



Timber Sale Appraisal
Black Ice
Sale WO-341-2018-54-

District: West Oregon

Date: September 18, 2017

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,057,082.21	\$22,955.68	\$1,080,037.89
		Project Work:	(\$44,230.00)
		Advertised Value:	\$1,035,807.89



Timber Sale Appraisal Black Ice Sale WO-341-2018-54-

District: West Oregon

Date: September 18, 2017

Timber Description

Location: Portions of Sections 21, 22, and 27, T11S, R8W, W.M., Lincoln County, Oregon.

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	24	0	97
Port Orford Cedar	20	0	95
Alder (Red)	18	0	95
Maple	12	0	95

Volume by Grade	3P	SM	2S	3S	3S 12"+	4S	Camprun	Total
Douglas - Fir	35	43	1,663	266	160	37	0	2,204
Port Orford Cedar	0	0	0	5	0	0	0	5
Alder (Red)	0	0	0	0	0	0	79	79
Maple	0	0	0	0	0	0	9	9
Total	35	43	1,663	271	160	37	88	2,297

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

Expected Log Markets: Philomath, Eugene, Springfield, Willamina.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
 $\$356.47/\text{MBF} = \$575.73/\text{MBF} - \$219.26/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$1,261.94/\text{MBF} = \$1,481.14/\text{MBF} - \$219.20/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = \$2.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

HAULING COST ALLOWANCE
Hauling costs equivalent to \$780 daily truck cost.

Other Costs (with Profit & Risk to be added):
Flaggers for Harlan-Burntwoods Rd. 2 x 4 days @ \$400/day = \$3,200

Other Costs (No Profit & Risk added):
Equipment Cleaning (Invasive Species): \$2,000
Firewood Sorting: 14 Landings @ \$100/Landing = \$1,400
Landing Slash Piling: 15 Landings @ \$180/Landing = \$2,700
TOTAL Other Costs (No Profit & Risk added) = \$6,100

SLASH DISPOSAL
Move-In: \$1,290
Machine Wash: \$300
Project Work: 43 hrs @ \$150/hr = \$6,450
TOTAL Slash Disposal = \$8,040



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Logging Conditions

Combination#: 1

Douglas - Fir	54.07%
Port Orford Cedar	80.00%
Alder (Red)	59.11%
Maple	80.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Harvester Head Delimbing
yarding distance: Short (400 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: \$169.14
machines: Log Loader (A)
Forwarder
Harvester
Tower Yarder (Medium)

Combination#: 2

Douglas - Fir	45.93%
Port Orford Cedar	20.00%
Alder (Red)	40.89%
Maple	20.00%

Logging System: Shovel **Process:** Harvester Head Delimbing
yarding distance: Short (400 ft) **downhill yarding:** No
tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 15 **bd. ft / load:** 4600
cost / mbf: \$77.45
machines: Forwarder
Harvester



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Logging Costs

Operating Seasons: 2.00	Profit Risk: 12%
Project Costs: \$44,230.00	Other Costs (P/R): \$3,200.00
Slash Disposal: \$8,040.00	Other Costs: \$6,100.00

Miles of Road

Road Maintenance: \$3.92

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	4.0	4.0
Port Orford Cedar	\$0.00	1.0	3.5
Alder (Red)	\$0.00	2.0	3.6
Maple	\$0.00	2.0	3.6



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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									
\$127.03	\$4.04	\$3.82	\$50.21	\$1.39	\$22.38	\$3.50	\$7.00	\$2.66	\$222.03
Port Orford Cedar									
\$150.80	\$4.12	\$3.82	\$234.00	\$1.39	\$47.30	\$3.50	\$7.00	\$2.66	\$454.59
Alder (Red)									
\$131.65	\$4.12	\$3.82	\$113.75	\$1.39	\$30.57	\$3.50	\$7.00	\$2.66	\$298.46
Maple									
\$150.80	\$4.12	\$3.82	\$113.75	\$1.39	\$32.87	\$3.50	\$7.00	\$2.66	\$319.91

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$701.32	\$479.29	\$0.00
Port Orford Cedar	\$0.00	\$600.00	\$145.41	\$0.00
Alder (Red)	\$0.00	\$571.02	\$272.56	\$0.00
Maple	\$0.00	\$478.07	\$158.16	\$0.00



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Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Port Orford Cedar	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	2,204	\$479.29	\$1,056,355.16
Port Orford Cedar	5	\$145.41	\$727.05
Alder (Red)	79	\$272.56	\$21,532.24
Maple	9	\$158.16	\$1,423.44

Gross Timber Sale Value

Recovery: \$1,080,037.89

Prepared By: Matt McBride

Phone: 541-929-3266

SUMMARY OF ALL PROJECT COSTS

Sale Name: Black Ice

Date: August 2017

Time: 9:22

Project #1 - New Construction and Improvements

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
A to B	6.5 sta	\$2,207
1 to 2	82.3 sta	\$682
3 to 4	13.0 sta	\$3,039
5 to 6	8.9 sta	\$1,899
7 to 8	1.0 sta	\$932
9 to 10	19.0 sta	\$3,908

TOTALS

130.7 sta

\$12,667

Project #2 - Stockpile Creation

\$19,172

Project #3 - Roadside Brushing

<u>Length</u>		<u>Cost</u>	
7.05	miles	\$7,755	\$7,755

Move in

	<u>Cost</u>	<u>On-site move</u>
Crawler tractor, D-7 or equiv.	\$805	
Grader, Cat 14-G or equiv.	\$1,556	
Vibratory roller	\$778	\$77
Back hoe	\$321	
Front end loader, C966 or equiv.	\$778	
Brush Cutter	\$321	

TOTAL

\$4,636

GRAND TOTAL

\$44,230

Compiled by M. McBride

Date 08/15/2017

SUMMARY OF CONSTRUCTION COST

SALE	Black Ice	Project #	1	LENGTH	const	6.5 sta
ROAD	A to B				unsurfaced	

CLEARING AND GRUBBING

0.40 acres	@	\$1,337.00 /acre	=	\$535 road
0.10 acres	@	\$1,337.00 /acre	=	\$134 landing

