



Timber Sale Appraisal Dino

Sale AT-341-2018-43-

District: Astoria

Date: November 28, 2017

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$5,427,403.28	\$191,967.26	\$5,619,370.54
		Project Work:	(\$117,549.00)
		Advertised Value:	\$5,501,821.54



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Timber Description

Location: Portions of Sections 20, 29, 31, and 32, T7N, R6W, W.M., Clatsop County, Oregon

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	24	0	98
Western Hemlock / Fir	20	0	98
Sitka Spruce	32	0	94
Alder (Red)	15	0	96
Maple	26	0	96

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	7,156	1,307	122	8,585
Western Hemlock / Fir	1,564	411	74	2,049
Sitka Spruce	9	1	0	10
Alder (Red)	146	113	213	472
Maple	0	2	0	2
Total	8,875	1,834	409	11,118

Comments: Pond Values Used: October 2017.

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: \$1,276.21/MBF = \$1,521.00/MBF - \$244.79/MBF

SCALING COST ALLOWANCE = \$5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = \$2.00/MBF

FUELING COST ALLOWANCE = \$3.00/GALLON

HAULING COST ALLOWANCE

Hauling costs equivalent to \$780 daily truck cost.

Other Costs (with Profit & Risk added):

2 Temporary Stream Crossing w/ Log Loader (Area 1)

4 Hrs @ \$155/Hr = \$620

4 Hrs Labor @ \$40/Hr = \$160

6 Straw Bales @ \$10.73/Bale = \$64.38

Loggers Choice Spur Construction (Area 1 and 3)

8 Hours w/ C330 Excavator @ \$155/Hr = \$1,240

8 Hours w/ D8 Dozer @ \$158/Hr @ \$158/Hr = \$1,264

Waterbar and Block: 8 Hrs w/ 330 Excavator @ \$155/Hr = \$1,240

Line Pull (Area 3):

2 Acres - 106 MBF @ \$20/MBF = \$2,120

Slash and Landing Piling (Includes move-in and pile materials)= \$21,680

Skyline Placement of Logs in 4 Locations (Area 2):

5 Logs/Site x 4 = 20 Logs x \$125 = \$2,500

Machine Washing for invasive Weed Compliance = \$3,000

TOTAL Other Costs (with Profit & Risk added): \$33,888.38

Other Costs (No Profit & Risk added):

Easement Haul Cost = \$9.02/MBF @ 11,118 MBF = \$100,284.36

TOTAL Other Costs (No Profit & Risk added) = \$100,284.36

ROAD MAINTENANCE

(See attached Road Maintenance Cost Summary Sheet)

TOTAL Road Maintenance: \$20,535/11,118 MBF = \$ 1.85/MBF



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Logging Conditions

Combination#: 1

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

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: 12 **bd. ft / load:** 4400

cost / mbf: \$74.57

machines: Shovel Logger

Combination#: 2

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

Logging System: Cable: Large Tower >=70 **Process:** Manual Falling/Delimbing

yarding distance: Long (1,500 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 10 **bd. ft / load:** 4600

cost / mbf: \$147.83

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



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Logging Costs

Operating Seasons: 3.00	Profit Risk: 12%
Project Costs: \$117,549.00	Other Costs (P/R): \$33,888.38
Slash Disposal: \$0.00	Other Costs: \$100,284.36

Miles of Road

Road Maintenance: \$1.85

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.5
Western Hemlock / Fir	\$0.00	2.0	4.0
Sitka Spruce	\$0.00	2.0	4.0
Alder (Red)	\$0.00	2.0	3.6
Maple	\$0.00	3.0	3.5



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
\$98.01	\$1.89	\$1.18	\$88.40	\$3.05	\$23.10	\$0.00	\$7.00	\$9.02	\$231.65
Western Hemlock / Fir									
\$98.01	\$1.89	\$1.18	\$99.45	\$3.05	\$24.43	\$0.00	\$7.00	\$9.02	\$244.03
Sitka Spruce									
\$98.01	\$1.96	\$1.18	\$103.35	\$3.05	\$24.91	\$0.00	\$7.00	\$9.02	\$248.48
Alder (Red)									
\$98.01	\$1.92	\$1.18	\$112.66	\$3.05	\$26.02	\$0.00	\$7.00	\$9.02	\$258.86
Maple									
\$98.01	\$1.92	\$1.18	\$77.26	\$3.05	\$21.77	\$0.00	\$7.00	\$9.02	\$219.21

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$768.25	\$536.60	\$0.00
Western Hemlock / Fir	\$0.00	\$643.65	\$399.62	\$0.00
Sitka Spruce	\$0.00	\$435.57	\$187.09	\$0.00
Alder (Red)	\$0.00	\$664.41	\$405.55	\$0.00
Maple	\$0.00	\$493.04	\$273.83	\$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
Maple	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	8,585	\$536.60	\$4,606,711.00
Western Hemlock / Fir	2,049	\$399.62	\$818,821.38
Sitka Spruce	10	\$187.09	\$1,870.90
Alder (Red)	472	\$405.55	\$191,419.60
Maple	2	\$273.83	\$547.66

Gross Timber Sale Value

Recovery: \$5,619,370.54

Prepared By: Cody Valencia

Phone: 503-325-5451

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Dino

ROAD CONSTRUCTION:

<u>Project No.</u>	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Surfaced	1A-1B, 2A-2B		
Crowned and	2C-2D, 2G-2H,		
Ditched	2I-2J, 3A-3B, 3C-3D, A-B	37.70	\$46,514
TOTALS		37.70	\$46,514
Miles		0.71	

ROAD IMPROVEMENT:

Project No. 2	Road segment	Length/Sta	Cost
	11-12, 13-14, 15-16, 17-18, 19-110, 111-112, 113-114, 115-116, 117-118	313.50	\$53,535
	TOTALS	313.50	\$53,535
	Miles	5.94	

SPECIAL PROJECTS:

	Description	Cost
Project No. 3	Road Vacating and Fill Removal	\$5,626
	Project Road Maintanace	\$3,894
	TOTAL	\$9,520

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
Excavator (C315)	\$805
Excavator (C330)	\$1,406
Rubber Tired Skidder	\$805
Large Grader (14G)	\$778
Front End Loader (C966)	\$778
10 cy dump trucks x 4	\$652
20 cu dump truck x 2	\$382
Water Truck (2,500 gal.)	\$190
Vibratory Roller	\$778
Dozer (D8)	\$1,406
TOTAL	\$7,980

GRAND TOTAL	\$117,549
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Compiled By: John Choate

Date: 10/13/2017

SUMMARY OF CONSTRUCTION COSTS

SALE NAME Dino

ROAD: 2A-2B (29.7), 2C-2D (1.5), 2E-2F (1.5), 2G-2H(1.5), 3A-3B(1.0), 3C-3D(1.5), A-B (1.5)

POINTS: 2B, 2D, 2F, 2H, 3B, 3D, B

NEW CONSTRUCTION: 37.70 STATIONS

0.71 MILES

DIRT CONSTRUCTION:

MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter outside of R/W	3.5	x	\$ 1,337.00	=	\$4,628.55
Scatter Outside of R/W (Landings)	1.0	x	\$ 1,337.00	=	\$1,337.00

SUB TOTAL FOR CLEARING & GRUBBING

\$5,966

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
2A-2B					
Balanced Construction \$/sta	15	x	\$122.00	=	\$1,830.00
Common drift (<50% slopes) \$/cy	2,003.00	x	\$1.80	=	\$3,605.40
Embankment compaction \$/cy	2,801.00	x	\$0.70	=	\$1,960.70
Landing Construction 2A-2B Sta 16+80 \$/landing	1.00	x	\$389.00	=	\$389.00
Landing Construction 2A-2B Sta 19+70 \$/landing	1.00	x	\$389.00	=	\$389.00
Landing Construction 2A-2B Sta 27+00 \$/landing	1.00	x	\$389.00	=	\$389.00
Landing Construction 2A-2B Sta 2B \$/landing	1.00	x	\$389.00	=	\$389.00
2C-2D					
0+00-1+50 Balanced Construction \$/sta	1.50	x	\$122.00	=	\$183.00
1+50 Landing \$/landing	1.00	x	\$389.00	=	\$389.00
2E-2F					
0+00-1+50 Balanced Construction \$/sta	1.50	x	\$122.00	=	\$183.00
1+50 Landing \$/landing	1.00	x	\$389.00	=	\$389.00
2G-2H					
0+00-1+50 Balanced Construction \$/sta	1.50	x	\$122.00	=	\$183.00
1+50 Landing \$/landing	1.00	x	\$389.00	=	\$389.00
3A-3B					
0+00-1+00 Balanced Construction \$/sta	1.00	x	\$122.00	=	\$122.00
1+00 Landing \$/landing	1.00	x	\$389.00	=	\$389.00
3C-3D					
0+00-1+00 Balanced Construction \$/sta	1.00	x	\$122.00	=	\$122.00
1+00 Landing \$/landing	1.00	x	\$389.00	=	\$389.00
A to B (Foster Sort)					
0+00-1+50 Balanced Construction \$/sta	1.50	x	\$122.00	=	\$183.00
1+50 Landing \$/landing	1.00	x	\$389.00	=	\$389.00

SUB TOTAL FOR EXCAVATION

\$12,262

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
2A to 2B									
8+40	18"cpp	35	\$19.53	\$683.55					
13+80	18"cpp	35	\$19.53	\$683.55					
23+00	18"cpp	35	\$19.53	\$683.55					
26+00	18"cpp	35	\$19.53	\$683.55					

Other/miscellaneous:

Culvert stakes & markers:

Description	Quantity	Rate	Cost
6' X 2 1/2" white fiberglass posts	4	\$20.00	\$80.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$2,814

Subtotal of Clearing, Exc., Culv.

