Timber Sale Appraisal
Rock Fall

Sale WO-341-2020-W00789-01

District: West Oregon

Date: August 13, 2019

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$745,448.55	$45,216.15	$790,664.70
		Project Work:	($75,104.00)
		Advertised Value:	$715,560.70

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District: West Oregon **Date: August 13, 2019**

Timber Description

Location: Portions of Sections 5, 6 and 7, T10S, R8W, W.M., Lincoln and Polk Counties, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	19	0	95
Alder (Red)	14	0	90
Maple	18	0	90

Volume by Grade	2S	3S & 4S 6"-11"	SM & Better	Camprun	Total
Douglas - Fir	1,169	724	46	0	1,939
Alder (Red)	0	0	0	304	304
Maple	0	0	0	89	89
Total	1,169	724	46	393	2,332

Comments: Pond Values Used: Local Pond Values, August, 2019

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
$244/MBF = $533/MBF - $289/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$649/MBF = $938/MBF - $289/MBF

PULP (Conifer and Hardwood Price) = $2.5/TON

Other Costs (with Profit & Risk to be added):
Intermediate Support/Tail Trees: 8 supports @ $100/support = $800
Flaggers for Logsden County Road: 2 flaggers x 2 days @ $320/day = $640
Loader Cleanup Logsden County Road: 16 hrs @ $150/hr = $2,400
Directional Felling Logsden County Road: 1 acre @ $200/acre = $200
TOTAL Other Costs (with Profit & Risk to be added) = $4,040

Other Costs (No Profit & Risk added):
Equipment Cleaning (Invasive Species): $2,000
Move-in Loader for Controlled Felling in Area 2 = $905
Water Bar and Block Dirt Roads: (A to B)&(Unsurfaced portion of E to F) 28 stations @ $15.96/station = $447
(Pts. G, I and K to be blocked upon completion of Slash Piling.
Landing Slash Piling: 7 Landings @ $100/Landing = $700
Landing Slash Piling and sorting out firewood: 5 Landings @ $180/Landing = $900
TOTAL Other Costs (No Profit & Risk added) = $4,952

ROAD MAINTENANCE
Temporary Culvert removal and Haul to Philomath: 2 Culverts @ 250/culvert = $500
Move-in: (Grader) $875 and (Backhoe) $361
Final Road Maintenance: $10,500
TOTAL Road Maintenance: $12,236/2,332 MBF = $5.25/MBF

SLASH DISPOSAL
Move-In: $1,290
Machine Wash: $300
Project Work: 56 hrs @ $150/hr = $8,400
TOTAL Slash Disposal = $9,990

District: West Oregon **Date: August 13, 2019**

Logging Conditions

Combination#: 1

Douglas - Fir	71.12%
Alder (Red)	43.12%
Maple	43.37%

Logging System: Cable: Large Tower >=70 **Process:** Harvester Head 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:** 4600

cost / mbf: $144.57

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

Combination#: 2

Douglas - Fir	28.88%
Alder (Red)	56.88%
Maple	56.63%

Logging System: Shovel **Process:** Harvester Head Delimbing

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

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

loads / day: 14 **bd. ft / load:** 3800

cost / mbf: $100.45

machines: Forwarder
Harvester

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District: West Oregon **Date: August 13, 2019**

Logging Costs

Operating Seasons:	2.00	**Profit Risk:**	14%
Project Costs:	$75,104.00	**Other Costs (P/R):**	$4,040.00
Slash Disposal:	$9,990.00	**Other Costs:**	$4,952.00

Miles of Road **Road Maintenance:** $4.50

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	4.8
Alder (Red)	$0.00	2.0	3.5
Maple	$0.00	2.0	3.5

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District: West Oregon **Date: August 13, 2019**

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
$131.83	$4.73	$3.76	$103.91	$1.73	$34.43	$4.28	$2.00	$2.12	$288.79
Alder (Red)									
$119.48	$4.95	$3.76	$149.28	$1.73	$39.09	$4.28	$2.00	$2.12	$326.69
Maple									
$119.59	$4.95	$3.76	$149.28	$1.73	$39.10	$4.28	$2.00	$2.12	$326.81

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$673.24	$384.45	$0.00
Alder (Red)	$0.00	$454.00	$127.31	$0.00
Maple	$0.00	$400.00	$73.19	$0.00

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District: West Oregon **Date: August 13, 2019**

Summary

Amortized

Specie	MBF	Value	Total
Douglas - 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	1,939	$384.45	$745,448.55
Alder (Red)	304	$127.31	$38,702.24
Maple	89	$73.19	$6,513.91

Gross Timber Sale Value

Recovery: $790,664.70

Prepared By: Aaron McEwen **Phone:** 541-929-9168

SUMMARY OF ALL PROJECT COSTS

Sale Name: Rock Fall

Project #1 - New Construction

Road Segment	Cost Allocation	Length	Length		Cost
A to B	CSL	21.4 sta		$	12,095
C to D	CSL	0.8 sta		$	726
E to F	BOF		15.2 sta	$	25,920
G to H	BOF		1.2 sta	$	1,033
I to J	CSL	2.0 sta		$	1,759
K to L	CSL	7.9 sta		$	3,838
	TOTALS	32.1 sta	16.4 sta	$	45,371

Project #1	$	45,371

Project #2 - Road Improvement

Road Segment		Length	Length		Cost
1 to 2	BOF/CSL	64.5 sta		$	16,434
3 to 4	BOF/CSL		45.0 sta	$	3,988
5 to 6	BOF		7.1 sta	$	109
7 to 8	BOF		8.0 sta	$	123
	TOTAL	64.5 sta	60.1 sta	$	20,654

Project #2	$	20,654

Project #3 - Roadside Brushing

	Length	2.35	miles	**Project #3**	$ 2,960

Project #4 - Move in

		Cost
Excavator, C325 or equiv.	$	1,450
Dozer, D-7 or equiv.	$	905
Grader, Cat 14-G or equiv.	$	875
Road brusher	$	778
Backhoe	$	361
Front end loader	$	875
Vibratory roller	$	875
TOTAL	$	6,119

Project #4	$	6,119

GRAND TOTAL	**$ 75,104**

Compiled by Jim Stuart/J. Long
Date 08/01/2019

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #1 Construction LENGTH 21.4 sta
ROAD A to B

CLEARING AND GRUBBING

1.8	acres	@	$ 1,337.00	/acre	=	$	2,407	

TOTAL CLEARING AND GRUBBING = $ 2,407

EXCAVATION With D7 dozer or equivalent

Construct road	21.4	stations	@	$ 214.00	/ sta	=	$	4,580
Construct landing	1	landing	@	$ 438.00	/ ldg	=	$	438
Shape subgrade (with road grader)	21.4	stations	@	$ 15.40	/ sta	=	$	330
Compact subgrade (with vibratory roller)	21.4	stations	@	$ 14.00	/ sta	=	$	300
Endpush (expand 20%)	250	CY	@	$ 2.50	/ CY	=	$	625
Construct Turnaround (no rock)	2	TA.	@	$ 50.00	/ TA	=	$	100

TOTAL EXCAVATION = $ 6,373

Culverts (2)

(Sta. 11+80 & 13+55)			Size		Cost		
18"x 30' CPP (2)	60	ft		@	$12.06	/ft =	$724
Install culvts (2 hrs each+remove old	5	hr		@	$140.00	/hr =	$700
Bedding/backfill 1 1/2"-0" (2)	20	CY	1 1/2"-0	@	$31.25	/CY =	$625
Install dissipators (2)	2	hr		@	$140.00	/hr =	$280
Dissipator Rock (2)	10	CY	Pit-run	@	$27.93	/CY =	$279
Old Culvert Disposal	1			@	$100.00	=	$100

