OREGON DEPARTMENT OF FORESTRY

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rocky Road

Sale TL-341-2018-83-

District: Tillamook

Date: December 04, 2017

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$2,857,713.84	$59,631.69	$2,917,345.53
		Project Work:	($683,570.00)
		Advertised Value:	$2,233,775.53

Timber Description

Location: Portions of Sections 26, 27, 33, 34, & 35, T2S, R7W, and
Portions of Sections 1, 2, & 12, T3S, R7W, W.M.,

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	19	0	95
Alder (Red)	16	0	90

Volume by Grade	2S	3S	4S	8" - 9"	6" - 7"	Total
Douglas - Fir	4,615	2,261	713	0	0	7,589
Alder (Red)	0	0	0	63	170	233
Total	4,615	2,261	713	63	170	7,822

Comments: Pond Values Used: October 2017

Western Red Cedar and Other Cedars Stumpage Price = Pond Value – Logging Cost
$1,550/MBF - $300/MBF = $1,250/MBF

Pulp (Conifer and Hardwood) Price = $ 25/ MBF

SCALING COST ALLOWANCE = $ 5.00/ MBF
BRAND AND PAINT ALLOWANCE = $2.00/ MBF
FUEL COST ALLOWANCE = $3.00/ Gallon
HAULING COST ALLOWANCE= Hauling cost equivalent to $780 daily truck cost

Other Costs with Profit and Risk to be added:
Snag creation: (Area 1: 113 snags, Area 2: 110 snags, Area 3: 96 snags) 319 snags x $15/ snag = $4,785
TOTAL Other Costs with profit and Risk to be added = $4,785

Other Costs with No Profit and Risk Added:
Machine Cleaning: $1000/machine x 2 machines = $2,000
Slash piling and sorting (Cable Ground): $5/ac x 319 ac = $1,595
Heliport Construction: 8 hours machine loader time for slash moving @ $140/ hour = $ 1,120
Non-project Road 1: $290/station x 2+90 stations = $840
Non-project Road 2: $1,280/station x 19+10 stations = $24,450
Non-project Road 3: $245/station x 2+00 stations = $490
Non-project Road 4: $293/station x 7+00 stations = $2,050
Non-project Road 5: $203/station x 1+20 stations = $240
Non-project Road 6: $225/station x 1+05 stations = $240
Non-project Road 7: $620/station x 21+45 stations = $13,300
Road blocking (All non-project Roads 1 to 7): $50/ block x 7 roads = $350

Ditch Cleaning and Bank Sluff Removal:
Mobilization: once – dump truck w/ tilt bed & small excavator: $890 x 1 = $890
Small excavator (Cat 312 or equivalent): 40 hours @ $95/ hour = $3,800
Dump truck: 40 hours @ $70/ hour = $2,800

TOTAL Other Costs no Profit and Risk added = $54,165

ROAD MAINTENANCE:
Portions of Rock Creek Grade, East Fork Road, & South Fork Trask River Road.
Spot rocking: 20cy/mmbf/mile x 7.8 MMBF x $5.23/cy x 12 miles/ 7,822 MBF = $1.25/ MBF
Interm Grading, 4 times: $400/ mile x 12 miles x 4 times/ 7,822 MBF = $2.45/ MBF
Final Maintenance Grading: $800 x 12 miles/ 7,822 MBF = $1.23/ MBF
Final Maintenance Compaction: $700/mile x 4 miles/ 7,822 MBF = $ 0.36/ MBF
Total Road Maintenance: $5.29/ MBF

Logging Conditions

Combination#: 1

Douglas - Fir	91.57%
Alder (Red)	98.28%

Logging System: Cable: Large Tower >=70 **Process:** Stroke Delimber
yarding distance: Long (1,500 ft) **downhill yarding:** No
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 7 **bd. ft / load:** 3500
cost / mbf: $253.06
machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Large)

Combination#: 2

Douglas - Fir	8.43%
Alder (Red)	1.72%

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: 13 **bd. ft / load:** 4000
cost / mbf: $61.00
machines: Stroke Delimber (B)

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Logging Costs

Operating Seasons:	2.00	**Profit Risk:**	15%
Project Costs:	$683,570.00	**Other Costs (P/R):**	$4,785.00
Slash Disposal:	$0.00	**Other Costs:**	$54,165.00

Miles of Road

Road Maintenance: $5.29

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	3.0	3.3
Alder (Red)	$0.00	3.0	3.1

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
$236.86	$5.55	$1.12	$82.73	$0.61	$49.03	$0.00	$7.00	$6.92	$389.82
Alder (Red)									
$249.76	$5.82	$1.12	$92.26	$0.61	$52.44	$0.00	$7.00	$6.92	$415.93

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$766.38	$376.56	$0.00
Alder (Red)	$0.00	$671.86	$255.93	$0.00

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Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	$0.00	$0.00
Alder (Red)	0	$0.00	$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	7,589	$376.56	$2,857,713.84
Alder (Red)	233	$255.93	$59,631.69

Gross Timber Sale Value

Recovery: $2,917,345.53

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OREGON DEPARTMENT OF FORESTRY

"STEWARDSHIP IN FORESTRY"

PROJECT SUMMARY SHEET

Sale: Rocky Road

CONSTRUCTION

Point	E to F	6+15	stations =	$5,130.07
Point	G to H	42+80	stations =	$29,189.00
Point	I to J	6+80	stations =	$4,782.00
Point	K to L	24+75	stations =	$141,196.67
Point	M to N	18+00	stations =	$14,558.00
Point	O to P	4+65	stations =	$3,713.00
Point	Q to R	4+55	stations =	$4,602.14
Point	U to V	7+35	stations =	$6,916.65
Point	W to X	12+30	stations =	$24,681.66
Point	Y to Z	7+85	stations =	$29,028.00
			SUBTOTAL CONSTRUCTION	**$263,797.19**

IMPROVEMENT

Point	A to B	396+60	stations =	$129,563.00
Point	C to D	23+85	stations =	$14,869.00
			SUBTOTAL IMPROVEMENT	**$144,432.00**

RECONSTRUCTION

Point	E to F	38+50	stations =	$26,341.93
Point	K to L	114+90	stations =	$157,505.33
Point	Q to R	12+95	stations =	$18,771.86
Point	S to T	11+20	stations =	$14,595.00
Point	U to V	3+50	stations =	$2,634.35
Point	W to X	16+60	stations =	$20,466.34
			SUBTOTAL RECONSTRUCTION	**$240,314.81**

SPECIAL PROJECTS

8 Hours Property Line Pit Test Drilling	$2,496.51
Stockpile Relocation	$8,250.00
1000cuyds 1 1/2"-0" Stockpile Creation	$11,370.00
Property Line Pit Slash piling and burning	$4,306.00
Property Line Pit Work	$7,920.00
SUBTOTAL SPECIAL PROJECTS	**$26,422.51**

MOVE IN	**$8,603.49**
GRAND TOTAL	**$683,570.00**

Move-In Calculations for Project Work not Involving Rocking/Pit Work

Sale: **Rocky Road**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
26.0	Pavement	30
20.0	Main Lines	7
1.5	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move ($/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
3	Excavators (Large)	$2,953.36	1	$44.80	0.00	4.24	4.24	$569.86	$3,523.22
3	Tractors (D7)	$2,596.43	2	$11.30	0.00	0.00	0	$0.00	$2,596.43
3	Dump Truck (Off Hiway)	$2,423.42	1	$4.75	0.00	4.24	4.24	$60.42	$2,483.84
					TOTAL MOVE-IN COSTS:				$8,603.49

SUMMARY OF CONSTRUCTION COST

Sale:	**Rocky Road**	Road:	**A to B**

Construction -	0+00	stations	Improvement -	396+60	stations	Reconstruction -	0+00	stations
	0.00	miles		7.51	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Widening	6.250	acres @	$660.00	per acre =	$4,125	
				TOTAL CLEARING AND GRUBBING		$4,125

IMPROVEMENT: EXCAVATION -

Widening	2640	cy. @	$2.00	per c.y.=	$5,280	
				TOTAL EXCAVATION		$5,280

IMPROVEMENT: ENDHAUL -

Widening	4+20	to	265+10	2640	cy. @	$5.22	per c.y.=	$13,781	
Spread & compact				2640	cy. @	$0.50	per c.y.=	$1,320	
							TOTAL ENDHAUL		$15,101

CULVERTS - MATERIALS & INSTALLATION

Culverts						
360	LF of 18"	$6,617	80	LF of 24"	$2,268	
			60	LF of 36"	$2,520	
		$6,617			$4,788	
Culvert Stakes & Markers						
36 markers		$288				
		$288				
				TOTAL CULVERTS		$11,693

