



"STRENGTH THROUGH FORESTRY"

Timber Sale Appraisal Deer Creek Headwaters

Sale CS-341-2016-18-

District: Coos

Date: December 02, 2015

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$31,349.18	\$12,715.60	\$44,064.78
		Project Work:	(\$5,191.00)
		Advertised Value:	\$38,873.78



"SUSTAINABLE FORESTRY"

Timber Sale Appraisal Deer Creek Headwaters

Sale CS-341-2016-18-

District: Coos

Date: December 02, 2015

Timber Description

Location: Portions of Section 35, T22S, R11W, W.M., Douglas County, Oregon.

Stand Stocking: 40%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	19	0	95
Western Hemlock / Fir	12	0	95
Alder (Red)	13	0	90
Maple	13	0	90

Volume by Grade	2S	3S	4S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	61	41	9	0	0	0	0	111
Western Hemlock / Fir	0	2	6	0	0	0	0	8
Alder (Red)	0	0	0	19	32	3	32	86
Maple	0	0	0	2	2	0	0	4
Total	61	43	15	21	34	3	32	209

Comments: Pond Values Used: 3rd Quarter Calendar Year 2015.
Local Pond Values used for bigleaf maple.

15 acres of regeneration harvest containing approximately 209 MBF of 48 year old third-growth mix of Douglas-fir and red alder sawtimber.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$781.82 = \$1,150/\text{MBF} - \$368.18/\text{MBF}$

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

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

HAULING COST ALLOWANCE:

Hauling costs equivalent to $\$780$ daily truck cost.

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

Felling of Unmerchantable Material: $\$80/\text{acre} \times 2 \text{ acres} = \160

Brand and Paint Logs: $\$1/\text{MBF} \times 209 \text{ MBF} = \209

Cull Sorting/Slash Piling: $\$125/\text{landing} \times 3 \text{ landings} = \375

Rig Tail/Lift Trees: $\$150/\text{lift tree} \times 4 \text{ lift trees} = \600

Artificial Guy Anchors/Dozer: $\$500/\text{anchor} \times 1 \text{ anchor} = \500

Cover Landing Slash Pile w/Sheeting: $\$50/\text{landing} \times 3 \text{ landings} = \150

Maintenance Rock (Section 2130): $\$30/\text{yard} \times 80 \text{ yards} = \$2,400$

Safety Flaggers on 2000 Road: $\$150/\text{day} \times 2 \text{ days} = \300

TOTAL Other Costs (with Profit & Risk to be added) = $\$4,694$

Other Costs (No Profit & Risk added):

None.



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Logging Conditions

Combination#: 1

Douglas - Fir	80.00%
Western Hemlock / Fir	80.00%
Alder (Red)	80.00%
Maple	80.00%

Logging System: Cable: Small Tower <=40 **Process:** Stroke Delimber

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

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

loads / day: 10 **bd. ft / load:** 3600

cost / mbf: \$155.56

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

Combination#: 2

Douglas - Fir	20.00%
Western Hemlock / Fir	20.00%
Alder (Red)	20.00%
Maple	20.00%

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

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

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

loads / day: 10 **bd. ft / load:** 3800

cost / mbf: \$83.47

machines: Stroke Delimber (B)



Timber Sale Appraisal
Deer Creek Headwaters

Sale CS-341-2016-18-

District: Coos

Date: December 02, 2015

Logging Costs

Operating Seasons: 1.00	Profit Risk: 20%
Project Costs: \$5,191.00	Other Costs (P/R): \$4,694.00
Slash Disposal: \$0.00	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$0.00

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	1.0	0.0	0.0

Hauling Costs

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

Local Pond Values

Date	Specie	Grade	Value
12/02/2015	Maple	8" - 9"	\$450.00
12/02/2015	Maple	10" - 11"	\$525.00



Timber Sale Appraisal
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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$141.14	\$1.07	\$20.98	\$113.75	\$22.46	\$59.88	\$0.00	\$5.00	\$0.00	\$364.28
Western Hemlock / Fir									
\$141.14	\$1.07	\$20.98	\$117.00	\$22.46	\$60.53	\$0.00	\$5.00	\$0.00	\$368.18
Alder (Red)									
\$141.14	\$1.12	\$20.98	\$143.00	\$22.46	\$65.74	\$0.00	\$5.00	\$0.00	\$399.44
Maple									
\$141.14	\$1.12	\$20.98	\$143.00	\$22.46	\$65.74	\$0.00	\$5.00	\$0.00	\$399.44