\$21,042

SURFACING				Stations/amount			sta/amt	Cost
Subgrade prep:				Description				
				(2A to 2B, 2C to 2D, 2E to 2F, 3A to 3B, 3C to 3D, A to B) Grade, Shape and Ditch 16'		37.70	x	\$24.83 \$936.09
				(2A to 2B, 2C to 2D, 2E to 2F, 3A to 3B, 3C to 3D, A to B) Subgrade Compaction		37.70	x	\$20.19 \$761.16
ROAD SEGMENT 2A to 2B				POINT TO POINT		Sta. to Sta.		
				2A to 2B		0+00 to 29+70		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	4"-0" crushed	0+00 to 27+85	8	station	50	stations	29.7	1,485 \$6.48 \$9,623
Turnouts	4"-0" crushed	3+70, 11+50	N/A	T/O	33	T/O's	2	66 \$6.48 \$428
Junctions	4"-0" crushed	0+00	N/A	Junction	11	Junctions	1	11 \$6.48 \$71
Landings	6"-0" pit-run	16+80, 19+70, 27+00, 29+70	N/A	Landing	99	Landings	4	396 \$5.14 \$2,035
Total Rock for Road Segment:				2A to 2B		1,958		\$12,157
ROAD SEGMENT 2C to 2D				POINT TO POINT		Sta. to Sta.		
				2C to 2D		0+00 to 1+50		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	6"-0" pit-run	0+00 to 1+50	10	station	63	stations	1.50	95 \$5.14 \$486
Landings	6"-0" pit-run	1+50	N/A	Landing	99	Landings	1	99 \$5.14 \$509
Total Rock for Road Segment:				2C to 2D		194		\$995
ROAD SEGMENT 2E to 2F				POINT TO POINT		Sta. to Sta.		
				2E to 2F		0+00 to 1+50		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	6"-0" pit-run	0+00 to 1+50	10	station	63	stations	1.50	95 \$5.14 \$486
Landings	6"-0" pit-run	1+50	N/A	Landing	99	Landings	1	99 \$5.14 \$509
Total Rock for Road Segment:				2E to 2F		194		\$995
ROAD SEGMENT 2G to 2H				POINT TO POINT		Sta. to Sta.		
				2G to 2H		0+00 to 1+50		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	6"-0" pit-run	0+00 to 1+50	10	station	63	stations	1.50	95 \$5.14 \$486
Landings	6"-0" pit-run	1+50	N/A	Landing	99	Landings	1	99 \$5.14 \$509
Total Rock for Road Segment:				2G to 2H		194		\$995
ROAD SEGMENT 3A to 3B				POINT TO POINT		Sta. to Sta.		
				3A to 3B		0+00 to 1+00		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	6"-0" pit-run	0+00 to 1+00	10	station	63	stations	1.00	63 \$5.14 \$324
Landings	6"-0" pit-run	1+00	N/A	Landing	99	Landings	1	99 \$5.14 \$509
Total Rock for Road Segment:				3A to 3B		162		\$833
ROAD SEGMENT 3C to 3D				POINT TO POINT		Sta. to Sta.		
				3C to 3D		0+00 to 1+00		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	6"-0" pit-run	0+00 to 1+00	10	station	63	stations	1.00	63 \$5.14 \$324
Landings	6"-0" pit-run	1+00	N/A	Landing	99	Landings	1	99 \$5.14 \$509
Total Rock for Road Segment:				3C to 3D		162		\$833
ROAD SEGMENT A to B (Foster Sort)				POINT TO POINT		Sta. to Sta.		
				A to B (Foster Sort)		0+00 to 1+50		
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY) Rate/ Sta./ amt. Cost
Base Rock	6"-0" pit-run	0+00 to 1+50	10	station	63	stations	1.50	95 \$5.14 \$486
Landings	6"-0" pit-run	1+50	N/A	Landing	99	Landings	1	99 \$5.14 \$509
Total Rock for Road Segment:				A to B (Foster Sort)		194		\$995
Processing:				Description		No.sta	Rate/sta	Cost
				Water, Process & Compact (New Construction):		29.70	\$56.48	\$1,677
				Process & Compact (Pit-run w D8 and Roller)		8.00	\$51.54	\$412

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Dino
ROAD: I1-I2 (114.0), I3-I4 (18.5), I5-I6 (57.0), I7-I8 (32.0), I9-I10 (2.5)
POINTS: I11-I12 (51.0), I13-I14 (7.5), I15-I16 (31.0), I17-I18

NEW CONSTRUCTION: STATIONS
IMPROVEMENT: 313.50 STATIONS 5.94 MILES

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W (Landings)	1	x	\$ 1,337.00	=	\$1,337.00
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING

\$1,337

EXCAVATION

I5 to I6	Material	Cy/amount	x	Rate	=	Cost
	Landing Construction I11 to I12 Sta 37+00	\$/landing 1.00	x	\$389.00	=	\$389.00
I9 to I10						
	Landing Construction I9 to I10 Sta 1+50	\$/landing 1.00	x	\$389.00	=	\$389.00
I11 to I12						
15+40	Install ditch filter	(C315)hrs. 1.0	x	\$101.00	=	\$101.00
33+60	Install ditch filter	(C315)hrs. 1.0	x	\$101.00	=	\$101.00
	Sod removal w grader	(14G)hrs. 8.0	x	\$100.00	=	\$800.00
	Sod removal w excavator	(C315)hrs. 8.0	x	\$101.00	=	\$808.00
	Landing Construction I11 to I12 Sta 27+00	\$/landing 1.00	x	\$389.00	=	\$389.00
	Landing Construction I11 to I12 Sta 35+00	\$/landing 1.00	x	\$389.00	=	\$389.00

SUB TOTAL FOR EXCAVATION

\$3,366

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
I11 to I12									
32+60	18" cpp	35	\$19.53	\$683.55					
Other/miscellaneous:					Description				
					Quantity				
					Rate				
					Cost				
Culvert stakes & markers:					6' X 2 1/2" white fiberglass posts				
					1				
					\$20.00				
					\$20.00				

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$704

Subtotal of Clearing, Exc., Culv.

\$5,407

SURFACING										Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:				Description						16.00	x	\$100.00	\$1,600.00
				(I3-I4,I5-I6,I9-I10, I13-I14) Additional grader time for sod and grass removal (\$/hr)						8.00	x	\$100.00	\$800.00
				(I17-18) Spot Grading Hampton Ownership (\$/hr)						293.50	x	\$45.02	\$13,213.37
				(I1 to I2, I3 to I4, I5 to I6, I7 to I8, I9 to I10, I11 to I12, I13 to I14) Subgrade Prep						20.00	x	\$22.92	\$458.40
				(I5 to I6 37+00 to 57+00) Ditch Improvement									
ROAD SEGMENT I1 to I2				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I1 to I2 Volume (CY) per	0+00 to 114+00 Number of							
Leveling Rock		3/4"-0" Crushed	N/A	N/A	load	11	loads	20.00	220	\$6.48	\$1,426		
Surface Rock		3/4"-0" Crushed	0+00 to 114+00	2	station	13	stations	114.00	1,482	\$6.48	\$9,603		
Total Rock for Road Segment:				I1 to I2						1,702			
ROAD SEGMENT I3 to I4				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) per	0+00 to 18+50 Number of							
Leveling Rock		3/4"-0" Crushed	0+00 to 3+00	N/A	load	11	loads	5	55	\$6.48	\$356		
Leveling Rock		4"-0"	3+00 to 18+50	N/A	load	11	loads	3	33	\$6.48	\$214		
Total Rock for Road Segment:				I3 to I4						88			
ROAD SEGMENT I5 to I6				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I5 to I6 Volume (CY) per	0+00 to 57+00 Number of							
Leveling Rock		3/4"-0" Crushed	N/A	N/A	load	11	loads	8	88	\$6.48	\$570		
Surface Rock		3/4"-0" Crushed	0+00 to 20+00	2	station	13	stations	20	260	\$6.48	\$1,685		
Turnouts		3/4"-0" Crushed	4+00, 8+00	2	T/O	22	T/O's	2	44	\$6.48	\$285		
Landing Rock		6"-0" pit-run	37+00	N/A	landing	88	landings	1	88	\$5.14	\$452		
Total Rock for Road Segment:				I5 to I6						480			
ROAD SEGMENT I7 to I8				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I7 to I8 Volume (CY) per	0+00 to 32+00 Number of							
Surface Rock		3/4"-0" Crushed	0+00 to 5+00	2	station	13	stations	5.00	65	\$6.48	\$421		
Total Rock for Road Segment:				I7 to I8						65			
ROAD SEGMENT I9 to I10				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I9 to I10 Volume (CY) per	0+00 to 2+50 Number of							
Leveling Rock		3/4"-0" Crushed	N/A	N/A	load	11	loads	3	33	\$6.48	\$214		
Landing Rock		6"-0" pit-run	1+50, 2+50	N/A	Landing	88	landings	2	176	\$5.14	\$905		
Total Rock for Road Segment:				I9 to I10						209			
ROAD SEGMENT I11 to I12				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I11 to I12 Volume (CY) per	0+00 to 51+00 Number of							
Leveling Rock		4"-0"	N/A	N/A	load	11	loads	38	418	\$6.48	\$2,709		
Landing Rock		6"-0" pit-run	27+00, 35+00	N/A	landing	88	landings	2	176	\$5.14	\$905		
Ditch Filter		6"-4" pit-run	15+40, 33+60	N/A	load	11	loads	2	22	\$5.14	\$113		
Total Rock for Road Segment:				I11 to I12						616			
ROAD SEGMENT I13 to I14				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I13 to I14 Volume (CY) per	0+00 to 7+50 Number of							
Landing Rock		6"-0" pit-run	7+50	N/A	landing	66	landings	1	66	\$5.14	\$339		
Surface Rock		3/4"-0" Crushed	0+00 to 7+50	2	station	13	stations	7.5	98	\$6.48	\$632		
Turnaround		3/4"-0" Crushed	5+00	2	T/O	22	T/O's	1	22	\$6.48	\$143		
Total Rock for Road Segment:				I13 to I14						186			
ROAD SEGMENT I15 to I16				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I15 to I16 Volume (CY) per	0+00 to 31+00 Number of							
Leveling Rock		3/4"-0" Crushed	21+00 to 31+00	N/A	load	11	loads	6	66	\$5.14	\$339		
Surface Rock		3/4"-0" Crushed	0+00 to 21+00	2	station	13	stations	21	273	\$5.14	\$1,403		
Total Rock for Road Segment:				I15 to I16						339			
ROAD SEGMENT I17 to I18 (Hampton)				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost			
Application		Rock Size and Type	Location	Depth of Rock (inches)	I17 to I18 (Hampton) Volume (CY) per	N/A Number of							
Leveling Rock		3/4"-0" Crushed	N/A	N/A	load	11	loads	10	110	\$6.48	\$713		
Total Rock for Road Segment:				I17 to I18 (Hampton)						110			
Processing:				Description						No.sta	Rate/sta	Cost	
				Water, Process & Compact: (I3-I4,I5-I6, I7-I8, I9-I10, I13-I14, 15-I16)						128.50	\$56.48	\$7,258	
				24"-6" rr	6"-0"pr	6"-4" pr	4"-0"	1 1/2"-0"	3/4"-0"	Total			
SUB TOTAL FOR SURFACING					506	22	451		2,816	3,795	3,795	\$46,756	
SPECIAL PROJECTS													
Description								Cyl/Amount	Rate	Cost			
pit-run development								528	\$2.60	\$1,373			
SUB TOTAL FOR SPECIAL PROJECTS													
GRAND TOTAL													

