hemlock/fir	16	171	92	79			4

Hardwoods

Species	DBH	Net Vol. MBF	12"+	10-12"	8-10"	6-8"	% D & B	% Sale
Red Alder	14	444	22	189	96	137		9

TOTAL NET VOLUME	4,814 MBF
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8. Prepared by: Cody Valencia

Date: 11/28/2018

9. Approved by: 

Date: 1/14/2019

10. Attachments: Cruise Plans & Maps (9 pages)
Species, Sort, Grade Report (5 pages)
Statistics Reports (11 pages)
Stand Table Report (2 pages)
Log Stock Table Report MBF (3 pages)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Sassy Sally **Area(s)** 1

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 76 **Estimated CV%** 50 Net BF/Acre **SE% Objective** 8 Net BF/Acre

Planned Sale Volume : 5,293 MMBF **Estimated Sale Area Value/Acre:** \$17,000/Acre
(40 MBF/Ac. @ \$425/Acre)

A. Cruise Goals: (a) Grade minimum 80 conifer and 40 hardwood trees
(b) Sample 41 cruise plots (20 grade/21 count); (c) Other goals (Determine "automark"
thinning standards; X Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

- 1. Plot Cruises:** BAF 54 for Conifers, 40 for hardwoods (Full point)
Cruise Line Directions: 56°/236°
Cruise Line Spacing 4 (chains) 264 (Feet)
Grade/Count Ratio 1:1

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.
Hardwoods are measured using a 40 BAF at same plot.

C. Tree Measurements:

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

6. Species, Sort, and Grade Codes:

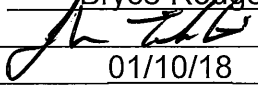
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
- Hardwoods: Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.
- All Maple Camp Run = R

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

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

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

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

Cruise Design by: Bryce Rodgers
Approved by: 
Date: 01/10/18

Sassy Sally Cruise Map

Area 1 (MC)

Plots Total: 41

Grade Plots: 20

Count Plots: 21

AZ : 56/236

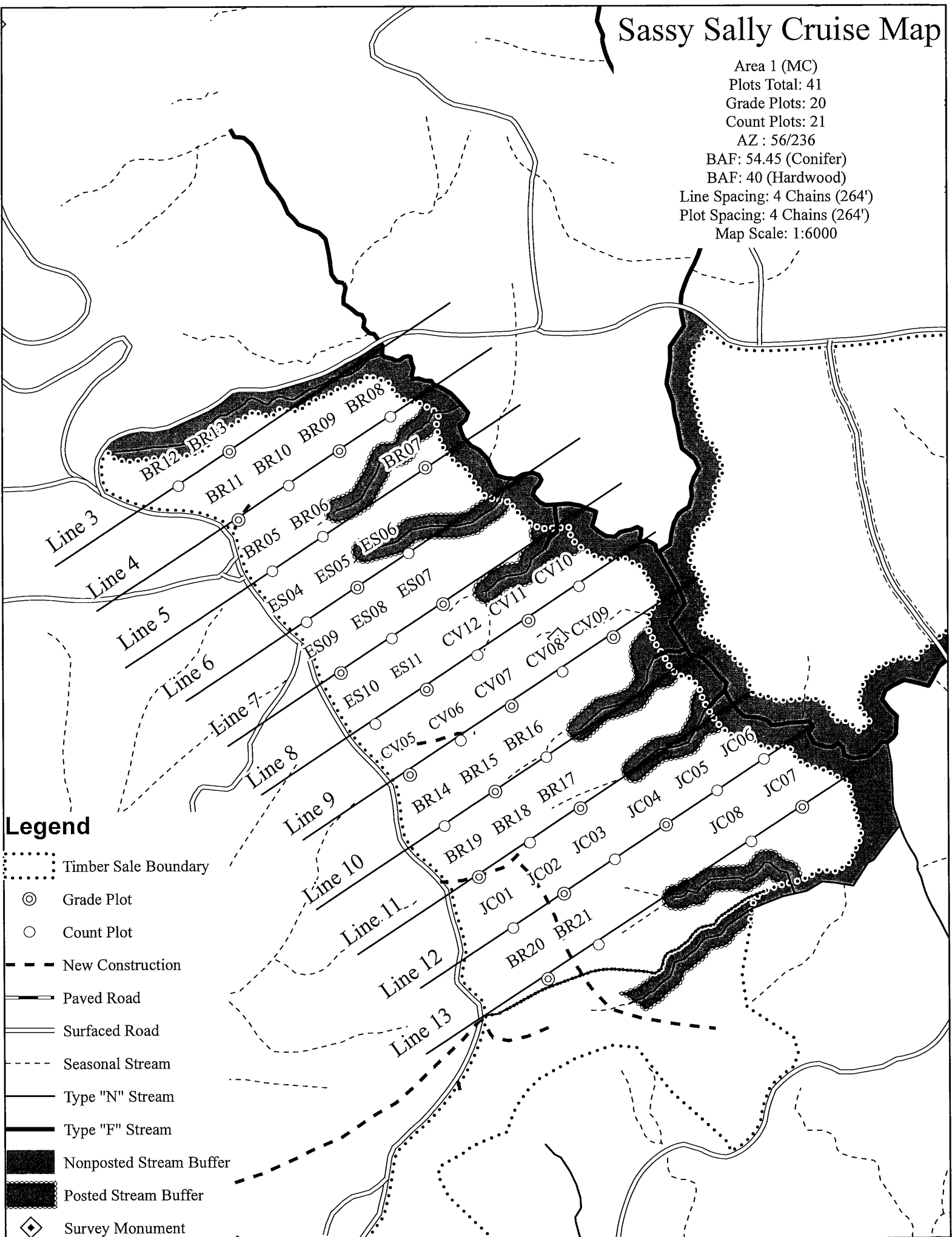
BAF: 54.45 (Conifer)

BAF: 40 (Hardwood)

Line Spacing: 4 Chains (264')

Plot Spacing: 4 Chains (264')

Map Scale: 1:6000



CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Sassy Sally **Area(s)** 2

Harvest Type: (PC) Partial Cut

Approx. Cruise Acres: 20 **Estimated CV%** 45 Net BF/Acre **SE% Objective** 8 Net BF/Acre

Planned Sale Volume : 5,293 MMBF **Estimated Sale Area Value/Acre:** \$4,500/Acre
(12 MBF/Ac. @ \$375/Acre)

A. Cruise Goals: (a) Grade minimum 100 conifer and 40 hardwood trees
(b) Sample 35 cruise plots (18 grade/ 17 count); (c) Other goals (Determine "automark"
thinning standards; X Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

1. Plot Cruises: BAF 40 (Full point)
Cruise Line Directions: 96°/276
Cruise Line Spacing 3 (chains) 198 (Feet)
Cruise Plot Spacing 2 (chains) 132 (Feet)
Grade/Count Ratio 1:1

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.
Leave approximately 3-4 trees per plot. Record trees with Blue bands as LV.