TOTAL CULVERT COST = $2,708

SURFACING

			Size		Cost/yd			
Junction rock	20	CY	3" - 0	@	$ 29.59	/CY =	$	592
Process surfacing (with road grader)	0.50	station		@	$ 15.40	/sta =	$	8
Compact surfacing (with vibratory roller)	0.50	station		@	$ 14.00	/sta =	$	7

TOTAL SURFACING COST = $ 607

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 12,095

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project # 1 Construction LENGTH 0.8 sta
ROAD C to D

CLEARING AND GRUBBING

0.07	acres	@	$ 1,337.00	/ acre	=	$	94

TOTAL CLEARING AND GRUBBING = $ 94

EXCAVATION With D7 dozer or equivalent

Construct road	0.8	stations	@	$ 214.00	/ sta	=	$ 171
Construct landing	1	Landing	@	$ 438.00	/ ldg	=	$ 438
Shape subgrade (with road grader)	0.8	stations	@	$ 15.40	/ sta	=	$ 12
Compact subgrade (with vibratory roller)	0.8	stations	@	$ 14.00	/ sta	=	$ 11

TOTAL EXCAVATION = $ 632

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 726

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #1 Construction LENGTH 15.2 sta
ROAD E to F

CLEARING AND GRUBBING

1.30	acres	@	$ 1,337.00	/ acre	=	$	1,738

TOTAL CLEARING AND GRUBBING = $ 1,738

RECLAIM EXISTING ROCK & REUSE (Station 0+00 to Station 2+81, Reuse from Pt. E to Pt. 2)

2.81 Sta. @ 36 /Sta (est) = 100 @ $8.00 per cu yd = $ 800

EXCAVATION With D7 dozer or equivalent

Excavation (drift)	1,505	CY	@	$	2.36	/ CY	=	$ 3,552
End-haul	300	CY	@	$	4.50	/ CY	=	$ 1,350
Embankment compaction	1,838	CY	@	$	0.80	/ CY	=	$ 1,470
Waste Area creation (2 WA's)	1.0	hr	@	$	162.00	/ hr	=	$ 162
Waste compaction	300	CY	@	$	0.45	/ CY	=	$ 135
Construct landing	3	Landing	@	$	438.00	/ ldg	=	$ 1,314
Shape subgrade (with road grader)	15.20	stations	@	$	21.56	/ sta	=	$ 328
Compact subgrade (with vibratory roller)	15.20	stations	@	$	19.60	/ sta	=	$ 298

TOTAL EXCAVATION = $ 8,609

SURFACING (Station 0+00 to Station 8+60)

			Size			Cost			
Base rock (33 cy/sta)(6" depth)	280	CY	3" - 0	@	$	29.59	/CY	=	$ 8,285
Traction rock (11 cy/sta)(2" depth)	100	CY	3/4"-0	@	$	31.25	/CY	=	$ 3,125
Landing rock	80	CY	Jaw-run	@	$	28.59	/CY	=	$ 2,287
Turnout rock (Sta. 2+20)	20	CY	Jaw-run	@	$	28.59	/CY	=	$ 572
Process base rock (with road grader)	8.6	station	3" - 0	@	$	15.40	/sta	=	$ 132
Compact base rock (with vibratory roller)	8.6	station		@	$	14.00	/sta	=	$ 120
Process surfacing (with road grader)	8.6	station	3/4"-0	@	$	15.40	/sta	=	$ 132
Compact surfacing (with vibratory roller)	8.6	station		@	$	14.00	/sta	=	$ 120

TOTAL SURFACING COST = $ 14,773

GRAND TOTAL =====> $ 25,920

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #1 Construction LENGTH 1.2 sta
ROAD G to H

CLEARING AND GRUBBING

0.10	acres	@	$ 1,337.00	/ acre	=	$	134	

TOTAL CLEARING AND GRUBBING = $ 134

EXCAVATION

Construct road	1.2	stations	@	$	214.00	/ sta	=	$	257
Shape subgrade (with road grader)	1.2	stations	@	$	15.40	/ sta	=	$	18
Compact subgrade (with vibratory roller)	1.2	stations	@	$	14.00	/ sta	=	$	17

TOTAL EXCAVATION = $ 292

SURFACING

			Size			Cost				
Two-way Junction	20	CY	3" - 0	@	$	29.59	/CY	=	$	592
Process surfacing (with road grader)	0.50	station		@	$	15.40	/sta	=	$	8
Compact surfacing (with vibratory roller)	0.50	station		@	$	14.00	/sta	=	$	7

TOTAL SURFACING COST = $ 607

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 1,033

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #1 Construction LENGTH 2.0 sta
ROAD I to J

CLEARING AND GRUBBING

0.17	acres	@	$ 1,337.00	/ acre	=	$ 227

TOTAL CLEARING AND GRUBBING = $ 227

EXCAVATION With D7 dozer or equivalent

Construct landing	1	Landing	@	$ 438.00	/ ldg	=	$ 438
Construct road	2.0	stations	@	$ 214.00	/ sta	=	$ 428
Shape subgrade (with road grader)	2.0	stations	@	$ 15.40	/ sta	=	$ 31
Compact subgrade (with vibratory roller)	2.0	stations	@	$ 14.00	/ sta	=	$ 28

TOTAL EXCAVATION = $ 925

SURFACING

			Size		Cost			
Two-way junction	20	CY	3" - 0	@	$ 29.59	/CY	=	$ 592
Process surfacing (with road grader)	0.50	station		@	$ 15.40	/sta	=	$ 8
Compact surfacing (with vibratory roller)	0.50	station		@	$ 14.00	/sta	=	$ 7

TOTAL SURFACING COST = $ 607

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 1,759

SUMMARY OF CONSTRUCTION COST

SALE ROAD: Rock Fall K to L | Project #1 | Construction | LENGTH 7.9 sta

CLEARING AND GRUBBING

0.65	acres	@	$ 1,337.00	/ acre	=	$	869

TOTAL CLEARING AND GRUBBING = $ 869

EXCAVATION With D7 dozer or equivalent

Construct landing	1	Landing	@	$ 438.00	/ ldg	=	$	438
Construct road	7.9	stations	@	$ 214.00	/ sta	=	$	1,691
Shape subgrade (with road grader)	7.9	stations	@	$ 15.40	/ sta	=	$	122
Compact subgrade	7.9	stations	@	$ 14.00	/ sta	=	$	111

TOTAL EXCAVATION = $ 2,362

SURFACING

			Size		Cost				
Two-way junction	20	CY	3" - 0	@	$29.59	/CY	=	$	592
Process surfacing (with road grader)	0.5	station		@	$ 15.40	/sta	=	$	8
Compact surfacing (with vibratory roller)	0.5	station		@	$ 14.00	/sta	=	$	7

TOTAL SURFACING COST = $ 607

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 3,838

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #2 Improvement LENGTH 64.5 sta
ROAD 1 to 2 Hatchery Fall Creek Road

EXCAVATION (With excavator)

Remove bank slough (36+19 to 38+22)	100	CY	@	$	4.50	/CY	=	$ 450
Cutslope rounding	2	sta	@	$	49.00	/sta	=	$ 98
End-haul to waste area	100	CY	@	$	4.50	/CY	=	$ 450
Level road with Spur E to F (Haul to Spur E to F)	250	CY	@	$	4.50	/CY	=	$ 1,125