TOTAL CLEARING AND GRUBBING = \$669

EXCAVATION

With D7 dozer or equivalent

Construct road	6.5 sta	@	\$122.00 /sta	=	\$793
Construct landing	1 ldg	@	\$389.00 /ldg	=	\$389
Shape subgrade (with road grader)	6.5 sta	@	\$18.35 /sta	=	\$119
Compact subgrade (with vibratory roller)	6.5 sta	@	\$20.19 /sta	=	\$131

TOTAL EXCAVATION = \$1,432

SURFACING

			Size	Cost/yd	
Junction patch rock	30 cy of		3-0"	\$3.52	= \$106

TOTAL ROCK COST = \$106

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$2,207

SUMMARY OF CONSTRUCTION COST

SALE	Black Ice	Project #	1	LENGTH	improve	82.3 sta
ROAD	1 to 2	Burnt Woods Ridge Rd.		Surfaced, Ditched		

IMPROVEMENT

With road grader						
Re-open landings (5)	2 hrs	@	\$ 100.00	/hr	=	\$200
Spread/Compact	2 hr	@	\$100.00	/hr	=	\$200
Landing rock (5)						

TOTAL IMPROVEMENT = \$400

SURFACING

			Size	Cost/yd		
Landing rock (4)	80	cy of	3-0"	\$3.52	=	\$282

TOTAL ROCK COST = \$282

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$682

SUMMARY OF CONSTRUCTION COST

SALE	Black Ice	Project #	1	LENGTH	improve	13.0 sta
ROAD	3 to 4				Surfaced, outsloped	

IMPROVEMENT

Re-open road	13 sta	@	\$18.35 /sta	=	\$239
Re-open landings (3) (with road grader)	1.5 hrs	@	\$100.00 /hr	=	\$150
Grade/Process surface rock (with 14G and vibratory roller)	13.0 sta	@	\$24.28 /sta	=	\$316

TOTAL IMPROVEMENT = \$705

SURFACING

			Size	Cost/yd	
Surface rock (3"lift)	250 cy of		3-0"	\$3.52	= \$880
Landing rock (3)	60 cy of		jaw-run	\$20.04	= \$1,202
Junction patch rock	10 cy of		1½-0"	\$22.70	= \$227

TOTAL ROCK COST = \$2,309

SPECIAL PROJECTS

Clean out culverts (inlets and outlets)	1 culvert	@	\$25.00 ea	=	\$25
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TOTAL SPECIAL PROJECTS COST = \$25

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$3,039

SUMMARY OF CONSTRUCTION COST

SALE	Black Ice	Project #	1	LENGTH	const	8.9 sta
ROAD	5 to 6			Surfaced, outsloped		

IMPROVEMENT

Re-open road	8.9 sta	@	\$18.35 /sta	=	\$163
Re-open landing (with road grader)	0.5 hrs	@	\$100.00 /hr	=	\$50
Grade/Process surface rock (with 14G and vibratory roller)	8.9 sta	@	\$24.28 /sta	=	\$216

TOTAL IMPROVEMENT = \$429

SURFACING

			Size	Cost/yd	
Surface rock (3"lift)	170 cy of		3-0"	\$3.52	= \$598
Landing rock	40 cy of		jaw-run	\$20.04	= \$802
Junction patch rock	20 cy of		3-0"	\$3.52	= \$70

TOTAL ROCK COST = \$1,470

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$1,899

SUMMARY OF CONSTRUCTION COST

SALE	Black Ice	Project #	1	LENGTH	const	1 sta
ROAD	7 to 8	(Plunketts Pass Rd.)		Surfaced, Ditched		

IMPROVEMENT

Grade/Process	1.0 sta	@	\$24.28 /sta	=	\$24
surface rock					
(with 14G and vibratory roller)					

TOTAL IMPROVEMENT = \$24

SURFACING

		Size	Cost/yd		
Surface rock (4"lift)	20 cy of	1½-0"	\$22.70	=	\$454
Junction patch rock	20 cy of	1½-0"	\$22.70	=	\$454

TOTAL ROCK COST = \$908

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$932

SUMMARY OF CONSTRUCTION COST

SALE	Black Ice	Project # 1	LENGTH	improve	19 sta
ROAD	9 to 10	(Harlan Pass Rd.)		Surfaced, Ditched	

IMPROVEMENT

Re-open landing	0.5 hrs	@	\$ 100.00 /hr	=	\$50
Re-open turnaround (Station 16+20)	0.5 hrs	@	\$ 100.00 /hr	=	\$50
Pull ditch and scatter waste material	70.0 sta	@	\$12.41 /sta	=	\$869
Grade/Process surface rock (with 14G and vibratory roller)	19.0 sta	@	\$24.28 /sta	=	\$461

TOTAL IMPROVEMENT = \$1,430

SURFACING

			Size	Cost/yd		
Surface rock (3"lift)	360	cy of	3-0"	\$3.52	=	\$1,267
Landing rock	30	cy of	jaw-run	\$20.04	=	\$601
Junction patch rock	20	cy of	1½-0"	\$22.70	=	\$454
Turnaround rock (2) (Stations 3+40 and 16+20)	30	cy of	3-0"	\$3.52	=	\$106

TOTAL ROCK COST = \$2,428

SPECIAL PROJECTS

Clean out culverts (inlets and outlets) (hand dig)	2 culverts	@	\$25.00 ea	=	\$50
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TOTAL SPECIAL PROJECTS COST = \$50

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$3,908

**Black Ice Timber Sale
No. 341-18-054**

Project No. 3

Mechanical Brushing Costs

Date: Aug 15, 2017

Road Segment/ Point	Road Name	Length (Feet)	Miles	Brush Density	Cost / Mile	Segment Cost
B1 to B2	Plunketts Pond Rd.	3,762	0.71	Medium	\$1,100.00	\$781
B3 to B4	Burnt Woods Ridge Rd.	12,333	2.34	Medium	\$1,100.00	\$2,574
B4 to B5	Wolf Cabin Rd.	16,843	3.19	Medium	\$1,100.00	\$3,509
B6 to B7		148	0.03	Medium	\$1,100.00	\$33
2 to B8		2,592	0.49	Medium	\$1,100.00	\$539
B9 to B10		544	0.10	Medium	\$1,100.00	\$110
B11 to B12		1,023	0.19	Medium	\$1,100.00	\$209
Totals		37,245	7.05			\$7,755