C. Tree Measurements:

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

6. Species, Sort, and Grade Codes:

- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
Hardwoods: Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.
All Maple Camp Run = R

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

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

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

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

Cruise Design by: Bryce Rodgers
Approved by: [Signature]
Date: 01/11/18

Sassy Sally Cruise Map

Area 2 (PC)

Plots Total: 35

Grade Plots: 18

Count Plots: 17

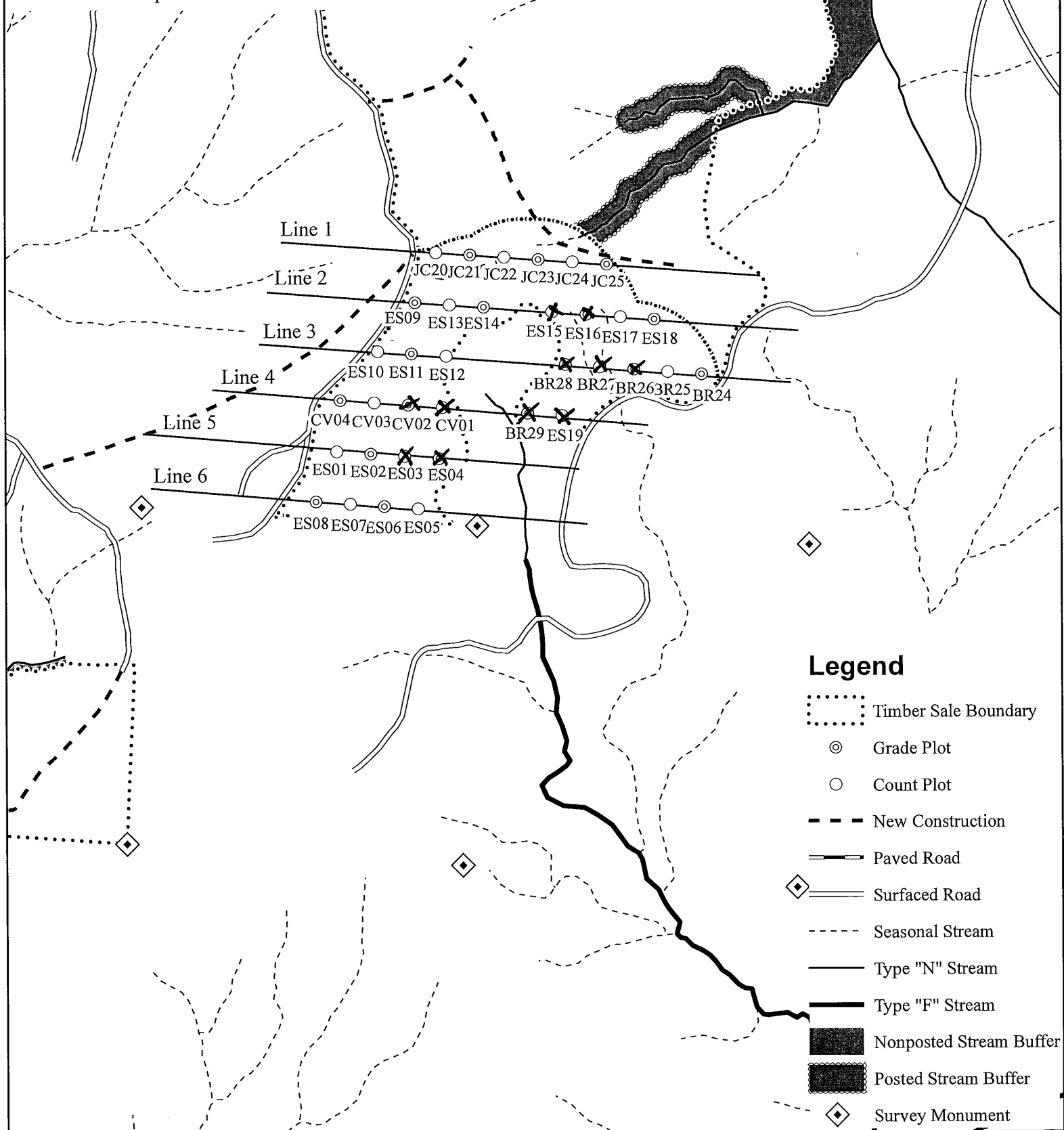
AZ : 96/276

BAF: 40 (Conifer)

Line Spacing: 3 Chains (198')

Plot Spacing: 2 Chains (132')

Map Scale: 1:6000



CRUISE DESIGN ASTORIA DISTRICT

Sale Name: Sassy Sally **Area** 4

Harvest Type: (PC) Partial Cut

Approx. Cruise Acres: 104 **Estimated CV%** 50 Net BF/Acre **SE% Objective** 8 Net BF/Acre

Planned Sale Volume : 5,293 MMBF **Estimated Sale Area Value/Acre:** \$4,875/Acre
(13 MBF/Ac. @ \$375/Acre)

A. Cruise Goals: (a) Grade minimum 70 conifer and 30 hardwood trees
(b) Sample 45 cruise plots (15 grade/ 30 count); (c) Other goals (Determine "automark"
thinning standards; X Determine log grades for sale value; X Determine snag and leave
tree species and sizes.

B. Cruise Design:

1. **Plot Cruises:** BAF 54.44 for Conifers, 33.61 for hardwoods (Full point)
Cruise Line Directions: Area 4 0°/180°
Cruise Line Spacing 3 (chains) 198 (Feet)
Cruise Plot Spacing 3 (chains) 198 (Feet)
Grade/Count Ratio 2:1

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.
Basal Area leave target is 130 sq. ft. Cruiser needs to select 2.5 conifer leave trees per plot.

C. Tree Measurements:

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

6. Species, Sort, and Grade Codes:

- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: Use code "1" (Domestic).
- C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull
Hardwoods: Alder Grades: 12" + = 1 Sawmill; 10"-12" = 2 Sawmill; 10"-8" = 3 Sawmill; and 8"-6" 4 Sawmill, or R = Camp Run; 0 = Cull.
All Maple Camp Run = R

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

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

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

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

Cruise Design by: Bryce Rodgers
Approved by: [Signature]
Date: 01/17/18

Sassy Sally Cruise Map

Area 4 (PC)

Plots Total: 45

Grade Plots: 15

Count Plots: 30

AZ: 0/180

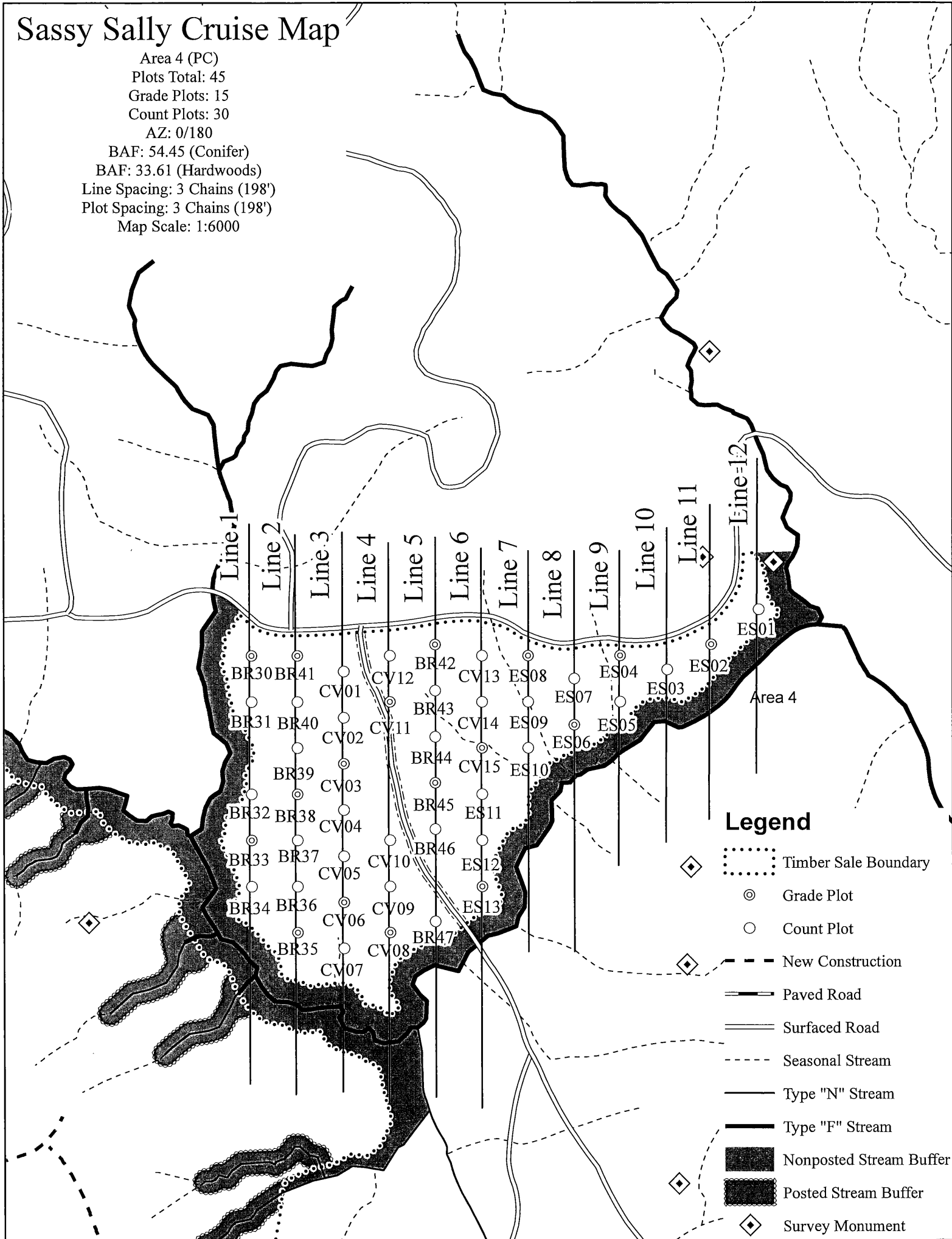
BAF: 54.45 (Conifer)