\$1,373

\$48,129

\$5,407

\$53,535

Dino

Project No. 3 - Road Vacating and Fill Removal

Location/Description	C330 Excavator	D8 Dozer	Labor	Seeding (V1)	Straw Mulch (V1)	Total
V1 to V2 Sidecast Pullback/Fill Removal	24 hrs	8 hrs	8 hrs	40 lb.	24 bales	
Total	24 hrs	8 hr	8 hrs	40 lb	24 Bales	
Rate	\$155 /hr	\$158 /hr	\$40 /hr	\$1.60 /lb	\$10.73 /Bale	
Cost	\$3,720	\$1,264	\$320	\$64	\$258	\$5,626

Prepared by: John Choate

Date:

10/17/2017

CRUSHED ROCK COST

SALE NAME:	Dino
PROJECT:	1 and 2
QUARRY:	Knob Point Stockpile

MATERIAL: 4"-0" and 3/4"-0" Crushed

DATE: 10/10/2017
BY: Cody Valencia

[illegible]

Average Round Trip Distance (miles)	9.61
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ROCK HAUL:

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

Ave haul:	\$4.97	/cy
Load:	\$0.54	/cy
Spread:	\$0.96	/cy

Truck type: D12 No. trucks: 4
 Delay min.: 6 Efficiency: 85%

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

Production: cy/day = 829

CRUSHED ROCK HAUL COSTS 4,829 cy @ \$6.48 /cy

PIT RUN ROCK COST

SALE NAME:	Dino
PROJECT:	1 and 2
QUARRY:	Knob point Quarry

MATERIAL: 6"-0" Pit Run and
6"-4" Pit Run

DATE: 10/10/2017
BY: Cody Valencia

[illegible]

ROCK HAUL:

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

Ave haul:	\$3.88	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>4</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

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

Production: cy/day = 1,063

PIT RUN ROCK HAUL COSTS	2,024 cy @	\$5.14 /cy
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Projects Road Maintenance Cost Summary

Sale: Dino
Date: October 10, 2017
By: Cody Valencia *FL*

Type	Equipment/Rationale			Hours	Rate	Cost
Final Project Haul Road Maintenance	Grader 14G			13.0	\$100	\$1,300
	Dump Truck 12CY			8.0	\$79	\$632
	FE Loader C966			3.0	\$83	\$249
	Vibratory Roller			13.0	\$77	\$1,001
	Water Truck 2,500 gallon			8.0	\$89	\$712
Total						\$3,894

Production Rates

Grader

Vibratory Roller

Miles/day	Distance(miles)	Days	Hours
1.5	2.5	1.7	13
1.5	2.5	1.7	13

Knob Point Road 0.1 miles

Shingle Mill Road 1.3 miles

Foster Mainline to Improvement 1.1 miles

Total Miles = 2.5 Miles

X:\DOCUMENT\STATE_FOREST\UNIT_SUNSET\2018 FY Sales\Dino\Sale Prep\Project Costing\Dino_Project Road Maintenance

**Dino
FY 2018
TIMBER CRUISE REPORT**

1. **Sale Area Location:** Areas 1, 2, and 3 are located in portions of Sections 20, 29, 31, and 32 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	Treatment	Gross Acres	Stream Buffer Acres	New R/W Acres	Existing RW Acres	Net Acreage	Survey Method
1	Modified Clearcut	109	10	0	1	98	GIS
2	Modified Clearcut	96	0	3	1	92	GIS
3	Modified Clearcut	47	<1	<1	2	45	GIS
4	R/W	3	N/A	N/A	N/A	3	Length x Width
TOTALS		255	10	3	4	238	

4. **Cruisers and Cruise Dates:** Areas 1, 2, and 3 were cruised by Bryce Rodgers, John Choate, Ed Holloran, Cody Valencia, Ella Salkeld, and John Tillotson from October 6th through October 12th, 2017.
5. **Cruise Method and Computation:** Area 1 is a modified clearcut unit. A variable plot cruise with a 40 BAF was used for this Area. The plots were located on a 4 chain by 4 chain grid, with a count/grade plot ratio of 2:1. A total of 63 plots were sampled.

Areas 2 and 3 are modified clearcut units. A variable plot cruise with a 40 BAF for conifers and a 33.61 BAF was used for hardwoods in these Areas. The plots were located on a 6.5 chain by 3 chain grid, with a count/grade plot ratio of 1:1. A total of 69 plots were sampled.

Area 4 R/W Right-of-way volume was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Areas 2 and 3.

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	Dino	A1	00MC, TK
2 and 3	Dino	A23	00MC, TK
4	Dino	TK	R/W

Timber Description: Area 1 is an approximately 65 year old stand of Douglas-fir, with some western hemlock and red alder. The average take Douglas-fir tree size is approximately 26 inches DBH, with an average merchantable tree height of 90 feet. The average hemlock take tree size is approximately 19 inches in DBH, with an average merchantable tree height of 67 feet. The average red alder take tree size for harvest is approximately 13 inches DBH, with an average merchantable tree height of 31 feet. The average volume per acre to be harvested (net) is approximately 38 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp. This area was previously thinned with the Big Nic timber sale in 2000.

Areas 2 and 3 are approximately 70 year old stands of Douglas-fir, western hemlock and red alder, with some Sitka Spruce and Bigleaf maple. The average take Douglas-fir tree size is approximately 24 inches DBH, with an average merchantable tree height of 95 feet. The average take hemlock tree size is approximately 22 inches DBH, with an average merchantable tree height of 75 feet. The average take red alder tree size for harvest is approximately 16 inches DBH, with an average merchantable tree height of 49 feet. The average volume per acre to be harvested (net) is approximately 53 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp.

Area 4 R/W is similar to the timber description mentioned above in the timber sale areas 2 and 3. The average volume 53 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	38.6	4.9
2 and 3	60	8	53.7	6.5

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	24	8,585	7,156	1,307	122	1.7	77
Western Hemlock/fir	20	2,049	1,564	411	74	2.4	18
Sitka Spruce	32	10	9	1	-	6.3	<1

Hardwoods

Species	DBH	Net Vol. MBF	12"+	10-12"	8-10"	6-8"	% D & B	% Sale
Red Alder	15	472	146	113	90	123	4	5
Bigleaf Maple	26	2	-	-	2	-	-	<1

TOTAL NET VOLUME	11,118 MBF
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8. Prepared by: _____ Cody Valencia

Date: _____ 10/13/2017

10. Approved by: _____ *Edward M. Halloran*

Date: _____ 10/24/2017

11. Attachments: Cruise Plans & Maps (6 pages)
Species, Sort, Grade Report (4 pages)
Statistics Reports (5 pages)
Stand Table Report (2 pages)
Log Stock Table Report MBF (3 pages)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Dino **Area** 1

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 99 **Estimated CV%** 50 Net BF/Acre **SE% Objective** 8 Net BF/Acre

Planned Sale Volume : 2.97 MMBF **Estimated Sale Area Value/Acre:** \$12,750/Acre
(30 MBF/Ac. @ \$425/Acre)

A. Cruise Goals: (a) Grade minimum 80 conifer and 40 hardwood trees
(b) Sample 63 cruise plots (27 grade/36 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: 0°/180°
Cruise Line Spacing 4 (chains) 264 (Feet)
Cruise Plot Spacing 4 (chains) 264 (Feet)
Grade/Count Ratio 1:2

Take plots as marked on cruise map. All cedar will be reserved. Record all snags as SN.