TOTAL EXCAVATION = $ 2,123

IMPROVEMENT

Remove sod and brushing debris (with grader and backhoe)	64.5	stations	@	$	15.40	/ sta	=	$ 993
Pull Ditch and Scatter waste material (Pt. A to Sta. 38+22)	12.0	stations	@	$	44.00	/ sta	=	$ 528
Pull Ditch and Endhaul waste material (Pt. A to Sta. 38+22)	11.0	stations	@	$	64.00	/ sta	=	$ 704

TOTAL IMPROVEMENT = $ 2,225

SURFACING

			Size		Cost			
Spot Rock	210	CY	1 1/2"-0	@	$ 31.25	/CY	=	$ 6,563
Base rock (6" lift) + CW	60	CY	3" - 0	@	$ 29.59	/CY	=	$ 1,775
Surface Rock (3" lift) (Sta. 36+19 to 38+22)	30	CY	1 1/2"-0	@	$ 31.25	/CY	=	$ 938
Process base rock (with road grader)	3.0	station	3" - 0	@	$ 15.40	/sta	=	$ 46
Compact base rock (with vibratory roller)	3.0	station		@	$ 14.00	/sta	=	$ 42
Process surfacing (with road grader)	20.0	station	1 1/2"-0	@	$ 15.40	/sta	=	$ 308
Compact surfacing (with vibratory roller)	20.0	station		@	$ 14.00	/sta	=	$ 280

TOTAL SURFACING COST = $ 9,952

Culverts

(Sta. 5+90)			Size		Cost		
24"x 30' CPP	30	ft		@	$20.50	/ft =	$615
Install culvert	2	hr		@	$140.00	/hr =	$280
Install dissipator	1.5	hr		@	$140.00	/hr =	$210
Bedding/backfill 1 1/2"-0"	20	CY	1 1/2"-0	@	$31.25	/CY =	$625
Dissipator Rock	10	CY	Pit-run	@	$27.93	/CY =	$279
Old Culvert Disposal	1			@	$100.00	=	$100

TOTAL CULVERT COST = $2,109

SPECIAL PROJECTS

					Labor $		
Clean out culverts (inlets and outlets)	1	culvert	@	$	25.00	ea =	$ 25

TOTAL SPECIAL PROJECTS COST = $ 25

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> **$ 16,434**

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #2 Improvement LENGTH 45.0 sta
ROAD 3 to 4 Hatchery Fall Creek Road

IMPROVEMENT

Remove sod and brushing debris (with grader and backhoe)	45	stations	@	$	15.40	/ sta	=	$	693
Waste Area Creation (2 WA's)	1	hrs	@	$	162.00	/hr	=	$	162
Waste Area Compaction	100	CY	@	$	0.45	/ CY	=	$	45

TOTAL IMPROVEMENT = $ 900

SURFACING			Size		Cost				
Spot rock (Pt. 3 to Pt. 4)	80	CY	1 1/2"-0	@	$ 31.25	/CY	=	$	2,500
Process surface rock (with road grader)	20	stations		@	$ 15.40	/ sta	=	$	308
Compact road surface (Pt. 3 to Pt. 4)	20	stations		@	$ 14.00	/ sta	=	$	280

TOTAL SURFACING COST = $ 3,088

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 3,988

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project #2 Improvement LENGTH 7.1 sta
ROAD 5 to 6 (Surfaced)

IMPROVEMENT

Remove sod and woody debris (with road grader)	7.1	sta	@	$	15.40	/ sta	= $	109

TOTAL IMPROVEMENT = $ 109

Compiled by:
Date: Jim Stuart/J. Long
Aug 1, 2019

GRAND TOTAL =====> **$ 109**

SUMMARY OF CONSTRUCTION COST

SALE Rock Fall Project # 2 Improvement LENGTH 8.0 sta
ROAD 7 to 8 (Dirt)

IMPROVEMENT

Remove sod and woody debris (with road grader)	8.0 sta	@	$	15.40	/ sta	=	$	123

TOTAL IMPROVEMENT = $ 123

Compiled by: Jim Stuart/J. Long
Date: Aug 1, 2019

GRAND TOTAL =====> $ 123

Rock Fall Timber Sale
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Project No. 3

Mechanical Road Brushing Costs (Lincoln County)

Date: Aug 1, 2019

Road Segment Point	Length (Feet) Allocation BOF	CSL	Miles	Brush Density	Cost / Mile	Total Costs Allocation BOF	CSL
1 to 2	64.5		1.22	Medium	$ 1,200.00	$ 1,464	
3 to 4		45.0	0.85	Medium	$ 1,200.00		$ 1,020
5 to 6	7.1		0.13	Heavy	$ 1,700.00	$ 221	
7 to 8	8.0		0.15	Heavy	$ 1,700.00	$ 255	
Totals	79.6	45.0	**2.35**			$ 1,940	$ 1,020

2.35 Miles **Total Cost $ 2,960.00**

Rock Haul Cost Computation

SALE NAME: Rock Fall DATE: Aug 1, 2019
ROAD NAME: E to F CLASS: Medium
ROCK SOURCE: Rickard 10 CY truck
Route: Garrett Lane, Hwy 20, Eddyville-Blodgett Hwy, Logsden Rd, Steer Cr, Beaver Cr, Hatchery Fall Cr.

TIME Computation:
Road speed time factors:

1.	55 MPH	8.2	MRT	8.9	minutes
2.	50 MPH		MRT	0.0	minutes
3.	45 MPH		MRT	0.0	minutes
4.	40 MPH	16.2	MRT	24.3	minutes
5.	35 MPH	14.6	MRT	25.0	minutes
6.	30 MPH		MRT	0.0	minutes
7.	25 MPH	3.2	MRT	7.7	minutes
8.	20 MPH	7.7	MRT	23.1	minutes
9.	15 MPH		MRT	0.0	minutes
10.	10 MPH	1.0	MRT	6.0	minutes
11.	05 MPH	0.5	MRT	6.0	minutes

Dump or spread time per RT		0.50	minutes
Total hauling cycle time for this setting (100% efficiency)		101.50	minutes
Operator efficiency correction	0.85	119.41	minutes
Job efficiency correction	0.90	132.68	minutes
Truck capacity (CY)	10.00	13.27	min/CY
Loading time, delay time per CY		0.25	min/CY
TIME (minutes) per cubic yard		13.52	min/CY

COST per CY computation

Cost of truck and operator per hour	$90.00	/hr
Cost of truck and operator per minute	$1.50	/min
Cost per CY	$20.28	/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	$31.25	$32.75
3 - 0"	$ 9.31	$29.59	$31.09
Jaw Run	$ 8.31	$28.59	$30.09
Pit-Run	7.65	$27.93	$29.43
Boulders	$ 23.94	$44.22	

Rock Haul Cost Computation

SALE NAME: Rock Fall DATE: Aug 1, 2019
ROAD NAME: E to F CLASS: Medium
ROCK SOURCE: Rickard 20 CY truck
Route: Garrett Lane, Hwy 20, Eddyville-Blodgett Hwy, Logsden Rd, Steer Cr, Beaver Cr, Hatchery Fall Cr.