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$642.70	\$278.42	\$0.00
Western Hemlock / Fir	\$0.00	\$423.75	\$55.57	\$0.00
Alder (Red)	\$0.00	\$543.20	\$143.76	\$0.00
Maple	\$0.00	\$487.50	\$88.06	\$0.00



Timber Sale Appraisal
Deer Creek Headwaters

Sale CS-341-2016-18-

District: Coos

Date: December 02, 2015

Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00
Maple	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	111	\$278.42	\$30,904.62
Western Hemlock / Fir	8	\$55.57	\$444.56
Alder (Red)	86	\$143.76	\$12,363.36
Maple	4	\$88.06	\$352.24

Gross Timber Sale Value

Recovery: \$44,064.78

Prepared By: Jon Haynes

Phone: 541-267-1758

Summary of "Other Costs" for Timber Sale Appraisals

Sale Name: Deer Creek Headwaters

Additional "Other Cost" with additional profit and risk to be added:

	<u>Units</u>	<u>Quantity</u>	<u>Cost/unit</u>	<u>Total Cost</u>
Felling				
Felling of unmerch material	acre	2	\$ 80.00	\$ 160.00
Yarding and Loading				
Brand and paint logs	MBF	209	\$ 1.00	\$ 209.00
Cull sorting/slash piling on landings	landing	3	\$ 125.00	\$ 375.00
Rig tail/lift trees	lift tree	4	\$ 150.00	\$ 600.00
Artificial guy anchors(dozer, skidder)	anchor	1	\$ 500.00	\$ 500.00
Cover landing slash pile w/sheeting	landing	3	\$ 50.00	\$ 150.00
Miscellaneous Costs				
Maintenance rock (Section 2130)	yards	80	\$ 30.00	\$ 2,400.00
Safety Flaggers on 2000 Road	per day	2	\$ 150.00	\$ 300.00
Total additional "Other Cost" with additional profit and risk to be added				\$ 4,694.00

Additional "Other Cost" with no additional profit and Risk

	<u>Units</u>	<u>Quantity</u>	<u>Cost/unit</u>	<u>Total Cost</u>
Non-required road construction	Stations			\$ -
Non-required road rocking	Cubic Yards			\$ -
Stream clearance	Feet			\$ -
Scaling (high piece count)	MBF		\$ 2.00	\$ -
				\$ -
Total additional "Other Cost" with no additional profit and Risk				\$ -

**SUMMARY OF CONSTRUCTION COST
Deer Creek Headwaters**

Project 1A: Landing Construction

Points: E Length: n/a Type: n/a

Excavator	<u>1</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$140.00</u>
Cat time	<u>2</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$280.00</u>
Laborer	<u>1</u>	hrs at	<u>\$38.00</u>	per hour	<u>\$38.00</u>

Total Project 1A: \$458.00

Move-in

Equipment	Miles	hrs/RT	Lowboy Rate/hr	Total
Excavator	30	5	\$100.00	\$500.00
Cat	30	5	\$100.00	\$500.00
Grader	30	4	\$100.00	\$400.00
Dump Truck	30	4	\$100.00	\$400.00

Total Move-in: \$1,800.00

Project 1 Total \$2,258.00

Project 2A: Road Improvement

Points: C to D Length: Type: 14' w/ditch

Grader time - blade road	<u>1</u>	hrs at	<u>\$85.00</u>	per hour	<u>\$85.00</u>
Cat time	<u>1</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$140.00</u>

Total Project 2A: \$225.00

Project 2B: Road Improvement

Points: C to E Length: Type: 14' no ditch

Cat time	<u>3</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$420.00</u>
Grader time	<u>1</u>	hrs at	<u>\$85.00</u>	per hour	<u>\$85.00</u>
Excavator	<u>1</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$140.00</u>

