



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Salander Ridge

Sale CS-341-2016-12-

District: Coos

Date: January 07, 2016

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$468,767.46	\$29,794.44	\$498,561.90
		Project Work:	(\$43,804.00)
		Advertised Value:	\$454,757.90



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Sale CS-341-2016-12-

District: Coos

Date: January 07, 2016

Timber Description

Location: Portions of Sections 11 and 14, T23S, R10W, W.M., Douglas County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	17	0	95
Western Hemlock / Fir	14	0	95
Red Cedar	17	0	95
Alder (Red)	14	0	90
Maple	17	0	90

Volume by Grade	2S	3S	4S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	449	411	184	0	0	0	0	1,044
Western Hemlock / Fir	169	341	164	0	0	0	0	674
Red Cedar	0	23	0	0	0	0	0	23
Alder (Red)	0	0	0	35	60	34	34	163
Maple	0	0	0	0	3	0	1	4
Total	618	775	348	35	63	34	35	1,908

Comments: Pond Values Used: 4th Quarter Calendar Year 2015.
Local Pond Values used for Bigleaf Maple

51 acres of regeneration harvest containing approximately 1,908 MBF of 45-64 year old third growth Douglas-fir, western hemlock and red alder sawtimber.

SCALING COST ALLOWANCE = \$5.00/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):

YARDING AND LOADING:

Brand and Paint Logs: \$1/MBF x 1,908 MBF = \$1,908

Cull Sorting/Slash Piling: \$125/landing x 6 landings = \$750

Rig Tail/Lift Trees: \$150/lift tree x 4 lift trees = \$600

Artificial Guy Anchors (dozer/skidder): \$500/anchor x 1 anchors = \$500

Cover Landing Slash Piles with Sheeting: \$50/landing x 6 landings = \$300

Equipment Wash for Ground Operations: \$65/hour x 6 hours = \$390

TOTAL Other Costs (with Profit & Risk to be added) = \$4,448

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



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Logging Conditions

Combination#: 1

Douglas - Fir	60.00%
Western Hemlock / Fir	60.00%
Red Cedar	60.00%
Alder (Red)	60.00%
Maple	60.00%

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

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

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

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

cost / mbf: \$157.90

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

Combination#: 2

Douglas - Fir	40.00%
Western Hemlock / Fir	40.00%
Red Cedar	40.00%
Alder (Red)	40.00%
Maple	40.00%

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: 12 **bd. ft / load:** 3800

cost / mbf: \$69.56

machines: Stroke Delimber (B)



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Logging Costs

Operating Seasons: 1.00

Profit Risk: 20%

Project Costs: \$43,804.00

Other Costs (P/R): \$4,448.00

Slash Disposal: \$0.00

Other Costs: \$0.00

Miles of Road

Road Maintenance: \$0.00

Dirt	Rock (Contractor)	Rock (State)	Paved
2.0	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
Red Cedar	\$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
01/07/2016	Maple	10" - 11"	\$525.00
01/07/2016	Maple	6" - 7"	\$345.00



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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									
\$122.56	\$2.33	\$2.30	\$113.75	\$2.33	\$48.65	\$0.00	\$5.00	\$0.00	\$296.92
Western Hemlock / Fir									
\$122.56	\$2.33	\$2.30	\$117.00	\$2.33	\$49.30	\$0.00	\$5.00	\$0.00	\$300.82
Red Cedar									
\$122.56	\$2.33	\$2.30	\$117.00	\$2.33	\$49.30	\$0.00	\$5.00	\$0.00	\$300.82
Alder (Red)									
\$122.56	\$2.44	\$2.30	\$143.00	\$2.33	\$54.53	\$0.00	\$5.00	\$0.00	\$332.16
Maple									
\$122.56	\$2.44	\$2.30	\$143.00	\$2.33	\$54.53	\$0.00	\$5.00	\$0.00	\$332.16

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$639.77	\$342.85	\$0.00
Western Hemlock / Fir	\$0.00	\$441.40	\$140.58	\$0.00
Red Cedar	\$0.00	\$1,000.00	\$699.18	\$0.00
Alder (Red)	\$0.00	\$511.32	\$179.16	\$0.00
Maple	\$0.00	\$480.00	\$147.84	\$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
Red 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	1,044	\$342.85	\$357,935.40
Western Hemlock / Fir	674	\$140.58	\$94,750.92
Red Cedar	23	\$699.18	\$16,081.14
Alder (Red)	163	\$179.16	\$29,203.08
Maple	4	\$147.84	\$591.36