TIME Computation:
Road speed time factors:

1.	55 MPH	8.2	MRT	8.9	minutes
2.	50 MPH		MRT	0.0	minutes
3.	45 MPH		MRT	0.0	minutes
4.	40 MPH	16.2	MRT	24.3	minutes
5.	35 MPH	14.6	MRT	25.0	minutes
6.	30 MPH		MRT	0.0	minutes
7.	25 MPH	3.2	MRT	7.7	minutes
8.	20 MPH	7.7	MRT	23.1	minutes
9.	15 MPH		MRT	0.0	minutes
10.	10 MPH	1.0	MRT	6.0	minutes
11.	05 MPH	0.5	MRT	6.0	minutes

Dump or spread time per RT		0.50	minutes
Total hauling cycle time for this setting (100% efficiency)		101.50	minutes
Operator efficiency correction	0.85	119.41	minutes
Job efficiency correction	0.90	132.68	minutes
Truck capacity (CY)	20.00	6.63	min/CY
Loading time, delay time per CY		0.25	min/CY
TIME (minutes) per cubic yard		6.88	min/CY

COST per CY computation

Cost of truck and operator per hour	$90.00	/hr
Cost of truck and operator per minute	$1.50	/min
Cost per CY	$10.32	/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	$21.29	$22.79
3 - 0"	$ 9.31	$19.63	$21.13
Jaw Run	$ 8.31	$18.63	$20.13
Pit-Run	7.65	$17.97	$19.47
Boulders	$ 23.94	$34.26	

SUMMARY OF MAINTENANCE COST

SALE Rock Fall - Final Maintenance Cost Estimate

(Costed in appraisal, not in project costs)

SALVAGE CULVERTS

Road Segment	Station	Salvage	Remove Cost	Haul to Philomath	Total cost
Spur A to B	11+80	18" x 30'	$ 150	$ 100	$ 250
Spur A to B	13+55	18" x 30'	$ 150	$ 100	$ 250
					$ 500

Total $ 500

Grading

Move-in

Grader	$ 875	
Backhoe	$ 361	Total $ 1,236

2.7 miles 20 hrs @ $113.00 /hr = $ 2,260

MAINTENANCE ROCK

Rock Size	Miles	Volume	Cost/CY	Cost
1½-0"	1.35	140	$31.25	$4,375.00
1½-0"	1.35	100	$21.29	$2,129.00
			Total	$ 6,504

GRAND TOTAL	$ 10,500

TS Volume MBF = 2,332

Cost / MBF = $ 4.50

NOTES: Grade surface rock on all roads used for hauling 2.70 miles to County road.

Rock Fall (WO-341-2020-W00789-01)
FY 2020

TIMBER CRUISE REPORT

1. **Sale Area Location**: Portions of Sections 5, 6 and 7, T10S, R8W, W.M., Lincoln and Polk Counties, Oregon.

2. **Fund Distribution:**
   a. **Fund** BOF 58%, CSL 42%
   b. **Tax Code**

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Stream Buffers	Existing Roads	Green Tree Retention Acres	Slope Buffer Acres	Net Sale Acres	Acreage Comp. Method
1	**Modified Clearcut**	80	10	1	3	0	66	Ortho photo, GIS, GPS
2	**Modified Clearcut**	43	4	0	0	3	36	Ortho photo, GIS, GPS
Total		123	14	1	3	3	102	

4. **Cruisers and Cruise Dates:** All sale areas were cruised by Aaron McEwen and Jon Long. Both areas were cruised in March of 2019.

5. **Cruise Method and Computation:** All Areas of the sale were cruised using variable radius plot sampling using a 40 BAF for conifers, and a 33.61 BAF for hardwoods. A total of 42 plots were taken in Area 1 consisting of 23 measure and 19 count plots 7 chains by 3 chains apart. Plot #'s 7 and 15 were dropped due to being within stream buffers. A total of 25 plots were taken in Area 2 consisting of 14 measure and 11 count plots spaced 7 chains by 3 chains apart. Plot #5 was dropped due to being within a slope buffer.

   Digital ortho photos, LiDar, and ArcMap 10.6 were used to map the boundaries for the sale, and ArcMap 10.6 was used to determine gross and net acreage.

6. **Measurement Standards:** Measure 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. Additional volume was removed to account for hidden defect and breakage.

7. **Timber Description:** Timber in the sale areas consists of 52-54 year-old planted Douglas-fir and natural hardwoods. The average DBH of Douglas fir in Area 1 is approximately 18 inches, and approximately 14 inches DBH for red alder. The average volume per acre of Douglas fir to be harvested (net) in Area 1 is approximately 12 MBF, and 5 MBF of red alder and bigleaf maple. The average DBH of Douglas fir for Area 2 is approximately 19 inches, and approximately 14 inches DBH for red alder.The average volume per acre of Douglas fir to be harvested (net) in Area 2 is approximately 32 MBF, and 2 MBF of red alder and bigleaf maple. Western Hemlock are reserved from cutting in both sale areas.

8. **Total Volume (MBF) by Species and Grade:** (See attached volume report "Species, Sort Grade – Board Foot Volumes - Project").

Area	Species	Gross Cruise Volume	Cruised D&B	Cruised D&B (MBF)	Hidden D&B	Hidden D&B (MBF)	Net Sale Volume
1	Douglas-fir	840	2.7%	(23)	2%	(17)	800
	Red alder	266	5.4%	(14)	2%	(5)	247
	Bigleaf maple	82	10.5%	(9)	1%	(1)	72
2	Douglas-fir	1,182	1.6%	(19)	2%	(24)	1,139
	Red alder	59	2.4%	(1)	2%	(1)	57
	Bigleaf maple	18	6%	(1)	1%	-	17
Total		2,447	2.7%	(67)	2%	(48)	2,332

Grade % Breakdown / Volume by Grade

Area	Species	Ave. DBH	Tot. Net Vol.	2-Saw	3-Saw	4-Saw	SM	Camp Run
1	Douglas-fir	18	Grade %	55%	37%	8%	-	-
			800	440	296	64	-	-
	Red alder	14	Grade %	-	-	-	-	100%
			247	-	-	-	-	247
	Bigleaf maple	17	Grade %	-	-	-	-	100%
			72	-	-	-	-	72
2	Douglas-fir	19	Grade %	64%	26%	6%	4%	-
			1,139	729	296	68	46	-
	Red alder	14	Grade %	-	-	-	-	100%
			57	-	-	-	-	57
	Bigleaf maple	20	Grade %	-	-	-	-	100%
			17	-	-	-	-	17
	Total All Areas		Grade %	50%	25%	6%	2%	17%
			2,332	1,169	592	132	46	393

Attachments:

-Cruise Maps
-Cruise Design
- Project Statistics (All Areas)
- Species/Sort/Grade-BF Vol. (All Areas)
- Stand Table Summary (All Areas)
- Log Stock Table (All Areas)

Prepared by: Aaron McEwen Date: 5/15/2019

Unit Forester: _____ Date: _____
Evelyn Hukari

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T10S R08W S6 TyCC 66.00

Project: ROCKFALL
Acres 66.00

Page 1
Date 5/20/2019
Time 8:16:55AM

Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RA		CU CU														6	11		0.00	6.0
RA		DO CR	100	5.3	4,031	3,815	252	0	80	20		13	32	25	30	27	8	58	0.74	66.2
RA	**Totals**		22	5.3	4,031	3,815	252	0	80	20		13	32	25	30	25	8	53	0.72	72.2
DF		CU CU														1	15		0.00	2.7
DF		DO 2M	55	2.7	7,068	6,878	454			72	28		11	19	70	36	14	254	1.84	27.0
DF		DO 3M	37	2.7	4,725	4,599	304		97	3			4	19	77	37	7	82	0.75	56.4
DF		DO 4M	8	3.9	930	894	59	47	53			33	53	14		21	5	25	0.43	35.9
DF	**Totals**		71	2.8	12,724	12,371	817	3	40	41	15	2	12	18	68	32	8	101	0.96	122.0
BM		CU CU														1	10		0.00	5.5
BM		DO CR	100	10.5	1,245	1,114	74	7	93			10	56		34	25	8	60	0.94	18.6
BM	**Totals**		6	10.5	1,245	1,114	74	7	93			10	56		34	20	8	46	0.93	24.0
WH		CU CU														9	29		0.00	.1
WH		DO 2M	91		84	84	6				100			100		32	20	560	3.62	.1
WH		DO 3M	9		7	7	0		100				100			28	7	50	1.21	.1
WH	**Totals**		1		91	91	6		8		92		8	92		23	19	203	2.17	.4
Totals				3.9	18,090	17,391	1,148	3	52	34	11	5	19	19	57	28	8	80	0.89	218.7

