



Timber Sale Appraisal
Nicolai
Sale AT-341-2018-47-

District: Astoria

Date: September 20, 2017

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,447,047.48	\$81,024.45	\$1,528,071.93
		Project Work:	\$0.00
		Advertised Value:	\$1,528,071.93



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District: Astoria

Date: September 20, 2017

Timber Description

Location: Portions of Sections 16 and 21, T7N, R6W, W. M., Clatsop County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	22	0	96
Western Hemlock / Fir	22	0	95
Alder (Red)	14	0	95

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	2,404	654	68	0	3,126
Western Hemlock / Fir	160	48	0	0	208
Alder (Red)	0	0	0	195	195
Total	2,564	702	68	195	3,529

Comments: Pond Values Used: Local Pond Values, July 2017.

Expected Markets: Warrenton, OR; Forest Grove, OR; Claskanine, OR; Longview, WA;, Chehalis, WA; Tillamook, OR; Garibaldi, OR; Mist, OR.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$1,275/\text{MBF} = \$1,520/\text{MBF} - \$245/\text{MBF}$

SCALING COST ALLOWANCE = $\$5.00/\text{MBF}$

BRANDING AND PAINTING COST ALLOWANCE = $\$2.00/\text{MBF}$

FUEL COST ALLOWANCE = $\$3.00/\text{Gallon}$

HAULING COST ALLOWANCE:

Hauling costs equivalent to \$780 daily truck cost.

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

Hand Line Pulling: $\$25/\text{MBF}$ for 2.5 acres @ 32.99 MBF/acre = $\$2,062$

Slash Piling on Ground Based Area and Landings (move-in's, materials, firewood, etc.) = $\$14,002$

Machine Wash for Invasive Species = $\$3,000$

TOTAL Other Costs (with Profit & Risk to be added) = $\$19,064$

Other Costs (No Profit & Risk added):

Time to Open Old Spur: 4 hours of dozer time @ $\$113/\text{hr} = \452

Time to Close (water-bar and block) Old Spur: 2 hours of dozer time @ $\$113/\text{hr} = \226

Time to Close Dirt Spur Off Nicolai: 2 hour of dozer time @ $\$113/\text{hr} = \226

Time to Rehab and Clear OHV Recreationa Trail: 2 hours of dozer or small backhoe time @ $\$113/\text{hr} = \226

Move-in for Dozer at $\$778 = \778

TOTAL Other Costs (No Profit & Risk added) = $\$1,908$



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Logging Conditions

Combination#: 1

Douglas - Fir	68.00%
Western Hemlock / Fir	68.00%
Alder (Red)	68.00%

Logging System: Shovel **Process:** Stroke Delimber

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 10 **bd. ft / load:** 4300

cost / mbf: \$73.77

machines: Stroke Delimber (B)

Combination#: 2

Douglas - Fir	32.00%
Western Hemlock / Fir	32.00%
Alder (Red)	32.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber

yarding distance: Short (400 ft) **downhill yarding:** No

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 8 **bd. ft / load:** 4300

cost / mbf: \$174.42

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



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Logging Costs

Operating Seasons: 2.00	Profit Risk: 10%
Project Costs: \$0.00	Other Costs (P/R): \$19,064.00
Slash Disposal: \$0.00	Other Costs: \$1,908.00

Miles of Road

Road Maintenance: \$8.17

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	3.5
Western Hemlock / Fir	\$0.00	2.0	4.1
Alder (Red)	\$0.00	2.0	3.3



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
\$105.98	\$8.50	\$2.49	\$115.89	\$5.40	\$23.83	\$0.00	\$7.00	\$0.54	\$269.63
Western Hemlock / Fir									
\$105.98	\$8.58	\$2.49	\$99.88	\$5.40	\$22.23	\$0.00	\$7.00	\$0.54	\$252.10
Alder (Red)									
\$105.98	\$8.58	\$2.49	\$124.09	\$5.40	\$24.65	\$0.00	\$7.00	\$0.54	\$278.73

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$710.21	\$440.58	\$0.00
Western Hemlock / Fir	\$0.00	\$587.65	\$335.55	\$0.00
Alder (Red)	\$0.00	\$694.24	\$415.51	\$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
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,126	\$440.58	\$1,377,253.08
Western Hemlock / Fir	208	\$335.55	\$69,794.40
Alder (Red)	195	\$415.51	\$81,024.45