BAF: 33.61 (Hardwoods)

Line Spacing: 3 Chains (198')

Plot Spacing: 3 Chains (198')

Map Scale: 1:6000



Legend

- Timber Sale Boundary
- Grade Plot
- Count Plot
- New Construction
- Paved Road
- Surfaced Road
- Seasonal Stream
- Type "N" Stream
- Type "F" Stream
- Nonposted Stream Buffer
- Posted Stream Buffer
- Survey Monument

TC		PSPCSTGR Species, Sort Grade - Board Foot Volumes (Project)																	
T04N R09W S24 TyTAKE THRU T04N R09W S24 TyRW				Project: SASSY										Page 1					
				Acres 146.00										Date 11/28/2018 Time 11:17:24AM					
Spp	S So Gr T rt ad	%	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
		Net BdFt	Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
A	DOCU														12	13		0.00	2.4
A	DO1S	4		151	151	22			100		84			16	21	12	116	1.38	1.3
A	DO2S	43		1,295	1,295	189		73	27			23	2	76	36	11	161	1.23	8.1
A	DO3S	22		659	659	96		100			6	53	25	16	30	8	67	0.69	9.8
A	DO4S	31		938	938	137		100			64	10	7	19	21	7	34	0.55	28.0
A Totals		9		3,044	3,044	444		83	17		25	24	8	42	25	8	61	0.75	49.6
S	DO2S	63	.9	3,589	3,557	519			31	69	1		2	98	39	17	458	2.60	7.8
S	DO3S	25	3.5	1,463	1,411	206		63	15	21	1	1	17	81	36	10	153	1.26	9.2
S	DO4S	12		649	649	95		100			60	35	5		20	7	30	0.54	21.8
S Totals		17	1.5	5,700	5,617	820		27	24	49	8	4	6	82	28	10	145	1.35	38.8
D	DOCU														11	16		0.00	1.9
D	DO2S	83	1.7	19,622	19,281	2,815		0	30	70	1	0	3	96	39	17	478	2.68	40.3
D	DO3S	14	.7	3,285	3,261	476		97	3		4	11	23	62	34	9	95	0.83	34.4
D	DO4S	3	.2	606	604	88		100			40	41	2	17	21	7	31	0.53	19.3
D Totals		70	1.6	23,513	23,146	3,379		17	26	58	3	3	5	89	33	12	241	1.69	95.9
H	DO2S	54		633	633	92			100				100		40	12	200	1.23	3.2
H	DO3S	46		538	538	79		100					29	71	36	8	85	0.56	6.3
H Totals		4		1,171	1,171	171		46	54				14	86	37	9	123	0.79	9.5
Totals			1.3	33,429	32,979	4,814	4,815	26	25	49	6	5	6	83	30	10	170	1.37	193.7

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)												Page		1				
				Project: SASSY												Date		11/28/2018				
																Time		10:52:57AM				
T04N R09W S24 TTAKE										T04N R09W S24 TTAKE												
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees				CuFt		BdFt		
04N		09W		24		A1		TAKE		76.00		41		89				1		W		
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln Dia Bd CF/ Ft In Ft Lf						
D	DO	CU															10	18		0.00		2.7
D	DO	2S	87	1.9	28,025	27,483	2,089			27	73		2		3	96	38	17	507	2.83		54.2
D	DO	3S	10	.6	3,222	3,202	243		99	1			7	14	34	45	32	9	95	0.89		33.8
D	DO	4S	3		755	755	57		100				30	46		25	24	7	36	0.55		21.0
D Totals			67	1.8	32,002	31,440	2,389		12	24	64		3	3	6	89	33	13	281	1.93		111.8
S	DO	2S	66	.9	6,469	6,411	487			31	69		1		2	98	39	17	458	2.60		14.0
S	DO	3S	27	3.5	2,637	2,544	193		63	15	21		1	1	17	81	36	10	153	1.26		16.6
S	DO	4S	7		646	646	49		100				84	6	10		18	7	29	0.54		22.6
S Totals			20	1.5	9,751	9,601	730		24	25	52		6	1	6	87	29	10	180	1.54		53.3
A	DO	CU															12	13		0.00		3.9
A	DO	1S	4		197	197	15			100			100				20	12	100	1.25		2.0
A	DO	2S	55		2,242	2,242	170		74	26				24		76	36	11	161	1.24		13.9
A	DO	3S	13		515	515	39		100				13	72		15	28	8	59	0.70		8.7
A	DO	4S	28		1,131	1,131	86		100				81	9	10		19	7	31	0.49		37.0
A Totals			9		4,084	4,084	310		81	19			29	24	3	44	23	8	62	0.77		65.6
H	DO	2S	54		1,141	1,141	87			100						100	40	12	200	1.23		5.7
H	DO	3S	46		970	970	74		100						29	71	36	8	85	0.56		11.4
H Totals			4		2,112	2,112	160		46	54					14	86	37	9	123	0.79		17.1
Type Totals				1.5	47,949	47,237	3,590		22	25	53		6	4	6	84	30	11	191	1.51		247.8

T	Species, Sort Grade - Board Foot Volumes (Type)														Page 1					
	Project: SASSY														Date 11/28/2018					
															Time 10:55:38AM					
T04N R09W S24 TTAKE														T04N R09W S24 TTAKE						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
04N	09W	24	A2	TAKE	19.00	35	68	1	W											
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/ Lf
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		
D DO CU																16	9		0.00	2.9
D DO 2S			59	1.8	12,345	12,122	230			70	30	2	1	2	96	39	14	316	1.94	38.3
D DO 3S			36	.7	7,220	7,172	136		93	7		1	2	11	86	37	8	94	0.73	76.0
D DO 4S			5	1.0	949	940	18		100			46	44	10		20	6	27	0.48	35.1
D Totals			93	1.4	20,515	20,234	384		38	45	18	3	3	5	88	34	9	133	1.05	152.2
A DO CU																10	13		0.00	1.4
A DO 1S			20		323	323	6			100		42			58	26	14	196	1.88	1.6
A DO 2S			24		398	398	8		55	45				45	55	36	11	154	1.10	2.6
A DO 3S			42		665	665	13		100			3	22		75	36	9	107	0.91	6.2
A DO 4S			14		221	221	4		100			67	15		18	21	6	26	0.61	8.5
A Totals			7		1,607	1,607	31		69	31		19	11	11	59	27	9	79	0.90	20.4
Type Totals				1.3	22,121	21,841	415		40	44	17	5	4	6	86	33	9	127	1.03	172.6