SUMMARY OF CONSTRUCTION COST

SALE Black Ice Project # 2 - Rock Stockpile
ROAD

IMPROVEMENT With road grader and vibratory roller

Spread/Compact 1 hr @ \$100.00 /hr = \$100
Stockpile pad rock

TOTAL IMPROVEMENT = \$100

STOCKPILE

Base rock 1000 cy of Size Cost/yd
3-0" \$17.94 = \$17,940

TOTAL ROCK COST = \$17,940

EQUIPEMENT

Back hoe 16 hr. @ \$77.00 /hr. = \$1,232

Compiled by: M. McBride
Date: Aug 15, 2017

GRAND TOTAL =====> \$19,172

SUMMARY OF MAINTENANCE COST

SALE	Black Ice	- Final Maintenance Cost Estimate (Costed in appraisal, not in project costs)
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Grading	Move-in	Grader	\$	778
		Vibratory roller	\$	778

Road Segment	Length	Cost/Sta	Cost	Mileage
1 to 2 (Burnt Woods Ridge Rd.)	82.3	\$24.28	\$1,998.24	1.56
3 to 4	13	\$24.28	\$315.64	0.25
5 to 6	8.9	\$24.28	\$216.09	0.17
7 to 8 (Plunketts Pass Rd.)	1	\$24.28	\$24.28	0.02
9 to 10 (Harlan Pass Rd.)	19	\$24.28	\$461.32	0.36
A to B	6.5	\$24.28	\$157.82	0.12

Intermediate Grading (Point 1 to 2)	Stations 82.3	Cost/Sta \$24.28	Cost \$1,998.24
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Total	213.0	\$5,171.63	4.03
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Maintenance Rock:

1½-0"	Volume	Cost/CY	Cost
	100	\$22.70	\$2,270.00

Grand Total	\$ 8,997.63
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TS Volume 2,297 MBF

Cost / MBF = \$3.92

NOTES:

If rock is need for interim maintenance, reserve a minimum of 50 CY for final maintenance.

Rock Haul Cost Computation

SALE NAME: Black Ice
ROAD NAME:
ROCK SOURCE: Burnt Woods Ridge Stockpile
Route:

DATE: Aug 15, 2017
CLASS: Medium
10-12 CY truck

Road speed time factors:

1.	55 MPH	MRT	0.0 minutes
2.	50 MPH	MRT	0.0 minutes
3.	45 MPH	MRT	0.0 minutes
4.	40 MPH	MRT	0.0 minutes
5.	35 MPH	MRT	0.0 minutes
6.	30 MPH	MRT	0.0 minutes
7.	25 MPH	MRT	0.0 minutes
8.	20 MPH	MRT	0.0 minutes
9.	15 MPH	MRT	0.0 minutes
10.	10 MPH	3.0 MRT	18.0 minutes
11.	05 MPH	MRT	0.0 minutes

Dump or spread time per RT 0.50 minutes
Total hauling cycle time for this setting
(100% efficiency) 18.50 minutes

Operator efficiency correction 0.85 21.76 minutes
Job efficiency correction 0.90 24.18 minutes

Truck capacity (CY) 10.00 2.42 min/CY
Loading time, delay time per CY 0.25 min/CY
TIME (minutes) per cubic yard 2.67 min/CY

COST per CY computation

Cost of truck and operator per hour \$79.00 /hr.
Cost of truck and operator per minute \$1.32 /min

Cost per CY \$3.52 /CY

Spread and compact Water truck, Grader & Roller \$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
3 - 0"	\$ -	\$3.52	\$5.02

Rock Haul Cost Computation

SALE NAME: Black Ice
ROAD NAME: Haul route CLASS: Medium
ROCK SOURCE: Rickard 10-12 CY truck
Route: Garrett Ln, Hwy 20, Harlan/Burnt Woods Rd, Burnt Woods Ridge Rd,

Road speed time factors:

1.	55 MPH		MRT	0.0 minutes
2.	50 MPH	25.0	MRT	30.0 minutes
3.	45 MPH		MRT	0.0 minutes
4.	40 MPH		MRT	0.0 minutes
5.	35 MPH		MRT	0.0 minutes
6.	30 MPH		MRT	0.0 minutes
7.	25 MPH	4.0	MRT	9.6 minutes
8.	20 MPH		MRT	0.0 minutes
9.	15 MPH	2.0	MRT	8.0 minutes
10.	10 MPH	3.0	MRT	18.0 minutes
11.	05 MPH		MRT	0.0 minutes

Dump or spread time per RT 0.50 minutes

Total hauling cycle time for this setting
(100% efficiency) 66.10 minutes

Operator efficiency correction 0.85 77.76 minutes

Job efficiency correction 0.90 86.40 minutes

Truck capacity (CY) 10.00 8.64 min/CY

Loading time, delay time per CY 0.25 min/CY

TIME (minutes) per cubic yard 8.89 min/CY

COST per CY computation

Cost of truck and operator per hour \$79.00 /hr.

Cost of truck and operator per minute \$1.32 /min

Cost per CY \$11.73 /CY

Spread and compact Water truck, Grader & Roller \$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.97	\$22.70	\$24.20
3 - 0"	\$ 9.31	\$21.04	\$22.54
Jaw Run	\$ 8.31	\$20.04	\$21.54
pit-run	7.65	\$19.38	\$20.88

Note: Pit costs April 1, 2017 Rickard Rock Quarry

Rock Haul Cost Computation

SALE NAME: Black Ice
ROAD NAME: Stockpile Creation CLASS: Medium
ROCK SOURCE: Rickard 10-12 CY truck
Route: Garrett Ln, Hwy 20, Harlan/Burnt Woods Rd, Burnt Woods Ridge Rd,

Road speed time factors:

1.	55 MPH		MRT	0.0 minutes
2.	50 MPH	25.0	MRT	30.0 minutes
3.	45 MPH		MRT	0.0 minutes
4.	40 MPH		MRT	0.0 minutes
5.	35 MPH		MRT	0.0 minutes
6.	30 MPH		MRT	0.0 minutes
7.	25 MPH	4.0	MRT	9.6 minutes
8.	20 MPH		MRT	0.0 minutes
9.	15 MPH	2.0	MRT	8.0 minutes
10.	10 MPH		MRT	0.0 minutes
11.	05 MPH		MRT	0.0 minutes