ROCK

0+00 to	202+35	4,520	cy. of	Crushed	@	$11.98	per c.y.=	$54,150	
Intersection Widenings	As Marked	160	cy. of	Crushed	@	$4.15	per c.y.=	$664	
Cross Drain energy dissipator	5cy/x-drair	60	cy. of	Riprap	@	$7.20	per c.y.=	$432	
Cross Drain Backfill	15cy/x-drai	180	cy. of	Crushed	@	$10.40	per c.y.=	$1,872	
Stream Crossing Energy Dissipator	10cy/culver	30	cy. of	Riprap	@	$6.40	per c.y.=	$192	
Stream Crossing Backfill	20cy/culver	60	cy. of	Crushed	@	$10.40	per c.y.=	$624	
Ditch Armor	As Directec	100	cy. of	Drain Rocl	@	$12.60	per c.y.=	$1,260	
Leveling Rock	As Directec	1,000	cy. of	Jawrun	@	$11.40	per c.y.=	$11,400	
Spot Patch	2+35-269+	200	cy. of	Crushed	@	$11.40	per c.y.=	$2,280	
Spot Patch	+00-202+3	200	cy. of	Crushed	@	$11.95	per c.y.=	$2,390	
Fill Widenings	As Marked	280	cy. of	Jawrun	@	$3.95	per c.y.=	$1,106	
							TOTAL ROCK		$76,370

SPECIAL PROJECTS

Construct Slash Piles at 143+70, 144+95, and 146+50	4.00	hours @	$150.00	per hour	$600	
Construct waste areas -	6.00	hours @	$165.00	per hour	$990	
Clean Ditchlines	50.00	stations @	$100.00	each	$5,000	
Grade and shape road -	294.45	stations @	$15.50	per station	$4,564	
Roll Road following grading -	294.45	stations @	$13.20	per station	$3,887	
Grass seed and fertilize -	6.15	acres @	$220.00	per acre	$1,353	
Mulching -	1.000	acres @	$600.00	per acre	$600	
				TOTAL SPECIAL PROJECTS		$16,994
				GRAND TOTAL		$129,563

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **C to D**

Construction -	0+00	stations	Improvement -	23+85	stations	Reconstruction -	0+00	stations
	0.00	miles		0.45	miles		0.00	miles

ROCK

0+00 to	24+50	570	cy. of	Crushed	@	$11.33	per c.y.=	$6,458	
Intersection Widening	As Marked	60	cy. of	Crushed	@	$11.69	per c.y.=	$701	
Stockpile	Stockpile	500	cy. of	Drain Rock	@	$11.65	per c.y.=	$5,825	
								TOTAL ROCK	**$12,984**

SPECIAL PROJECTS

Construct stockpile area -	6.00	hours @	$150.00	per hour	$900	
Grade and shape road -	23.85	stations @	$15.50	per station	$370	
Roll subgrade w/ vibratory roller prior to rocking -	23.85	stations @	$13.20	per station	$315	
Clean Ditches	5.00	stations @	$60.00	per station	$300	
					TOTAL SPECIAL PROJECTS	**$1,885**

GRAND TOTAL **$14,869**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **E to F**

Construction -	6+15	stations	Improvement -	0+00	stations	Reconstruction -	38+50	stations
	0.12	miles		0.00	miles		0.73	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
38+50		44+65	40%			$290			=	$1,784
								TOTAL CONSTRUCTION		$1,784

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	1.770	acres @	$750.00	per acre =	$1,328	
Scattering	1.060	acres @	$980.00	per acre =	$1,039	
				TOTAL CLEARING AND GRUBBING		$2,367

RECONSTRUCTION: EXCAVATION -

Widening	1730	cy. @	$1.75	per c.y.=	$3,028	
				TOTAL EXCAVATION		$3,028

CULVERTS - MATERIALS & INSTALLATION

Culverts						
110	LF of 18"	$2,021.80	0	LF of 24"	$0	
Culvert Stakes & Markers						
2	markers	$16.00				
		$16.00			TOTAL CULVERTS	$2,038

ROCK

0+00 to	44+65	2,340	cy. of	Jawrun	@	$8.05	per c.y.=	$18,837	
Intersection Rock	0+00	30	cy. of	jawrun	@	$7.65	per c.y.=	$230	
Landing Rock	44+65	100	cy. of	jawrun	@	$8.45	per c.y.=	$845	
Landing Rock	40+00	50	cy. of	jawrun	@	$8.36	per c.y.=	$418	
Turnaround	38+50	50	cy. of	jawrun	@	$8.34	per c.y.=	$417	
								TOTAL ROCK	$20,747

SPECIAL PROJECTS

Grade and shape road -	44.65	stations @	$15.50	per station	$692	
Roll subgrade w/ vibratory roller prior to rocking -	44.65	stations @	$13.20	per station	$589	
Grass seed and fertilize -	1.03	acres @	$220.00	per acre	$227	
				TOTAL SPECIAL PROJECTS		$1,508

GRAND TOTAL $31,472

SUMMARY OF CONSTRUCTION COST

Sale:	**Rocky Road**	Road:	**G to H**

Construction -	42+80	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.81	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
0+00		24+30	10%		Outslope	$100			=	$2,430
24+30		29+65	8%		Ditch	$212			=	$1,134
29+65		35+48	34%		Ditch	$392			=	$2,285
35+48		38+05	48%		Ditch	$662			=	$1,701
38+05		39+61	24%		Outslope	$280			=	$437
39+61		42+80	15%		Outslope	$222			=	$708
									TOTAL CONSTRUCTION	**$8,695**

ROCK

0+00	to	42+80	2,310	cy. of	Jawrun	@	$6.60	per c.y.=	$15,246	
Intersection Rock		0+00	30	cy. of	Crushed	@	$10.83	per c.y.=	$325	
Landing Rock		42+80	100	cy. of	jawrun	@	$5.62	per c.y.=	$562	
Intersection Rock		0+00	50	cy. of	jawrun	@	$4.88	per c.y.=	$244	
									TOTAL ROCK	**$16,377**

SPECIAL PROJECTS

Construct Waste Area	4.00	hours @	$145.00	per hour	$580	
Construct Landing @42+80	12.00	hours @	$150.00	per hour	$1,800	
Grade and shape road -	42.80	stations @	$15.50	per station	$663	
Roll subgrade w/ vibratory roller prior to rocking -	42.80	stations @	$13.20	per station	$565	
Remove large stumps -	4.00	@	$75.00	each	$300	
Grass seed and fertilize -	0.95	acres @	$220.00	per acre	$209	
					TOTAL SPECIAL PROJECTS	**$4,117**

GRAND TOTAL **$29,189**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **I to J**

Construction -	6+80	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.13	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
0+00		2+85	40%		Ditch	$350			=	$998
2+85		6+80	10%			$120			=	$474
								TOTAL CONSTRUCTION		**$1,472**

ROCK

0+00	to	6+80	400	cy. of	Jawrun	@	$5.52 per c.y.=	$2,208	
Intersection Rock		0+00	30	cy. of	jawrun	@	$5.46 per c.y.=	$164	
Landing Rock		6+80	100	cy. of	jawrun	@	$5.58 per c.y.=	$558	
								TOTAL ROCK	**$2,930**

SPECIAL PROJECTS

Grade and shape road -	6.80	stations @	$15.50	per station	$105	
Roll subgrade w/ vibratory roller prior to rocking -	6.80	stations @	$13.20	per station	$90	
Remove large stumps -	2.00	lump sum @	$75.00		$150	
Grass seed and fertilize -	0.16	acres @	$220.00	per acre	$35	
					TOTAL SPECIAL PROJECTS	**$380**

GRAND TOTAL **$4,782**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **K to L**

Construction -	24+75	stations	Improvement -	0+00	stations	Reconstruction -	114+90	stations
	0.47	miles		0.00	miles		2.18	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
98+80		104+20	40%		Ditch	$545		$21,630	=	$24,573
120+30		121+24	19%		Ditch	$267			=	$251
121+24		122+95	45%		Ditch	$680			=	$1,163
122+95		126+25	70%		Ditch	$3,241		$22,615	=	$33,310
126+25		127+62	24%		Ditch	$290			=	$397
127+62		128+46	26%		Ditch	$312			=	$262
128+46		129+09	65%		Ditch	$2,700		$5,905	=	$7,606
129+09		130+12	76%		Ditch	$3,782		$8,858	=	$12,753
130+12		132+29	84%		Ditch	$4,531		$17,716	=	$27,548
132+29		133+19	65%		Ditch	$2,700		$5,315	=	$7,745
133+19		134+36	43%		Ditch	$567			=	$663
134+36		139+65	12%			$222			=	$1,174
								TOTAL CONSTRUCTION		**$117,445**

RECONSTRUCTION: CLEARING AND GRUBBING -

Side cast	0.171	acres @	$980.00	per acre =	$168	
Widening	0.465	acres @	$980.00	per acre =	$456	
				TOTAL CLEARING AND GRUBBING		**$624**

RECONSTRUCTION: EXCAVATION -

Pullback	562	cy. @	$1.75	per c.y.=	$984	
Widening	2275	cy. @	$1.75	per c.y.=	$3,981	
Slope Stabilization Prep.	829	cy. @	$1.75	per c.y.=	$1,451	
				TOTAL EXCAVATION		**$6,416**