Gross Timber Sale Value

Recovery: \$498,561.90

Prepared By: Jon Haynes

Phone: 541-267-1758

Summary of "Other Costs" for Timber Sale Appraisals

Sale Name: Salander Ridge

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				
Directional Felling/Tree Jacking	MBF	100	\$ 2.00	\$ 200.00
Yarding and Loading				
Brand and paint logs	MBF	1908	\$ 1.00	\$ 1,908.00
Cull sorting/slash piling on landings	landing	6	\$ 125.00	\$ 750.00
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	6	\$ 50.00	\$ 300.00
Equipment wash for ground operations	hrs	6	\$ 65.00	\$ 390.00

Miscellaneous Costs

Total additional "Other Cost" with additional profit and risk to be added

\$ 4,648.00

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
Salander Ridge

Project 1A: Road and Landing Construction

Points: D to E Length: 375' Type: 14' no ditch

Excavator	6	hrs at	\$175.00	per hour	\$1,050.00
Cat time	4	hrs at	\$155.00	per hour	\$620.00
Grader	1	hrs at	\$85.00	per hour	\$85.00
Laborer	3	hrs at	\$38.00	per hour	\$114.00
Dump Truck	3	hrs at	\$100.00	per hour	\$300.00

Total Project 1A: \$2,169.00

Project 1B: Landing Construction

Points: B, J & K Length: n/a Type: 14' no ditch

Excavator - enlarge landing area	6	hrs at	\$175.00	per hour	\$1,050.00
Cat time	6	hrs at	\$155.00	per hour	\$930.00
Grader	3	hrs at	\$85.00	per hour	\$255.00
Laborer	6	hrs at	\$38.00	per hour	\$228.00
Dump Truck	6	hrs at	\$100.00	per hour	\$600.00

Total Project 1B: \$3,063.00

Project 1C: Step Landing Construction

Points: G Length: n/a Type: outsloped

Excavator - cleanup, brushing	16	hrs at	\$175.00	per hour	\$2,800.00
Dump Truck - haul material waste areas	16	hrs at	\$100.00	per hour	\$1,600.00
Dump Truck - haul material waste areas	16	hrs at	\$100.00	per hour	\$1,600.00
Cat time	8	hrs at	\$155.00	per hour	\$1,240.00
Laborer	8	hrs at	\$38.00	per hour	\$304.00

Total Project 1C: \$7,544.00

Move-in

Equipment	Miles	Lowb or Equip		
		hrs/RT	Rate/hr	Total
Excavator	35	7	\$125.00	\$875.00
Cat	35	7	\$125.00	\$875.00
Dump Truck	35	5	\$100.00	\$500.00
Dump Truck	35	5	\$100.00	\$500.00
Grader	35	6	\$125.00	\$750.00

Total Move-In \$3,500.00

Move-between areas

Lowboy time to move excavator and cat	6	hrs at	\$125.00	per hour	\$750.00
Grader (move between)	1	hrs at	\$85.00	per hour	\$85.00
Dump Truck	1	hrs at	\$100.00	per hour	\$100.00

Total Move between: \$935.00

Project 1 Total \$17,211.00

SUMMARY OF CONSTRUCTION COST
Salander Ridge

Project 2A: Road Improvement

Points: A - G Length: 5318' Type: 14' no ditch

Excavator - cleanup, brushing	20	hrs at	\$175.00	per hour	\$3,500.00
Cat time - smooth road surface & process waste material at Point C and M	20	hrs at	\$155.00	per hour	\$3,100.00
Dump Truck - haul material waste areas	12	hrs at	\$100.00	per hour	\$1,200.00
Grader time - blade road	3	hrs at	\$85.00	per hour	\$255.00
Road Brushing	1	per day	\$600.00	per hour	\$600.00
Laborer	20	hrs at	\$38.00	per hour	\$760.00