TC PLOGSTVB

Log Stock Table - MBF

T10S R08W S6 TyCC 36.00

Project: ROCKFALL
Acres 36.00

Page 1
Date 5/20/2019
Time 8:20:40AM

Spp	S T	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+
DF		DO	2M	24	8		8	.7						8						
DF		DO	2M	26	12		12	1.0						3	9					
DF		DO	2M	30	10		10	.8								10				
DF		DO	2M	32	21	3.7	21	1.8						9				12		
DF		DO	2M	34	8		8	.7						8						
DF		DO	2M	36	18	2.9	18	1.5						18						
DF		DO	2M	38	15		15	1.3						15						
DF		DO	2M	40	660		654	56.3						135	150	157	112	84	16	
DF		DO	3M	16	3	16.7	2	.2					2							
DF		DO	3M	28	9	5.9	8	.7						8						
DF		DO	3M	32	67	2.6	65	5.6			10	30	19			7				
DF		DO	3M	34	11	30.8	8	.7					8							
DF		DO	3M	36	20		20	1.7			6	9	4							
DF		DO	3M	38	19		19	1.6			14	5								
DF		DO	3M	40	188		188	16.2			46	75	36			5		9		17
DF		DO	4M	12	3		3	.2		1	2									
DF		DO	4M	13	1		1	.1			1									
DF		DO	4M	14	0		0	.0			0									
DF		DO	4M	15	1		1	.1			1									
DF		DO	4M	16	4		4	.4		2	2									
DF		DO	4M	17	3		3	.2		1	2									
DF		DO	4M	18	3		3	.2			3									
DF		DO	4M	20	8		8	.7		5	3									
DF		DO	4M	22	6		6	.5			6									
DF		DO	4M	24	11		11	.9		8	3									
DF		DO	4M	26	1		1	.1			1									
DF		DO	4M	28	1		1	.1			1									
DF		DO	4M	30	1		1	.1		1										
DF		DO	4M	32	13		13	1.1			13									
DF		DO	4M	34	2	25.0	1	.1		1										
DF		DO	4M	36	5		5	.4			5									
DF		DO	4M	40	5		5	.4		4			1							
DF		DO	SM	40	42	1.0	41	3.6								26	15			
DF		Totals			1,182	1.6	1,163	93.0		23	118	119	70	204	160	205	127	104	16	17
BM		DO	CR	15	4	13.6	3	17.9								3				
BM		DO	CR	16	1		1	3.3			1									

TC PLOGSTVB

Log Stock Table - MBF

T10S R08W S6 TyCC 36.00

Project: ROCKFALL
Acres 36.00

Page 2
Date 5/20/2019
Time 8:20:40AM

Spp	S T	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+
BM		DO	CR	17	1		1	4.2			1									
BM		DO	CR	32	3	8.3	3	18.4					3							
BM		DO	CR	38	3	5.9	2	13.9					2							
BM		DO	CR	40	7	2.6	7	42.3		1	1		5							
BM		Totals			18	6.1	17	1.4		1	2		11			3				
SN		Totals			120	100.0														
WH		DO	3M	38	10	2.1	10	69.9											10	
WH		DO	3M	40	4		4	28.6									4			
WH		DO	4M	24	0		0	1.5				0								
WH		Totals			14	1.5	14	1.1				0					4		10	
RA		DO	CR	12	1		1	1.4			1									
RA		DO	CR	16	2	23.4	1	2.4			1	1								
RA		DO	CR	30	4		4	7.6			4									
RA		DO	CR	32	20	5.0	19	32.9			11			8						
RA		DO	CR	36	6		6	11.1			6									
RA		DO	CR	40	26		26	44.7			9	6	11							
RA		Totals			59	2.4	57	4.6			31	7	11	8						
Total		All Species			1,393	10.2	1,251	100.0		23	152	126	92	212	160	208	131	104	26	17

TC PSTNDSUM

Stand Table Summary

Page 1
Date: 5/20/2019

T10S R08W S6 TyCC 66.00

Project ROCKFALL
Acres 66.00

Time: 8:16:59AM
Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		12	3	88	51	7.599	5.97	7.60	17.0	53.3		129	405		85	27
DF		13	2	86	59	4.316	3.98	6.47	15.3	46.7		99	302		66	20
DF		14	5	86	68	9.305	9.95	13.03	20.3	57.1		264	744		174	49
DF		15	6	87	85	9.726	11.94	19.45	20.2	66.7		392	1,297		259	86
DF		16	2	86	78	2.850	3.98	5.70	21.7	65.0		124	370		82	24
DF		17	7	87	83	8.834	13.93	17.67	26.3	89.3		464	1,578		307	104
DF		18	2	87	84	2.251	3.98	4.50	28.5	95.0		128	428		85	28
DF		19	5	88	81	5.052	9.95	10.10	32.1	106.0		324	1,071		214	71
DF		20	2	87	91	1.824	3.98	3.65	38.8	130.0		141	474		93	31
DF		21	5	87	81	4.135	9.95	8.27	40.0	124.0		331	1,026		218	68
DF		22	2	87	95	1.507	3.98	3.01	49.2	162.5		148	490		98	32
DF		23	4	86	101	2.758	7.96	6.89	45.0	167.0		310	1,151		205	76
DF		24	2	86	89	1.266	3.98	2.53	54.7	172.5		139	437		92	29
DF		25	3	88	104	1.751	5.97	4.09	59.1	211.4		242	864		159	57
DF		26	2	86	93	1.079	3.98	2.16	66.5	250.0		144	540		95	36
DF		28	2	86	103	.930	3.98	2.33	69.0	270.0		161	628		106	41
DF		30	1	88	92	.405	1.99	.81	90.0	330.0		73	267		48	18
DF		32	1	85	92	.356	1.99	1.07	65.7	280.0		70	299		46	20
DF		Totals	56	87	78	65.945	111.40	119.34	30.9	103.7		3,684	12,371		2,432	817
RA		10	5	86	27	10.322	5.63	10.32	7.4	24.0		76	248		50	16
RA		11	4	87	53	6.824	4.50	6.82	14.0	42.5		96	290		63	19
RA		12	3	86	32	4.301	3.38	4.30	12.3	36.7		53	158		35	10
RA		13	6	86	60	7.329	6.76	8.55	19.1	58.6		164	501		108	33
RA		14	7	87	56	7.373	7.88	9.48	19.4	54.4		184	516		122	34
RA		15	7	87	50	6.422	7.88	6.42	27.1	64.3		174	413		115	27
RA		16	7	87	63	5.645	7.88	8.06	25.8	74.0		208	597		137	39
RA		17	3	86	75	2.143	3.38	4.29	26.8	91.7		115	393		76	26
RA		18	6	87	57	3.823	6.76	6.37	27.4	81.0		175	516		115	34
RA		19	1	87	71	.572	1.13	1.14	30.0	105.0		34	120		23	8
RA		22	1	87	50	.427	1.13	.43	54.0	150.0		23	64		15	4
RA		Totals	50	87	50	55.180	56.30	66.19	19.7	57.6		1,302	3,815		859	252
BM		15	1	87	67	5.478	6.72	10.96	17.5	60.0		192	657		127	43
BM		18	2	86	41	7.608	13.44	7.61	33.0	60.0		251	456		166	30
BM		Totals	3	86	52	13.085	20.17	18.56	23.9	60.0		443	1,114		292	74
WH		35	1	82	81	.150	1.00	.30	75.0	305.0		22	91		15	6
WH		Totals	1	82	81	.150	1.00	.30	75.0	305.0		22	91		15	6
Totals			110	87	64	134.361	188.87	204.39	26.7	85.1		5,452	17,391		3,598	1,148