RECONSTRUCTION: ENDHAUL -

Widening	1+15	to	5+20	40	cy. @	$3.66	per c.y.=	$146	
Widening	5+20	to	8+00	110	cy. @	$3.53	per c.y.=	$388
Widening	9+55	to	11+60	80	cy. @	$3.39	per c.y.=	$271
Widening	13+60	to	15+60	80	cy. @	$3.22	per c.y.=	$258
Widening	20+25	to	27+25	205	cy. @	$2.75	per c.y.=	$564
Widening	27+25	to	32+80	55	cy. @	$2.65	per c.y.=	$146
Widening	34+25	to	36+05	260	cy. @	$2.79	per c.y.=	$725
Widening	39+25	to	44+25	290	cy. @	$3.12	per c.y.=	$905
Widening	46+70	to	53+85	70	cy. @	$3.51	per c.y.=	$246
Widening	57+15	to	60+50	35	cy. @	$3.30	per c.y.=	$116
Widening	62+80	to	74+15	1315	cy. @	$2.75	per c.y.=	$3,616
Widening	74+15	to	82+75	315	cy. @	$2.78	per c.y.=	$876
Widening	82+75	to	86+75	580	cy. @	$2.94	per c.y.=	$1,705
Widening	86+75	to	90+45	250	cy. @	$2.69	per c.y.=	$673
Widening	94+70	to	98+80	1423	cy. @	$2.68	per c.y.=	$3,814
Widening	104+20	to	111+65	3500	cy. @	$3.28	per c.y.=	$11,480
Widening	112+85	to	120+30	2425	cy. @	$3.61	per c.y.=	$8,754
Spread & compact				11033	cy. @	$0.50	per c.y.=	$5,517
							TOTAL ENDHAUL	**$40,200**

CULVERTS - MATERIALS & INSTALLATION

Culverts							
450	LF of 18"	$8,271.00	60	LF of 24"	$1,701		
		$8,271.00			$1,701		
Culvert Stakes & Markers							
13 markers		$104.00					
		$104.00				**TOTAL CULVERTS**	**$10,076**

ROCK

0+00 to	120+30	6,310	cy. of	Jawrun	@	$11.76	per c.y.=	$74,206	
0+00 to	120+30	2,060	cy. of	Crushed	@	$12.31	per c.y.=	$25,359	
120+30 to	139+85	1,040	cy. of	Jawrun	@	$5.29	per c.y.=	$5,502	
Landing Rock	135+30	100	cy. of	jawrun	@	$5.34	per c.y.=	$534	
Landing Rock	139+65	100	cy. of	jawrun	@	$5.39	per c.y.=	$539	
Intersection	120+60	30	cy. of	Jawrun	@	$9.74	per c.y.=	$292	
Landing Rock	136+35	50	cy. of	jawrun	@	$5.36	per c.y.=	$268	
Culvert Backfill	As Needed	500	cy. of	jawrun	@	$5.04	per c.y.=	$2,520	
Cross Drain Energy Dissipator	5yds/culvert	55	cy. of	Riprap	@	$7.56	per c.y.=	$416	
Landing Rock	107+90	50	cy. of	jawrun	@	$5.04	per c.y.=	$252	
Cross Drain Bedding	As Needed	200	cy. of	Crushed	@	$10.76	per c.y.=	$2,152	
Stream Bedding	32+80 & 54+85	50	cy. of	Crushed	@	$10.39	per c.y.=	$520	
Stream Energy Headwall/Dissipa	32+80 & 54+85	20	cy. of	Rip Rap	@	$7.19	per c.y.=	$144	
								TOTAL ROCK	**$112,704**

SPECIAL PROJECTS

Construct waste areas -	16.00	hours @	$315.00	per hour	$5,040	
Grade and shape road -	139.65	stations @	$15.50	per station	$2,165	
Block motorcycle trails using slash, logs and stumps.	2.00	hour @	$145.00	per hour	$290	
Roll subgrade w/ vibratory roller prior to rocking -	139.65	stations @	$13.20	per station	$1,843	
Remove large stumps -	6.00	@	$75.00	each	$450	
Remove culverts from state lands	1.00	@	$262.90	total	$263	
Grass seed and fertilize -	3.21	acres @	$220.00	per acre	$706	
Mulching -	0.800	acres @	$600.00	per acre	$480	
					TOTAL SPECIAL PROJECTS	**$11,237**

GRAND TOTAL **$298,702**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **M to N**

Construction -	18+00 0.34	stations miles	Improvement -	0+00 0.00	stations miles	Reconstruction -	0+00 0.00	stations miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
0+00		18+00	15%		Outslope	$107		$3,700	=	$5,626
								TOTAL CONSTRUCTION		**$5,626**

CULVERTS - MATERIALS & INSTALLATION

Culverts

40	LF of 18"	$735.20	0	LF of 24"	$0
		$735.20			$0

Culvert Stakes & Markers

1 markers	$8.00
	$8.00

TOTAL CULVERTS **$743**

ROCK

0+00	to	18+00	960	cy. of	Jawrun	@	$5.87 per c.y.=	$5,635	
Intersection Rock		0+00	30	cy. of	Crushed	@	$13.51 per c.y.=	$405	
Landing Rock		18+00	60	cy. of	jawrun	@	$6.03 per c.y.=	$362	
								TOTAL ROCK	**$6,402**

SPECIAL PROJECTS

Widen Fill	4.00	hours @	$295.00	per hour	$1,180	
Grade and shape road -	18.00	stations @	$15.50	per station	$279	
Roll subgrade w/ vibratory roller prior to rocking -	18.00	stations @	$13.20	per station	$238	
Grass seed and fertilize -	0.41	acres @	$220.00	per acre	$90	
					TOTAL SPECIAL PROJECTS	**$1,787**

GRAND TOTAL **$14,558**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **O to P**

Construction -	4+65	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.09	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
0+00		4+65	20%		Ditch	$280			=	$1,302
									TOTAL CONSTRUCTION	**$1,302**

ROCK

0+00	to	4+65	270	cy. of	Jawrun	@	$5.98 per c.y.=	$1,615	
Intersection Rock		0+00	30	cy. of	jawrun	@	$5.94 per c.y.=	$178	
Landing Rock		4+65	50	cy. of	jawrun	@	$6.02 per c.y.=	$301	
								TOTAL ROCK	**$2,094**

SPECIAL PROJECTS

Grade and shape road -	4.65	stations @	$15.50	per station	$72	
Roll subgrade w/ vibratory roller prior to rocking -	4.65	stations @	$13.20	per station	$61	
Remove large stumps -	2.00	lump sum @	$80.00		$160	
Grass seed and fertilize -	0.11	acres @	$220.00	per acre	$24	
					TOTAL SPECIAL PROJECTS	**$317**

GRAND TOTAL **$3,713**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **O to R**

Construction -	4+55	stations	Improvement -	0+00	stations	Reconstruction -	12+95	stations
	0.09	miles		0.00	miles		0.25	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
12+95		17+50	30%		Ditch	$392			=	$1,784
									TOTAL CONSTRUCTION	**$1,784**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.700	acres @	$660.00	per acre =	$462	
Scattering	1.250	acres @	$980.00	per acre =	$1,225	
				TOTAL CLEARING AND GRUBBING		**$1,687**

RECONSTRUCTION: EXCAVATION -

Widening	1930	cy. @	$1.50	per c.y.=	$2,895	
				TOTAL EXCAVATION		**$2,895**

RECONSTRUCTION: ENDHAUL -

Widening	0+00	to	7+00	1645	cy. @	$3.75	per c.y.=	$6,169	
							TOTAL ENDHAUL		**$6,169**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	$551.40	0	LF of 24"	$0	
		$551.40			$0	

Culvert Stakes & Markers

1 markers	$8.00			
	$8.00		**TOTAL CULVERTS**	**$559**

ROCK

0+00	to	12+95	480	cy. of	Jawrun	@	$11.87	per c.y.=	$5,698	
12+95	to	17+50	280	cy. of	Jawrun	@	$6.13	per c.y.=	$1,716	
Approach		0+00	30	cy. of	Jawrun	@	$11.76	per c.y.=	$353	
Landing Rock		17+50	70	cy. of	jawrun	@	$6.17	per c.y.=	$432	
Energy Dissipator		8+60	5	cy. of	Riprap	@	$9.06	per c.y.=	$45	
Spot Patch		7+85	10	cy. of	Jawrun	@	$11.90	per c.y.=	$119	
Bedding/Backfill		8+60	15	cy. of	Crushed	@	$12.46	per c.y.=	$187	
									TOTAL ROCK	**$8,550**

SPECIAL PROJECTS

Grade and shape road -	17.50	stations @	$15.50	per station	$271	
Realign Approach 0+00 to 1+75	6.00	hours @	$165.00	per hour	$990	
Roll subgrade w/ vibratory roller prior to rocking -	17.50	stations @	$13.20	per station	$231	
Remove large stumps -	2.00	@	$75.00	each	$150	
Grass seed and fertilize -	0.40	acres @	$220.00	per acre	$88	
				TOTAL SPECIAL PROJECTS		**$1,730**

GRAND TOTAL **$23,374**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **S to T**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	11+20	stations
	0.00	miles		0.00	miles		0.21	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.200	acres @	$660.00	per acre =	$132	
				TOTAL CLEARING AND GRUBBING		**$132**

RECONSTRUCTION: EXCAVATION -

Widening	202	cy. @	$1.50	per c.y.=	$303	
				TOTAL EXCAVATION		**$303**

ROCK

0+00 to	11+20	610	cy. of	Jawrun	@	$18.60	per c.y.=	$11,346	
Intersection Rock	0+00	30	cy. of	Jawrun	@	$18.50	per c.y.=	$555	
Landing Rock	10+00	100	cy. of	jawrun	@	$12.80	per c.y.=	$1,280	
								TOTAL ROCK	**$13,181**