Gross Timber Sale Value

Recovery: \$1,528,071.93

Prepared By: Ed Holloran

Phone: 503-325-5451

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Nicolai
Date: August 4, 2017
By: Ed Holloran

MBF: 3,529
\$\$/MBF: \$8.17

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations and snow	Grader 14G	\$778	1	25	\$100	\$3,278
	Dump Truck 12CY	\$163	1	6	\$79	\$637
	Back Hoe	\$321	1	2	\$77	\$475
Final Road Maintenance	Grader 14G	\$778	1	90	\$100	\$9,778
	Dump Truck 12CY	\$163	1	10	\$79	\$953
	FE Loader C966	\$778	1	2	\$83	\$944
	Vibratory Roller	\$778	1	85	\$77	\$7,323
	Water Truck 2,500 gallon	\$190	1	45	\$89	\$4,195
	Rubber Tired Backhoe-small	\$321	1	8	\$77	\$937
	Labor			8	\$40	\$320
Total						\$28,840

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	3.5	7.00	2.0	20

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours*
Process - Grader - Nicolai	1.0	8.4	8.4	84
Process - Grader - side spurs	1.5	1.3	0.9	9
Vibratory Roller - Nicolai	1.0	8.4	8.4	84
Vibratory Roller - side spurs	1.5	1.3	0.9	9

* 10 hours per day

Process and compact: All crushed rock roads -

Nicolai Mainline (8.4 miles),

I3-I4 (0.71 miles), I5-I6 (0.08 miles), I7-I8, (0.32 miles), North spur (0.08 miles), South Spur (0.14 miles) = 1.33miles.

Grade & Process Total = 9.7 miles

Site Prep Appraisal

Sale Number: 341-18-47
 Sale Name: Nicolai
 Date: 07/19/2017

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	A	73.0	73	\$129.00	\$9,417.00
					In-unit Piling	Sub Total = \$9,417.00
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	10	\$220.00	\$2,200.00	219	\$5.00	\$1,095.00
*Cost includes separating firewood					Materials	Sub Total = \$1,095.00
					Landing Piling	Sub Total = \$2,200.00
Move-In Allowance	Number of Move-In's	Total Move-In Allowance				
\$1,290.00	1	\$1,290.00	Move-In Sub Total = \$1,290.00			
Grand Total =						\$14,002.00

3,529 MBF Cost/MBF = \$3.97
 107 Acres Cost/Acre = \$130.86

Nicolai T. S.
FY 2018
TIMBER CRUISE REPORT

1. **Sale Area Location:** Area 1 is located in portions of Sections 16 and 21, T7N, R6W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** Fund: BOF 100% CSL 0%
 Tax Code: 30-05 100%

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acres	Stream Buffer Acres	New R/W Acres	Existing R/W Acres	Net Acreage
1	MC	131	12	1	11	107
TOTALS		131	12	1	11	107

4. **Cruisers and Cruise Dates:** Area 1 was cruised on July 12, 2017, by John Choate, Bryce Rodgers, Ed Holloran, and Ella Salkeld with John Tillotson.

5. **Cruise Method and Computation:** Area 1 is a modified clearcut unit. A variable plot cruise with a 40.0 BAF was used in this Area. These plots were located on a 7 chain by 4 chain grid, with a count/cruise plot ratio of 1 to 1. A total of 42 plots were sampled, with 22 measured plots and 20 count plots.

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

<u>AREAS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1	Nic	A1	0CC1, and TAKE

6. **Timber Description:** Area 1 is approximately a 60 year old stand of Douglas-fir, with some hemlock, and alder. The average take Douglas-fir tree size for harvest is approximately 22 inches DBH, with an average merchantable tree height of 80 feet. The average take hemlock tree size is approximately 22 inches DBH, with an average merchantable tree height of 65 feet. The average take alder tree size is approximately 14 inches DBH, with an average merchantable tree height of 42 feet. The average volume per acre to be harvested (net) is approximately 33 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp.

Cedar is a reserved species.

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
1	50	9	32	4.9

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

8. **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.