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.

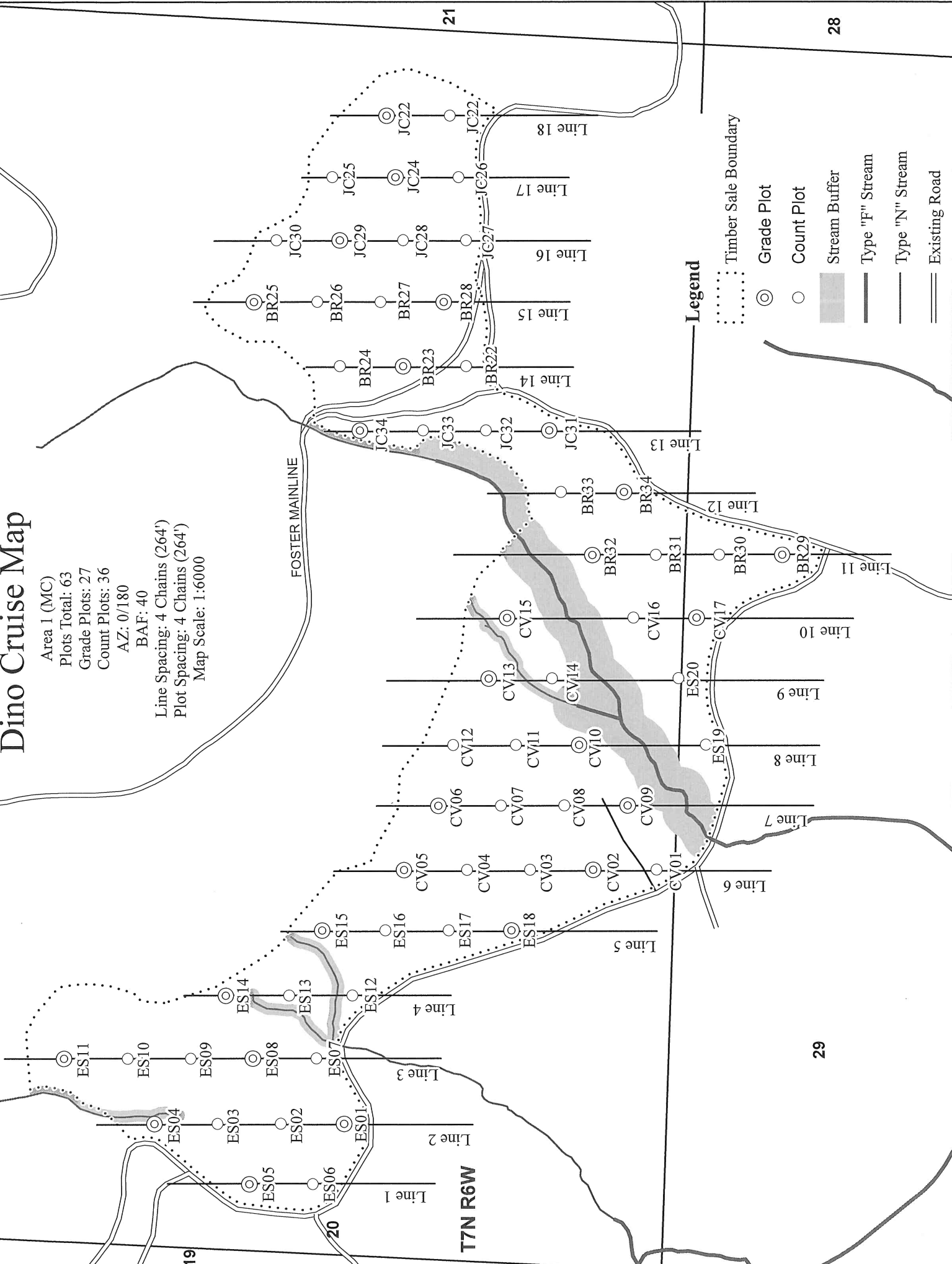
10. **Attachments**: A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: John Choate
Approved by: [Signature]
Date: 9/29/2017

Dino Cruise Map

Area 1 (MC)
 Plots Total: 63
 Grade Plots: 27
 Count Plots: 36
 AZ: 0/180
 BAF: 40
 Line Spacing: 4 Chains (264')
 Plot Spacing: 4 Chains (264')
 Map Scale: 1:6000

FOSTER MAINLINE



**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Dino **Area(s)** 2 and 3

Harvest Type: (MC) Modified Clearcut

Approx. Cruise Acres: 143 **Estimated CV%** 60 Net BF/Acre **SE% Objective** 8 Net BF/Acre

Planned Sale Volume : 5,720 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 70 cruise plots (36 grade/ 34 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 for Conifers, 33.61 for hardwoods (Full point)
Cruise Line Directions: 33°/213°
Cruise Line Spacing 6.5 (chains) 429 (Feet)
Cruise Plot Spacing 3 (chains) 198 (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 33.61 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:

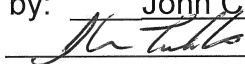
- A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
- B. Sort: 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: John Choate
Approved by: 
Date: 9/29/18

Dino Cruise Map

Area 2 & 3 (MC)

Plots Total: 70

Grade Plots: 36

Count Plots: 34

AZ: 33/213

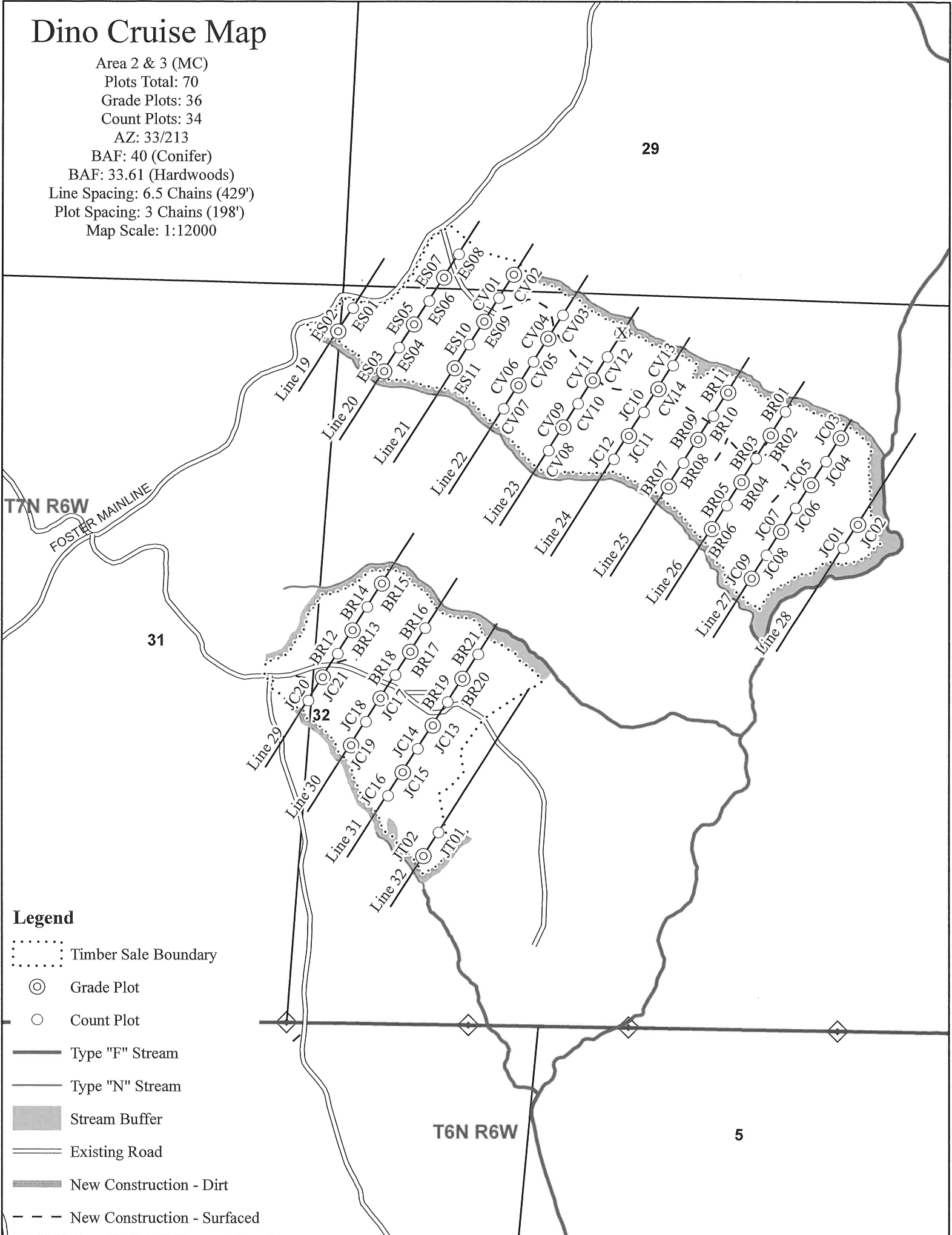
BAF: 40 (Conifer)

BAF: 33.61 (Hardwoods)

Line Spacing: 6.5 Chains (429')

Plot Spacing: 3 Chains (198')