SPECIAL PROJECTS

Grade and shape road -	11.20	stations @	$15.50	per station	$174	
Roll subgrade w/ vibratory roller prior to rocking -	11.20	stations @	$13.20	per station	$148	
Waste Area Construction	4.00	hours @	$150.00	per hour	$600	
Grass seed and fertilize -	0.26	acres @	$220.00	per acre	$57	
				TOTAL SPECIAL PROJECTS		**$979**

GRAND TOTAL **$14,595**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **U to V**

Construction -	7+35	stations	Improvement -	0+00	stations	Reconstruction -	3+50	stations
	0.14	miles		0.00	miles		0.07	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
3+50		5+13	14%		Ditch	$255			=	$416
5+13		7+12	43%		Ditch	$585			=	$1,164
7+12		10+85	16%		Ditch	$277			=	$1,033
									TOTAL CONSTRUCTION	**$2,613**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.040	acres @	$660.00	per acre =	$26	
				TOTAL CLEARING AND GRUBBING		**$26**

RECONSTRUCTION: EXCAVATION -

Widening	150	cy. @	$1.50	per c.y.=	$225	
				TOTAL EXCAVATION		**$225**

RECONSTRUCTION: ENDHAUL -

Widening	0+00	to	3+50	100	cy. @	$2.84	per c.y.=	$284	
Spread & compact				100	cy. @	$0.50	per c.y.=	$50	
							TOTAL ENDHAUL		**$334**

ROCK

0+00	to	3+50	160	cy. of	Jawrun	@	$12.33	per c.y.=	$1,973	
3+50	to	10+85	420	cy. of	Jawrun	@	$6.53	per c.y.=	$2,743	
Intersection Rock		0+00	30	cy. of	Jawrun	@	$12.30	per c.y.=	$369	
Landing Rock		10+85	80	cy. of	jawrun	@	$6.59	per c.y.=	$527	
								TOTAL ROCK		**$5,612**

SPECIAL PROJECTS

Grade and shape road -	10.85	stations @	$15.50	per station	$168	
Roll subgrade w/ vibratory roller prior to rocking -	10.85	stations @	$13.20	per station	$143	
Remove large stumps -	5.00	@	$75.00	each	$375	
Grass seed and fertilize -	0.25	acres @	$220.00	per acre	$55	
				TOTAL SPECIAL PROJECTS		**$741**

GRAND TOTAL **$9,551**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **W to X**

Construction -	12+30	stations	Improvement -	0+00	stations	Reconstruction -	16+60	stations
	0.23	miles		0.00	miles		0.31	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
16+60		20+80	10%		Outslope	$245			=	$1,029
20+80		22+80	65%		Outslope	$1,832		$3,495	=	$7,159
22+80		24+80	25%		Outslope	$312			=	$624
24+80		28+90	45%		Outslope	$680		$5,837	=	$8,625
								TOTAL CONSTRUCTION		**$17,437**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.572	acres @	$660.00	per acre =	$378	
Scattering	0.460	acres @	$980.00	per acre =	$451	
			TOTAL CLEARING AND GRUBBING			**$829**

RECONSTRUCTION: EXCAVATION -

Widening	2000	cy. @	$1.75	per c.y.=	$3,500	
				TOTAL EXCAVATION		**$3,500**

RECONSTRUCTION: ENDHAUL -

Widening	4+60	to	16+60	2000	cy. @	$2.68	per c.y.=	$5,360	
Spread & compact				2000	cy. @	$0.50	per c.y.=	$1,000	
							TOTAL ENDHAUL		**$6,360**

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	$551.40	0	LF of 24"	$0	
		$551.40			$0	

Culvert Stakes & Markers

1	markers	$8.00	
		$8.00	
		TOTAL CULVERTS	**$559**

ROCK

0+00 to	28+90	1,520	cy. of	Jawrun	@	$6.77	per c.y.=	$10,290	
Culvert Backfill	10+60	15	cy. of	Crushed	@	$12.95	per c.y.=	$194	
Landing Rock	11+10	80	cy. of	jawrun	@	$6.71	per c.y.=	$537	
Spot Patching	10yds/spot	50	cy. of	jawrun	@	$6.66	per c.y.=	$333	
Intersection Rock	0+00	30	cy. of	jawrun	@	$6.51	per c.y.=	$195	
Landing Rock	16+20	50	cy. of	jawrun	@	$6.81	per c.y.=	$341	
Energy Dissipator	10+60	5	cy. of	Riprap	@	$9.75	per c.y.=	$49	
Road Realignment	16+60	50	cy. of	jawrun	@	$6.81	per c.y.=	$341	
Landing Rock	20+75	100	cy. of	jawrun	@	$6.88	per c.y.=	$688	
Landing Rock	26+35	100	cy. of	jawrun	@	$6.98	per c.y.=	$698	
Landing Rock	28+90	50	cy. of	jawrun	@	$7.03	per c.y.=	$352	
								TOTAL ROCK	**$14,018**

SPECIAL PROJECTS

Road Realignment @ station 16+60	2.00	hours @	$150.00	per hour	$300	
Construct Landing @ station 28+90	2.00	hours @	$150.00	per hour	$300	
Construct Landing and Waste Area @ station 20+75	2.00	hours @	$150.00	per hour	$300	
Ditch 2+95 to 3+80	0.85	stations @	$60.00	each	$51	
Waterbar across old road at 16+60	1.00	hours @	$145.00	per hour	$145	
Grade and shape road -	28.90	stations @	$15.50	per station	$448	
Roll subgrade w/ vibratory roller prior to rocking -	28.90	stations @	$13.20	per station	$381	
Remove large stumps -	5.00	@	$75.00	each	$375	
Grass seed and fertilize -	0.66	acres @	$220.00	per acre	$145	
			TOTAL SPECIAL PROJECTS			**$2,445**

GRAND TOTAL **$45,148**

SUMMARY OF CONSTRUCTION COST

Sale: **Rocky Road** Road: **Y to Z**

Construction -	7+85	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.15	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Drill & Shoot CUYDS	Endhaul Waste		
0+00		0+58	15%		Ditch	$267			=	$155
0+58		3+66	61%		Ditch	$2,194		$15,625	=	$22,383
3+66		7+85	21%		Ditch	$290			=	$1,215
								TOTAL CONSTRUCTION		$23,753

ROCK

0+00	to	7+85	470	cy. of	Jawrun	@	$6.98	per c.y.=	$3,281	
Intersection Rock		0+00	30	cy. of	Jawrun	@	$12.42	per c.y.=	$373	
Landing Rock		50/Landing	150	cy. of	jawrun	@	$7.03	per c.y.=	$1,055	
									TOTAL ROCK	$4,709

SPECIAL PROJECTS

Grade and shape road -	7.85	stations @	$15.50	per station	$122	
Roll subgrade w/ vibratory roller prior to rocking -	7.85	stations @	$13.20	per station	$104	
Remove large stumps -	4.00	lump sum @	$75.00		$300	
Grass seed and fertilize -	0.18	acres @	$220.00	per acre	$40	
					TOTAL SPECIAL PROJECTS	$566

GRAND TOTAL $29,028

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

General Information

Pit:	Boundary	Location:	Sec. 15, T1S, R7W, W.M.	
Sale:	**Rocky Road**		Road:	31495 c.y.
Swell:	1.40		Stockpile:	c.y.
Shirinkage	1.16		Total Truck Loads:	31495 c.y.
Drill Pct.:	100%		In Place Total:	22496 c.y.

Manufacturing

Drill & Shoot:	$2.50	/cu.yd.
Load Crusher:	$0.70	/cu.yd.
Crush Rock(1 1/2"):	$3.25	/cu.yd.
Crush Rock(4"):	$2.35	/cu.yd.
Load Dump Truck:	$0.70	/cu.yd.
Sorting:	$0.25	/cu.yd.
Generate Drain Rock	$3.40	/cu.yd.