Species	DBH	Net Vol. MBF	2 Saw	3Saw	4 Saw	Camp Run	% Sale
Douglas-fir	22	3,126	2,404	654	68		88.6
W. Hemlock & True Fir	22	208	160	48	0		5.9
Alder	14	195				195	5.5
TOTAL NET VOLUME		3,529	2,607	814	109	195	100

9. Prepared by: Edward M. Holloran

Date: July 26, 2017

10. Approved by: 

Date: 7/31/17

11. Attachments: Cruise Plans & Maps (3)
Species, Sort, Grade Report (1)
Statistics Reports (3)
Stand Table Report (1)
Log Stock Table Report MBF (2)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Nicolai Area(s) 1

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

Approx. Cruise Acres: 107 Estimated CV% 50 Net BF or BA/Acre SE% Objective 9 Net BF or BA/Acre

Planned Sale Volume: 2,675 MMBF Estimated Sale Area Value/Acre: \$11,250

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and 10 hardwood trees:
(b) Sample 42 cruise plots; (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters;)

B. Cruise Design:

1. **Plot Cruises:** BAF 40 (Full point Half point) (circle one)
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) Due East/West - 90° / 270°
Cruise Line Spacing 7 (chains) (feet)
Cruise Plot Spacing 4 (chains) (feet)
Grade/Count Ratio 1:1

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

C. Tree Measurements:

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

Revised August, 2002

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths in conifer and 30' and 40' for hardwoods (8'/10' multiples), whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

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

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

C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull; 9 = Utility

Hardwoods: #1 Sawmill = 12" + scaling diameter; #2 Sawmill = 10" and 11"; #3 Sawmill = 8" and 9", and #4 Sawmill = 6" and 7".

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

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

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

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

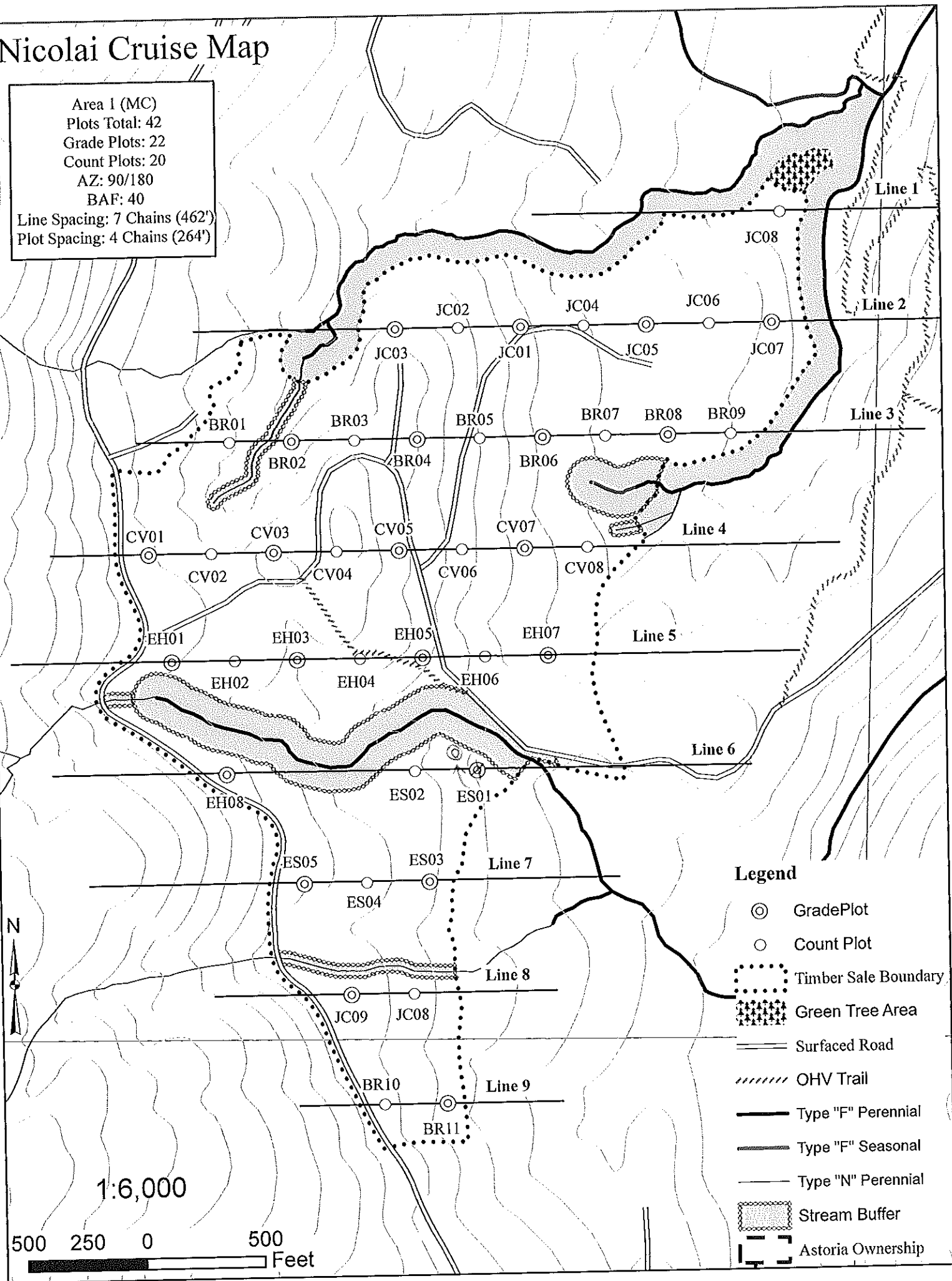
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Edward M. Holloran