Total Project 2A: \$9,415.00

Project 2B: Road Improvement

Points: H - P Length: 3286' Type: 14' no ditch

Excavator - cleanup, brushing	18	hrs at	\$175.00	per hour	\$3,150.00
Cat time	18	hrs at	\$155.00	per hour	\$2,790.00
Dump Truck - haul material waste areas	18	hrs at	\$100.00	per hour	\$1,800.00
Road Brushing	1	per day	\$600.00	per hour	\$600.00
Grader time - blade road	4	hrs at	\$85.00	per hour	\$340.00
Laborer	18	hrs at	\$38.00	per hour	\$684.00

Total Project 2B: \$9,364.00

Project 2C: Road Improvement

Points: I - K Length: 1285' Type: 14' no ditch

Excavator - cleanup, brushing	4	hrs at	\$175.00	per hour	\$700.00
Cat time - smooth road surface & process waste material at Point N	3	hrs at	\$155.00	per hour	\$465.00
Dump Truck - haul material waste areas	3	hrs at	\$100.00	per hour	\$300.00
Road Brushing	1	per day	\$600.00	per hour	\$600.00
Grader time - blade road	1	hrs at	\$85.00	per hour	\$85.00
Laborer	4	hrs at	\$38.00	per hour	\$152.00

Total Project 2C: \$3,906.00

Project 2 Total \$22,685.00

SUMMARY OF CONSTRUCTION COST
Salander Ridge

Project 3A: Temporary Stream Crossing

Points:	L	Length:	n/a	Type:	14' no ditch		
Excavator - time for placing logs and dirt to allow truck traffic. Remove once hauling has been completed.		8		hrs at	\$175.00	per hour	\$1,400.00
Woven Geotextile Fabric		32		sq. yd.	\$4.00	per ft	\$128.00
Laborer		2		hrs at	\$38.00	per hour	\$76.00
Total Project 2E:							\$1,604.00

Project 3B: Temporary Stream Crossing

Points:	O	Length:	n/a	Type:	14' no ditch		
Excavator - time for placing logs and dirt to allow truck traffic. Remove once hauling has been completed.		12		hrs at	\$175.00	per hour	\$2,100.00
Woven Geotextile Fabric		32		sq. yd.	\$4.00	per ft	\$128.00
Laborer		2		hrs at	\$38.00	per hour	\$76.00
Total Project 2E:							\$2,304.00

Project 3 Total \$3,908.00

Total Project Costs \$43,804.00

TIMBER SALE SUMMARY

Salander Ridge

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 total sale area is approximately 51 acres in two harvest units. Acreage was determined from LIDAR imagery using electronic digitizing with the ArcMap 10.3 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	Non-Stocked Acres	Net Cruise Acres	Net Harvest Acres
Area 1	5.62	.44	0	5.18	5
Area 2	47.99	2.31	.10	45.58	46
Total Sale	53.61	2.75	.10	50.76	51

5. Volume by Species

Species	Total Volume (MBF)	Volume (MBF) per Acre
Douglas-fir	1,044	20.5
Hemlock	674	13.2
Red Cedar	23	.5
Red Alder	163	3.2
Bigleaf Maple	4	.1
Total	1,908	37.5

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			43 %	39 %		18 %	
Hemlock			25 %	51 %		24 %	
Red Cedar				100 %			
Red Alder			21 %	37 %		21 %	21 %
Big Leaf Maple			87 %				13 %

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 80 feet apart on cruise lines spaced 350 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 80 count plots were installed. A 250 BAF full plot at DBH was taken on every other plot to determine which Douglas-fir trees would be fully measured. A total of 59 Douglas-fir trees were measured for DBH, height, grade, and defect. Minor species were measured on every other plot with a 40 BAF at DBH. A total of 21 western hemlock, 24 red alder, 2 red cedar, and 1 bigleaf maple trees were fully measured. Cruise data was compiled using Superace. Cruising was done by ODF Coos District staff J. Riding, C. Hall, and E. Hamner in October and November 2015.

8. Grading: All trees were graded according to the Official Bureau Log Scaling and Grading Rules. Trees were graded to maximize grade where possible. Additional deductions were made for hidden defect and for breakage (Table B).