Map Scale: 1:12000



Legend

⋯ Timber Sale Boundary

⊙ Grade Plot

○ Count Plot

— Type "F" Stream

— Type "N" Stream

■ Stream Buffer

== Existing Road

--- New Construction - Dirt

- - - New Construction - Surfaced

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T07N R06W S20 TyTK98.00 T07N R06W S32 TyTK137.00 T07N R06W S32 TyTK3.00				Project:		DINO												Page1			
				Acres		238.00												Date10/25/2017			
																		Time11:51:36AM			
S Spp	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	Bd. 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								
H	DOCU															9	16		0.00	1.1	
H	DO2S	76	1.1	6,646	6,571	1,564			46	54	1		8	92	39	16	389	2.25	16.9		
H	DO3S	20	.6	1,736	1,725	411		97	3		2	5	19	74	36	8	99	0.86	17.5		
H	DO4S	4	1.2	316	313	74		100			81	14	5		19	7	28	0.53	11.0		
H Totals		18	1.0	8,698	8,609	2,049		23	36	41	4	2	10	85	32	11	185	1.41	46.4		
D	DOCU															9	21		0.00	2.0	
D	DO2S	83	.8	30,306	30,066	7,156		0	32	68	0	0	3	97	39	17	468	2.49	64.2		
D	DO3S	15	.7	5,530	5,490	1,307		92	0	8	3	6	26	64	35	9	106	0.90	51.9		
D	DO4S	2		513	513	122	3	97			60	36	3		19	7	30	0.53	17.1		
D Totals		77	.8	36,349	36,069	8,584 8,584	0	16	27	58	1	2	6	90	35	13	267	1.73	135.3		
A	DOCU															6	14		0.00	1.0	
A	DO1S	30	1.6	624	614	146			100		36	20	18	26	26	14	177	1.76	3.5		
A	DO2S	24	1.8	482	474	113		76	24		9	11	26	54	33	11	146	1.25	3.2		
A	DO3S	19	1.3	382	376	90		100			15	15	47	23	29	9	72	0.87	5.2		
A	DO4S	27		518	518	123	18	82			30	29	24	16	25	6	31	0.49	16.6		
A Totals		4	1.2	2,006	1,982	472	5	59	37		24	19	27	30	26	8	67	0.82	29.5		
M	DO3S	100		9	9	2		100						100	40	9	120	1.87	.1		
M Totals		0		9	9	2		100						100	40	9	120	1.87	.1		
S	DO2S	87	7.1	43	40	9			100					100	40	20	650	4.23	.1		
S	DO3S	13		5	5	1		100				100			24	10	90	1.46	.1		
S Totals		0	6.3	48	45	10 11		12	88			12		88	32	15	370	3.19	.1		
C	DO4S	100		0	0	0		100				100			30	4	20	0.63	.0		
C Totals		0		0	0	0		100				100			30	4	20	0.63	.0		
Totals			0.8	47,110	46,715	11,118		0	19	29	52	3	2	8	87	33	12	221	1.56	211.4	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)														Page 1						
		Project: DINO														Date 10/24/2017						
																Time 11:42:21AM						
T07N R06W S20 TTK										T07N R06W S20 TTK												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
07N	06W	20	A1	TK	98.00	63	151	1	W													
S So Gr T rt ad Spp			%	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
			Net BdFt					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	Lf	
D	DO	CU		100.0	115													10	21		0.00	.7
D	DO	2S	82	.6	21,100	20,963	2,054			0	32	68				6	94	39	17	456	2.57	45.9
D	DO	3S	16	1.5	3,871	3,812	374			79	1	20		6	9	31	54	33	9	120	1.05	31.7
D	DO	4S	2		507	507	50			100				69	31			17	8	30	0.59	16.9
D Totals			67	1.2	25,593	25,281	2,478			14	27	59		2	2	9	86	33	13	265	1.87	95.3
H	DO	CU		100.0	56													5	20		0.00	.6
H	DO	2S	74	.5	8,194	8,155	799				47	53				10	90	39	15	383	2.23	21.3
H	DO	3S	21		2,395	2,395	235			100				1	6	21	72	37	8	92	0.79	26.0
H	DO	4S	5	1.9	477	468	46			100				92		8		19	7	27	0.50	17.6
H Totals			29	.9	11,121	11,018	1,080			26	35	39		4	1	12	82	32	10	168	1.31	65.5
A	DO	1S	8		102	102	10			100				100				20	14	140	1.60	.7
A	DO	2S	12		141	141	14			100						100		32	10	120	1.00	1.2
A	DO	3S	24		285	285	28			100					33	46	20	32	9	80	1.05	3.6
A	DO	4S	56		666	666	65	18	82					17	40	20	23	28	6	36	0.49	18.5
A Totals			3		1,194	1,194	117	10	82	9				18	30	34	18	29	7	50	0.63	23.9
Type Totals				1.1	37,908	37,493	3,674	0	20	29	51			3	3	11	83	32	11	203	1.53	184.7

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)													Page 1						
		Project: DINO													Date	10/24/2017					
															Time	11:42:39AM					
T07N R06W S32 TTK										T07N R06W S32 TTK											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
07N	06W	32	A23	TK	137.00	69	217	1	W												
S So Gr Spp T rt ad			% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
			Def%	Gross	Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf				
D Totals			82	1.9	44,487	43,621	5,976	0	16	26	57	1	2	5	92	35	12	267	1.68	163.2	
H DO CU				00.0	165											11	15		0.00	1.4	
H DO 2S			78	1.8	5,562	5,463	748			45	55	1		5	94	39	16	395	2.27	13.8	
H DO 3S			19	1.4	1,275	1,256	172		94	6		3	4	16	77	36	9	109	0.96	11.5	
H DO 4S			3		204	204	28		100			63	37			19	7	32	0.58	6.4	
H Totals			13	3.9	7,205	6,924	949		20	37	43	3	2	7	88	33	12	209	1.55	33.1	
A DO CU				00.0	100											6	14		0.00	1.7	
A DO 1S			38	1.8	989	972	133			100		31	22	19	28	27	14	180	1.77	5.4	
A DO 2S			28	2.0	721	707	97		73	27		10	13	15	62	33	11	151	1.29	4.7	
A DO 3S			17	1.9	449	440	60		100			22	7	48	24	28	9	69	0.79	6.4	
A DO 4S			17		414	414	57	19	81			45	16	30	8	23	6	27	0.50	15.3	
A Totals			5	5.3	2,674	2,533	347	3	51	46		26	16	25	33	25	9	76	0.92	33.4	
S DO 2S			87	7.1	73	67	9			100				100		40	20	650	4.23	.1	
S DO 3S			13		9	9	1		100				100			24	10	90	1.46	.1	
S Totals			0	6.3	82	77	11		12	88			12	88		32	15	370	3.19	.2	
M DO 3S			100		16	16	2		100					100		40	9	120	1.87	.1	
M Totals			0		16	16	2		100					100		40	9	120	1.87	.1	
Type Totals					2.4	54,464	53,170	7,284	0	18	29	53	2	2	6	89	33	12	231	1.58	230.1

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)												Page		1					
				Project: DINO												Date		10/25/2017					
																Time		11:35:23AM					
T07N R06W S32 TTK																T07N R06W S32 TTK							
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt					
07N		06W		32		RW		TK		3.00		69		218		1		W					
				% 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		
Spp	T	So	Gr							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft			
D		DO	CU																9	21		0.00	2.9
D		DO	2S	83	.9	36,751	36,438	109			0	32	68	0	0	2	98		40	17	473	2.46	77.1
D		DO	3S	15	.4	6,691	6,666	20			97		3	2	5	25	68		35	9	101	0.85	66.1
D		DO	4S	2		517	517	2		6	94			54	40	6			20	7	30	0.50	17.2
D		Totals		82	.8	43,959	43,621	131		0	16	26	57	1	2	5	92		35	12	267	1.68	163.2
H		DO	CU																11	15		0.00	1.4
H		DO	2S	78	1.8	5,562	5,463	16				45	55	1		5	94		39	16	395	2.27	13.8
H		DO	3S	19	1.4	1,275	1,256	4			94	6		3	4	16	77		36	9	109	0.96	11.5
H		DO	4S	3		204	204	1			100			63	37				19	7	32	0.58	6.4
H		Totals		13	1.7	7,041	6,924	21			20	37	43	3	2	7	88		33	12	209	1.55	33.1
A		DO	CU																6	14		0.00	1.7
A		DO	1S	38	1.8	989	972	3				100		31	22	19	28		27	14	180	1.77	5.4
A		DO	2S	28	2.0	721	707	2			73	27		10	13	15	62		33	11	151	1.29	4.7
A		DO	3S	17	1.9	449	440	1			100			22	7	48	24		28	9	69	0.79	6.4
A		DO	4S	17		414	414	1		19	81			45	16	30	8		23	6	27	0.50	15.3
A		Totals		5	1.6	2,574	2,533	8		3	51	46		26	16	25	33		25	9	76	0.92	33.4
S		DO	2S	87	7.1	73	67	0				100				100			40	20	650	4.23	.1
S		DO	3S	13		9	9	0			100				100				24	10	90	1.46	.1
S		Totals		0	6.3	82	77	0			12	88			12	88			32	15	370	3.19	.2
C		DO	4S	100		9	9	0		100					100				30	4	20	0.63	.5
C		Totals		0		9	9	0		100					100				30	4	20	0.63	.5
M		DO	3S	100		16	16	0		100						100			40	9	120	1.87	.1
M		Totals		0		16	16	0		100						100			40	9	120	1.87	.1
Type Totals					.9	53,681	53,180	160		0	18	29	53	2	2	6	89		33	12	231	1.58	230.6