Total Project 2B: \$645.00

Project 2C: Landing Improvement

Points: A & D Length: n/a Type: 14' no ditch

Excavator - remove small trees, move material	<u>3</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$420.00</u>
Cat time - move material to open landings	<u>4</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$560.00</u>
Dump Truck	<u>2</u>	hrs at	<u>\$100.00</u>	perhour	<u>\$200.00</u>

Total Project 2C: \$1,180.00

**SUMMARY OF CONSTRUCTION COST
Deer Creek Headwaters**

Project 2D: Landing Improvement

Points: B Length: n/a Type: 14' no ditch

Excavator - move material	<u>1</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$140.00</u>
Cat time	<u>2</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$280.00</u>
Laborer	<u>1</u>	hrs at	<u>\$38.00</u>	per hour	<u>\$38.00</u>
Dump Truck	<u>1</u>	hrs at	<u>\$100.00</u>	per hour	<u>\$100.00</u>

Total Project 2D: \$558.00

Project 2E: Road Improvement

Points: A to C Length: Type: 14' w/ ditch

Excavator	<u>1</u>	hrs at	<u>\$140.00</u>	per hour	<u>\$140.00</u>
Grader time - blade road	<u>1</u>	hrs at	<u>\$85.00</u>	per hour	<u>\$85.00</u>
Dump Truck	<u>1</u>	hrs at	<u>\$100.00</u>	per hour	<u>\$100.00</u>

Total Project 2E: \$325.00

Project 2 Total \$2,933.00

Total Project Costs \$5,191.00

TIMBER SALE SUMMARY

Deer Creek Headwaters

1. Type of Sale: Final Harvest, Recovery, Sealed Bid

2. Boundary Lines: Timber sale boundaries are marked on the ground with white "Timber Sale Boundary" posters, red flagging, and red paint at locations shown on the Exhibit "A".

3. Revenue Distribution: 100% CSL; 100% Douglas County

4. Sale Acreage: The sale area is approximately 15 acres and was determined from LIDAR imagery using electronic digitizing with the ArcMap 10.2 GIS program. The cruise expansion acres include only the timbered acres and not unstocked areas nor existing interior roads or landings.

	Posted Acres	Interior Roads/Landings	Net Cruise Acres	Net Harvest Acres
Sale Area	17.24	2.15	15.09	15.09

5. Volume by Species

Species	Total Volume (MBF)	Volume (MBF) per Acre
Douglas-fir	111	7.4
Hemlock	8	.5
Red Alder	86	5.7
Big Leaf Maple	4	.3
Total	209	13.9

6. Grade: (by Percent,)

Species	3 Peeler %	Special Mill %	2 Saw (12"+) %	3 Saw % (10" – 11") %	Big 3 Saw %	4 Saw % (8" – 9") %	6" – 7" % Hardwood
Douglas-fir			55%	37 %		8 %	
Hemlock				28 %		72%	
Red Alder			3 %	37%		22 %	38 %
Big Leaf Maple				53%		47 %	

7. Cruise: The sale areas were variable plot cruised using a nested Big BAF plot method. The Big BAF method is a combination of count plots and individually measured trees. Plots were spaced 60 feet apart on cruise lines spaced 325 feet apart. A 40 BAF full plot was used to determine tree counts for all species. Trees were sighted in at DBH and a total of 39 count plots were installed. A 250 BAF full plot at DBH was taken on every plot to determine which Douglas-fir trees would be fully measured. A total of 23 Douglas-fir trees were measured for DBH, height, grade, and defect. Minor species were measured on every third plot with a 20 BAF at DBH. A total of 20 minor species were fully measured. Cruise data was compiled using Superace. Cruising was done by J. Riding in June 2015.

8. Grading: All trees were graded according to the Official Bureau Log Scaling Rules. Trees were graded to maximize grade where possible and field net volume was calculated by converting all logs to 40 feet lengths. Additional deductions were made for hidden defect and breakage (Table B).