A. Summary data:

Diam	Ht. Stand	Form Pt.	Form Factor	CV %	SE %
DBH	5" DIB Conifer 6" DIB Hardwood	All species: DBH	Recorded for all cruised trees by estimate and measure	69 %	7.8 %

B. Defect and Breakage Summary by Percent:

SPECIES	CRUISED	HIDDEN DEFECT	BREAKAGE	TOTAL
DOUGLAS FIR	< 1 %	4 %	2 %	6 %
HEMLOCK	0 %	3 %	2 %	5 %
RED CEDAR	0 %	3 %	2 %	5 %
RED ALDER	0 %	4 %	5 %	9 %
BIGLEAF MAPLE	0 %	4 %	5 %	9 %

C. Stand Data:

SPECIES	DBH	TREES/ACRE	BASAL AREA/AC	NET MBF/ACRE
DOUGLAS FIR	17"	90	133	20.5
HEMLOCK	14"	81	83	13.2
RED CEDAR	17"	2	4	<1
RED ALDER	14"	35	39	3.2
BIGLEAF MAPLE	17"	<1	1	<1

D. Green Tree Retention (GTR): There are six (6) green tree reserve areas associated with this sale that are reserved from cutting. These areas consist of a Type D perennial stream buffer, several Type N seasonal other buffers, and a GTR area immediately upslope of an adjacent landowners spring. About 2/3rds of green tree retention is posted outside of the sale area and was not included in the timber cruise. The remaining 1/3rd is painted with yellow paint and has been removed from the timber cruise. All GTR is located in Area 2. There is no GTR located in Area 1. A total of 296 GTR are distributed across the sale area for an average of 5.8 GTR per acre. The FPA requirement for this sale is 108 trees. The table on the next page summarizes the green tree retention areas, tree counts, and volume removed.

GTR Area	D-fir Count	D-fir Vol Removed	Hemlock Cedar Spruce Count	Hemlock Cedar Spruce Vol Removed	Alder Maple Myrtle Count
Type D Perennial Stream Buffers	34	--	22	--	52
Seasonal Other Buffers	89	29 mbf	29	8 mbf	0
Other GTR Areas	16	--	8	--	46
TOTALS	139	29 mbf	59	8 mbf	98

- 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 consists of approximately 33 acres of 64 year-old moderately stocked Douglas-fir and 18 acres of 45 year-old moderately stocked Douglas-fir. There are significant amounts of western hemlock and red alder scattered throughout. Portions of Area 2 were commercially thinned approximately 10 years ago. Timber quality across the sale area is generally good.

10. Topography: Area 1 has terrain of 20 to 40 percent with predominately SE facing slopes. No streams originate in or flow next to Area 1. Area 2 has terrain of 60 to 70 percent over most of the unit with some gentler ground in the south. Area 2 is predominately south facing and has sources of three tributaries of Lake Creek originating within the unit. One of the tributaries is a Type D (Domestic Water Supply) with an instream water intake approximately 280 feet outside the sale area. A no harvest buffer has been posted on this Type D. The other Type N seasonal streams have individually painted green tree retention scattered along the reaches.

11. Logging Method: The majority of Area 2 is designed to be uphill cable logged from landings at Points E, G, and K. Access to Point G is via the existing 1960 road. Landings at Points E and K will be new landings. A short section of new road (D to E) will need to be constructed to access Point E. Point G is an existing landing but may require reconstruction as a step landing. The south part of Area 2 may be suitable for ground based operations and can be accessed via existing roads coming up from the 1000 road. Area 1 is designed for ground based operations and is accessible via the 1960 road with a new landing at Point B. Temporary stream crossings or culverts may be required at Points L and O. The sale areas abut private ownership along the south and east boundaries of both units. A permanent right of way road easement #311.10033, dated September 26, 1960 and October 12, 1960 grants STATE access to the sale areas. Any tailholds or guyline anchors located on adjacent private land will require approval from adjacent landowner. 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. In unit lift/tail trees and dozer tailhold/guyline anchors have been costed for in the appraisal. Ground based logging equipment will be required to be washed prior to entering the Elliott State Forest. The timber sale area is designed for dry season operation.