Dump or spread time per RT 0.50 minutes
Total hauling cycle time for this setting
(100% efficiency) 48.10 minutes

Operator efficiency correction 0.85 56.59 minutes
Job efficiency correction 0.90 62.88 minutes

Truck capacity (CY) 10.00 6.29 min/CY
Loading time, delay time per CY 0.25 min/CY
TIME (minutes) per cubic yard 6.54 min/CY

COST per CY computation

Cost of truck and operator per hour \$79.00 /hr.
Cost of truck and operator per minute \$1.32 /min

Cost per CY \$8.63 /CY

Spread and compact Water truck, Grader & Roller \$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.97	\$19.60	\$21.10
3 - 0"	\$ 9.31	\$17.94	\$19.44
Jaw Run	\$ 8.31	\$16.94	\$18.44
pit-run	7.65	\$16.28	\$17.78

Note: Pit costs April 1, 2017 Rickard Rock Quarry

**Black Ice (341-18-54)
FY 2018**

TIMBER CRUISE REPORT

1. **Sale Area Location:** Portions of Sections 21, 22 and 27, T11S, R8W, W.M., Lincoln County, Oregon.

2. **Fund Distribution:**

- a. **Fund** BOF 100%
- b. **Tax Code**

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Stream Buffers	Patch Cuts	Existing Roads	GTRA	Net Sale Acres	Acreage Comp. Method
1	Modified Clearcut	31	1.7	--	1.8	1.5	26	Ortho photo, GIS, GPS
2	Modified Clearcut	45	5.4	2.8	3.3	0.5	33	Ortho photo, GIS, GPS
Total		76	7.1	2.8	5.1	2.0	59	

4. **Cruisers and Cruise Dates:** Area 1 was cruised by Matt McBride in June 2017. Area 2 was cruised by Matt McBride, Jon Long, and Carli Morgan in June 2017.

5. **Cruise Method and Computation:** The timber sale consists of two modified clearcut areas. Area 1 was cruised using variable radius plot sampling with a 40 BAF. A total of 28 plots were cruised using a 3 by 3 chain grid with a ratio of one count plot for every grade plot. In total, 14 plots were counted, and 14 plots were graded. Area 2 was cruised with a 40 BAF. A total of 30 plots were cruised using a 3 by 3 chain grid with a one to one count to grade plot ratio. In total, 14 plots were counted, and 16 plots were graded in Area 2. Tree count and species were recorded on all count plots. Cruise plots were measured for DBH, height, form factor, grade, and defect. Data was entered into the Atterbury SuperACE cruise program to determine stand statistics and net board foot volume.

Digital ortho photos, Lidar data, and GPS data were used to map the boundaries for the sale, and ArcMap GIS was used to determine gross and net acreage.

6. **Measurement Standards:** Tree heights were measured to the nearest foot, to a top diameter of 7 inches outside bark or to 40% of form factor. Diameters were measured to the nearest inch, and a form point of 16 feet was used to calculate form factor. Form factors were measured or estimated on every graded tree. Most trees were graded in 40 foot log segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.

7. **Timber Description:** Timber in Area 1 consists of approximately 42 to 85 year-old Douglas-fir with scattered red alder. The average Douglas-fir tree size to be harvested in Area 1 is approximately 24 inches DBH, with an average height of 109 feet to a merchantable top. The average red alder in Area 1 is approximately 18 inches DBH, with an average height of 34 feet to a merchantable top. Timber in Area 2 consists of approximately 57 to 156 year-old Douglas-fir with minor amounts of Port Orford cedar, big leaf maple, and red alder. The average Douglas-fir in Area 2 is approximately 25 inches DBH, with an average height of 97 feet to a merchantable top. The average red alder in Area 2 is approximately 17 inches DBH, with an average height of 40 feet to a merchantable top. The average volume per acre to be harvested (net) is approximately 45 MBF in Area 1, and 34 MBF in the Area 2.

8. Statistical Analysis and Stand Summary: (See attached “Statistics”).

Area	Target CV	Target SE	Actual CV	Actual SE
1	45%	9%	58%	11.2%
2	45%	9%	43%	8.0%

Note: Percentages are for net board foot volume.

9. Total Volume (MBF) by Species and Grade: (See attached volume report “Species, Sort Grade – Board Foot Volumes - Project”).

Areas 1 and 2 combined

Species	Gross Cruise Volume	Cruised D & B	Cruised D & B (MBF)	Hidden D & B	Hidden D & B (MBF)	Net Sale Volume
Douglas-fir	2,344	1.0%	23	5%	117	2,204
Port Orford cedar	5	0%	0	5%	0.25	5
Big leaf maple	11	3.9%	0.4	5%	0.5	9
Red alder	83	1%	1	5%	4	79
Total	2,443	1%	24	5%	122	2,297

Area 1

Species	Ave. DBH	Net Vol.	3P	SM	2-Saw	3-Saw	3-Saw 12”+	4-Saw	Camp Run	% by Species
Douglas-fir		Grade %	3%	4%	69%	13%	9%	2%	--	97%
	24	1,143	35	43	795	150	98	22	--	
Red alder		Grade %	--	--	--	--	--	--	100%	3%
	18	33	--	--	--	--	--	--	33	
Total		1,175	35	43	795	150	98	22	33	100%

Area 2

Species	Ave. DBH	Net Vol.	3P	SM	2-Saw	3-Saw	3-Saw 12”+	4-Saw	Camp Run	% by Species
Douglas-fir		Grade %			82%	11%	6%	1%	--	95%
	25	1,061			868	116	62	15	--	
Port Orford cedar		Grade %			--	100%	--	--	--	<1%
	20	5			--	5	--	--	--	
Red alder		Grade %			--	--	--	--	100%	4%
	18	46			--	--	--	--	46	
Big leaf maple		Grade %			--	--	--	--	100%	<1%
	12	9			--	--	--	--	9	
		Net Vol.			2-Saw	3-Saw	3-Saw 12”+	4-Saw	Camp Run	% by Species
Total		1,121			868	121	62	15	55	100%