T		Species, Sort Grade - Board Foot Volumes (Type)										Page 1								
TSPCSTGR		Project: SASSY										Date	11/28/2018							
												Time	10:56:12AM							
T04N R09W S24 TTAKE										T04N R09W S24 TTAKE										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
04N	09W	24	A4	TAKE	46.00	46	30	1	W											
S So Gr T rt ad Spp		%	Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln Dia Bd CF/ Ft In Ft Lf				
D	DO	2S	79	.5	7,832	7,795	359	2	23	75		2	98	40	17	469	2.54	16.6		
D	DO	3S	18	1.2	1,771	1,749	80	100				16	8	76	36	8	97	0.80	18.1	
D	DO	4S	3		201	201	9	100			100				13	7	20	0.52	9.8	
D	Totals		78	.6	9,804	9,745	448	22	18	60		2	3	3	92	32	11	219	1.57	44.5
A	DO	3S	50		912	912	42	100				43	57		32	7	69	0.63	13.3	
A	DO	4S	50		895	895	41	100			27	13		61	29	7	45	0.68	20.1	
A	Totals		14		1,807	1,807	83	100			13	28	29	30	30	7	54	0.66	33.4	
S	DO	4S	100		922	922	42	100			30	70			22	6	32	0.54	29.2	
S	Totals		7		922	922	42	100			30	70			22	6	32	0.54	29.2	
Type Totals					.5	12,532	12,474	574	39	14	47	6	11	6	76	29	9	117	1.06	107.0

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page		1											
				Project:		SASSY						Date		11/28/2018													
												Time		11:17:48AM													
T04N R09W S24 TRW														T04N R09W S24 TRW													
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt									
04N		09W		24		A5		RW		5.00		41		91		1		W									
S So Gr T rt ad Spp		% Net BdFt		Bd. Ft. per Acre Def%GrossNet			Total Net MBF		Percent Net Board Foot Volume								Average Log				Logs Per /Acre						
									Log Scale Dia.				Log Length				Ln Dia Bd CF/ Ft In Ft Lf										
D		DO		CU											10 18				0.00		2.7						
D		DO		2S		87		1.9 28,025 27,483		137		27 73				2 3 96				38 17 507 2.83				54.2			
D		DO		3S		10		.6 3,222 3,202		16		99 1				7 14 34 45				32 9 95 0.89				33.8			
D		DO		4S		3		755 755		4		100				30 46 25				24 7 36 0.55				21.0			
D		Totals				67		1.8 32,002 31,440		157		12 24 64				3 3 6 89				33 13 281 1.93				111.8			
S		DO		2S		66		.9 6,469 6,411		32		31 69				1 2 98				39 17 458 2.60				14.0			
S		DO		3S		27		3.5 2,637 2,544		13		63 15 21				1 1 17 81				36 10 153 1.26				16.6			
S		DO		4S		7		646 646		3		100				84 6 10				18 7 29 0.54				22.6			
S		Totals				20		1.5 9,751 9,601		48		24 25 52				6 1 6 87				29 10 180 1.54				53.3			
A		DO		CU																12 13				0.00		3.9	
A		DO		1S		4		197 197		1		100				100				20 12 100 1.25				2.0			
A		DO		2S		55		2,242 2,242		11		74 26				24 76				36 11 161 1.24				13.9			
A		DO		3S		13		515 515		3		100				13 72 15				28 8 59 0.70				8.7			
A		DO		4S		28		1,131 1,131		6		100				81 9 10				19 7 31 0.49				37.0			
A		Totals				9		4,084 4,084		20		81 19				29 24 3 44				23 8 62 0.77				65.6			
H		DO		2S		54		1,141 1,141		6		100				100				40 12 200 1.23				5.7			
H		DO		3S		46		970 970		5		100				29 71				36 8 85 0.56				11.4			
H		Totals				4		2,112 2,112		11		46 54				14 86				37 9 123 0.79				17.1			
Type Totals								1.5 47,949 47,237		236		22 25 53				6 4 6 84				30 11 191 1.51				247.8			

TC PSTATS			PROJECT STATISTICS						PAGE	1		
			PROJECT			SASSY			DATE	12/31/2018		
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
04N	09	24	A1	TAKE		141.00		122	436	1	W	
04N	09W	24	A2	TAKE								
04N	09W	24	A4	TAKE								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL			122	436	3.6							
CRUISE			52	186	3.6	14,495		1.3				
DBH COUNT												
REFOREST												
COUNT			58	249	4.3							
BLANKS			12									
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			120	41.6	22.7	79	24.6	117.2	23,212	22,852	5,301	5,301
R ALDER			37	33.4	13.7	40	9.3	34.4	3,007	3,007	921	921
S SPRUCE			28	24.7	16.5	44	9.0	36.6	5,557	5,476	1,413	1,413
WHEMLOCK			1	3.1	16.0	115	1.1	4.3	1,138	1,138	274	274
TOTAL			186	102.8	18.5	59	44.7	192.5	32,914	32,474	7,908	7,908
CONFIDENCE LIMITS OF THE SAMPLE												
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR												
CL	68.1	COEFF	SAMPLE TREES - BF						# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15		
DOUG FIR			88.1	8.0	670	729	787					
R ALDER			70.2	11.5	107	121	135					
S SPRUCE			105.6	20.3	447	561	675					
WHEMLOCK												
TOTAL			105.4	7.7	536	581	626	443	111	49		
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			114.4	10.3	37	42	46					
R ALDER			181.8	16.4	28	33	39					
S SPRUCE			247.4	22.4	19	25	30					
WHEMLOCK			632.4	57.2	1	3	5					
TOTAL			111.0	10.0	92	103	113	492	123	55		
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			121.4	11.0	104	117	130					
R ALDER			166.7	15.1	29	34	40					
S SPRUCE			285.1	25.8	27	37	46					
WHEMLOCK			632.4	57.2	2	4	7					
TOTAL			106.6	9.6	174	193	211	454	114	50		
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			127.8	11.6	20,210	22,852	25,494					
R ALDER			174.5	15.8	2,533	3,007	3,482					
S SPRUCE			364.2	32.9	3,672	5,476	7,280					
WHEMLOCK			632.4	57.2	487	1,138	1,789					
TOTAL			122.6	11.1	28,871	32,474	36,076	601	150	67		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A1	00MC	76.00	41	215	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		41	215	5.2						
CRUISE		20	90	4.5	9,895		.9			
DBH COUNT										
REFOREST										
COUNT		21	123	5.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	47	46.7	24.7	82	31.3	155.4	32,002	31,440	7,133	7,133
S SPRUCE	24	28.2	19.0	58	12.8	55.8	9,751	9,601	2,409	2,409
R ALDER	16	43.5	13.6	38	11.9	43.9	4,084	4,084	1,186	1,186
WHEMLOCK	1	5.7	16.0	115	2.0	8.0	2,112	2,112	508	508
SNAG	2	6.0	14.2	37	1.8	6.6				
TOTAL	90	130.2	19.5	61	61.1	269.7	47,949	47,237	11,236	11,236
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUG FIR	69.5	10.1	1,001	1,114	1,226					
S SPRUCE	91.9	19.1	525	649	773					
R ALDER	69.0	17.8	109	133	156					
WHEMLOCK										
SNAG										
TOTAL	95.4	10.1	704	782	861		364	91	40	
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	76.7	12.0	41	47	52					
S SPRUCE	194.6	30.4	20	28	37					
R ALDER	126.5	19.7	35	44	52					
WHEMLOCK	360.3	56.2	2	6	9					
SNAG	298.6	46.6	3	6	9					
TOTAL	68.6	10.7	116	130	144		188	47	21	
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	66.3	10.3	139	155	171					
S SPRUCE	184.6	28.8	40	56	72					
R ALDER	114.9	17.9	36	44	52					
WHEMLOCK	360.3	56.2	3	8	12					
SNAG	271.7	42.4	4	7	9					
TOTAL	44.2	6.9	251	270	288		78	19	9	
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUG FIR	66.2	10.3	28,194	31,440	34,687					
S SPRUCE	210.3	32.8	6,451	9,601	12,751					
R ALDER	113.2	17.7	3,363	4,084	4,805					
WHEMLOCK	360.3	56.2	924	2,112	3,299					
SNAG										
TOTAL	53.2	8.3	43,319	47,237	51,155		113	28	13	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A1	TAKE	76.00	41	210	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	41	210	5.1							
CRUISE	20	88	4.4		9,439		.9			
DBH COUNT										
REFOREST										
COUNT	21	121	5.8							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	47	46.7	24.7	82	31.3	155.4	32,002	31,440	7,133	7,133
S SPRUCE	24	28.2	19.0	58	12.8	55.8	9,751	9,601	2,409	2,409
R ALDER	16	43.5	13.6	38	11.9	43.9	4,084	4,084	1,186	1,186
WHEMLOCK	1	5.7	16.0	115	2.0	8.0	2,112	2,112	508	508
TOTAL	88	124.2	19.7	63	59.3	263.0	47,949	47,237	11,236	11,236
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUG FIR	69.5	10.1	1,001	1,114	1,226					
S SPRUCE	91.9	19.1	525	649	773					
R ALDER	69.0	17.8	109	133	156					
WHEMLOCK										
TOTAL	93.2	9.9	721	800	880		347	87	39	
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	76.7	12.0	41	47	52					
S SPRUCE	194.6	30.4	20	28	37					
R ALDER	126.5	19.7	35	44	52					
WHEMLOCK	360.3	56.2	2	6	9					
TOTAL	71.3	11.1	110	124	138		203	51	23	
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	66.3	10.3	139	155	171					
S SPRUCE	184.6	28.8	40	56	72					
R ALDER	114.9	17.9	36	44	52					
WHEMLOCK	360.3	56.2	3	8	12					
TOTAL	46.5	7.3	244	263	282		86	22	10	
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUG FIR	66.2	10.3	28,194	31,440	34,687					
S SPRUCE	210.3	32.8	6,451	9,601	12,751					
R ALDER	113.2	17.7	3,363	4,084	4,805					
WHEMLOCK	360.3	56.2	924	2,112	3,299					
TOTAL	53.2	8.3	43,319	47,237	51,155		113	28	13	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT SASSY				DATE	11/28/2018	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A2	PC	19.00	35	279	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL				35	279	8.0				
CRUISE				18	145	8.1	2,687	5.4		
DBH COUNT										
REFOREST										
COUNT				17	133	7.8				
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV		66	39.1	25.9	93	28.1	142.9	29,750	29,518	6,745
DOUG FIR		59	78.4	17.7	68	31.8	133.7	20,515	20,234	5,340
R ALDER		9	10.5	16.7	56	3.9	16.0	1,607	1,607	494
SNAG		7	7.3	20.0	27	3.6	16.0			
ALDRLEAV		3	5.2	14.2	61	1.5	5.7	660	660	187
SPRUCELV		1	1.0	21.0	56	0.5	2.3	209	209	74
TOTAL		145	141.4	20.3	71	70.3	316.6	52,740	52,228	12,840
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		66.6	8.2	950	1,034	1,119				
DOUG FIR		75.6	9.8	360	399	438				
R ALDER		57.5	20.3	133	167	200				
SNAG										
ALDRLEAV		46.5	32.1	97	143	189				
SPRUCELV										
TOTAL		95.9	8.0	596	648	700	368	92	41	
CL:	68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUGLEAV		37.8	6.4	37	39	42				
DOUG FIR		89.5	15.1	67	78	90				
R ALDER		287.6	48.6	5	10	16				
SNAG		160.5	27.1	5	7	9				
ALDRLEAV		350.2	59.1	2	5	8				
SPRUCELV		412.1	69.6	0	1	2				
TOTAL		50.9	8.6	129	141	154	104	26	12	
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		19.5	3.3	138	143	148				
DOUG FIR		66.1	11.2	119	134	149				
R ALDER		258.7	43.7	9	16	23				
SNAG		138.3	23.4	12	16	20				
ALDRLEAV		345.6	58.4	2	6	9				
SPRUCELV		412.1	69.6	1	2	4				
TOTAL		26.6	4.5	302	317	331	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	
DOUGLEAV		21.1	3.6	28,466	29,518	30,570				
DOUG FIR		66.1	11.2	17,975	20,234	22,493				
R ALDER		277.7	46.9	853	1,607	2,360				
SNAG										