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T10S R08W S6 TyCC 36.00

Project: ROCKFALL
Acres 36.00

Page 1
Date 5/20/2019
Time 8:20:41AM

Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF	CU	CU		100.0	148											5	13		0.00	7.8
DF	DO	2M	64	.9	20,888	20,694	745			52	48		4	4	92	38	15	352	2.02	58.7
DF	DO	3M	26	2.0	8,789	8,615	310		85	3	12	1	3	23	73	37	8	97	0.77	88.5
DF	DO	4M	6	.7	1,851	1,838	66	34	66			34	30	22	14	22	6	27	0.40	67.1
DF	DO	SM	4	1.0	1,164	1,152	41				100				100	40	19	600	3.07	1.9
DF	**Totals**		93	1.6	32,840	32,299	1,163	2	26	34	37	2	5	10	83	32	9	144	1.10	224.0
BM	CU	CU														8	17		0.00	1.8
BM	DO	CR	100	6.1	504	474	17	4	78		18	25		18	56	29	9	87	1.10	5.4
BM	**Totals**		1	6.1	504	474	17	4	78		18	25		18	56	24	11	66	1.01	7.2
SN	CU	CU		100.0	3,327											70	72		0.00	1.9
SN	**Totals**			100.0	3,327											70	72		0.00	1.9
WH	CU	CU														1	33		0.00	.1
WH	DO	3M	98	1.5	384	378	14				100				100	39	28	1310	6.78	.3
WH	DO	4M	2		6	6	0		100				100			24	8	40	1.38	.1
WH	**Totals**		1	1.5	390	384	14		2		98		2		98	26	24	665	5.46	.6
RA	DO	CR	100	2.4	1,629	1,590	57		86	14		4	8	33	56	32	7	66	0.72	24.2
RA	**Totals**		5	2.4	1,629	1,590	57		86	14		4	8	33	56	32	7	66	0.72	24.2
Totals				10.2	38,690	34,746	1,251	2	30	32	36	3	5	11	81	32	10	135	1.06	257.9

TC PSTATS

PROJECT STATISTICS

PROJECT ROCKFALL

DATE 5/20/2019

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
10S	08	6	A2	CC	36.00	24	133	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	24	133	5.5		
CRUISE	14	92	6.6	4,385	2.1
DBH COUNT					
REFOREST					
COUNT	9	41	4.6		
BLANKS	1				
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
DF	70	95.7	18.6	74	42.0	181.1	32,840	32,299	7,905	7,873
R ALDER	14	20.9	14.1	40	6.0	22.7	1,629	1,590	565	565
BL MAPLE	5	3.2	20.1	53	1.6	7.0	504	474	172	172
SNAG	2	1.9	17.4	70	0.7	3.1	3,327			
WHEMLOCK	1	.1	46.0	94	0.2	1.7	390	384	81	81
TOTAL	*92*	*121.8*	*18.0*	*68*	*50.8*	*215.5*	*38,690*	*34,746*	*8,724*	*8,691*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DF	118.7	14.2	564	657	750			
R ALDER	61.0	16.9	78	94	109			
BL MAPLE	41.4	20.6	119	150	181			
SNAG								
WHEMLOCK								
TOTAL	*136.6*	*14.2*	*473*	*551*	*630*	*745*	*186*	*83*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DF	82.3	17.1	79	96	112			
R ALDER	345.8	72.0	6	21	36			
BL MAPLE	363.2	75.7	1	3	6			
SNAG	406.5	84.7	0	2	3			
WHEMLOCK	489.9	102.1		0	0			
TOTAL	*72.8*	*15.2*	*103*	*122*	*140*	*221*	*55*	*25*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DF	74.8	15.6	153	181	209			
R ALDER	279.0	58.1	9	23	36			
BL MAPLE	399.8	83.3	1	7	13			
SNAG	340.2	70.9	1	3	5			
WHEMLOCK	489.9	102.1		2	3			
TOTAL	*56.7*	*11.8*	*190*	*216*	*241*	*134*	*33*	*15*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DF	78.5	16.4	27,014	32,299	37,584			
R ALDER	285.3	59.4	645	1,590	2,534			
BL MAPLE	353.0	73.5	125	474	822			
SNAG								
WHEMLOCK	489.9	102.1		384	776			
TOTAL	*68.6*	*14.3*	*29,782*	*34,746*	*39,710*	*196*	*49*	*22*

TC PSTNDSUM

Stand Table Summary

Page 1
Date: 5/20/2019

T10S R08W S6 TyCC 36.00

Project ROCKFALL
Acres 36.00

Time: 8:20:44AM
Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		10	1	86	76	4.005	2.18	4.00	15.0	60.0		60	240		22	9
DF		11	2	87	77	7.878	5.20	11.82	11.7	46.7		138	551		50	20
DF		12	4	87	104	13.239	10.40	26.48	14.4	55.0		381	1,456		137	52
DF		13	1	87	91	2.820	2.60	5.64	16.0	55.0		90	310		32	11
DF		14	4	87	88	9.338	9.98	18.68	18.9	61.5		352	1,149		127	41
DF		15	1	88	110	2.118	2.60	4.24	26.0	105.0		110	445		40	16
DF		16	3	88	78	5.585	7.80	11.17	21.5	71.7		240	801		86	29
DF		17	2	87	105	3.298	5.20	8.25	21.2	74.0		175	610		63	22
DF		18	8	88	107	11.768	20.80	25.01	34.4	122.9		859	3,074		309	111
DF		19	4	88	105	5.281	10.40	14.52	29.0	108.2		421	1,571		152	57
DF		20	6	88	115	7.149	15.60	19.06	36.6	136.2		698	2,598		251	94
DF		21	4	90	112	4.323	10.40	10.81	43.8	174.0		473	1,880		170	68
DF		22	4	89	106	3.939	10.40	9.85	44.0	169.0		433	1,664		156	60
DF		23	1	86	103	.901	2.60	2.70	39.0	153.3		105	414		38	15
DF		24	2	89	133	1.655	5.20	4.96	52.7	225.0		261	1,117		94	40
DF		25	4	88	104	3.050	10.40	7.63	54.9	218.0		419	1,662		151	60
DF		26	3	89	128	2.115	7.80	6.35	61.1	266.7		388	1,692		140	61
DF		27	1	89	117	.654	2.60	1.96	62.0	266.7		122	523		44	19
DF		28	3	87	155	1.824	7.80	6.69	67.1	311.8		449	2,085		162	75
DF		29	1	88	114	.567	2.60	1.70	69.0	306.7		117	521		42	19
DF		30	2	90	151	1.059	5.20	3.71	81.4	401.4		302	1,488		109	54
DF		31	1	89	156	.496	2.60	1.98	75.2	360.0		149	714		54	26
DF		33	2	89	147	.875	5.20	3.06	93.9	484.3		288	1,484		104	53
DF		34	1	85	156	.412	2.60	1.24	115.0	543.3		142	672		51	24
DF		38	1	86	154	.330	2.60	1.32	110.0	545.0		145	720		52	26
DF		39	2	92	145	.627	5.20	2.19	133.6	694.3		293	1,523		105	55
DF		43	1	91	118	.258	2.60	.77	158.0	763.3		122	590		44	21
DF		55	1	89	140	.158	2.60	.47	294.0	1570.0		139	742		50	27
DF		Totals	70	88	103	95.722	181.13	216.26	36.4	149.4		7,873	32,299		2,834	1,163
RA		10	1	87	76	2.930	1.60	2.93	16.0	60.0		47	176		17	6
RA		11	1	86	53	2.421	1.60	2.42	14.0	50.0		34	121		12	4
RA		12	3	86	58	6.103	4.79	6.10	20.0	53.3		122	326		44	12
RA		14	2	87	42	2.989	3.20	2.99	19.0	50.0		57	149		20	5
RA		15	1	87	40	1.302	1.60	1.30	22.0	50.0		29	65		10	2
RA		16	1	86	87	1.144	1.60	2.29	26.0	85.0		60	195		21	7
RA		18	1	86	56	1.076	1.90	1.08	44.0	90.0		47	97		17	3
RA		20	4	87	58	2.930	6.39	5.13	33.1	90.0		170	461		61	17
RA		Totals	14	86	58	20.895	22.67	24.24	23.3	65.6		565	1,590		203	57
BM		16	1	87	78	1.003	1.40	2.01	25.5	85.0		51	171		18	6
BM		18	1	87	73	.792	1.40	1.58	19.5	65.0		31	103		11	4
BM		22	1	86	61	.530	1.40	.53	45.0	60.0		24	32		9	1
BM		24	1	86	68	.446	1.40	.89	41.0	115.0		37	103		13	4
BM		25	1	86	51	.411	1.40	.41	73.0	160.0		30	66		11	2
BM		Totals	5	87	69	3.183	7.00	5.42	31.8	87.3		172	474		62	17
WH		46	1	89	118	.144	1.67	.43	187.3	886.7		81	384		29	14
WH		Totals	1	89	118	.144	1.67	.43	187.3	886.7		81	384		29	14
SN		13	1	86	72	1.519	1.40									
SN		30	1	88	88	.340	1.67									
SN		Totals	2	86	75	1.859	3.07									