Areas 1 and 2 Combined

Species	Ave. DBH	Net Vol.	3P	SM	2- Saw	3- Saw	3- Saw 12"+	4- Saw	Camp Run	% by Species
Douglas-fir		Grade %	2%	2%	75%	12%	7%	2%	--	96%
	25	2,204	35	43	1,663	266	160	37	--	
Port Orford cedar		Grade %	--	--	--	100%	--	--	--	<1%
	20	5	--	--	--	5	--	--	--	
Big leaf maple		Grade %	--	--	--	--	--	--	100%	<1%
	12	9	--	--	--	--	--	--	9	
Red alder		Grade %	--	--	--	--		--	100%	3%
	18	79	--	--	--	--	--	--	79	
Total		2,297	35	43	1,663	271	160	37	88	100%

Attachments: Cruise Design
Cruise Maps
Species, Sort Grade – Board Foot Volumes
Statistics
Stand Table Summary
Log Stock Table – MBF

Prepared by: Matt McBride

Date: 6/27/2017

Unit Forester: Evelyn Hukari

Date: _____

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	BLACKICE			DATE	6/27/2017		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
11S	08W	21	001	TAKE	26.00	28	149	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL			28	149	5.3						
CRUISE			14	79	5.6	1,922		4.1			
DBH COUNT											
REFOREST											
COUNT			14	70	5.0						
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
DF			67	56.8	24.3	109	37.1	182.9	46,505	46,241	10,065
R ALDER			12	17.1	17.9	34	7.1	30.0	1,327	1,327	548
TOTAL			79	73.9	23.0	91	44.4	212.9	47,832	47,568	10,613
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
DF		71.9	8.8	1,078	1,182	1,286					
R ALDER		105.4	31.7	61	90	119					
TOTAL		86.2	9.7	918	1,016	1,115	297		74	33	
CL:	68.1 %	COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH			5	10	15
DF		62.9	12.1	50	57	64					
R ALDER		114.6	22.0	13	17	21					
TOTAL		47.4	9.1	67	74	81	93		23	10	
CL:	68.1 %	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH			5	10	15
DF		58.2	11.2	162	183	203					
R ALDER		112.6	21.7	24	30	36					
TOTAL		44.0	8.5	195	213	231	80		20	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
DF		61.7	11.9	40,754	46,241	51,728					
R ALDER		115.3	22.2	1,033	1,327	1,621					
TOTAL		58.2	11.2	42,240	47,568	52,895	140		35	16	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	BLACKICE			DATE	6/27/2017		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
11S	08W	21	002	TAKE	33.00	30	136	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
PLOTS		TREES									
TOTAL		30		136		4.5					
CRUISE		16		61		3.8		2,106		2.9	
DBH COUNT											
REFOREST											
COUNT		14		72		5.1					
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	
DF		47	42.3	25.3	97	29.4	148.0	34,407	33,856	7,492	7,472
R ALDER		11	16.0	17.5	40	6.4	26.7	1,466	1,449	582	582
PO CEDAR		1	1.8	20.0	53	0.9	4.0	165	165	81	81
BL MAPLE		2	3.7	11.5	53	0.8	2.7	321	309	83	83
TOTAL		61	63.8	22.8	79	38.0	181.3	36,359	35,779	8,237	8,217
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		
DF		53.1	7.7	939	1,018	1,097					
R ALDER		63.1	19.9	79	98	118					
PO CEDAR											
BL MAPLE		52.1	48.8	49	95	141					
TOTAL		76.2	9.7	728	807	885	232	58	26		
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DF		51.9	9.6	38	42	46					
R ALDER		182.1	33.8	11	16	21					
PO CEDAR		402.6	74.7	0	2	3					
BL MAPLE		547.7	101.7		4	7					
TOTAL		51.6	9.6	58	64	70	110	28	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		
DF		48.7	9.0	135	148	161					
R ALDER		181.9	33.8	18	27	36					
PO CEDAR		402.6	74.7	1	4	7					
BL MAPLE		547.7	101.7		3	5					
TOTAL		31.1	5.8	171	181	192	40	10	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		
DF		50.2	9.3	30,700	33,856	37,012					
R ALDER		175.9	32.7	976	1,449	1,922					
PO CEDAR		402.6	74.7	42	165	288					
BL MAPLE		547.7	101.7		309	623					
TOTAL		43.3	8.0	32,902	35,779	38,655	78	19	9		

TC		TSTNDSUM													Stand Table Summary												
Project													BLACKICE														
T11S R08W S21 TTAKE													T11S R08W S21 TTAKE														
Twp		Rge		Sec		Tract		Type			Acres		Plots		Sample Trees			Page:		1							
11S		08W		21		001		TAKE			26.00		28		79			Date:		06/27/2017							
													Time:		10:06:51AM												
S		Sample			Av					Average Log		Net		Net		T o t a l s											
Spc		T		DBH		Trees		FF		Ht		Trees/		BA/		Logs		Net		Net		Tons		Cunits		MBF	
				16'		Tot		Acre		Acre		Acre		Cu.Ft.		Bd.Ft.		Acre		Acre		Acre					
DF				14	1	83	107	2.553	2.73	5.11	22.5	75.0	115	383	30	10											
DF				16	2	87	106	3.909	5.46	7.82	27.0	102.5	211	801	55	21											
DF				17	1	87	134	1.731	2.73	5.19	27.0	103.3	140	537	36	14											
DF				18	4	87	105	6.178	10.92	13.90	32.1	111.1	446	1,544	116	40											
DF				19	1	88	127	1.386	2.73	4.16	32.3	126.7	134	527	35	14											
DF				20	6	88	131	7.506	16.38	21.27	39.1	158.2	831	3,365	216	87											
DF				21	2	88	136	2.269	5.46	6.81	42.3	185.0	288	1,259	75	33											
DF				22	5	87	133	5.169	13.65	15.51	43.3	184.7	672	2,864	175	74											
DF				24	6	86	139	5.212	16.38	14.77	56.9	227.6	841	3,362	219	87											
DF				25	3	87	154	2.402	8.19	7.21	65.2	288.9	470	2,082	122	54											
DF				26	4	87	150	2.961	10.92	8.88	67.8	300.8	603	2,672	157	69											
DF				27	1	86	152	.686	2.73	2.06	74.3	323.3	153	666	40	17											
DF				28	3	87	160	1.915	8.19	5.74	82.3	393.3	473	2,259	123	59											
DF				30	8	86	165	4.448	21.83	16.68	77.7	373.7	1,296	6,233	337	162											
DF				31	4	86	163	2.083	10.92	8.85	72.6	355.9	643	3,150	167	82											
DF				32	5	87	172	2.443	13.65	9.77	86.9	438.5	849	4,286	221	111											
DF				34	2	86	179	.866	5.46	3.46	99.0	511.3	343	1,770	89	46											
DF				36	4	85	185	1.544	10.92	6.18	115.3	619.4	712	3,826	185	99											
DF				38	2	85	191	.693	5.46	2.77	131.7	725.0	365	2,010	95	52											
DF				40	1	81	191	.313	2.73	1.25	137.7	725.0	172	907	45	24											
DF				42	1	87	191	.284	2.73	.57	251.5	1515.0	143	860	37	22											
DF				48	1	82	178	.217	2.73	.87	189.8	1010.0	165	877	43	23											
DF		Totals		67	87	139	56.769	182.86	168.83	59.6	273.9	10,065	46,241	2,617	1,202												
RA		14		1	87	31	2.339	2.50	2.34	15.0	30.0	35	70	9	2												
RA		16		3	86	45	5.371	7.50	7.16	20.7	57.5	149	412	39	11												
RA		18		3	87	33	4.244	7.50	4.24	25.3	43.3	108	184	28	5												
RA		20		3	87	42	3.438	7.50	4.58	31.0	72.5	142	332	37	9												
RA		22		1	86	39	.947	2.50	.95	44.0	70.0	42	66	11	2												
RA		24		1	87	63	.796	2.50	1.59	46.0	165.0	73	263	19	7												
RA		Totals		12	87	40	17.135	30.00	20.87	26.3	63.6	548	1,327	143	35												
Totals		79		87	116	73.904	212.86	189.69	55.9	250.8	10613	47,568	2,759	1,237													