Approved by: [Signature] Date: 7/10/17

Nicolai Cruise Map

Area 1 (MC)
 Plots Total: 42
 Grade Plots: 22
 Count Plots: 20
 AZ: 90/180
 BAF: 40
 Line Spacing: 7 Chains (462')
 Plot Spacing: 4 Chains (264')



Legend

- ⊙ GradePlot
- Count Plot
- Timber Sale Boundary
- Green Tree Area
- Surfaced Road
- //// OHV Trail
- Type "F" Perennial
- Type "F" Seasonal
- Type "N" Perennial
- Stream Buffer
- Astoria Ownership

TC		Species, Sort Grade - Board Foot Volumes (Project)																			
T07N R06W S16 TyTAKE 107.00				Project: NIC Acres 107.00										Page 1 Date 7/26/2017 Time 1:00:34PM							
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
D			DOCU														2	14		0.00	1.7
D			DO2S	76	.7	22,627	22,466	2,404		1	64	35	0	1	9	90	38	15	350	2.12	64.1
D			DO3S	21	.7	6,154	6,113	654		97	3		3	8	21	68	36	8	91	0.83	67.3
D			DO4S	3	.9	645	639	68		100			83	17			18	7	27	0.52	23.4
D Totals				89	.7	29,425	29,218	3,126		23	50	27	3	3	11	83	34	11	187	1.40	156.5
																	4	17		0.00	.8
A			DOCU														26	13	150	1.48	1.6
A			DO1S	12		237	237	25			100		47		53		34	11	134	1.15	3.8
A			DO2S	28	4.9	531	505	54		100				29	26	45	28	8	59	0.72	7.1
A			DO3S	23		420	420	45		100			26	30	30	14	27	6	42	0.51	16.1
A			DO4S	37		668	668	71		100			23	38		40	27	6	42	0.51	16.1
A Totals				6	1.4	1,855	1,829	195 196		87	13		20	29	21	30	28	8	62	0.71	29.3
H			DO2S	76		1,496	1,496	160			71	29			100		40	16	431	2.53	3.5
H			DO3S	24		450	450	48		100					17	83	38	8	80	1.00	5.6
H Totals				6		1,947	1,947	208		23	54	23			4	96	39	11	214	1.61	9.1
Totals					0.7	33,227	32,994	3,529 3,530		26	48	25	4	4	11	81	33	10	169	1.33	194.9