A. Summary data:

Diam	Ht. Stand	Form Pt.	Form Factor	CV %	SE %
DBH	6" DIB Hardwood 5" DIB Confer	All species: DBH	Recorded for all cruised trees by estimate and measure	70 %	11.2

B. Defect and Breakage Summary:

BY PERCENT

SPECIES	CRUISED	HIDDEN DEFECT	BREAKAGE	TOTAL %
DOUGLAS FIR	0	4	2	6
HEMLOCK	0	3	2	5
RED ALDER	0	4	5	9
BL MAPLE	0	4	4	8

C. Stand Data:

SPECIES	DBH	TREES/ACRE	BASAL AREA/AC	NET MBF/ACRE
DOUGLAS FIR	19"	28	55	7.4
HEMLOCK	12"	4	3	0.5
RED ALDER	13"	77	67	5.7
BL MAPLE	13"	5	5	0.3

D. Green Tree Retention: There are five (5) green tree reserve areas associated with this sale that are reserved from cutting. These areas consist mostly of Type N seasonal potential debris flow stream buffers posted out of the sale area, and a small portion of a Type N perennial stream, also posted out of the sale area. Because all green tree retention is external to the sale area, no green tree retention volume was removed from the cruise. A total of 187 GTR are distributed across the sale areas for an average of 10.4 GTR per acre. The FPA requirement for this sale is 39 trees. The table below summarizes the green tree retention areas and tree counts.

GTR Area	D-fir Count	Hemlock Cedar Spruce Count	Alder Maple Myrtle Count
Type N Perennial Stream Buffer	62	0	40
Seasonal Potential Debris Flow Buffers	30	1	54
TOTALS	92	1	94

E. Down Wood: The down woody debris requirement of this sale is to leave 60 – 120 cubic feet per acre of hard logs across the sale areas. This will be achieved by retaining hard logs containing a minimum of 20 cubic feet for any individual piece. Existing down wood can be used to achieve this target provided they meet the definition of a hard log (sound wood in decay class 1 or 2 indicated by intact bark and original wood color).

9. Timber Description: The sale area is a 49 year old stand of low to moderately stocked Douglas-fir that was commercially thinned in early 2001. There is considerable hardwood and some scattered hemlock throughout the sale area. Timber quality across the sale areas is generally good.

10. Topography: The sale area has primarily north and east aspects with slopes 70 to 80 percent. The headwaters of Deer Creek flow east from the sale area; only a small portion of the sale actually borders this stream. The streams originating within the sale area are classified as seasonal Type N potential debris flow streams and small Perennial Type N's; summarily these streams have posted buffers on them.

11. Logging Method: The sale area is designed to be uphill cable logged from points A, B, and D. the Big Scholfield Marbled Murrelet Management Area (MMMA) is located southwest of the sale area. Full suspension will be required while yarding over the posted stream buffers shown on Exhibit A. Single end suspension will be maintained over the remainder of the sale areas. Lift tree and artificial guy anchor cost has been included in the appraisal. The sale area is designed for dry season operation. A radio tower is located in the vicinity of Point E. Purchaser shall not impact this tower or related structures.

12. Access: (All miles approximate) To access the timber sale area from Lakeside take North Lake Road 4.3 miles to the 4000 road. Proceed east on the 4000 road for 7.6 miles to the junction with the 2000 road. Take the 2000 road north for 1.5 miles to the 2560 road. Point C is located at 2000/2560 junction.

13. Projects: See attached "Project Cost Summary Sheet"

<u>Project No. 1:</u>	Landing Construction
<u>Project No. 2:</u>	Road and Landing Improvement

CRUISE VOLUME COMPUTATION REPORT

SALE NAME:	Deer Creek Headwaters	DATE:	11/03/2015
LEGAL LOCATION:	Section 35, T22S, R11W	BY:	J.Riding
	WM. Douglas County, OR		

FIELD CULL PERCENTAGE

Sale Area

Species	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple
Field cull	0%	0	0%	0	0%	0

NET FIELD VOLUME MBF (Gross vol. less field cull)

SPECIES>>>>>	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple	TOTAL
Sale Area	118	0	0	8	94	4	224
less GTR vol		0	0	0	0	0	0
TOTAL	118	0	0	8	94	4	224

HIDDEN DEFECT AND BREAKAGE

Species	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple
Hidden cull	0.04	0	0	0.03	0.04	0.04
Breakage	0.02	0	0	0.02	0.05	0.04
TOTAL	0.06	0.00	0.00	0.05	0.09	0.08