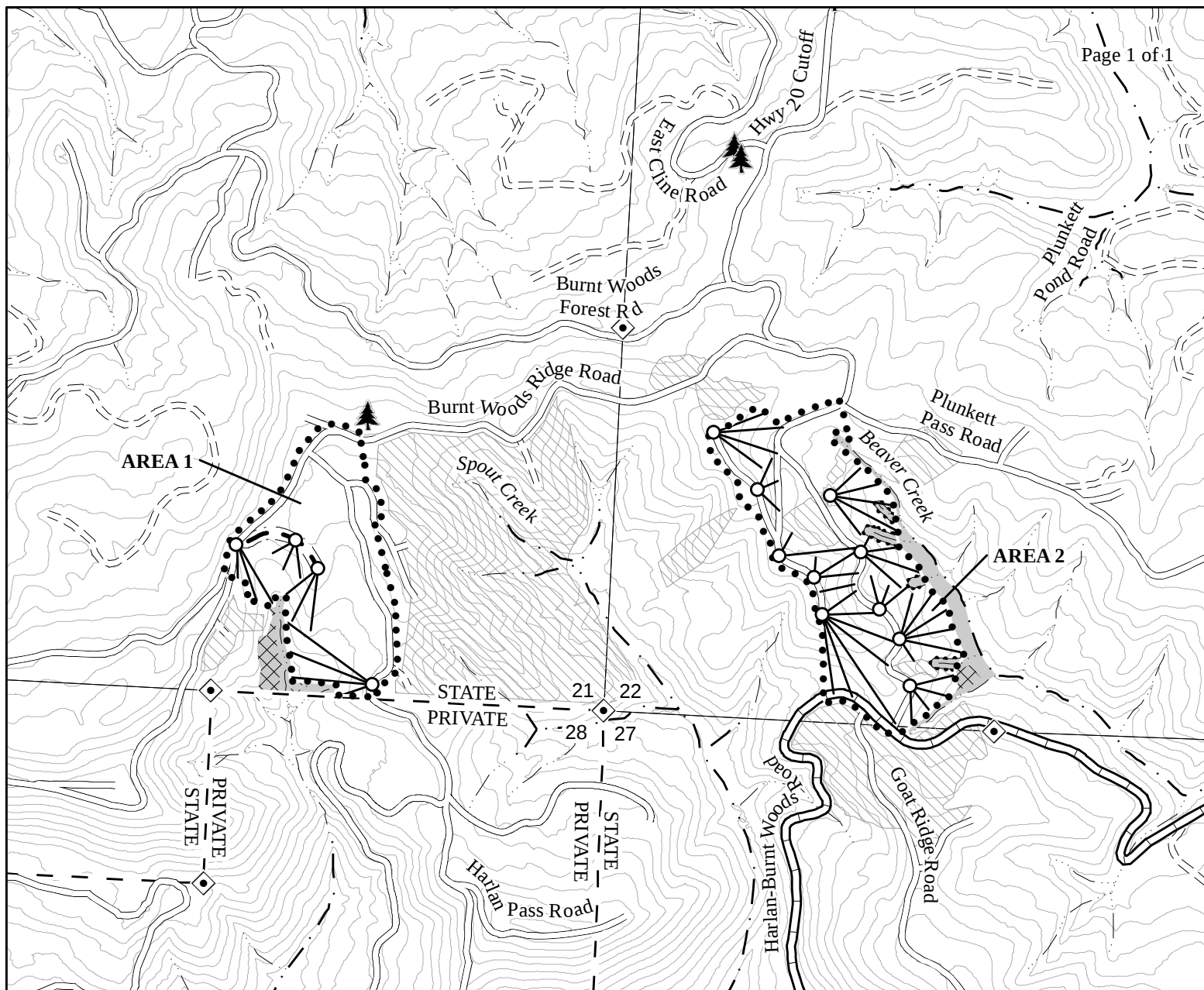
TC		TSTNDSUM													Stand Table Summary														
															Project					BLACKICE									
T11S R08W S21 TTAKE															T11S R08W S21 TTAKE														
Twp		Rge		Sec		Tract		Type			Acres		Plots		Sample Trees			Page:		1									
11S		08W		21		002		TAKE			33.00		30		61			Date:		06/27/2017									
															Time:		1:26:12PM												
S Spc	T	Sample		FF	Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Tons	Net	Net	Totals												
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre		Cu.Ft.	Bd.Ft.	Tons	Cunits	MBF										
DF		14	1	88	54	2.946	3.15	2.95	24.0	60.0		71	177				23	6											
DF		16	1	90	54	2.255	3.15	2.26	30.0	60.0		68	135				22	4											
DF		18	1	91	67	1.782	3.15	3.56	24.5	85.0		87	303				29	10											
DF		20	2	88	108	2.887	6.30	7.22	37.4	140.0		270	1,010				89	33											
DF		21	1	86	113	1.309	3.15	3.93	34.7	133.3		136	524				45	17											
DF		22	2	89	124	2.386	6.30	8.35	35.4	154.3		296	1,288				98	43											
DF		23	1	94	126	1.091	3.15	3.27	49.7	230.0		163	753				54	25											
DF		24	4	87	123	4.009	12.60	12.03	50.0	213.3		601	2,566				198	85											
DF		25	2	86	127	1.848	6.30	5.54	55.2	223.3		306	1,238				101	41											
DF		26	8	89	138	6.833	25.19	20.50	64.8	295.8		1,329	6,064				439	200											
DF		27	3	87	134	2.376	9.45	6.34	71.7	306.3		455	1,940				150	64											
DF		28	4	86	144	2.946	12.60	9.57	68.3	331.5		654	3,174				216	105											
DF		29	3	88	144	2.060	9.45	6.18	83.2	387.8		514	2,396				170	79											
DF		30	3	86	149	1.924	9.45	5.77	87.6	411.1		505	2,374				167	78											
DF		32	3	86	160	1.691	9.45	5.64	96.3	461.0		543	2,599				179	86											
DF		33	2	89	154	1.060	6.30	3.18	113.0	560.0		359	1,781				119	59											
DF		34	5	88	161	2.497	15.74	7.99	117.4	581.9		938	4,650				310	153											
DF		40	1	85	155	.361	3.15	1.08	164.0	816.7		178	884				59	29											
DF		Totals		47	88	122	42.261	148.00	115.36	64.8	293.5		7,472	33,856			2,466	1,117											
RA		16	4	86	42	6.945	9.70	6.94	25.5	52.5		177	365				58	12											
RA		18	5	87	54	6.859	12.12	6.86	39.2	90.0		269	617				89	20											
RA		20	2	87	60	2.222	4.85	4.44	30.5	105.0		136	467				45	15											
RA		Totals		11	87	50	16.027	26.67	18.25	31.9	79.4		582	1,449			192	48											
BM		10	1	87	100	2.445	1.33	2.44	15.0	60.0		37	147				12	5											
BM		14	1	87	86	1.247	1.33	2.49	18.5	65.0		46	162				15	5											
BM		Totals		2	87	95	3.692	2.67	4.94	16.8	62.5		83	309			27	10											
PO		20	1	74	65	1.833	4.00	1.83	44.0	90.0		81	165				27	5											
PO		Totals		1	74	65	1.833	4.00	1.83	44.0	90.0		81	165			27	5											
Totals		61		87	101	63.812	181.33	140.38	58.5	254.9		8217	35,779				2,712	1,181											