Move In / Set Up

Move In/Set-up Jaw	1	@	$1,799.00	=	$1,799.00
Move In/Set-up Crusher	1	@	$5,009.00	=	$5,009.00
Move In/Set-up Screen	1	@	$405.00	=	$405.00
Move In and set up Drill and Compressor	1	@	$247.52	=	$247.52
Move in Roller and Compactor	1	@	$247.52	=	$247.52
Move in Grader	1	@	$91.00	=	$91.00
Move in D-8	1	@	$453.96	=	$453.96
Move in Loader	1	@	$331.90	=	$331.90
Move in Excavator	1	@	$498.77	=	$498.77
Move in Trucks	5	@	$71.95	=	$359.75
Move in Water Truck	1	@	$84.58	=	$84.58
				Subtotal	$9,528.00
				Per Cubic Yard:	$0.30

Base Cost 1 1/2"=	$7.45	Per Cu.Yd.	@	9150 cuyds
Base Cost 3"=	$6.90	Per Cu.Yd.	@	8920 cuyds
Base Cost Drain Rock=	$9.95	Per Cu.Yd.	@	600 cuyds
Base Cost 6"=	$1.00	Per Cu.Yd.	@	12650 cuyds
Base Cost 12"-6"=	$3.75	Per Cu.Yd.	@	125 cuyds
Base Cost 24"-12"=	$3.75	Per Cu.Yd.	@	50 cuyds
Base Cost 48"-24"=	$3.75	Per Cu.Yd.	@	cuyds

Road Segment	Haul Cost $/cu.yd.	Proc Cost $/cu.yd.	Base Cost. $/cu.yd.	Cost $/cu.yd.	Number Cu. Yds	ROCK COST
A to B 0 20235 (Crushed)	2.08	2.45	7.45	11.98	4520	$54,149.60
A to B Intersection Widenings (Crushed)	1.70	2.45	0.00	4.15	160	$664.00
A to B Cross Drain energy dissipator (Rip	2.05	1.40	3.75	7.20	60	$432.00
A to B Cross Drain Backfill (Crushed)	2.05	0.90	7.45	10.40	180	$1,872.00
A to B Stream Crossing Energy Dissipator	2.05	0.60	3.75	6.40	30	$192.00
A to B Stream Crossing Backfill (Crushed	2.05	0.90	7.45	10.40	60	$624.00
A to B Ditch Armor (Drain Rock)	2.05	0.60	9.95	12.60	100	$1,260.00
A to B Leveling Rock (Jawrun)	2.05	2.45	6.90	11.40	1000	$11,400.00
A to B Spot Patch (Crushed)	2.05	2.45	6.90	11.40	200	$2,280.00
A to B Spot Patch (Crushed)	2.05	2.45	7.45	11.95	200	$2,390.00
A to B Fill Widenings (Jawrun)	2.05	0.90	1.00	3.95	280	$1,106.00
C to D 0 2450 (Crushed)	1.43	2.45	7.45	11.33	570	$6,458.10
C to D Intersection Widening (Crushed)	1.79	2.45	7.45	11.69	60	$701.40
C to D Stockpile (Drain Rock)	1.10	0.60	9.95	11.65	500	$5,825.00
E to F 0 4465 (Jawrun)	5.95	1.10	1.00	8.05	2340	$18,837.00
E to F Intersection Rock (jawrun)	5.55	1.10	1.00	7.65	30	$229.50
E to F Landing Rock (jawrun)	6.35	1.10	1.00	8.45	100	$845.00
E to F Landing Rock (jawrun)	6.26	1.10	1.00	8.36	50	$418.00
E to F Turnaround (jawrun)	6.24	1.10	1.00	8.34	50	$417.00
G to H 0 4280 (Jawrun)	3.15	2.45	1.00	6.60	2310	$15,246.00
G to H Intersection Rock (Crushed)	2.78	0.60	7.45	10.83	30	$324.90
G to H Landing Rock (jawrun)	3.52	1.10	1.00	5.62	100	$562.00
G to H Intersection Rock (jawrun)	2.78	1.10	1.00	4.88	50	$244.00
I to J 0 680 (Jawrun)	3.42	1.10	1.00	5.52	400	$2,208.00
I to J Intersection Rock (jawrun)	3.36	1.10	1.00	5.46	30	$163.80
I to J Landing Rock (jawrun)	3.48	1.10	1.00	5.58	100	$558.00
K to L 0 12030 (Jawrun)	2.41	2.45	6.90	11.76	6310	$74,205.60
K to L 0 12030 (Crushed)	2.41	2.45	7.45	12.31	2060	$25,358.60
K to L 12030 13985 (Jawrun)	3.19	1.10	1.00	5.29	1040	$5,501.60
K to L Landing Rock (jawrun)	3.24	1.10	1.00	5.34	100	$534.00
K to L Landing Rock (jawrun)	3.29	1.10	1.00	5.39	100	$539.00
K to L Intersection (Jawrun)	1.74	1.10	6.90	9.74	30	$292.20
K to L Landing Rock (jawrun)	3.26	1.10	1.00	5.36	50	$268.00
K to L Culvert Backfill (jawrun)	2.04	2.00	1.00	5.04	500	$2,520.00
K to L Cross Drain Energy Dissipator (Rip	2.41	1.40	3.75	7.56	55	$415.80
K to L Landing Rock (jawrun)	2.94	1.10	1.00	5.04	50	$252.00
K to L Cross Drain Bedding (Crushed)	2.41	0.90	7.45	10.76	200	$2,152.00
K to L Stream Bedding (Crushed)	2.04	0.90	7.45	10.39	50	$519.50
K to L Stream Energy Headwall/Dissipat	2.04	1.40	3.75	7.19	20	$143.80
M to N 0 1800 (Jawrun)	3.77	1.10	1.00	5.87	960	$5,635.20
M to N Intersection Rock (Crushed)	3.61	2.45	7.45	13.51	30	$405.30
M to N Landing Rock (jawrun)	3.93	1.10	1.00	6.03	60	$361.80
O to P 0 465 (Jawrun)	3.88	1.10	1.00	5.98	270	$1,614.60
O to P Intersection Rock (jawrun)	3.84	1.10	1.00	5.94	30	$178.20
O to P Landing Rock (jawrun)	3.92	1.10	1.00	6.02	50	$301.00
Q to R 0 1295 (Jawrun)	3.87	1.10	6.90	11.87	480	$5,697.60
Q to R 1295 1750 (Jawrun)	4.03	1.10	1.00	6.13	280	$1,716.40
Q to R Approach (Jawrun)	3.76	1.10	6.90	11.76	30	$352.80
Q to R Landing Rock (jawrun)	4.07	1.10	1.00	6.17	70	$431.90
Q to R Energy Dissipator (Riprap)	3.91	1.40	3.75	9.06	5	$45.30
Q to R Spot Patch (Jawrun)	3.90	1.10	6.90	11.90	10	$119.00
Q to R Bedding/Backfill (Crushed)	3.91	1.10	7.45	12.46	15	$186.90
S to T 0 1120 (Jawrun)	9.25	2.45	6.90	18.60	610	$11,346.00
S to T Intersection Rock (Jawrun)	9.15	2.45	6.90	18.50	30	$555.00
S to T Landing Rock (jawrun)	9.35	2.45	1.00	12.80	100	$1,280.00
U to V 0 350 (Jawrun)	4.33	1.10	6.90	12.33	160	$1,972.80
U to V 350 1085 (Jawrun)	4.43	1.10	1.00	6.53	420	$2,742.60
U to V Intersection Rock (Jawrun)	4.30	1.10	6.90	12.30	30	$369.00
U to V Landing Rock (jawrun)	4.49	1.10	1.00	6.59	80	$527.20
W to X 0 2890 (Jawrun)	4.67	1.10	1.00	6.77	1520	$10,290.40
W to X Culvert Backfill (Crushed)	4.60	0.90	7.45	12.95	15	$194.25
W to X Landing Rock (jawrun)	4.61	1.10	1.00	6.71	80	$536.80
W to X Spot Patching (jawrun)	4.56	1.10	1.00	6.66	50	$333.00

W to X Intersection Rock (jawrun)	4.41	1.10	1.00	6.51	30		$195.30
W to X Landing Rock (jawrun)	4.71	1.10	1.00	6.81	50		$340.50
W to X Energy Dissipator (Riprap)	4.60	1.40	3.75	9.75	5		$48.75
W to X Road Realignment (jawrun)	4.71	1.10	1.00	6.81	50		$340.50
W to X Landing Rock (jawrun)	4.78	1.10	1.00	6.88	100		$688.00
W to X Landing Rock (jawrun)	4.88	1.10	1.00	6.98	100		$698.00
W to X Landing Rock (jawrun)	4.93	1.10	1.00	7.03	50		$351.50
Y to Z 0 785 (Jawrun)	4.88	1.10	1.00	6.98	470		$3,280.60
Y to Z Intersection Rock (Jawrun)	4.77	1.10	6.55	12.42	30		$372.60
Y to Z Landing Rock (jawrun)	4.93	1.10	1.00	7.03	150		$1,054.50
1 1/2"-0" Stockpile	1.79	1.40	7.45	11.37	1000		$11,370.00
				Total C.Y.	31495	Sub Total	$308,042.70

OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT
Rocky Road

1. Type of Sale

Regeneration harvest, Recovery

2. Legal Description

Sections 26, 27, 33, 34, and 35, T2S, R7W, and Sections 1, 2, & 12, T3S, R7W, W.M. Tillamook County, Oregon

3. Sale Acreage

Sale acreage was determined by GPS and orthophotographs along with GIS.

	ACRES	
	Gross	**Net**
Area 1 (Modified Clearcut)	145	113
Area 2 (Modified Clearcut)	159	110
Area 3 (Modified Clearcut)	119	96
Area 4 (Right of Way)	41	27

Gross Acres

Area within the Timber Sale Boundary signs

Net acres

Used for calculating the advertised volume.

Gross acres, less roads and riparian areas inside the sale boundary.

4. Cruising Procedures

A. Cruise Method

All areas were cruised with a grid of 350’ between plots and 700’ between lines. All trees on all plots were measured. Cruising work was completed in 2015 by Northwest Forestry Services and has been grown forward to 2017.

The timber sale was cruised using variable plot sampling. All conifers 8” DBH and greater containing 20 board feet and all hardwoods 10” DBH and greater containing 30 board feet were recorded on all plots. On all plots, tree species were recorded along with diameter, form factor, and merchantable heights to 6” and 7” outside bark for conifers and hardwoods, respectively.