TC PSTNDSUM

Stand Table Summary

Date: 5/20/2019

T10S R08W S6 TyCC 36.00

Project ROCKFALL

Acres 36.00

Time: 8:20:44AM

Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
Totals			92	87	94	121.803	215.54	246.35	35.3	141.0		8,691	34,746		3,129	1,251

TC PLOGSTVB

Log Stock Table - MBF

T10S R08W S6 TyCC 66.00

Project: ROCKFALL
Acres 66.00

Page 1
Date 5/20/2019
Time 8:23:12AM

Spp	ST	Sort	Grade	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+
RA		DO	CR	12	1		1	.5			1									
RA		DO	CR	16	20	18.0	16	6.5			11	5								
RA		DO	CR	18	7		7	2.8			7									
RA		DO	CR	20	9	4.4	9	3.6		1	3			5						
RA		DO	CR	22	7	26.9	5	2.0			5									
RA		DO	CR	23	8		8	3.3			8									
RA		DO	CR	24	27		27	10.9			14		7	6						
RA		DO	CR	25	6	20.0	5	1.8				5								
RA		DO	CR	26	2		2	.7			2									
RA		DO	CR	27	4		4	1.5			4									
RA		DO	CR	28	11	7.2	10	4.1			3			7						
RA		DO	CR	30	21	6.5	20	7.9			7		6	7						
RA		DO	CR	31	4		4	1.6			4									
RA		DO	CR	32	38	6.1	36	14.3			6	6	7	17						
RA		DO	CR	33	5		5	1.9			5									
RA		DO	CR	34	18	5.5	17	6.9			3		7	8						
RA		DO	CR	36	5		5	1.9			5									
RA		DO	CR	38	8	7.1	8	3.1			8									
RA		DO	CR	40	63	1.6	62	24.5			26	20	15							
RA		Totals			266	5.3	252	21.9		1	123	36	42	50						
DF		DO	2M	26	11		11	1.3						11						
DF		DO	2M	30	40	2.1	39	4.8						24				15		
DF		DO	2M	32	74		73	9.0						59		15				
DF		DO	2M	34	11		11	1.4						11						
DF		DO	2M	36	51	2.8	50	6.1						25	25					
DF		DO	2M	40	279	3.4	270	33.0						56	102	112				
DF		DO	3M	28	3		3	.3			3									
DF		DO	3M	30	10		10	1.2						10						
DF		DO	3M	32	40	7.3	37	4.6			12	9	17							
DF		DO	3M	34	12		12	1.5			10	2								
DF		DO	3M	35	8		8	1.0			8									
DF		DO	3M	36	19		19	2.3			19									
DF		DO	3M	37	2		2	.3			2									
DF		DO	3M	38	19	1.4	18	2.2			18									
DF		DO	3M	40	199	2.6	194	23.7			40	119	35							
DF		DO	4M	12	2		2	.3		2										
DF		DO	4M	16	9		9	1.1		7	2									

TC PLOGSTVB

Log Stock Table - MBF

T10S R08W S6 TyCC 66.00

Project: ROCKFALL
Acres 66.00

Date 5/20/2019
Time 8:23:12AM

Spp	ST	Sort	Grade	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+
DF		DO	4M	18	5		5	.6		2	2									
DF		DO	4M	20	3		3	.4		2	1									
DF		DO	4M	22	6		6	.8			6									
DF		DO	4M	24	19	12.8	16	2.0		10	7									
DF		DO	4M	25	2		2	.3			2									
DF		DO	4M	26	1		1	.2			1									
DF		DO	4M	29	3		3	.4		3										
DF		DO	4M	30	1		1	.2		1										
DF		DO	4M	32	8		8	1.0			8									
DF		Totals			840	2.8	817	71.1		28	143	129	52	197	126	126	15			
BM		DO	CR	16	11	33.3	7	9.8			7									
BM		DO	CR	22	5		5	6.8		5										
BM		DO	CR	27	36		36	49.2					36							
BM		DO	CR	40	30	16.7	25	34.2				25								
BM		Totals			82	10.5	74	6.4		5	7	25	36							
WH		DO	2M	32	6		6	91.8									6			
WH		DO	3M	28	0		0	8.2			0									
WH		Totals			6		6	.5			0						6			
Total		All Species			1,194	3.9	1,148	100.0		34	273	191	130	247	126	126	20			

TC PSTATS

PROJECT STATISTICS

PROJECT ROCKFALL

DATE 5/20/2019

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
10S	08	6	A1 EDIT	CC	66.00	40	206	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	40	206	5.2		
CRUISE	22	110	5.0	8,868	1.2
DBH COUNT					
REFOREST					
COUNT	16	96	6.0		
BLANKS	2				
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
DF	56	65.9	17.6	59	26.6	111.4	12,724	12,371	3,684	3,684
R ALDER	50	55.2	13.7	34	15.2	56.3	4,031	3,815	1,302	1,302
BL MAPLE	3	13.1	16.8	39	4.9	20.2	1,245	1,114	443	443
WHEMLOCK	1	.1	35.0	73	0.2	1.0	91	91	22	22
TOTAL	*110*	*134.4*	*16.1*	*47*	*47.1*	*188.9*	*18,090*	*17,391*	*5,452*	*5,452*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DF	71.8	9.6	235	260	285			
R ALDER	69.4	9.8	76	84	92			
BL MAPLE	66.1	45.8	43	80	117			
WHEMLOCK								
TOTAL	*94.9*	*9.0*	*162*	*178*	*194*	*359*	*90*	*40*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DF	100.7	15.9	55	66	76			
R ALDER	143.6	22.7	43	55	68			
BL MAPLE	317.7	50.2	7	13	20			
WHEMLOCK	632.5	99.9	0	0	0			
TOTAL	*61.0*	*9.6*	*121*	*134*	*147*	*148*	*37*	*16*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DF	93.7	14.8	95	111	128			
R ALDER	145.9	23.0	43	56	69			
BL MAPLE	317.6	50.2	10	20	30			
WHEMLOCK	632.5	99.9	0	1	2			
TOTAL	*52.7*	*8.3*	*173*	*189*	*205*	*111*	*28*	*12*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DF	90.7	14.3	10,598	12,371	14,145			
R ALDER	179.4	28.3	2,734	3,815	4,896			
BL MAPLE	318.9	50.4	553	1,114	1,675			
WHEMLOCK	632.5	99.9	0	91	183			
TOTAL	*57.7*	*9.1*	*15,805*	*17,391*	*18,978*	*133*	*33*	*15*