PROJECT STATISTICS										PAGE	1	
PROJECT NIC										DATE	7/26/2017	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt			
07N	06	16	A1	0CC1	107.00	42	236	1	W			
					TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
			PLOTS	TREES								
TOTAL			42	236	5.6							
CRUISE			23	119	5.2	10,346	1.2					
DBH COUNT												
REFOREST												
COUNT			19	111	5.8							
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			93	68.1	22.1	80	38.7	181.9	29,425	29,218	7,465	7,437
R ALDER			15	20.0	13.9	42	5.6	21.0	1,855	1,829	572	572
WHEMLOCK			4	5.6	22.3	65	3.2	15.2	1,947	1,947	565	565
DOUGLEAV			3	.8	25.7	84	0.6	2.9	466	466	118	118
HEMLEAV			3	2.0	16.4	55	0.7	2.9	475	445	115	115
SNAG			1	.2	32.0	40	0.2	1.0				
TOTAL			119	96.7	20.6	71	49.5	224.8	34,168	33,905	8,835	8,807
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		60.3	6.2	504	537	571						
R ALDER		57.9	15.5	91	107	124						
WHEMLOCK		57.5	32.9	279	415	551						
DOUGLEAV		20.3	14.0	519	603	688						
HEMLEAV		90.7	62.8	144	387	629						
SNAG												
TOTAL		69.9	6.4	442	472	503	195	49	22			
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		47.7	7.4	63	68	73						
R ALDER		350.2	54.0	9	20	31						
WHEMLOCK		165.8	25.6	4	6	7						
DOUGLEAV		465.3	71.7	0	1	1						
HEMLEAV		648.1	99.9	0	2	4						
SNAG		648.1	99.9	0	0	0						
TOTAL		73.7	11.4	86	97	108	217	54	24			
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		44.0	6.8	170	182	194						
R ALDER		310.5	47.9	11	21	31						
WHEMLOCK		163.5	25.2	11	15	19						
DOUGLEAV		478.3	73.7	1	3	5						
HEMLEAV		648.1	99.9	0	3	6						
SNAG		648.1	99.9	0	1	2						
TOTAL		30.4	4.7	214	225	235	37	9	4			
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		44.8	6.9	27,202	29,218	31,235						
R ALDER		356.3	54.9	825	1,829	2,834						
WHEMLOCK		166.9	25.7	1,446	1,947	2,448						
DOUGLEAV		487.2	75.1	116	466	816						

PROJECT STATISTICS										PAGE 2
TC PSTATS		PROJECT		NIC						DATE 7/26/2017
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
07N	06	16	A1	0CC1		107.00	42	236	1	W
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
HEMLEAV		648.1	99.9	0	445	890				
SNAG										
TOTAL		32.0	4.9	32,234	33,905	35,576	41	10	5	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	NIC	DATE 7/26/2017					
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
07N	06W	16	A1	TAKE	107.00	42	229	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
		PLOTS	TREES								
TOTAL		42	229	5.5							
CRUISE		22	112	5.1	10,034	1.1					
DBH COUNT											
REFOREST											
COUNT		20	117	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		93	68.1	22.1	80	38.7	181.9	29,425	29,218	7,465	7,437
R ALDER		15	20.0	13.9	42	5.6	21.0	1,855	1,829	572	572
WHEMLOCK		4	5.6	22.3	65	3.2	15.2	1,947	1,947	565	565
TOTAL		112	93.8	20.6	71	48.0	218.1	33,227	32,994	8,602	8,574
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		60.3	6.2	504	537	571					
R ALDER		57.9	15.5	91	107	124					
WHEMLOCK		57.5	32.9	279	415	551					
TOTAL		70.0	6.6	444	475	507	195	49	22		
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		47.7	7.4	63	68	73					
R ALDER		350.2	54.0	9	20	31					
WHEMLOCK		165.8	25.6	4	6	7					
TOTAL		63.7	9.8	85	94	103	162	41	18		
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		44.0	6.8	170	182	194					
R ALDER		310.5	47.9	11	21	31					
WHEMLOCK		163.5	25.2	11	15	19					
TOTAL		28.7	4.4	208	218	228	33	8	4		
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		44.8	6.9	27,202	29,218	31,235					
R ALDER		356.3	54.9	825	1,829	2,834					
WHEMLOCK		166.9	25.7	1,446	1,947	2,448					
TOTAL		31.2	4.8	31,407	32,994	34,581	39	10	4		