B. Plot size

BAF for A1 was 27.78, while A2 & A3 were cruised with a 33.61. Point of tree observation was 4.5 feet.

C. Grading System

All species were graded using the Columbia River Log Scaling and Grading

Bureau rules, favoring a 40’ log.

5. Computation Procedure

Plot data was entered into SuperAce for computation of basal areas, ingrowth, advertised volumes, volume summaries, log stock tables and stand tables for each species and type. All areas were originally cruised in 2015 and grown to 2017. The net sale acreage was used for volume calculation.

Statistics – Net Board Feet/ Acre			
	# Plots measure	SE %	CV %
Area 1	17	7.7	30.7
Area 2	21	6.9	30.7
Area 3	17	9.2	37.0
Area 4	0	0	0
Total	55	4.4	32.8

6. Hidden Defect and Breakage

A 1% reduction was applied to conifers and a 2% reduction to hardwood volumes for hidden defect and breakage.

7. Timber Description

All areas were burned in the 1933 Tillamook and 1939 Saddle Mountain Fires. Sale areas were planted between 1965 and 1969. All three areas were precommercially thinned in 1989.

The stands are composed of Douglas-fir and red alder with minor components of big leaf maple.

Sale Area - Species	DBH	Merchantable Bole Height	Merchantable Top
Area 1: Douglas-fir	20	76	5”
Area 1: Alder	15	69	6”
Area 2: Douglas-fir	19	78	5”
Area 2: Alder	19	64	6”
Area 3: Douglas-fir	18	72	5”
Area 3: Alder	13	50	6”
Area 4: Douglas-fir	19	78	5”
Area 4: Alder	19	64	6”

Above data derived from Statistics (type) report using SuperAce 2008, developed by Atterbury consultants, Inc.

8. Cruiser/Dates

Areas 1, 2 & 3, Contract 2015

9. Revenue Distribution

FDF: 100%

Tax Code: 801 (100%)

Deed Number: 169 (74%); 397 (26%)

10. Attachments

Stand Tables

Log Stock Tables

Volume Summary

Logging Plan Map

11. Stand and Log Stock Tables Species Key

DF: Douglas-fir - take
RA: Red alder - take
BM: Big leaf maple - leave

FI TSTNDSUM

Stand Table Summary

Project **ROCKYROD**

T02S R07W S34 TSALE

T02S R07W S34 TSALE
Page: **1**
Date: **08/03/201**
Time: **1:45:59PM**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	**07W**	**34**	**A1GROW**	**SALE**	113.00	17	93

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	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		11		80	89	2.455	1.69	5.04	9.5	42.8	1.37	48	216	154	54	24
DF		14		85	88	1.515	1.69	3.11	15.9	58.8	1.41	49	183	159	56	21
DF		15		88	112	2.640	3.39	5.42	22.1	101.6	3.41	120	551	386	135	62
DF		16		86	85	4.641	6.77	9.53	22.6	90.9	6.14	215	866	694	243	98
DF		17		86	101	4.111	6.77	8.44	28.8	112.3	6.92	243	948	782	274	107
DF		18		83	89	11.000	20.32	21.65	30.8	104.6	19.01	667	2,265	2,148	754	256
DF		19		86	93	9.050	18.62	17.74	34.7	125.3	17.56	616	2,222	1,985	696	251
DF		20		87	93	6.683	15.24	13.72	38.2	137.2	14.92	524	1,883	1,686	592	213
DF		21		87	101	11.449	28.78	24.20	43.5	165.0	29.98	1,052	3,993	3,388	1,189	451
DF		22		85	101	4.295	11.85	9.45	45.5	163.3	12.26	430	1,543	1,385	486	174
DF		24		88	102	3.369	10.16	7.49	50.6	202.4	10.80	379	1,517	1,221	428	171
DF		25		87	106	2.578	8.47	6.88	47.5	193.3	9.31	327	1,331	1,052	369	150
DF		26		86	110	1.426	5.08	3.42	59.3	241.4	5.78	203	824	653	229	93
DF		27		84	110	.879	3.39	2.26	59.5	239.5	3.83	134	540	432	152	61
DF		28		80	114	.407	1.69	.84	78.2	251.3	1.86	65	210	211	74	24
DF		29		86	113	.379	1.69	1.17	57.1	256.7	1.90	67	299	215	75	34
DF		31		84	127	.660	3.39	2.03	74.1	344.0	4.29	151	699	485	170	79
DF		37		81	135	.458	3.39	1.41	111.1	475.9	4.47	157	672	505	177	76
DF		43		77	135	.168	1.69	.52	145.1	577.5	2.14	75	299	242	85	34
DF		Totals		86	97	68.162	154.07	144.32	38.3	145.9	157.36	5,522	21,062	17,782	6,239	2,380
RA		15		83	102	1.420	1.67	2.88	20.9	79.1	1.65	60	228	187	68	26
RA		16		85	103	1.237	1.67	2.51	25.5	101.7	1.75	64	255	198	72	29
RA		Totals		84	103	2.657	3.34	5.38	23.0	89.6	3.41	124	483	385	140	55
Totals				85	97	70.819	157.41	149.71	37.7	143.9	160.77	5645	21,545	18,167	6,379	2,435

FI TLOGSTVB

Log Stock Table - MBF

Project: ROCKYROD

T02S R07W S34 TSALE **T02S R07W S34 TSALE**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	34	A1GROW	SALE	113.00	17	93

Page 1
Date 8/3/2017
Time 1:45:58PM

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		CO	2	20	12		12	.5						12						
DF		CO	2	28	21	4.0	20	.8							20					
DF		CO	2	30	25	14.8	21	.9							21					
DF		CO	2	32	36		36	1.5						26	9					
DF		CO	2	40	1,391	1.8	1,366	57.4						544	421	318	83			
DF		CO	3	16	2		2	.1					2							
DF		CO	3	20	2		2	.1					2							
DF		CO	3	24	10		10	.4				10								
DF		CO	3	28	7		7	.3					7							
DF		CO	3	29	3		3	.1					3							
DF		CO	3	32	94	1.6	93	3.9			21	5	66							
DF		CO	3	34	3		3	.1			3									
DF		CO	3	35	3		3	.1			3									
DF		CO	3	36	6		6	.2			6									
DF		CO	3	38	4		4	.2			4									
DF		CO	3	40	549	3.0	533	22.4			68	110	311					44		
DF		CO	4	16	2		2	.1		2										
DF		CO	4	17	11		11	.5		8	3									
DF		CO	4	18	3		3	.1		1	1									
DF		CO	4	19	1		1	.1			1									
DF		CO	4	20	7		7	.3		7										
DF		CO	4	21	5		5	.2		4		2								
DF		CO	4	22	6		6	.3		4	2									
DF		CO	4	23	4		4	.2			2	2								
DF		CO	4	24	8	13.7	7	.3		7										
DF		CO	4	25	3		3	.1		3										
DF		CO	4	26	4		4	.2		4										
DF		CO	4	27	6		6	.3		6										
DF		CO	4	30	9		9	.4		9										
DF		CO	4	31	3		3	.1		3										
DF		CO	4	32	6		6	.2		6										
DF		CO	4	33	11	7.0	10	.4		10										
DF		CO	4	34	15		15	.6		15										
DF		CO	4	35	7		7	.3		7										
DF		CO	4	36	18		18	.7		18										
DF		CO	4	37	20		20	.8		20										
DF		CO	4	38	5		5	.2		5										
DF		CO	4	39	3		3	.1		3										
DF		CO	4	40	30		30	1.3		30										
DF		CO	UT	19	3		3	.1		3										
DF		CO	UT	31	3		3	.1		3										
DF		CO	UT	35	3		3	.1		3										
DF		CO	UT	40	65		65	2.7			7		38	20						
DF		Totals			2,430	2.0	2,380	97.8		182	122	129	428	603	472	318	83	44		
RA		H	3	40	24		24	44.0					24							
RA		H	4	25	6		6	10.1			6									
RA		H	4	30	6	25.0	5	8.8			5									
RA		H	4	40	22	8.3	20	37.1				20								
RA		Totals			58	5.9	55	2.2			10	20	24							

FI TLOGSTVB

Log Stock Table - MBF

Project: ROCKYROD

T02S R07W S34 TSALE

T02S R07W S34 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	34	A1GROW	SALE	113.00	17	93

Page 2
Date 8/3/2017
Time 1:45:58PM

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+
Total All Species					2,488	2.1	2,435	100.0		182	133	149	452	603	472	318	83	44		

FI TSTNDSUM

Stand Table Summary

Project **ROCKYROD**

T02S R07W S26 TSALE

T02S R07W S26 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	26	A2GROW	SALE	110.00	21	103