TC PSTATS		PROJECT STATISTICS							PAGE	1		
		PROJECT		DINO					DATE	10/25/2017		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
07N	06	20	A1	TK		238.00	201	1,253	1	W		
07N	06W	32	A23	TK								
07N	06W	32	RW	TK								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			201	1253	6.2							
CRUISE			95	582	6.1	22,479	2.6					
DBH COUNT												
REFOREST												
COUNT			106	671	6.3							
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			421	51.7	24.3	93	33.8	166.5	36,349	36,069	8,106	8,106
WHEMLOCK			91	22.3	20.0	70	10.9	48.6	8,698	8,609	2,124	2,124
R ALDER			65	20.3	14.9	41	6.4	24.6	2,006	1,982	632	632
S SPRUCE			2	.1	32.0	66	0.1	.3	48	45	12	12
BL MAPLE			2	.1	26.0	41	0.1	.3	9	9	6	6
WR CEDAR			1	.0	15.0	31	0.0	.0	0	0	0	0
TOTAL			582	94.4	21.6	77	51.7	240.4	47,110	46,715	10,881	10,881
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		55.7	2.7	916	942	968						
WHEMLOCK		59.6	6.2	549	586	623						
R ALDER		59.8	7.4	135	146	157						
S SPRUCE				740	740	740						
BL MAPLE				120	120	120						
WR CEDAR												
TOTAL		68.1	2.8	770	792	815	185	46	21			
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		123.1	8.7	47	52	56						
WHEMLOCK		193.7	13.6	19	22	25						
R ALDER		258.8	18.2	17	20	24						
S SPRUCE		1387.5	97.8	0	0	0						
BL MAPLE		1387.5	97.8	0	0	0						
WR CEDAR		1417.7	99.9	0	0	0						
TOTAL		100.3	7.1	88	94	101	401	100	45			
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		109.1	7.7	154	167	179						
WHEMLOCK		170.4	12.0	43	49	54						
R ALDER		250.6	17.7	20	25	29						
S SPRUCE		1387.5	97.8	0	0	1						
BL MAPLE		1387.5	97.8	0	0	1						
WR CEDAR		1417.7	99.9	0	0	0						
TOTAL		91.8	6.5	225	240	256	336	84	37			
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		115.5	8.1	33,134	36,069	39,004						
WHEMLOCK		173.1	12.2	7,559	8,609	9,660						
R ALDER		261.3	18.4	1,617	1,982	2,347						

TC PSTATS		PROJECT STATISTICS							PAGE	2
		PROJECT DINO							DATE	10/25/2017
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
07N	06	20	A1	TK	238.00	201	1,253	1	W	
07N	06W	32	A23	TK						
07N	06W	32	RW	TK						
CL	68.1		COEFF	NET BF/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
S SPRUCE			1387.5	97.8	1	45	89			
BL MAPLE			1387.5	97.8	0	9	18			
WR CEDAR			1417.7	99.9	0	0	0			
TOTAL			100.5	7.1	43,405	46,715	50,025	404	101	45

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	DINO	DATE				10/24/2017	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
07N	06W	20	A1	00MC	98.00	63	348	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL		63	348	5.5							
CRUISE		27	154	5.7	9,345		1.6				
DBH COUNT											
REFOREST											
COUNT		36	194	5.4							
BLANKS											
100 %											
STAND SUMMARY											
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
DOUG FIR		97	36.0	25.6	90	25.5	128.9	25,593	25,281	5,913	5,891
WHEMLOCK		39	32.9	18.8	67	14.6	63.5	11,121	11,018	2,761	2,752
R ALDER		15	22.7	13.2	31	5.9	21.6	1,194	1,194	433	433
SNAG		3	3.7	16.8	68	1.4	5.7				
TOTAL		154	95.4	20.6	67	48.5	219.7	37,908	37,493	9,106	9,075
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		53.3	5.4	846	894	942					
WHEMLOCK		67.8	10.8	488	547	606					
R ALDER		62.9	16.8	54	65	76					
SNAG											
TOTAL		71.4	5.8	667	708	749	204	51	23		
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		58.1	7.3	33	36	39					
WHEMLOCK		137.5	17.3	27	33	39					
R ALDER		226.1	28.5	16	23	29					
SNAG		268.0	33.7	2	4	5					
TOTAL		69.2	8.7	87	95	104	191	48	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		55.0	6.9	120	129	138					
WHEMLOCK		112.4	14.1	55	63	72					
R ALDER		225.3	28.4	15	22	28					
SNAG		246.9	31.1	4	6	7					
TOTAL		35.7	4.5	210	220	230	51	13	6		
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		57.8	7.3	23,440	25,281	27,121					
WHEMLOCK		114.2	14.4	9,434	11,018	12,602					
R ALDER		226.0	28.4	855	1,194	1,534					
SNAG											
TOTAL		38.6	4.9	35,672	37,493	39,314	59	15	7		

TC TSTATS				STATISTICS				PAGE 1				
				PROJECT	DINO	DATE 10/24/2017						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt			
07N	06W	32	A23	00MC	137.00	69	485	1	W			
				TREES	ESTIMATED	PERCENT						
				PER PLOT	TOTAL	SAMPLE						
					TREES	TREES						
TOTAL			69	485	7.0							
CRUISE			35	230	6.6	14,505		1.6				
DBH COUNT												
REFOREST												
COUNT			34	246	7.2							
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			162	62.7	23.7	95	39.6	192.9	44,487	43,621	9,747	9,657
WHEMLOCK			26	14.9	21.7	75	8.2	38.2	7,205	6,924	1,715	1,685
R ALDER			25	18.6	16.3	49	6.6	26.8	2,674	2,533	790	772
SNAG			14	9.0	18.1	56	3.8	16.1	50		33	
S SPRUCE			1	.1	32.0	66	0.1	.6	82	77	21	21
WR CEDAR			1	.5	15.0	31	0.1	.6	9	9	9	9
BL MAPLE			1	.1	26.0	41	0.1	.5	16	16	10	10
TOTAL			230	105.9	21.8	80	59.0	275.6	54,524	53,180	12,324	12,153
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		56.4	4.4	914	956	999						
WHEMLOCK		54.7	10.9	548	615	683						
R ALDER		49.1	10.0	153	170	187						
SNAG												
S SPRUCE												
WR CEDAR												
BL MAPLE												
TOTAL		74.0	4.9	731	769	806	219	55	24			
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		72.6	8.7	57	63	68						
WHEMLOCK		148.5	17.9	12	15	18						
R ALDER		186.0	22.4	14	19	23						
SNAG		242.8	29.2	6	9	12						
S SPRUCE		830.7	99.9	0	0	0						
WR CEDAR		830.7	99.9	0	0	1						
BL MAPLE		830.7	99.9	0	0	0						
TOTAL		51.0	6.1	99	106	112	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				
DOUG FIR		60.6	7.3	179	193	207						
WHEMLOCK		144.3	17.4	32	38	45						
R ALDER		179.5	21.6	21	27	33						
SNAG		245.0	29.5	11	16	21						
S SPRUCE		830.7	99.9	0	1	1						
WR CEDAR		830.7	99.9	0	1	1						
BL MAPLE		830.7	99.9	0	0	1						
TOTAL		47.4	5.7	260	276	291	90	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				

TC TSTATS				STATISTICS PROJECT DINO				PAGE 2	
								DATE 10/24/2017	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
07N	06W	32	A23	00MC	137.00	69	485	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
DOUG FIR		63.5	7.6	40,290	43,621	46,952			
WHEMLOCK		147.2	17.7	5,697	6,924	8,150			
R ALDER		179.9	21.6	1,985	2,533	3,082			
SNAG									
S SPRUCE		830.7	99.9	0	77	154			
WR CEDAR		830.7	99.9	0	9	19			
BL MAPLE		830.7	99.9	0	16	32			
TOTAL		53.7	6.5	49,746	53,180	56,613	115	29	13