TC TSTATS				STATISTICS			PAGE	2	
				PROJECT	SASSY		DATE	11/28/2018	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	24	A2	PC	19.00	35	279	1	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
ALDRLEAV		340.8	57.6	280	660	1,040			
SPRUCELV		412.1	69.6	64	209	355			
TOTAL		25.9	4.4	49,946	52,228	54,510	27	7	3

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A2	LV	19.00	35	146	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	35	146	4.2							
CRUISE	18	77	4.3		999		7.7			
DBH COUNT										
REFOREST										
COUNT	17	68	4.0							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	66	39.1	25.9	93	28.1	142.9	29,750	29,518	6,745	6,745
SNAG	7	7.3	20.0	27	3.6	16.0				
ALDRLEAV	3	5.2	14.2	61	1.5	5.7	660	660	187	187
SPRUCELV	1	1.0	21.0	56	0.5	2.3	209	209	74	74
TOTAL	77	52.6	24.1	80	34.0	166.9	30,619	30,387	7,006	7,006
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUGLEAV	66.6	8.2	950	1,034	1,119					
SNAG										
ALDRLEAV	46.5	32.1	97	143	189					
SPRUCELV										
TOTAL	80.9	9.2	812	895	977		262	65	29	
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUGLEAV	37.8	6.4	37	39	42					
SNAG	160.5	27.1	5	7	9					
ALDRLEAV	350.2	59.1	2	5	8					
SPRUCELV	412.1	69.6	0	1	2					
TOTAL	31.4	5.3	50	53	55		39	10	4	
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	19.5	3.3	138	143	148					
SNAG	138.3	23.4	12	16	20					
ALDRLEAV	345.6	58.4	2	6	9					
SPRUCELV	412.1	69.6	1	2	4					
TOTAL	10.9	1.8	164	167	170		5	1	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	
DOUGLEAV	21.1	3.6	28,466	29,518	30,570					
SNAG										
ALDRLEAV	340.8	57.6	280	660	1,040					
SPRUCELV	412.1	69.6	64	209	355					
TOTAL	13.7	2.3	29,684	30,387	31,090		7	2	1	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A2	TAKE	19.00	35	133	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
PLOTS		TREES								
TOTAL		35	133	3.8						
CRUISE		17	68	4.0		1,688	4.0			
DBH COUNT										
REFOREST										
COUNT		16	65	4.1						
BLANKS		2								
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR		59	78.4	17.7	68	31.8	133.7	20,515	20,234	5,340
R ALDER		9	10.5	16.7	56	3.9	16.0	1,607	1,607	494
TOTAL		68	88.8	17.6	67	35.7	149.7	22,121	21,841	5,834
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		75.6	9.8	360	399	438				
R ALDER		57.5	20.3	133	167	200				
TOTAL		79.7	9.7	333	368	404	254	63	28	
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		89.5	15.1	67	78	90				
R ALDER		287.6	48.6	5	10	16				
TOTAL		74.4	12.6	78	89	100	221	55	25	
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		66.1	11.2	119	134	149				
R ALDER		258.7	43.7	9	16	23				
TOTAL		52.8	8.9	136	150	163	111	28	12	
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		66.1	11.2	17,975	20,234	22,493				
R ALDER		277.7	46.9	853	1,607	2,360				
TOTAL		55.1	9.3	19,809	21,841	23,873	121	30	13	