Page: 1
Date: 08/03/2017
Time: 1:47:21PM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	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		9		78	92	3.591	1.66	3.69	12.0	42.1	1.26	44	155	139	49	17
DF		12		88	108	4.040	3.32	8.30	14.2	60.5	3.35	117	502	368	129	55
DF		13		86	98	3.442	3.32	7.07	15.0	57.9	3.03	106	409	333	117	45
DF		14		85	88	1.484	1.66	3.05	15.9	52.6	1.38	48	160	152	53	18
DF		15		86	98	3.878	4.97	7.96	20.9	85.9	4.75	167	685	522	183	75
DF		16		86	95	5.681	8.29	11.67	23.4	91.6	7.79	273	1,068	857	301	118
DF		17		87	102	7.046	11.61	14.47	28.6	110.5	11.79	414	1,599	1,297	455	176
DF		18		86	97	12.569	23.21	25.81	31.4	111.3	23.13	811	2,872	2,544	893	316
DF		19		86	98	8.864	18.24	18.20	35.2	122.0	18.28	642	2,220	2,011	706	244
DF		20		86	99	2.909	6.63	5.97	39.8	144.7	6.78	238	864	746	262	95
DF		21		86	107	7.915	19.90	19.64	38.8	151.0	21.72	762	2,965	2,390	838	326
DF		22		86	105	4.808	13.27	11.72	43.1	170.0	14.41	506	1,994	1,585	556	219
DF		24		85	103	4.399	13.27	9.60	51.8	184.5	14.16	497	1,771	1,557	546	195
DF		25		86	114	3.535	11.61	9.85	47.1	201.1	13.23	464	1,981	1,455	511	218
DF		26		86	114	1.396	4.97	3.35	58.3	237.5	5.56	195	795	612	215	87
DF		27		84	104	1.291	4.97	3.09	61.0	230.0	5.38	189	711	592	208	78
DF		28		84	114	1.596	6.63	4.10	66.0	264.2	7.70	270	1,082	847	297	119
DF		29		84	126	.371	1.66	1.14	63.1	266.6	2.06	72	305	226	79	34
DF		30		87	112	.692	3.32	1.78	74.5	332.6	3.77	132	591	415	146	65
DF		32		83	113	.303	1.66	.93	69.2	312.2	1.84	64	291	202	71	32
DF		33		83	130	.284	1.66	.88	83.1	375.4	2.07	73	328	228	80	36
DF		39		82	116	.201	1.66	.62	110.2	480.6	1.95	68	298	214	75	33
DF		44		84	142	.157	1.66	.48	165.7	841.9	2.29	80	408	252	88	45
DF		Totals		86	102	80.454	169.14	173.37	36.0	138.7	177.68	6,234	24,055	19,545	6,858	2,646
RA		20		84	81	.755	1.64	1.53	33.9	105.7	1.43	52	162	157	57	18
RA		Totals		84	81	.755	1.64	1.53	33.9	105.7	1.43	52	162	157	57	18
Totals				86	102	81.209	170.77	174.90	35.9	138.5	179.10	6286	24,217	19,701	6,915	2,664

FI TLOGSTVB

Log Stock Table - MBF

Project: ROCKYROD

T02S R07W S26 TSALE **T02S R07W S26 TSALE**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	26	A2GROW	SALE	110.00	21	103

Page 1
Date 8/3/2017
Time 1:47:20PM

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		CO	2	26	40		40	1.5								40				
DF		CO	2	32	48	3.0	46	1.8						16	10		21			
DF		CO	2	40	1,480	2.3	1,445	54.6						452	538	364	40	51		
DF		CO	3	24	16		16	.6							9	8				
DF		CO	3	25	2		2	.1				2								
DF		CO	3	26	2		2	.1					2							
DF		CO	3	29	2		2	.1					2							
DF		CO	3	32	86	.8	86	3.2				35	41	10						
DF		CO	3	33	3	16.7	3	.1			3									
DF		CO	3	38	4		4	.1			4									
DF		CO	3	40	732	2.8	711	26.9			75	178	459							
DF		CO	4	16	3		3	.1		3										
DF		CO	4	18	7		7	.3		5	2									
DF		CO	4	19	4		4	.2		2	3									
DF		CO	4	20	8		8	.3		5	3									
DF		CO	4	21	9		9	.4		8	2									
DF		CO	4	22	3		3	.1		2	2									
DF		CO	4	23	2		2	.1			2									
DF		CO	4	24	6		6	.2		5		1								
DF		CO	4	26	3		3	.1		3										
DF		CO	4	27	15		15	.6		15										
DF		CO	4	28	10		10	.4		10										
DF		CO	4	29	3		3	.1		3										
DF		CO	4	30	19		19	.7		19										
DF		CO	4	31	15		15	.6		15										
DF		CO	4	33	8		8	.3		5	3									
DF		CO	4	34	5		5	.2		5										
DF		CO	4	35	20		20	.8		20										
DF		CO	4	36	7		7	.2		7										
DF		CO	4	37	29		29	1.1		29										
DF		CO	4	38	4		4	.2		4										
DF		CO	4	39	21		21	.8		21										
DF		CO	4	40	65		65	2.5		58	7									
DF		CO	UT	16	7	23.8	5	.2								5				
DF		CO	UT	22	16		16	.6								16				
DF		Totals			2,706	2.2	2,646	99.3		242	105	216	504	477	557	433	60	51		
RA		H	3	40	17	11.1	15	84.2					15							
RA		H	4	22	3		3	15.8			3									
RA		Totals			20	9.5	18	.7			3		15							
Total All Species					2,725	2.3	2,664	100.0		242	108	216	519	477	557	433	60	51		

FI TSTNDSUM

Stand Table Summary

Project **ROCKYROD**

T02S R07W S34 TSALE **T02S R07W S34 TSALE**

Page: **1**
Date: **08/03/201**
Time: **2:08:17PM**

Twp	**Rge**	**Sec**	**Tract**	**Type**	**Acres**	**Plots**	**Sample Trees**
02S	**07W**	**34**	**A3GROW**	**SALE**	96.00	17	85

									Average Log					**T o t a l s**		
Spc	**S T**	**DBH**	**Sample Trees**	**FF 16'**	**Av Ht Tot**	**Trees/ Acre**	**BA/ Acre**	**Logs Acre**	**Net Cu.Ft.**	**Net Bd.Ft.**	**Tons/ Acre**	**Net Cu.Ft. Acre**	**Net Bd.Ft. Acre**	**Tons**	**Cunits**	**MBF**
DF		10		85	72	3.593	2.05	3.69	12.0	42.1	1.25	44	155	120	43	15
DF		11		88	80	5.939	4.10	9.15	11.3	45.6	2.91	103	417	280	99	40
DF		12		87	74	4.991	4.10	7.69	13.8	45.6	3.00	106	351	288	102	34
DF		13		89	94	6.379	6.15	13.10	14.8	57.9	5.49	194	758	527	187	73
DF		14		86	104	3.667	4.10	7.53	18.7	71.0	3.99	141	535	383	135	51
DF		15		86	106	3.194	4.10	6.56	22.3	89.5	4.14	146	587	397	141	56
DF		16		89	92	8.422	12.29	17.29	24.0	95.6	11.72	415	1,653	1,125	398	159
DF		17		90	104	4.973	8.19	11.49	26.6	109.9	8.63	305	1,263	828	293	121
DF		18		91	98	6.654	12.29	15.94	27.0	111.3	12.18	431	1,774	1,169	414	170
DF		19		91	102	2.986	6.15	6.13	39.1	149.1	6.78	240	914	651	230	88
DF		20		87	100	8.085	18.44	18.45	35.5	133.7	19.07	654	2,466	1,831	628	237
DF		21		90	96	2.444	6.15	5.02	40.4	147.3	6.43	203	740	617	195	71
DF		22		89	98	7.424	20.48	17.53	42.9	170.7	21.25	752	2,992	2,040	722	287
DF		24		91	107	2.038	6.15	5.58	43.2	189.4	6.82	241	1,057	655	232	101
DF		25		87	99	1.248	4.10	2.56	58.4	207.9	4.23	150	533	406	144	51
DF		26		87	88	2.300	8.19	4.13	63.3	251.1	7.40	262	1,038	710	251	100
DF		27		87	94	1.063	4.10	2.18	64.8	244.7	4.00	141	534	384	136	51
DF		28		90	84	.986	4.10	2.02	63.8	250.0	3.65	129	506	351	124	49
DF		29		89	89	.458	2.05	.94	76.7	310.5	2.04	72	292	196	69	28
DF		30		90	102	.855	4.10	2.19	70.3	311.5	4.36	154	683	418	148	66
DF		31		86	119	1.198	6.15	2.87	89.9	392.4	7.29	258	1,126	700	248	108
DF		33		90	110	.702	4.10	1.80	93.4	435.7	4.76	168	785	457	162	75
DF		36		90	138	.293	2.05	.90	113.1	610.4	2.89	102	552	277	98	53
DF		37		80	111	.277	2.05	.85	94.3	392.9	2.28	81	336	219	77	32
DF		Totals		88	95	80.169	155.68	165.61	33.2	133.1	156.55	5,493	22,046	15,029	5,273	2,116
RA		10		90	67	6.736	4.04	6.82	12.4	50.1	2.32	84	342	223	81	33
RA		14		91	89	3.986	4.04	8.08	16.4	72.3	3.64	132	584	349	127	56
RA		15		92	78	5.155	6.06	8.70	20.0	77.9	4.78	174	678	459	167	65
RA		16		92	80	1.497	2.02	3.03	21.3	89.0	1.78	65	270	170	62	26
RA		Totals		91	76	17.373	16.16	26.64	17.1	70.3	12.52	455	1,873	1,202	437	180
BM		19		89	73	1.081	2.02	2.19	26.0	101.8	1.51	57	223	145	55	21
BM		Totals		89	73	1.081	2.02	2.19	26.0	101.8	1.51	57	223	145	55	21
Totals				89	91	98.622	173.86	194.44	30.9	124.2	170.58	6005	24,141	16,375	5,765	2,318