TC		PSTNDSUM		Stand Table Summary										Page Date:		1 10/25/2017	
T07N R06W S20 TyTK98.00 T07N R06W S32 TyTK137.00 T07N R06W S32 TyTK3.00					Project DINO Acres238.00					Time: 11:36:51AM Grown Year:							
S Spec	T	Tot							Average Log		Net		Net		Totals		
		DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF	
D		12	4	86	66	1.787	1.40	1.79	19.0	60.0		34	107		81	26	
D		13	7	86	101	2.877	2.65	5.75	17.2	64.0		99	368		235	88	
D		14	4	85	91	1.313	1.40	1.97	24.3	80.0		48	158		114	37	
D		15	6	84	101	1.715	2.11	3.43	23.5	83.3		81	286		192	68	
D		16	3	85	110	.894	1.25	1.79	28.2	100.0		50	179		120	43	
D		17	15	86	106	3.712	5.85	7.87	30.3	108.8		238	856		567	204	
D		18	6	88	104	1.191	2.11	2.78	31.9	118.6		89	330		211	78	
D		19	12	89	108	2.537	5.00	5.79	36.2	129.8		209	751		498	179	
D		20	6	87	117	1.145	2.50	2.86	39.3	147.5		112	422		268	100	
D		21	7	87	134	1.103	2.65	3.31	41.7	170.7		138	565		328	134	
D		22	21	87	122	3.311	8.74	9.31	44.8	186.0		417	1,732		993	412	
D		23	22	86	121	3.083	8.90	8.38	46.2	188.9		387	1,584		922	377	
D		24	26	88	127	2.993	9.40	8.31	55.1	230.4		457	1,914		1,089	456	
D		25	23	88	126	2.885	9.84	8.17	58.0	248.7		474	2,033		1,129	484	
D		26	30	89	134	3.174	11.70	9.33	64.4	290.8		601	2,714		1,431	646	
D		27	27	87	129	2.530	10.06	7.06	68.5	298.1		484	2,105		1,152	501	
D		28	44	88	137	3.951	16.89	11.60	75.5	344.7		876	3,997		2,085	951	
D		29	22	89	135	1.939	8.90	5.55	81.2	379.5		450	2,105		1,071	501	
D		30	25	88	141	1.987	9.75	5.96	85.6	408.4		510	2,434		1,214	579	
D		31	26	88	137	1.965	10.30	5.90	90.2	434.1		532	2,559		1,265	609	
D		32	29	87	133	2.138	11.94	5.99	100.2	470.0		601	2,817		1,429	671	
D		33	13	87	138	.933	5.54	2.80	103.8	499.4		291	1,398		692	333	
D		34	13	86	140	.817	5.15	2.34	110.7	555.0		259	1,298		617	309	
D		35	14	87	144	.853	5.70	2.56	119.9	599.4		307	1,533		730	365	
D		36	6	87	141	.353	2.50	1.06	125.8	638.3		133	677		317	161	
D		37	2	91	157	.094	.70	.28	151.0	833.3		43	235		101	56	
D		38	3	86	140	.159	1.25	.48	138.8	697.1		66	332		157	79	
D		39	4	83	146	.216	1.80	.65	145.3	703.8		94	457		225	109	
D		40	1	86	124	.063	.55	.19	136.0	660.0		26	124		61	30	
D		Totals	421	87	121	51.720	166.52	133.25	60.8	270.7		8,106	36,069		19,293	8,584	
H		9	1	80	39	1.517	.67	1.52	8.0	20.0		12	30		29	7	
H		11	1	86	69	1.016	.67	1.02	19.0	60.0		19	61		46	15	
H		12	4	87	75	2.813	2.21	4.52	14.7	47.6		66	215		158	51	
H		13	1	89	82	.727	.67	1.45	15.0	60.0		22	87		52	21	
H		15	1	89	111	.546	.67	1.09	30.5	120.0		33	131		79	31	
H		16	4	90	84	1.582	2.21	3.16	27.7	102.0		88	323		209	77	
H		17	5	88	88	1.528	2.41	2.50	37.4	136.6		94	342		223	81	
H		18	4	87	91	1.250	2.21	2.50	35.9	123.5		90	309		214	73	
H		19	1	88	101	.340	.67	.68	43.5	150.0		30	102		70	24	
H		20	2	88	95	.615	1.34	1.23	46.5	162.5		57	200		136	48	
H		21	11	88	98	2.281	5.49	4.92	49.8	192.4		245	947		584	225	
H		22	8	88	99	1.674	4.42	3.68	51.1	199.0		188	732		447	174	
H		23	4	87	113	.766	2.21	2.30	46.3	187.2		106	430		253	102	
H		24	6	88	97	.980	3.08	1.96	66.0	258.8		129	507		308	121	
H		25	12	90	117	1.668	5.69	5.00	59.4	264.2		297	1,322		708	315	
H		26	5	89	108	.781	2.88	2.11	64.8	274.9		137	579		325	138	
H		27	3	90	114	.506	2.01	1.35	74.9	353.7		101	477		240	114	
H		28	3	87	130	.360	1.54	1.08	79.0	376.8		85	407		203	97	
H		29	1	88	118	.146	.67	.44	79.0	350.0		35	153		82	37	
H		30	3	86	111	.314	1.54	.80	89.5	388.7		72	313		171	74	
H		31	2	85	83	.166	.87	.33	66.0	255.0		22	85		52	20	
H		32	5	85	112	.406	2.27	1.09	98.7	449.7		107	489		256	116	
H		36	3	81	105	.218	1.54	.44	136.9	580.9		60	253		142	60	

TC		PSTNDSUM		Stand Table Summary										Page		2	
														Date:		10/25/2017	
T07N R06W S20 TyTK98.00 T07N R06W S32 TyTK137.00 T07N R06W S32 TyTK3.00				Project		DINO				Time:		11:36:51AM					
				Acres		238.00				Grown Year:							
S Sp	T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
H		38	1	82	104	.085	.67	.17	168.5	675.0		29	115	68	27		
H		Totals	91	87	91	22.286	48.60	45.35	46.8	189.9		2,124	8,609	5,055	2,049		
A		10	2	86	42	2.173	1.19	2.17	11.0	40.0		24	87	57	21		
A		11	3	86	24	1.853	1.22	1.85	7.5	14.8		14	28	33	7		
A		12	7	86	43	4.575	3.59	4.58	15.0	38.5		69	176	163	42		
A		13	8	86	69	2.736	2.52	4.79	16.3	51.4		78	246	186	59		
A		14	1	86	59	.554	.59	.55	26.0	70.0		14	39	34	9		
A		15	5	86	63	1.510	1.85	2.51	20.0	65.8		50	165	119	39		
A		16	4	87	66	.903	1.26	1.81	22.5	77.5		41	140	97	33		
A		17	6	86	70	1.200	1.89	2.40	25.0	88.3		60	212	143	50		
A		18	5	87	57	1.049	1.85	1.76	26.7	86.0		47	151	112	36		
A		19	8	87	58	1.562	3.08	2.52	32.8	101.1		83	255	197	61		
A		20	2	86	46	.543	1.19	.54	42.5	80.0		23	43	55	10		
A		21	4	86	69	.524	1.26	1.05	38.0	122.5		40	128	95	31		
A		22	4	86	71	.478	1.26	.72	44.3	166.7		32	119	76	28		
A		23	4	86	65	.437	1.26	.87	45.0	160.0		39	140	94	33		
A		24	2	87	64	.201	.63	.40	47.0	130.0		19	52	45	12		
A		Totals	65	86	53	20.298	24.65	28.52	22.2	69.5		632	1,982	1,505	472		
S		32	2	82	79	.061	.34	.12	102.0	370.0		12	45	30	11		
S		Totals	2	82	79	.061	.34	.12	102.0	370.0		12	45	30	11		
M		26	2	87	49	.078	.29	.08	75.0	120.0		6	9	14	2		
M		Totals	2	87	49	.078	.29	.08	75.0	120.0		6	9	14	2		
C		15	1	83	37	.006	.01	.01	19.0	20.0		0	0	0	0		
C		Totals	1	83	37	.006	.01	.01	19.0	20.0		0	0	0	0		
Totals		582		87	99	94.448	240.40	207.33	52.5	225.3		10,881	46,715	25,896	11,118		