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A4	PC	46.00	46	224	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		46	224	4.9						
CRUISE		17	81	4.8	6,056	1.3				
DBH COUNT										
REFOREST										
COUNT		27	143	5.3						
BLANKS		2								
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	34	37.5	23.4	69	23.2	112.4	20,676	20,445	4,790	4,790
DOUG FIR	14	17.8	22.1	85	10.1	47.3	9,804	9,745	2,257	2,257
R ALDER	12	26.2	13.6	41	7.1	26.3	1,807	1,807	658	658
S SPRUCE	4	29.2	11.2	23	6.0	20.1	922	922	351	351
SPRUCELV	9	3.7	30.6	62	3.4	18.9	2,551	2,539	664	664
SNAG	5	2.9	25.8	67	2.1	10.7				
ALDRLEAV	2	12.7	9.5	14	2.0	6.2	210	210	42	42
HEMLEAV	1	1.6	20.0	59	0.8	3.6	374	374	112	112
TOTAL	81	131.7	18.5	50	57.1	245.5	36,344	36,043	8,874	8,874
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	70.5	12.1	1,056	1,201	1,346					
DOUG FIR	55.1	15.3	699	825	951					
R ALDER	48.5	14.6	62	73	83					
S SPRUCE	15.4	8.8	30	33	35					
SPRUCELV	82.5	29.1	876	1,236	1,595					
SNAG										
ALDRLEAV	141.4	132.4		15	35					
HEMLEAV										
TOTAL	104.0	11.5	707	800	892	432	108	48		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	90.2	13.3	33	37	42					
DOUG FIR	157.9	23.3	14	18	22					
R ALDER	131.7	19.4	21	26	31					
S SPRUCE	190.3	28.0	21	29	37					
SPRUCELV	207.0	30.5	3	4	5					
SNAG	299.6	44.1	2	3	4					
ALDRLEAV	325.5	48.0	7	13	19					
HEMLEAV	382.8	56.4	1	2	3					
TOTAL	71.8	10.6	118	132	146	206	51	23		
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	56.3	8.3	103	112	122					
DOUG FIR	169.0	24.9	36	47	59					
R ALDER	128.9	19.0	21	26	31					
S SPRUCE	192.3	28.3	14	20	26					
SPRUCELV	184.0	27.1	14	19	24					
SNAG	277.2	40.8	6	11	15					
ALDRLEAV	325.3	47.9	3	6	9					

TC TSTATS				STATISTICS				PAGE	2
				PROJECT		SASSY		DATE	11/28/2018
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	24	A4	PC	46.00	46	224	1	W
CL: 68.1 %				BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0				LOW	AVG	HIGH	5	10	15
HEMLEAV		382.8	56.4	2	4	6			
TOTAL		54.8	8.1	226	246	265	120	30	13
CL: 68.1 %				NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0				LOW	AVG	HIGH	5	10	15
DOUGLEAV		60.1	8.9	18,634	20,445	22,256			
DOUG FIR		180.0	26.5	7,161	9,745	12,329			
R ALDER		133.5	19.7	1,451	1,807	2,162			
S SPRUCE		191.0	28.1	663	922	1,182			
SPRUCELV		178.0	26.2	1,873	2,539	3,205			
SNAG									
ALDRLEAV		344.8	50.8	103	210	317			
HEMLEAV		382.8	56.4	163	374	585			
TOTAL		73.7	10.9	32,130	36,043	39,956	217	54	24

TC TSTATS				STATISTICS				PAGE 1													
				PROJECT	SASSY	DATE 11/28/2018															
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt												
04N	09W	24	A4	TAKE	46.00	46	93	1	W												
				TREES	ESTIMATED	PERCENT															
				PER PLOT	TOTAL	SAMPLE															
					TREES	TREES															
PLOTS		TREES																			
TOTAL		46		93		2.0															
CRUISE		15		30		2.0		3,368 .9													
DBH COUNT																					
REFOREST																					
COUNT		21		63		3.0															
BLANKS		10																			
100 %																					
STAND SUMMARY																					
SAMPLE		TREES		AVG		BOLE		REL		BASAL		GROSS		NET		GROSS		NET			
TREES		/ACRE		DBH		LEN		DEN		AREA		BF/AC		BF/AC		CF/AC		CF/AC			
DOUG FIR		14		17.8		22.1		85		10.1		47.3		9,804		9,745		2,257		2,257	
R ALDER		12		26.2		13.6		41		7.1		26.3		1,807		1,807		658		658	
S SPRUCE		4		29.2		11.2		23		6.0		20.1		922		922		351		351	
TOTAL		30		73.2		15.3		45		24.0		93.8		12,532		12,474		3,265		3,265	
CONFIDENCE LIMITS OF THE SAMPLE										68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %		COEFF		SAMPLE TREES - BF								# OF TREES REQ.		INF. POP.							
SD: 1.0		VAR.%		S.E.%		LOW		AVG		HIGH		5 10		15							
DOUG FIR		55.1		15.3		699		825		951											
R ALDER		48.5		14.6		62		73		83											
S SPRUCE		15.4		8.8		30		33		35											
TOTAL		117.8		21.9		327		418		510		574 143		64							
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		157.9		23.3		14		18		22											
R ALDER		131.7		19.4		21		26		31											
S SPRUCE		190.3		28.0		21		29		37											
TOTAL		91.8		13.5		63		73		83		337 84		37							
CL: 68.1 %		COEFF		BASAL AREA/ACRE								# OF PLOTS REQ.		INF. POP.							
SD: 1.0		VAR.%		S.E.%		LOW		AVG		HIGH		5 10		15							
DOUG FIR		169.0		24.9		36		47		59											
R ALDER		128.9		19.0		21		26		31											
S SPRUCE		192.3		28.3		14		20		26											
TOTAL		94.1		13.9		81		94		107		353 88		39							
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		180.0		26.5		7,161		9,745		12,329											
R ALDER		133.5		19.7		1,451		1,807		2,162											
S SPRUCE		191.0		28.1		663		922		1,182											
TOTAL		139.5		20.6		9,910		12,474		15,038		778 194		86							

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A4	LV	46.00	46	131	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	46	131	2.8							
CRUISE	17	51	3.0		2,688		1.9			
DBH COUNT										
REFOREST										
COUNT	27	80	3.0							
BLANKS	2									
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUGLEAV	34	37.5	23.4	69	23.2	112.4	20,676	20,445	4,790	4,790
SPRUCELV	9	3.7	30.6	62	3.4	18.9	2,551	2,539	664	664
SNAG	5	2.9	25.8	67	2.1	10.7				
ALDRLEAV	2	12.7	9.5	14	2.0	6.2	210	210	42	42
HEMLEAV	1	1.6	20.0	59	0.8	3.6	374	374	112	112
TOTAL	51	58.4	21.8	56	32.5	151.8	23,811	23,569	5,609	5,609
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	70.5	12.1	1,056	1,201	1,346					
SPRUCELV	82.5	29.1	876	1,236	1,595					
SNAG										
ALDRLEAV	141.4	132.4		15	35					
HEMLEAV										
TOTAL	88.8	12.4	897	1,024	1,151	315	79	35		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUGLEAV	90.2	13.3	33	37	42					
SPRUCELV	207.0	30.5	3	4	5					
SNAG	299.6	44.1	2	3	4					
ALDRLEAV	325.5	48.0	7	13	19					
HEMLEAV	382.8	56.4	1	2	3					
TOTAL	85.1	12.5	51	58	66	289	72	32		
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	56.3	8.3	103	112	122					
SPRUCELV	184.0	27.1	14	19	24					
SNAG	277.2	40.8	6	11	15					
ALDRLEAV	325.3	47.9	3	6	9					
HEMLEAV	382.8	56.4	2	4	6					
TOTAL	40.6	6.0	143	152	161	66	16	7		
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	60.1	8.9	18,634	20,445	22,256					
SPRUCELV	178.0	26.2	1,873	2,539	3,205					
SNAG										
ALDRLEAV	344.8	50.8	103	210	317					
HEMLEAV	382.8	56.4	163	374	585					
TOTAL	46.8	6.9	21,945	23,569	25,193	87	22	10		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT	SASSY	DATE 11/28/2018				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
04N	09W	24	A5	RW	5.00	41	215	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
		PLOTS	TREES							
TOTAL		41	215	5.2						
CRUISE		20	90	4.5	651		13.8			
DBH COUNT										
REFOREST										
COUNT		21	123	5.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	47	46.7	24.7	82	31.3	155.4	32,002	31,440	7,133	7,133
S SPRUCE	24	28.2	19.0	58	12.8	55.8	9,751	9,601	2,409	2,409
R ALDER	16	43.5	13.6	38	11.9	43.9	4,084	4,084	1,186	1,186
WHEMLOCK	1	5.7	16.0	115	2.0	8.0	2,112	2,112	508	508
SNAG	2	6.0	14.2	37	1.8	6.6				
TOTAL	90	130.2	19.5	61	61.1	269.7	47,949	47,237	11,236	11,236
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUG FIR	69.5	10.1	1,001	1,114	1,226					
S SPRUCE	91.9	19.1	525	649	773					
R ALDER	69.0	17.8	109	133	156					
WHEMLOCK										
SNAG										
TOTAL	95.4	10.1	704	782	861		364	91	40	
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	76.7	12.0	41	47	52					
S SPRUCE	194.6	30.4	20	28	37					
R ALDER	126.5	19.7	35	44	52					
WHEMLOCK	360.3	56.2	2	6	9					
SNAG	298.6	46.6	3	6	9					
TOTAL	68.6	10.7	116	130	144		188	47	21	
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	66.3	10.3	139	155	171					
S SPRUCE	184.6	28.8	40	56	72					
R ALDER	114.9	17.9	36	44	52					
WHEMLOCK	360.3	56.2	3	8	12					
SNAG	271.7	42.4	4	7	9					
TOTAL	44.2	6.9	251	270	288		78	19	9	
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
DOUG FIR	66.2	10.3	28,194	31,440	34,687					
S SPRUCE	210.3	32.8	6,451	9,601	12,751					
R ALDER	113.2	17.7	3,363	4,084	4,805					
WHEMLOCK	360.3	56.2	924	2,112	3,299					
SNAG										
TOTAL	53.2	8.3	43,319	47,237	51,155		113	28	13	