T	TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)												Page 1								
	Project: BLACKICE												Date	6/27/2017									
													Time	10:06:50AM									
T11S R08W S21 TTAKE												T11S R08W S21 TTAKE											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt														
11S	08W	21	001	TAKE	26.00	28	79	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					
			Def%	Gross	Net	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			
DF	DO	2M	69	.8	32,457	32,193	837					33	67			1	99	40	17	468	2.41	68.8	
DF	DO	3M	22		10,051	10,051	261				60	22	18	4	4	6	86	35	10	142	1.04	70.8	
DF	DO	4M	2		872	872	23				92	8		40	60			22	7	34	0.53	26.0	
DF	DO	3P	3		1,409	1,409	37						100			100		40	26	1217	5.55	1.2	
DF	DO	SM	4		1,715	1,715	45						100			100		40	22	821	4.05	2.1	
DF	Totals		97	.6	46,505	46,241	1,202				15	28	58	2	2	2	95	35	12	274	1.70	168.8	
RA	DO	CR	100		1,327	1,327	35				11	56	34	7	78	16		27	7	64	0.99	20.9	
RA	Totals		3		1,327	1,327	35				11	56	34	7	78	16		27	7	64	0.99	20.9	
Type Totals				.6	47,832	47,568	1,237				0	16	28	56	2	4	2	92	34	12	251	1.64	189.7

T	Species, Sort Grade - Board Foot Volumes (Type)														Page 1							
Project: BLACKICE														Date 6/27/2017								
														Time 1:26:12PM								
T11S R08W S21 TTAKE										T11S R08W S21 TTAKE												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
11S	08W	21	002	TAKE	33.00	30	61	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					
		Def%	Gross	Net	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			
DF			CU	100.0	111										8	19		0.00		2.9		
DF		81	DO 2M	1.1	27,996	27,688	914					22	78	1	3	7	89	38	18	501	2.68	55.3
DF		17	DO 3M	2.3	5,798	5,666	187				65	26	9		10	21	68	36	10	130	1.08	43.6
DF		2	DO 4M		502	502	17				100			76	16	9		18	7	30	0.55	16.5
DF Totals		95		1.6	34,407	33,856	1,117				12	22	65	2	4	10	84	34	13	286	1.88	118.3
RA		100	DO CR	1.2	1,466	1,449	48				72	28			36	19	45	33	8	79	0.97	18.2
RA Totals		4		1.2	1,466	1,449	48				72	28			36	19	45	33	8	79	0.97	18.2
PO			CU															5	18		0.00	1.8
PO		100	DO 3M		165	165	5				100						100	40	8	90	1.10	1.8
PO Totals		0			165	165	5				100						100	23	13	45	0.98	3.7
BM		100	DO CR	3.9	321	309	10				100			28		47	24	30	8	63	0.55	4.9
BM Totals		1		3.9	321	309	10				100			28		47	24	30	8	63	0.55	4.9
Type Totals				1.6	36,359	35,779	1,181				16	22	62	2	6	10	82	33	12	247	1.71	145.1