NET VOLUME BY MBF BY AREA

SPECIES>>>>>	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple	TOTALS
Sale Area	111	0	0	8	86	4	209
TOTALS	111	0	0	8	86	4	209

NET VOLUME BY GRADE AND MBF

Grade >>>>>>>>>>>	2PEE	3PEE	S.M.	2SAW (12"+)	3SAW (10"-11")	Big 3 SAW	4SAW (8"-9")	(6"-7")
Sale Area								
Doug-Fir	0	0	0	61	41	0	9	0
Hemlock	0	0	0	0	2	0	6	0
Red Alder	0	0	0	3	32	0	19	32
Cedar	0	0	0	0	0	0	0	0
Maple	0	0	0	0	2	0	2	0

GRADE DISTRIBUTION BY PERCENT

Grade >>>>>>>>>>>	2PEE	3PEE	S.M.	2SAW (12"+)	3SAW (10"-11")	Big 3 SAW	4SAW (8"-9")	(6"-7")
Sale Area								
Doug-fir	0%	0%	0%	55%	37%	0%	8%	0%
Hemlock	0%	0%	0%	0%	28%	0%	72%	0%
Red Alder	0%	0%	0%	3%	37%	0%	22%	38%
Cedar	0%	0%	0%	0%	0%	0%	0%	0%
Maple	0%	0%	0%	0%	53%	0%	47%	0%

Operating Periods Restrictions Matrix for

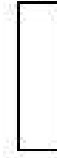
Deer Creek Headwaters

341-16-18

Harvesting	January		February		March		April		May		June		July		August		September		October		November		December		
Ground-based Yarding																									
Cable Yarding on Unsurfaced Roads																									
Cable Yarding Activity in M/MMA - Buffer & Seasonally Restricted Area (includes gullies and tailholds)																									
Cable Yarding Activity in M/MMA - Occupied Habitat (includes gullies and tailholds)																									

Hauling	January		February		March		April		May		June		July		August		September		October		November		December		
Log Hauling on Unsurfaced Roads																									
Log and Rock Haul adjacent to Type F streams, 7500 Rd																									

Project Work	January		February		March		April		May		June		July		August		September		October		November		December		
Projects 1 & 2																									
Non-project Roads and Landings																									
Projects and Non-project Roads in M/MMA and Seasonally Restricted Area																									