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		11/28/2018	
T04N R09W S24 TyTAKE THRU T04N R09W S24 TyRW				Project						SASSY				Time:		11:17:25AM	
				Acres						146.00				Grown Year:			
S Spec	T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
D		10	2	87	75	1.082	.59	1.08	14.0	60.0		15	65		22	9	
D		11	3	86	76	1.341	.88	1.34	17.3	60.0		23	80		34	12	
D		12	4	85	38	3.086	2.42	3.09	12.1	33.7		37	104		55	15	
D		13	2	91	64	1.476	1.36	2.63	13.5	39.3		35	103		52	15	
D		14	3	86	76	2.712	2.90	3.71	22.7	76.1		84	282		123	41	
D		15	6	86	99	2.456	3.01	5.15	22.9	85.3		118	440		172	64	
D		16	3	90	81	.634	.88	1.06	27.8	94.0		29	99		43	14	
D		17	6	86	92	2.401	3.78	4.99	28.8	98.9		144	493		210	72	
D		18	7	89	96	1.872	3.31	3.91	33.8	120.5		132	471		193	69	
D		19	5	86	104	1.381	2.72	2.91	37.4	123.2		109	359		159	52	
D		20	15	87	96	4.880	10.65	11.28	35.9	127.8		404	1,441		590	210	
D		21	8	88	106	1.498	3.60	3.88	38.9	149.9		151	582		220	85	
D		22	6	86	114	1.142	3.01	3.09	42.9	170.1		133	526		194	77	
D		23	4	87	100	.840	2.42	1.88	49.6	181.5		93	342		136	50	
D		24	6	87	128	1.054	3.31	3.07	53.1	218.2		163	669		238	98	
D		25	7	87	120	1.701	5.80	4.56	57.5	239.1		262	1,091		383	159	
D		26	8	86	123	1.861	6.86	5.58	56.4	237.0		315	1,323		460	193	
D		27	4	86	137	.490	1.95	1.32	74.9	316.4		99	419		145	61	
D		28	9	84	138	1.452	6.21	4.29	73.3	315.7		314	1,354		459	198	
D		29	6	87	143	1.096	5.03	3.29	82.3	378.0		271	1,243		395	182	
D		30	4	88	146	.747	3.67	2.24	91.7	448.3		206	1,005		300	147	
D		31	6	90	132	.959	5.03	2.88	89.7	449.9		258	1,295		377	189	
D		32	5	89	140	.848	4.73	2.54	99.8	491.2		254	1,249		370	182	
D		33	7	86	126	1.106	6.57	3.32	94.2	407.5		313	1,352		456	197	
D		34	4	85	125	.582	3.67	1.75	94.3	423.3		165	739		240	108	
D		35	8	86	142	1.098	7.34	3.29	116.8	570.8		385	1,880		562	275	
D		36	2	82	133	.259	1.83	.78	113.0	516.7		88	402		128	59	
D		37	3	85	129	.285	2.13	.86	119.7	557.7		102	477		150	70	
D		38	4	84	146	.466	3.67	1.40	140.0	673.3		196	941		286	137	
D		39	2	85	146	.221	1.83	.66	148.7	670.0		99	444		144	65	
D		42	2	85	146	.191	1.83	.57	170.3	850.0		97	486		142	71	
D		43	4	85	152	.364	3.67	1.09	150.8	776.7		165	848		240	124	
D		46	2	86	157	.159	1.83	.48	219.0	1133.3		104	540		152	79	
D		Totals	167	87	102	41.740	118.52	93.97	57.1	246.3		5,363	23,146		7,831	3,379	
S		10	5	85	21	7.634	4.16	7.63	8.4	30.0		64	229		93	33	
S		11	2	84	36	4.803	3.17	4.80	12.0	30.0		58	144		84	21	
S		14	3	84	50	2.689	2.87	3.89	18.6	58.6		73	228		106	33	
S		16	6	85	81	2.770	3.87	5.54	26.0	85.0		144	471		210	69	
S		18	2	80	82	.730	1.29	1.46	34.0	90.0		50	131		72	19	
S		19	2	88	89	.655	1.29	1.31	41.0	145.0		54	190		78	28	
S		20	4	87	84	1.182	2.58	2.36	42.5	132.5		100	313		147	46	
S		23	2	86	99	.447	1.29	.89	66.0	220.0		59	197		86	29	
S		24	2	86	118	.410	1.29	1.23	54.7	223.3		67	275		98	40	
S		25	2	85	135	.378	1.29	1.13	64.7	273.3		73	310		107	45	
S		26	4	84	82	.699	2.58	1.40	67.7	235.0		95	329		138	48	
S		27	2	83	111	.324	1.29	.97	62.7	253.3		61	246		89	36	
S		28	6	88	119	.905	3.87	2.41	84.6	382.5		204	923		298	135	
S		29	4	85	111	.562	2.58	1.69	75.2	321.7		127	543		185	79	
S		30	4	89	131	.525	2.58	1.58	93.3	453.3		147	714		215	104	
S		40	2	89	125	.148	1.29	.44	161.7	843.3		72	374		105	55	
S		Totals	52	85	57	24.861	37.28	38.75	37.3	144.9		1,447	5,617		2,113	820	
A		9	2	87	20	3.446	1.52	3.45	6.0	30.0		21	103		30	15	