12. Access: (All miles approximate). From Reedsport, take Highway 38 for 13.5 miles to the Douglas County Route #3 (Loon Lake Road). Follow DCR #3 for 10.3 miles past the upper end of Loon Lake to the 1000 Road (Elk Ridge Road). Follow the 1000 road for 1.5 miles to the 1960 road. Turn onto the 1960 road and proceed for .2 miles to Area 1. The 1960 road is blocked a short distance past Area 1. Continue on ATV or by foot on the 1960 for another .4 miles to Area 2 at Point D or .9 miles to Point G. To access the bottom of Area 2 walk in an existing road grade from Point H and continue up this grade for .4 miles the bottom of Area 2.

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

Project No. 1: Road and Landing Construction

Project No. 2: Road Improvement

Project No. 3: Temporary Stream Crossings

CRUISE VOLUME COMPUTATION REPORT

SALE NAME:	Salander Ridge	DATE:	12/04/2015
LEGAL LOCATION:	Sections 11 & 14, T23S, R10W	BY:	J. Haynes
	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
Areas 1 & 2	1140	0	24	717	179	4	2064
less GTR vol	29	0	0	8	0	0	37
TOTAL	1111	0	24	709	179	4	2027

HIDDEN DEFECT AND BREAKAGE

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

NET VOLUME BY MBF BY AREA

SPECIES>>>>>	Doug-fir	Spruce	Cedar	Hemlock	Red Alder	Bigleaf Maple	TOTALS
Areas 1 & 2	1044	0	23	674	163	4	1908
TOTALS	1044	0	23	674	163	4	1908

NET VOLUME BY GRADE AND MBF

Grade >>>>>>>>>>	2PEE	3PEE	S.M.	2SAW (12"+)	3SAW (10"-11")	Big 3 SAW	4SAW (8"-9")	(6"-7")
Areas 1 & 2								
Doug-Fir	0	0	0	449	411	0	184	0
Hemlock	0	0	0	169	341	0	164	0
Red Alder	0	0	0	34	60	0	35	34
Cedar	0	0	0	0	23	0	0	0
Maple	0	0	0	0	3	0	0	1

GRADE DISTRIBUTION BY PERCENT

Grade >>>>>>>>>>	2PEE	3PEE	S.M.	2SAW (12"+)	3SAW (10"-11")	Big 3 SAW	4SAW (8"-9")	(6"-7")
Areas 1 & 2								
Doug-fir	0%	0%	0%	43%	39%	0%	18%	0%
Hemlock	0%	0%	0%	25%	51%	0%	24%	0%
Red Alder	0%	0%	0%	21%	37%	0%	21%	21%
Cedar	0%	0%	0%	0%	100%	0%	0%	0%
Maple	0%	0%	0%	0%	87%	0%	0%	13%

Operating Periods Restrictions Matrix for

Salander Ridge

341-16-12

Harvesting	January	February	March	April	May	June	July	August		September		October		November	December
								5th	6th	15th	16th	14th	15th		
Ground-based Yarding															
Cable Yarding on Unsurfaced Roads															
Cable Logging Activity in Seasonally Restricted Area															
Logging Activity in M/MMA and Logging Restricted Area															

Hauling	January	February	March	April	May	June	July	August		September		October		November	December
												14th	15th		
Log Hauling on Unsurfaced Roads															

Project Work	January	February	March	April	May	June	July	August		September		October		November	December
								15th	16th	15th	16th	14th	15th		
Projects 1 & 2															
Project 3															
Non-project Roads and Landings															
Logging Restricted Area and Seasonally Restricted Area - Not exceed 1 day															
Logging Restricted Area and Seasonally Restricted Area - Exceed 1 day															