Log Stock Table - MBF

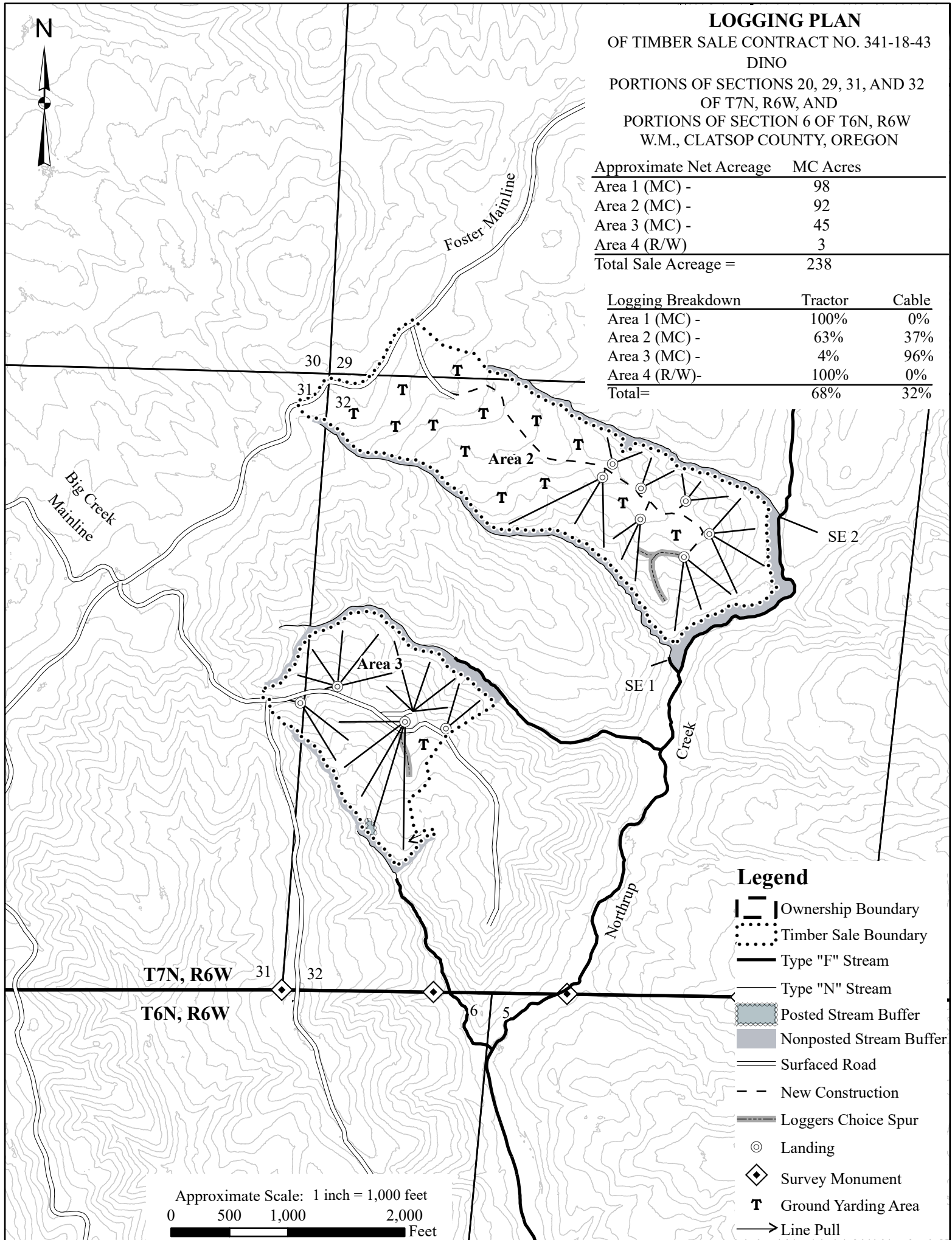
Page 1
Date 10/25/2017
Time 11:36:50AM

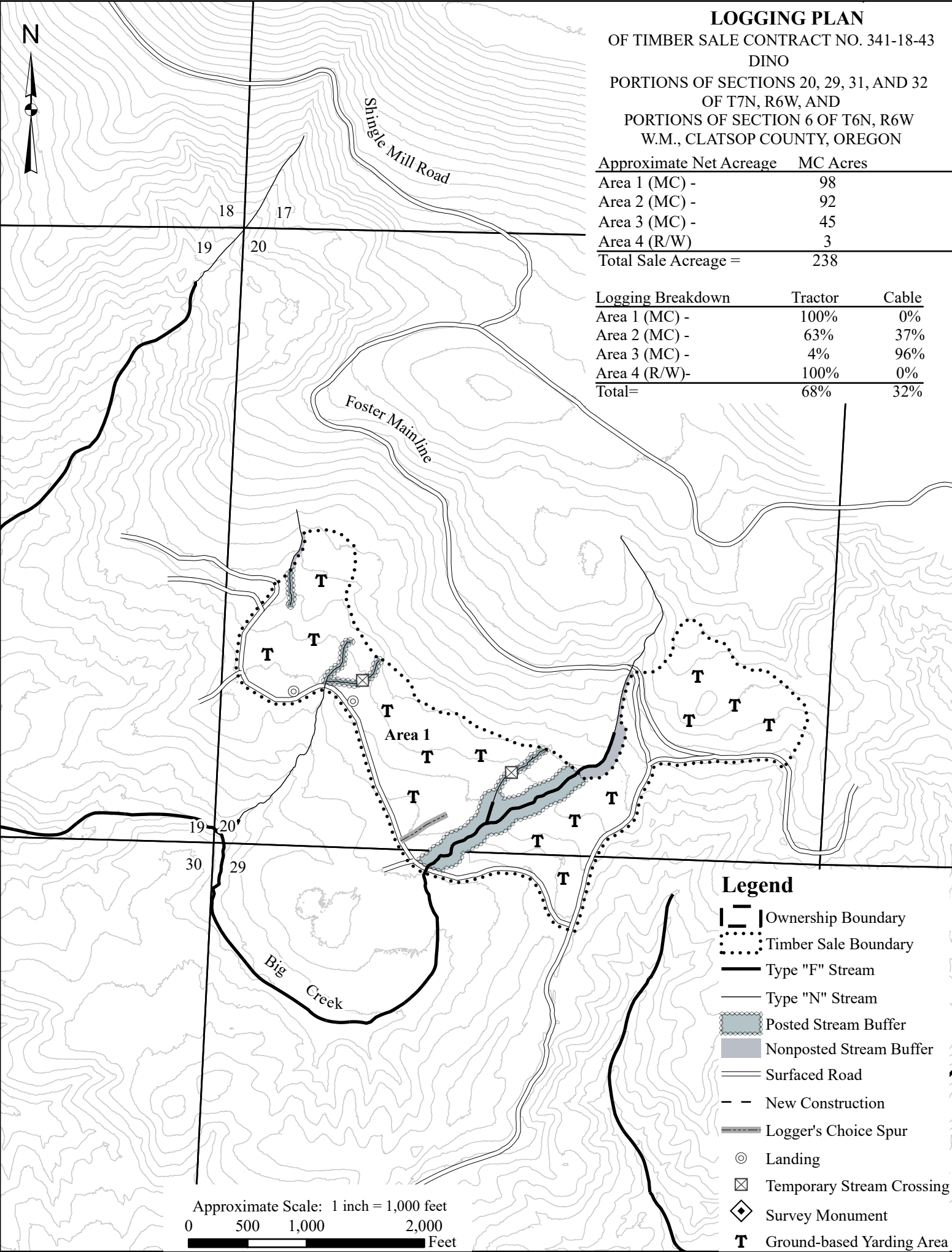
T07N R06W S20 TyTK 98.00
T07N R06W S32 TyTK 137.00
T07N R06W S32 TyTK 3.00

Project: DINO
Acres 238.00

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	2S	20	11	22.2	9	.4							9					
H	DO	2S	32	120		120	5.8					54	33	32					
H	DO	2S	40	1,451	1.0	1,436	70.1					200	306	547	338	44			
H	DO	3S	16	4		4	.2					4							
H	DO	3S	20	3		3	.1					3							
H	DO	3S	22	6		6	.3				2	4							
H	DO	3S	24	4		4	.2				4								
H	DO	3S	30	12		12	.6				12								
H	DO	3S	32	79	1.5	78	3.8			33	19	15	10						
H	DO	3S	36	14		14	.7					14							
H	DO	3S	38	11		11	.5					11							
H	DO	3S	40	280		278	13.6			69	49	161							
H	DO	4S	12	5		5	.2			3	2								
H	DO	4S	14	3		3	.1				1	1							
H	DO	4S	16	20		20	1.0			9	11								
H	DO	4S	18	6		6	.3			3	4								
H	DO	4S	20	26		26	1.3			26									
H	DO	4S	24	11		11	.5			11									
H	DO	4S	32	5	20.0	4	.2			4									
H	Totals			2,070	1.0	2,049	18.4			156	104	214	265	339	589	338	44		
D	DO	2S	20	2		2	.0					2							
D	DO	2S	28	21		21	.2									21			
D	DO	2S	32	204		204	2.4					5	85	70	43				
D	DO	2S	36	10		10	.1					10							
D	DO	2S	40	6,976		6,919	80.6					20	606	917	2541	2140	695		
D	DO	3S	14	1		1	.0					1							
D	DO	3S	16	24	18.8	19	.2			2	3	7					7		
D	DO	3S	18	8		8	.1					6	1						
D	DO	3S	20	14		14	.2			2	7	4	2						
D	DO	3S	22	8		8	.1				6	2							
D	DO	3S	24	50		50	.6				20	30							
D	DO	3S	26	9		9	.1				4	5							
D	DO	3S	28	8		8	.1			2		5							
D	DO	3S	30	9		9	.1			3	6								
D	DO	3S	32	329		329	3.8			41	108	166				14			
D	DO	3S	34	15		15	.2			5	7	3							

TC PLOGSTVB				Log Stock Table - MBF															
T07N R06W S20 TyTK98.00 T07N R06W S32 TyTK137.00 T07N R06W S32 TyTK3.00				Project: DINO Acres238.00												Page 3 Date 10/25/2017 Time 11:36:50AM			
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+
A		DO	4S 30	28		28	5.8		4	24									
A		DO	4S 32	17		17	3.7		4	14									
A		DO	4S 34	13		13	2.7			13									
A		DO	4S 40	20		20	4.3		5	15									
A		Totals		477	1.2	472	4.2		22	105	77	95	76	70	26				
M		DO	3S 40	2		2	100.0			2									
M		Totals		2		2	.0			2									
S		DO	2S 40	10	7.1	9	87.8								9				
S		DO	3S 24	1		1	12.2				1								
S		Totals		11	6.3	11	.1					1			9				
C		DO	4S 30	0		0	100.0		0										
C		Totals		0		0	.0		0										
Total		All Species		11,212		11,118	100.0		27	518	627	953	1048	1397	3199	2576	773		





Site Prep Appraisal

Sale Number: 341-18-43
Sale Name: Dino
Date: 10/13/2017

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	F	98.0	49	\$129.00	\$6,321.00	
2	MC	F	58.0	29	\$129.00	\$3,741.00	
3	MC	F	2.0	1	\$129.00	\$129.00	
					In-unit Piling	Sub Total =	\$10,191.00
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	49	\$5.00	\$245.00	
2	8	\$516.00	\$4,128.00	29	\$5.00	\$145.00	
3	5	\$516.00	\$2,580.00	1	\$5.00	\$5.00	
*Cost includes separating firewood					Materials	Sub Total =	\$395.00
					Landing Piling	Sub Total =	\$9,804.00
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 =							\$21,680.00

*Cost includes separating firewood

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Dino
Date: October 12, 2017
By: Cody Valencia *FL*

MBF: 11,118
\$/MBF: \$1.85

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations and snow	Grader 14G	\$778	3	8	\$100	\$3,134
	Dump Truck 12CY	\$163	3	6	\$79	\$963
	FE Loader	\$778	2	6	\$83	\$2,054
Final Road Maintenance	Grader 14G	\$778	1	46	\$100	\$5,378
	Dump Truck 12CY	\$163	2	24	\$79	\$2,222
	FE Loader C966	\$778	1	8	\$83	\$1,442
	Vibratory Roller	\$778	1	30	\$77	\$3,088
	Water Truck 2,500 gallon	\$190	1	16	\$89	\$1,614
	Labor			16	\$40	\$640
Total						\$20,535

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	5.6	3.7	30
Vibratory Roller	1.5	5.6	3.7	30
Big Creek Mainline	N/A	N/A	2.0	16

Process and compact: All crushed rock roads

Foster Mainline 2.16 miles

Exsting spurs and new roads 2.84 miles

Big Creek Mainline ODF Property 0.60 miles

Grade & Process Total = 5.6 miles

Big Creek Mainline Hampton Property 16 hours of grader for spot grading.