TC PSTNDSUM		Stand Table Summary								Page 2					
										Date: 11/28/2018					
T04N R09W S24 TyTAKE THRU T04N R09W S24 TyRW					Project SASSY		Time: 11:17:25AM								
					Acres 146.00		Grown Year:								
S Spc T	Tot							Average Log		Net Net		Totals			
	Sample	FF	Av		Trees/	BA/	Logs	Net	Net	Tons/	Cu.Ft.				Bd.Ft.
	DBH	Trees	16'	Ht	Acre	Acre	Acre	Cu.Ft.	Bd.Ft.	Acre	Acre	Acre	Tons	Cunits	MBF
A	10	4	86	18	5.582	3.04	5.58	7.0	30.0		39	167		57	24
A	11	5	86	46	5.446	3.59	6.49	11.8	36.4		76	237		112	35
A	12	3	87	57	2.638	2.07	2.64	20.3	56.7		54	149		78	22
A	13	2	87	44	1.652	1.52	1.65	18.0	50.0		30	83		43	12
A	14	4	86	76	2.286	2.44	4.57	18.5	68.6		85	314		124	46
A	15	9	86	70	4.172	5.12	7.59	20.7	69.9		157	530		229	77
A	16	6	87	75	3.271	4.57	5.45	23.4	76.0		128	414		186	60
A	17	7	87	74	2.372	3.74	4.74	27.4	91.1		130	432		190	63
A	19	2	86	70	.773	1.52	1.55	32.0	100.0		49	155		72	23
A	20	2	86	100	.698	1.52	1.40	49.0	175.0		68	244		100	36
A	22	4	87	51	1.100	2.90	1.68	40.7	101.3		68	170		100	25
A	24	1	86	46	.074	.23	.07	60.0	70.0		4	5		6	1
A	25	1	87	74	.068	.23	.14	58.0	200.0		8	27		11	4
A	26	1	86	45	.187	.69	.19	68.0	70.0		13	13		19	2
A	Totals	53	87	51	33.764	34.73	47.19	19.7	64.5		930	3,044		1,357	444
H	16	2	89	153	3.166	4.42	9.50	29.7	123.3		282	1,171		411	171
H	Totals	2	89	153	3.166	4.42	9.50	29.7	123.3		282	1,171		411	171
SN	11	1	88	32	.172	.11									
SN	25	1	89	74	.033	.11									
SN	Totals	2	88	39	.206	.23									
Totals		276	86	76	103.737	195.18	189.41	42.4	174.1		8,022	32,979		11,712	4,815

TC PLOGSTVB		Log Stock Table - MBF																	
T04N R09W S24 TyTAKE THRU T04N R09W S24 TyRW						Project: SASSY		Acres 146.00										Page 1	
																		Date 11/28/2018	
																		Time 11:17:24AM	
Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39 40+
A		DO	1S	20	18		18	4.2						18					
A		DO	1S	40	4		4	.8							4				
A		DO	2S	30	43		43	9.6					43						
A		DO	2S	32	3		3	.8						3					
A		DO	2S	36	19		19	4.2						19					
A		DO	2S	40	124		124	28.0					95		30				
A		DO	3S	18	5		5	1.2			5								
A		DO	3S	20	0		0	.1				0							
A		DO	3S	28	21		21	4.7					21						
A		DO	3S	30	30		30	6.8			20		10						
A		DO	3S	32	10		10	2.2					10						
A		DO	3S	34	14		14	3.2			14								
A		DO	3S	40	16		16	3.5			6	6	3						
A		DO	4S	16	59		59	13.3			47	12							
A		DO	4S	18	1		1	.1			1								
A		DO	4S	20	28		28	6.4			28								
A		DO	4S	22	3		3	.7			3								
A		DO	4S	28	3		3	.6			3								
A		DO	4S	30	8		8	1.8			8								
A		DO	4S	34	10		10	2.1			10								
A		DO	4S	40	26		26	5.8			26								
A		Totals			444		444	9.2			171	18	182	40	33				
S		DO	2S	18	3		3	.3							3				
S		DO	2S	32	9		9	1.1						9					
S		DO	2S	36	7		7	.9						7					
S		DO	2S	38	12		12	1.4						12					
S		DO	2S	40	493		488	59.6						63	27	154	209		35
S		DO	3S	16	3		3	.3					3						
S		DO	3S	26	3		3	.3				3							
S		DO	3S	32	34		34	4.2			5	4	26						
S		DO	3S	36	11		11	1.3						11					
S		DO	3S	38	4		4	.5				4							
S		DO	3S	40	159	4.7	151	18.4			5	5	77		21	44			
S		DO	4S	12	2		2	.3				2							
S		DO	4S	14	2		2	.2					2						

TC PLOGSTVB		Log Stock Table - MBF																	
T04N R09W S24 TyTAKE THRU T04N R09W S24 TyRW						Project: SASSY		Page 2										Date 11/28/2018	
						Acres 146.00		Time 11:17:24AM											
S Spp	T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
S		DO 4S	16	26		26	3.2			21	5								
S		DO 4S	18	13		13	1.6			13									
S		DO 4S	20	14		14	1.7			14									
S		DO 4S	24	33		33	4.0			33									
S		DO 4S	32	5		5	.6			5									
S		Totals		832	1.5	820	17.0			95	23	107	102	50	198	209		35	
D		DO 2S	16	0		0	.0						0						
D		DO 2S	20	39		39	1.2						3	32		4			
D		DO 2S	30	2		2	.1						2						
D		DO 2S	32	76	1.6	75	2.2						53	9	14				
D		DO 2S	38	48		48	1.4							7			41		
D		DO 2S	40	2,700	1.8	2,651	78.4					8	247	306	764	765	472	89	
D		DO 3S	16	3		3	.1					3							
D		DO 3S	18	3		3	.1					3							
D		DO 3S	20	15		15	.4					11	4						
D		DO 3S	24	26		26	.8				1	25							
D		DO 3S	26	5		5	.1			1	4								
D		DO 3S	28	6		6	.2				6								
D		DO 3S	30	15		15	.4			5	10								
D		DO 3S	32	111	1.7	109	3.2			21	22	65							
D		DO 3S	36	36	1.8	35	1.0			29	6								
D		DO 3S	38	25		25	.7			3	13	10							
D		DO 3S	40	235		234	6.9			44	39	141	10						
D		DO 4S	12	14		14	.4			5	5	4							
D		DO 4S	14	4		4	.1			2	1	1							
D		DO 4S	16	8		8	.2			5	3								
D		DO 4S	18	3		3	.1			2	0								
D		DO 4S	20	7		7	.2			4	3								
D		DO 4S	24	17		17	.5			12	5								
D		DO 4S	26	2		2	.1			2									
D		DO 4S	28	7	2.4	7	.2			7									
D		DO 4S	30	10		10	.3			10									
D		DO 4S	34	2		2	.1			2									
D		DO 4S	38	15		15	.4			15									
D		Totals		3,433	1.6	3,379	70.2			169	119	271	318	354	777	769	513	89	
H		DO 2S	40	92		92	54.1						92						

TC PLOGSTVB				Log Stock Table - MBF															
T04N R09W S24 TyTAKE THRU T04N R09W S24 TyRW				Project: SASSY Acres 146.00												Page 3 Date 11/28/2018 Time 11:17:24AM			
S T Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
H	DO	3S	32	23		23	13.5			23									
H	DO	3S	40	55		55	32.4			55									
H	Totals			171		171	3.6			23	55		92						
Total	All Species			4,881	1.3	4,815	100.0			458	216	560	553	438	976	977	513	124	

OF TIMBER SALE CONTRACT
AT-341-2019-W00361-01

SASSY SALLY

PORTIONS OF SECTIONS 13 AND 24,
OF T4N, R9W, W.M., AND
PORTIONS OF SECTIONS 7 AND 18
OF T4N, R8W, W.M.

CLATSOP COUNTY, OREGON

Approximate Net Acreage	Acres
Area 1 (MC) -	76
Area 2 (PC) -	19
Area 3 (R/W)	5
Area 4 (PC)	46
Total Sale Acreage =	146

Logging Breakdown	Tractor	Cable
Area 1 (MC) -	63%	37%
Area 2 (PC) -	16%	84%
Area 4 (PC) -	100%	0%
Total=	70%	30%

Legend

	Ownership Boundary		Nonposted Stream Buffer
	Timber Sale Boundary		Posted Stream Buffer
	Area Boundary		Operationally Restricted Area
	Existing Surfaced Road		Reforestation Area
	Landing To Be Constructed		Controlled Felling Area
	New Construction - Surfaced		Survey Monument
	New Construction - Unsurfaced		Cable Yarding Area
	Type "N" Stream		Ground Yarding Area
	Type "F" Stream		