Oregon Department of Forestry

OPERATIONAL PERIODS and SEASONAL RESTRICTIONS

West Oregon, NWOA
24533 ALSEA HWY, PHILOMATH, OR 97370
(541) 929-3266

Sale Number	Sale Name	Expiration Date
WO-341-2020-W00789-01	Rock Fall	September 30, 2022

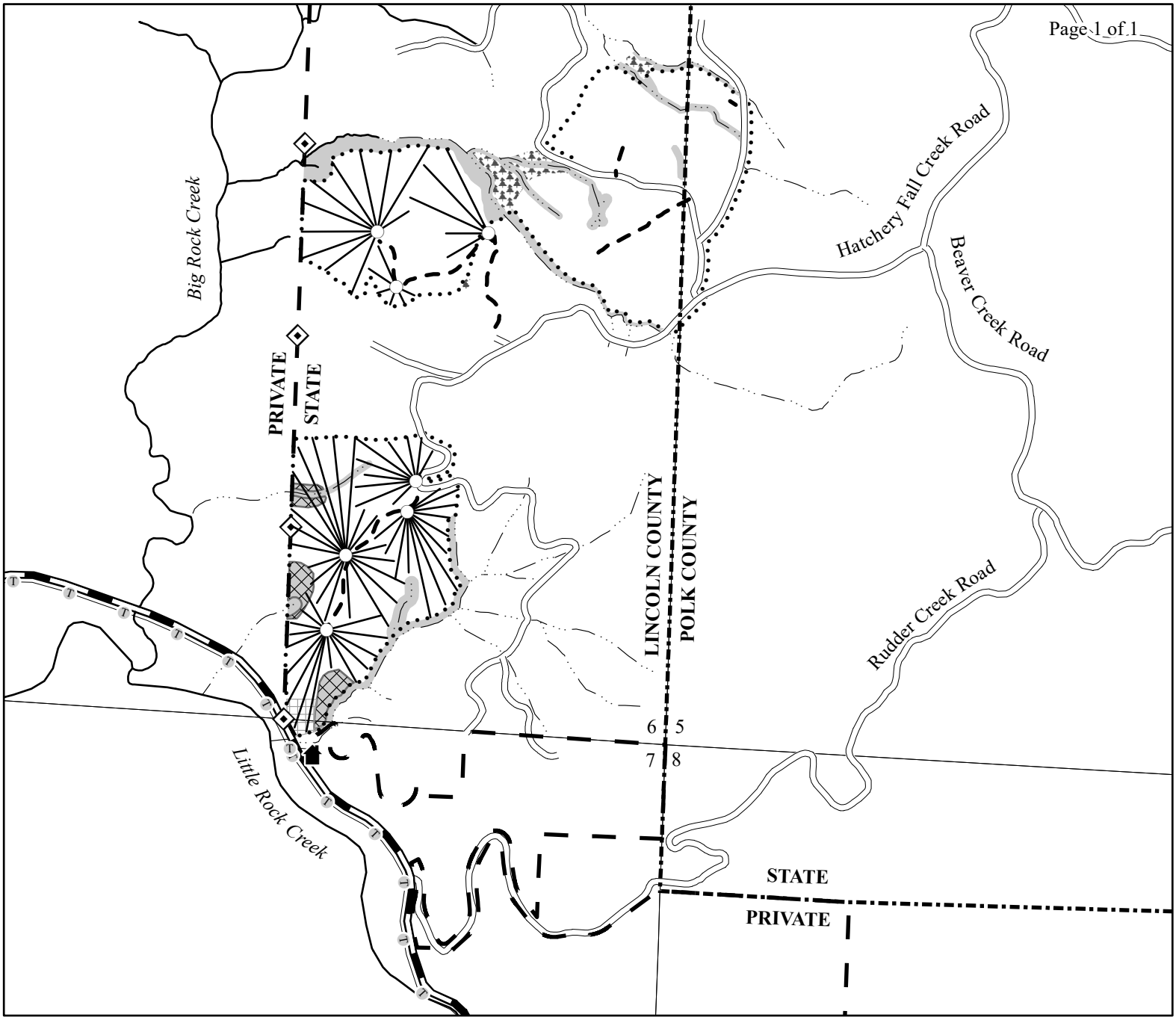
Harvesting	Comments	Units	Project	Jan 1	Jan 15	Feb 1	Feb 15	Mar 1	Mar 15	Apr 1	Apr 15	May 1	May 15	Jun 1	Jun 15	Jul 1	Jul 15	Aug 1	Aug 15	Sep 1	Sep 15	Oct 1	Oct 15	Nov 1	Nov 15	Dec 1	Dec 15	Date
Ground yarding		1																										
Slash Treatment	Slash Piling	1																										

Hauling	Comments	Units	Project	Jan 1	Jan 15	Feb 1	Feb 15	Mar 1	Mar 15	Apr 1	Apr 15	May 1	May 15	Jun 1	Jun 15	Jul 1	Jul 15	Aug 1	Aug 15	Sep 1	Sep 15	Oct 1	Oct 15	Nov 1	Nov 15	Dec 1	Dec 15	Date
Log Hauling on Unsurfaced Roads		1, 2																										

Project Work	Comments	Units	Project	Jan 1	Jan 15	Feb 1	Feb 15	Mar 1	Mar 15	Apr 1	Apr 15	May 1	May 15	Jun 1	Jun 15	Jul 1	Jul 15	Aug 1	Aug 15	Sep 1	Sep 15	Oct 1	Oct 15	Nov 1	Nov 15	Dec 1	Dec 15	Date
Activity in Live Streams	Culvert Replacement		1, 2																									
Landing and Road Construction or Improvement Operations			1, 2, 3																									
Non-project roads and landings																												

Operation Allowed — Operation Restricted — Activity Restricted 2 hours before sunset and 2 hours after sunrise

This report is for information purposes only. Refer to Section 2455 Seasonal Restrictions of the contract.



Logging Plan

OF TIMBER SALE CONTRACT NO. WO-341-2020-W00789-01
ROCK FALL
PORTIONS OF SECTIONS 5, 6, & 7, T10S, R08W, W.M.,
LINCOLN & POLK COUNTIES, OREGON

Legend

- Ownership
- Timber Sale Boundary
- Stream Buffer
- High Landslide Hazard Buffer
- Contolled Felling Area
- Green Tree Retention Area
- Paved Road
- Surfaced Road
- New Construction
- Type "F" Stream
- Type "N" Stream
- Overhead Transmission Line
- Cable Corridor
- Landing
- House
- Survey Monument

1 inch = 1,000 feet

0 500 1,000 2,000 Feet

N

AREA	Tractor Acres	Cable Acres
1 (MC)	46	20
2 (MC)	0	36
TOTAL	46	56