TC TLOGSTVB				Log Stock Table - MBF																
				Project: BLACKICE																
T11S R08W S21 TTAKE										T11S R08W S21 TTAK										
Twp		Rge		Sec	Tract		Type	Acres	Plots	Sample Trees				Page		1				
11S		08W		21	001		TAKE	26.00	28	79				Date		6/27/2017				
										Time		10:06:50AM								
S Spp	T	So	Gr	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
DF		DO	2M	34		5		5	.4					5						
DF		DO	2M	36		6		6	.5					3	3					
DF		DO	2M	40		834	.8	827	68.8					62	172	261	239	80	13	
DF		DO	3M	10		2		2	.2			2								
DF		DO	3M	15		1		1	.0				1							
DF		DO	3M	16		2		2	.2		1		1							
DF		DO	3M	20		5		5	.4					3	2					
DF		DO	3M	21		2		2	.1				2							
DF		DO	3M	26		3		3	.3				1	2						
DF		DO	3M	30		6		6	.5			3	3							
DF		DO	3M	32		4		4	.3		1	3								
DF		DO	3M	33		4		4	.3		4									
DF		DO	3M	34		7		7	.6		2			5						
DF		DO	3M	36		14		14	1.1		1		2	11						
DF		DO	3M	37		9		9	.8		5	5								
DF		DO	3M	38		5		5	.4		5									
DF		DO	3M	40		197		197	16.4		3	32	82	8	22	15	16	8	11	
DF		DO	4M	12		0		0	.0			0								
DF		DO	4M	15		3		3	.2		0	2	1							
DF		DO	4M	16		1		1	.1				1		1					
DF		DO	4M	17		5		5	.4		4		1							
DF		DO	4M	21		2		2	.2				2							
DF		DO	4M	22		2		2	.2		2									
DF		DO	4M	26		1		1	.1					1						
DF		DO	4M	27		6		6	.5		6									
DF		DO	4M	28		3		3	.3		3									
DF		DO	3P	40		37		37	3.0									37		
DF		DO	SM	40		45		45	3.7								45			
DF Totals						1,209		1,202	97.2		37	46	95	100	199	277	299	125	24	
RA		DO	CR	18		2		2	6.6		2									
RA		DO	CR	21		3		3	7.2		3									
RA		DO	CR	23		1		1	1.8		1									
RA		DO	CR	25		1		1	2.6		1									
RA		DO	CR	26		2		2	5.3	2										
RA		DO	CR	28		2		2	5.3		2									
RA		DO	CR	30		19		19	55.4		1		6	5		6				
RA		DO	CR	32		2		2	5.0			2								
RA		DO	CR	34		4		4	10.7	2	2									
RA Totals						35		35	2.8	4	11	2	6	5		6				
Total All Species						1,244		1,237	100.0	4	49	48	101	105	199	283	299	125	24	

TC TLOGSTVB				Log Stock Table - MBF																	
				Project: BLACKICE																	
T11S R08W S21 TTAKE										T11S R08W S21 TTAK											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1												
11S	08W	21	002	TAKE	33.00	30	61	Date	6/27/2017												
										Time	1:26:11PM										
Spp	T	S	So	Gr	Log	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+
DF				CU	4																
DF				CU	6																
DF				CU	8																
DF				CU	14	4	100.0														
DF		DO	2M	20		9	8.7	8	.7								8				
DF		DO	2M	24		12		12	1.1									12			
DF		DO	2M	30		16		16	1.4							3		13			
DF		DO	2M	32		68		68	6.1					10		40	18				
DF		DO	2M	38		30	1.7	30	2.6								13	17			
DF		DO	2M	40		788	1.1	780	69.8					28		82	334	196	140		
DF		DO	3M	24		4		4	.4							4					
DF		DO	3M	26		1		1	.1				1								
DF		DO	3M	27		6		6	.5				6								
DF		DO	3M	30		8		8	.7				3	4							
DF		DO	3M	31		1		1	.1				1								
DF		DO	3M	32		20		20	1.8				12	5		4					
DF		DO	3M	35		18	1.4	18	1.6				11				7				
DF		DO	3M	36		4	12.4	4	.3				4								
DF		DO	3M	37		7		7	.7				2	5							
DF		DO	3M	38		3		3	.3			3									
DF		DO	3M	39		6		6	.5			6									
DF		DO	3M	40		112	3.2	108	9.7			4	7	46	17	16	17				
DF		DO	4M	13		1		1	.1				1								
DF		DO	4M	14		1		1	.1				1								
DF		DO	4M	16		2		2	.2				2								
DF		DO	4M	17		4		4	.4				4								
DF		DO	4M	18		2		2	.2				1		1						
DF		DO	4M	19		1		1	.1				1								
DF		DO	4M	20		1		1	.1				1								
DF		DO	4M	22		1		1	.1					1							
DF		DO	4M	25		1		1	.1				1								
DF		DO	4M	31		1		1	.1					1							
DF		Totals				1,135	1.6	1,117	94.6			25	51	61	56	149	397	237	140		
RA		DO	CR	21		2		2	3.6			2									
RA		DO	CR	23		2		2	4.6			2									
RA		DO	CR	25		13		13	27.6							13					
RA		DO	CR	32		10	5.9	9	19.3			3		6							
RA		DO	CR	38		3		3	7.2			3									
RA		DO	CR	40		18		18	37.7			10	8								
RA		Totals				48	1.2	48	4.0			20	8	6		13					
PO		CU		5																	
PO		DO	3M	40		5		5	100.0				5								
PO		Totals				5		5	.5				5								
BM		DO	CR	18		3	12.5	3	28.3					3							
BM		DO	CR	32		5		5	47.5			5									
BM		DO	CR	40		2		2	24.2			2									
BM		Totals				11	3.9	10	.9			7		3							
Total All Species						1,200	1.6	1,181	100.0			53	65	71	56	162	397	237	140		



Legend

Boundaries

- Timber Sale Boundary
- — State Forest Property Boundary
- — Right of Way (Posted)

Roads

- ==== Paved
- ==== Surfed Road
- == == Unsurfaced Road
- — New Construction

Streams

- — Type F Stream
- — Type N Stream
- — Posted Stream Buffer
- Stream Buffer
- Reforestation Area

Cable Corridors

- Land Survey Monument

- Parent Trees

- Green Tree Retention Area

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-18-054
BLACK ICE
PORTIONS OF SECTIONS 21, 22 & 27, T11S, R8W, W.M.,
LINCOLN COUNTY, OREGON

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Scale

1:12,000



AREA	NET ACRES	
	TRACTOR	CABLE
1 (MC)	18	8
2 (MC)	6	27
TOTAL	24	35



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Date: 07/27/2017