TC TSTNDSUM				Stand Table Summary										
Project										NIC				
T07N R06W S16 TTAKE										T07N R06W S16 TTAK				
Twp	Rge	Sec	Tract	Type	Acres		Plots	Sample Trees		Page:	1			
07N	06W	16	A1	TAKE	107.00		42	112		Date:	07/26/20			
										Time:	1:00:34PM			
Spc	S T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals	
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Cu.Ft.		
D		13	1	85	91	2.122	1.96	4.24	15.5	55.0	66	233	70	25
D		15	1	82	70	1.594	1.96	3.19	18.0	45.0	57	143	61	15
D		16	3	86	94	4.203	5.87	8.41	25.0	88.3	210	742	225	79
D		17	2	87	99	2.482	3.91	4.96	31.5	112.5	156	558	167	60
D		18	6	87	97	6.641	11.74	14.39	30.9	109.2	445	1,572	476	168
D		19	4	89	99	3.974	7.82	7.95	39.7	143.7	316	1,142	338	122
D		20	11	88	103	9.862	21.52	21.52	40.4	148.7	869	3,201	930	342
D		21	8	89	103	6.506	15.65	14.64	42.9	158.3	629	2,318	673	248
D		22	4	89	106	2.964	7.82	6.67	50.2	200.0	335	1,334	358	143
D		23	12	87	107	8.135	23.47	20.34	48.1	186.0	978	3,783	1,046	405
D		24	9	86	105	5.603	17.60	11.83	60.0	223.7	710	2,646	759	283
D		25	6	87	101	3.443	11.74	8.03	57.0	225.7	458	1,813	490	194
D		26	4	88	114	2.122	7.82	5.84	60.5	261.8	353	1,528	377	163
D		27	3	85	115	1.476	5.87	4.43	57.9	233.3	256	1,033	274	111
D		28	2	85	106	.915	3.91	1.83	80.2	332.5	147	608	157	65
D		29	1	89	120	.426	1.96	1.28	70.7	316.7	90	405	97	43
D		30	5	86	111	1.992	9.78	5.18	80.5	346.2	417	1,793	446	192
D		31	4	86	113	1.493	7.82	4.48	75.9	344.2	340	1,541	364	165
D		32	2	90	122	.700	3.91	2.10	88.5	428.3	186	900	199	96
D		33	1	85	108	.329	1.96	.66	122.5	520.0	81	342	86	37
D		34	1	86	115	.310	1.96	.62	131.0	615.0	81	382	87	41
D		35	2	84	112	.586	3.91	1.46	112.6	492.0	165	720	176	77
D		37	1	88	120	.262	1.96	.79	118.7	610.0	93	479	100	51
D		Totals	93	87	103	68.139	181.90	154.82	48.0	188.7	7,437	29,218	7,958	3,126
H		18	1	83	52	2.156	3.81	2.16	41.0	70.0	88	151	95	16
H		23	2	89	97	2.641	7.62	5.28	62.5	242.5	330	1,281	353	137
H		29	1	83	89	.831	3.81	1.66	88.5	310.0	147	515	157	55
H		Totals	4	86	78	5.627	15.24	9.10	62.2	214.0	565	1,947	605	208
A		9	1	86	62	3.162	1.40	3.16	11.0	40.0	35	126	37	14
A		11	1	87	68	2.117	1.40	2.12	19.0	60.0	40	127	43	14
A		12	2	86	81	3.557	2.79	7.11	13.3	47.5	94	338	101	36
A		13	2	86	42	3.031	2.79	3.03	18.0	50.0	55	152	58	16
A		14	1	87	80	1.307	1.40	2.61	19.0	65.0	50	170	53	18
A		15	1	87	85	1.138	1.40	2.28	24.0	90.0	55	205	58	22
A		16	2	87	38	2.001	2.79	2.00	24.5	55.0	49	110	52	12
A		17	1	87	85	.886	1.40	1.77	31.0	110.0	55	195	59	21
A		18	3	86	56	2.371	4.19	3.95	27.6	86.0	109	340	117	36
A		24	1	86	52	.445	1.40	.44	69.0	150.0	31	67	33	7
A		Totals	15	86	63	20.014	20.95	28.48	20.1	64.2	572	1,829	612	196
Totals		112	87	93	93.780	218.10	192.40		44.6	171.5	8574	32,994	9,175	3,530

T07N R06W S16 TyTAKE 107.00

Project: NIC

Acres 107.00

Spp	S 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+
A		DO 4S	26	3		3	1.7			3									
A		DO 4S	30	20		20	10.0			20									
A		DO 4S	36	5		5	2.6			5									
A		DO 4S	38	10		10	5.0			10									
A		DO 4S	40	14		14	6.9			14									
A		Totals		199	1.4	196	5.5			78	38	54	14	12					
H		DO 2S	40	160		160	76.9							160					
H		DO 3S	32	8		8	3.8			8									
H		DO 3S	36	11		11	5.4			11									
H		DO 3S	40	29		29	13.9			16	13								
H		Totals		208		208	5.9			16	32			160					
Total		All Species		3,555		3,530	100.0			354	223	358	468	753	910	428	35		

Logging Breakdown	Tractor	Cable
Area 1 (MC) -	68%	32%
Total=	68%	32%

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-18-47
NICOLAI
PORTIONS OF SECTIONS 16 & 21, T7N, R6W,
W.M., CLATSOP COUNTY, OREGON

Approximate Net Acreage	MC Acres
Area 1 (MC) -	107
Total Sale Acreage =	107