Operations Allowed



Activity Restricted 2 hours before sunset through 2 hours after sunrise



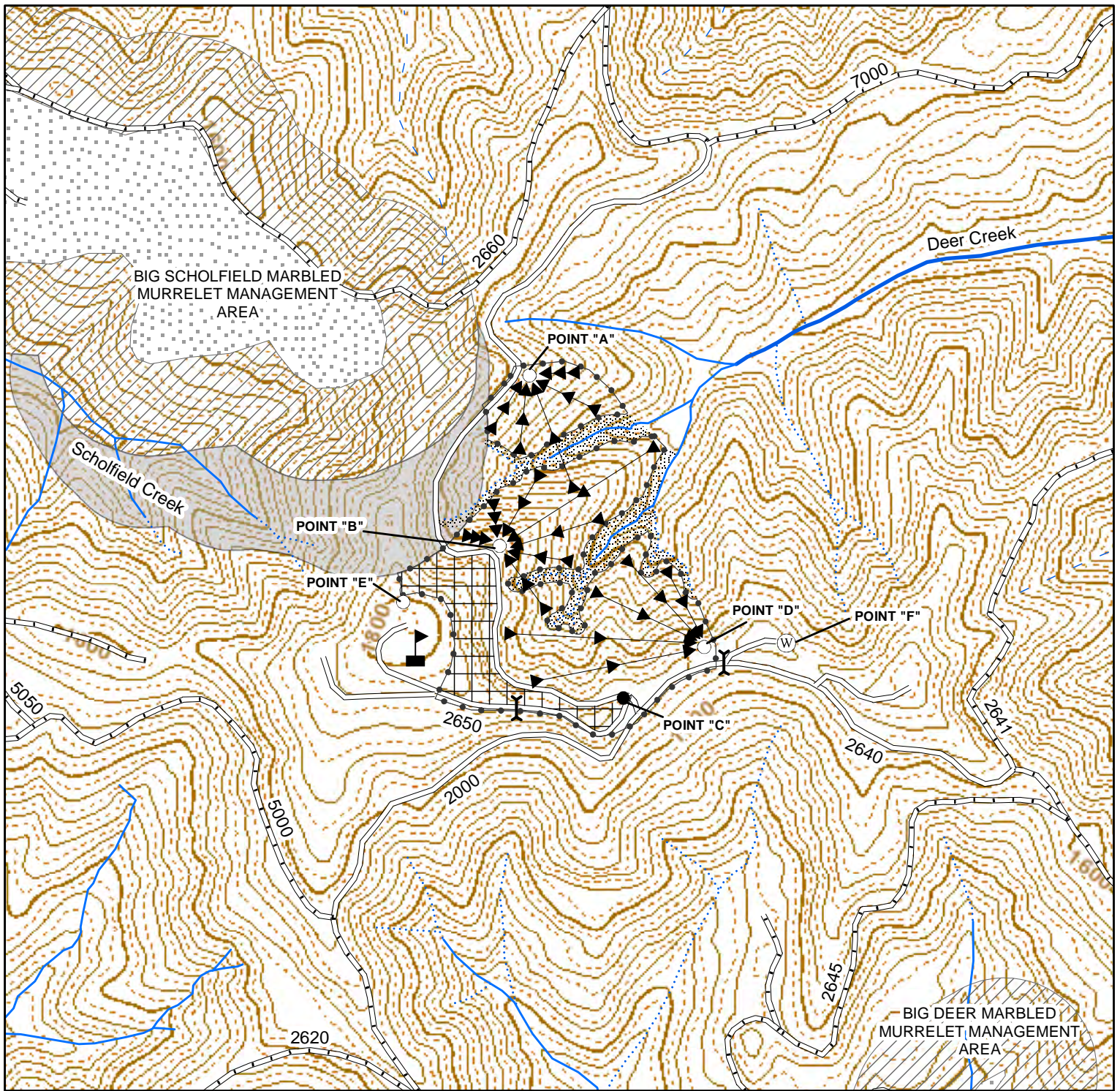
Operations Prohibited - T & E



Operations Prohibited for weather conditions: unless otherwise approved in writing by STATE

Operating Matrix represents the seasonal restrictions contained within the body of the timber sale contract. See Section 2455 for further information on seasonal restrictions.

MMMA is the Big Schaffield Marbled Murrelet Management Area.

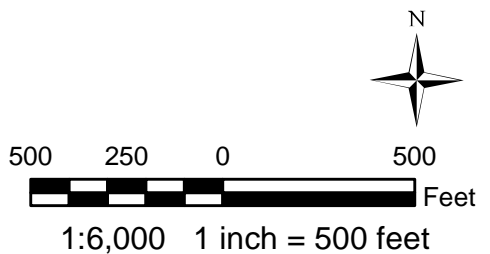


- Features**
- Timber Sale Boundary
 - Radio Tower
 - Locked Gate
 - 20 Ft. Contour
- Roads**
- Existing Road STATE Maintained
 - Existing Road Purchaser Maintained
- Marbled Murrelet Management Area**
- Buffer
 - Occupied Habitat
 - Seasonally Restricted Area

- Operations**
- Cable Yarding
 - Ground-based Operations
- Project Points**
- Landing
 - Road Point
 - Waste Area
- Streams**
- Type F Stream
 - Perennial Type N Stream
 - Seasonal Type N Stream
 - Unclassified
 - Streambuffers / Green Tree Retention Areas

LOGGING PLAN
Sale No. 341-16-18
Deer Creek Headwaters
 Portions of Section 35
 T22S, R11W, W.M.
 Douglas County, Oregon
 Regulated Use Area CS-1
 100% CSL

Approximately 15
 Net Harvest Acres



The information shown on Exhibit "A" map(s) are approximate locations. Exact locations of features represented by map symbols will be determined on site and shall depend upon the conditions that exist on site. Activities shall be conducted based upon features determined on site rather than features shown on maps.