Operations Allowed

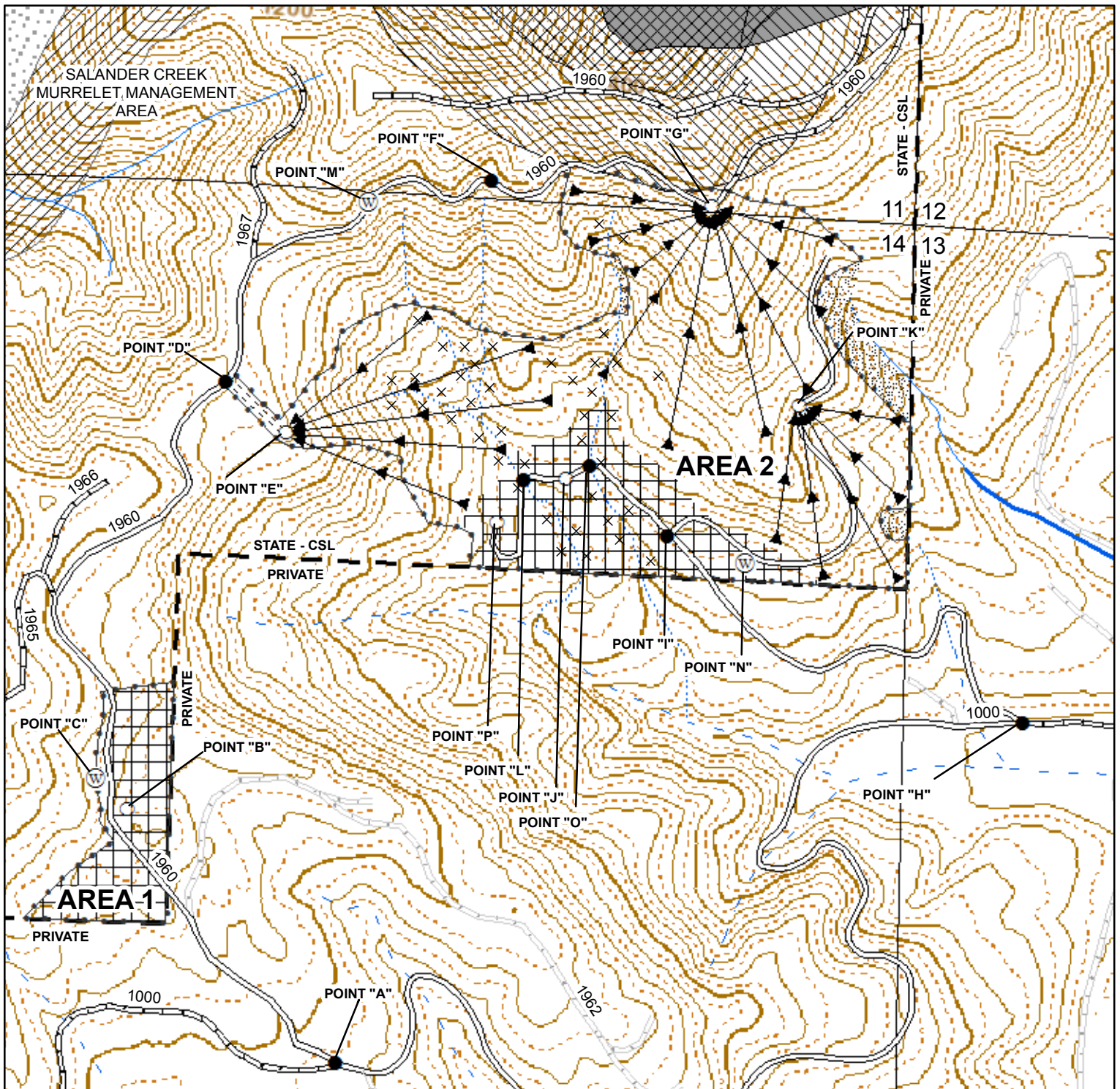
Activity Restricted 2 hours before sunset through 2 hours after sunrise

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.

M/MMA is the Salander Creek Marbled Murrelet Management Area.



- Timber Sale Boundary
- 20 Ft. Contour
- Logging Restricted Area
- Seasonally Restricted
- SUV Area

- Roads**
- Existing Road STATE Maintained
- Existing Road Purchaser Maintained
- Existing Roads - Private
- New Construction

Marbled Murrelet Mgmt Area

- Buffer
- Occupied Habitat

Operations

- Cable Yarding
- Ground-based Operations

Project Points

- Landing
- Road Point
- Waste Area

Streams

- Type F or D Stream
- Perennial Type N Stream
- Seasonal Type N Stream
- Unclassified

- Streambuffers / Green Tree Retention Areas

- Individual Green Tree Retention

LOGGING PLAN
Sale No. 341-16-12
Salander Ridge
 Portions of Sections 11 & 14
 T23S, R10W, W.M.
 Douglas County, Oregon
 Regulated Use Area CS-2
 100% CSL



500 250 0 500
 Feet
 1:6,000 1 inch = 500 feet

Area 1: 5 Acres
 Area 2: 46 Acres
 Approximately 51 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.