FI TLOGSTVB

Log Stock Table - MBF

Project: ROCKYROD

T02S R07W S34 TSALE **T02S R07W S34 TSALE**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	34	A3GROW	SALE	96.00	17	85

Page 1
Date 8/3/2017
Time 2:08:16PM

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		CO	2	18	22		22	1.0							15	7				
DF		CO	2	20	16		16	.8								16				
DF		CO	2	26	18	6.3	17	.8						17						
DF		CO	2	30	19		19	.9						19						
DF		CO	2	32	23		23	1.1						8		15				
DF		CO	2	36	21	5.6	20	.9						20						
DF		CO	2	38	49		49	2.3							49					
DF		CO	2	40	1,167	2.9	1,133	53.5						291	339	325	143	35		
DF		CO	3	22	9		9	.4					9							
DF		CO	3	26	5		5	.2				2	3							
DF		CO	3	28	2		2	.1				2								
DF		CO	3	30	26	19.7	21	1.0									21			
DF		CO	3	32	97	3.9	93	4.4			21	46	25							
DF		CO	3	34	4		4	.2			4									
DF		CO	3	36	4		4	.2				4								
DF		CO	3	38	3		3	.2				3								
DF		CO	3	40	459	2.7	447	21.1			59	139	230	19						
DF		CO	4	14	1		1	.1		1										
DF		CO	4	16	7		7	.3		5		1								
DF		CO	4	18	2		2	.1		2										
DF		CO	4	20	11		11	.5		11										
DF		CO	4	22	11		11	.5		11										
DF		CO	4	23	6		6	.3		6										
DF		CO	4	24	19		19	.9		2	9		8							
DF		CO	4	26	9		9	.4		7	2									
DF		CO	4	28	15		15	.7		15										
DF		CO	4	30	10		10	.5		3	8									
DF		CO	4	31	3		3	.1			3									
DF		CO	4	32	9		9	.4		9										
DF		CO	4	34	6		6	.3		6										
DF		CO	4	35	3		3	.1		3										
DF		CO	4	36	32		32	1.5		32										
DF		CO	4	37	14		14	.6		14										
DF		CO	4	38	9		9	.4		9										
DF		CO	4	39	4		4	.2		4										
DF		CO	4	40	33	2.6	32	1.5		32										
DF		CO	UT	16	5		5	.2				5								
DF		CO	UT	20	5		5	.2		5										
DF		CO	UT	40	18		18	.9			18									
DF		Totals			2,175	2.7	2,116	91.3		178	123	202	275	374	402	363	164	35		
RA		H	UT	17	9		9	4.8			9									
RA		H	UT	18	11		11	5.9			11									
RA		H	3	40	24	6.7	23	12.6					23							
RA		H	4	20	7		7	4.1			7									
RA		H	4	40	139	5.8	131	72.6			26	105								
RA		Totals			189	5.1	180	7.8			52	105	23							
BM		H	UT	36	7		7	31.6			7									
BM		H	2	20	16	7.1	15	68.4							15					

FI TLOGSTVB

Log Stock Table - MBF

Project: ROCKYROD

T02S R07W S34 TSALE **T02S R07W S34 TSALE**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	34	A3GROW	SALE	96.00	17	85

Page 2
Date 8/3/2017
Time 2:08:16PM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	% Def	Net MBF	% Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
BM				Totals	23	5.0	21	.9			7				15					
Total All Species					2,387	2.9	2,318	100.0		178	182	307	298	374	417	363	164	35		

The "Net Volume by Scaling Diameter in Inches" heading spans columns 2-3 through 40+.

FI TSTNDSUM

Stand Table Summary

Project **ROCKYROD**

T02S R07W S26 TSALE

T02S R07W S26 TSALE

Page: **1**
Date: **10/02/201**
Time: **4:30:44PM**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	**07W**	**26**	**A4GROW**	**SALE**	27.00	21	103

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	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		9		78	92	3.623	1.66	3.72	11.9	42.4	1.26	44	158	34	12	4
DF		12		88	108	4.076	3.32	8.37	14.0	61.0	3.35	117	511	90	32	14
DF		13		86	98	3.473	3.32	7.13	14.9	58.3	3.02	106	416	82	29	11
DF		14		85	88	1.497	1.66	3.08	15.7	53.0	1.38	48	163	37	13	4
DF		15		86	98	3.913	4.98	8.04	20.7	86.6	4.74	166	696	128	45	19
DF		16		86	95	5.731	8.30	11.77	23.2	92.3	7.79	273	1,087	210	74	29
DF		17		87	102	7.108	11.62	14.60	28.3	111.4	11.78	413	1,626	318	112	44
DF		18		86	98	12.680	23.24	26.05	31.1	112.1	23.10	811	2,921	624	219	79
DF		19		86	98	8.941	18.26	18.37	34.9	123.0	18.27	641	2,258	493	173	61
DF		20		86	99	2.934	6.64	6.03	39.4	145.9	6.77	238	879	183	64	24
DF		21		86	107	7.985	19.92	19.82	38.4	152.2	21.70	762	3,016	586	206	81
DF		22		86	105	4.850	13.28	11.83	42.7	171.4	14.40	505	2,028	389	136	55
DF		23		85	103	4.438	13.28	9.69	51.2	185.9	14.15	496	1,801	382	134	49
DF		24		86	114	3.566	11.62	9.94	46.2	201.0	13.08	459	1,998	353	124	54
DF		25		86	114	1.409	4.98	3.38	55.7	230.3	5.36	188	778	145	51	21
DF		26		84	104	1.302	4.98	3.12	60.4	231.8	5.37	189	724	145	51	20
DF		28		84	114	1.610	6.64	4.13	65.3	266.2	7.69	270	1,101	208	73	30
DF		29		84	126	.374	1.66	1.15	62.5	268.7	2.05	72	310	55	19	8
DF		30		87	112	.698	3.32	1.43	72.7	312.9	2.97	104	449	80	28	12
DF		32		83	113	.305	1.66	.94	63.0	279.3	1.69	59	263	46	16	7
DF		33		83	130	.287	1.66	.88	82.2	378.3	2.07	73	334	56	20	9
DF		39		82	116	.203	1.66	.42	88.3	408.4	1.05	37	170	28	10	5
DF		44		84	142	.159	1.66	.49	164.1	848.6	2.29	80	415	62	22	11
DF		Totals		86	102	81.161	169.35	174.40	35.3	138.2	175.34	6,152	24,103	4,734	1,661	651
RA		19		84	81	.781	1.61	1.58	31.8	102.1	1.38	50	162	37	14	4
RA		Totals		84	81	.781	1.61	1.58	31.8	102.1	1.38	50	162	37	14	4
Totals				86	102	81.942	170.96	175.98	35.2	137.9	176.72	6203	24,264	4,771	1,675	655

FI TLOGSTVB

Log Stock Table - MBF

Project: ROCKYROD

T02S R07W S26 TSALE **T02S R07W S26 TSALE**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	26	A4GROW	SALE	27.00	21	103

Page 1
Date 10/2/2017
Time 4:30:43PM

	S	So	Gr	Log	Gross	%	Net	%	Net Volume by Scaling Diameter in Inches											
Spp	T	rt	de	Len	MBF	Def	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		CO	2	26	10		10	1.5								10				
DF		CO	2	32	11	3.2	11	1.7						6			5			
DF		CO	2	40	365	2.3	356	54.8						112	134	89	14	7		
DF		CO	3	29	1		1	.1					1							
DF		CO	3	30	1		1	.1				1								
DF		CO	3	31	1		1	.1					1							
DF		CO	3	32	21	.8	21	3.2				9	12							
DF		CO	3	33	1	16.7	1	.1			1									
DF		CO	3	38	1		1	.1			1									
DF		CO	3	40	183	2.8	178	27.3			19	44	115							
DF		CO	4	16	1		1	.1		1										
DF		CO	4	17	0		0	.0			0									
DF		CO	4	18	2		2	.3		1	1	0								
DF		CO	4	19	1		1	.2		0	1									
DF		CO	4	20	2		2	.3		1	1									
DF		CO	4	21	2		2	.4		2	0									
DF		CO	4	22	1		1	.1		0	0									
DF		CO	4	23	1		1	.1			1									
DF		CO	4	24	1		1	.2		1										
DF		CO	4	26	1		1	.1		1										
DF		CO	4	27	4		4	.6		4										
DF		CO	4	28	3		3	.4		3										
DF		CO	4	29	1		1	.1		1										
DF		CO	4	30	5		5	.7		5										
DF		CO	4	31	4		4	.6		4										
DF		CO	4	33	1		1	.2		1										
DF		CO	4	34	1		1	.2		1										
DF		CO	4	35	5		5	.8		5										
DF		CO	4	36	2		2	.3		2										
DF		CO	4	37	7		7	1.1		7										
DF		CO	4	38	1		1	.2		1										
DF		CO	4	39	5		5	.8		5										
DF		CO	4	40	16		16	2.5		14	2									
DF		CO	UT	16	2	23.8	1	.2								1				
DF		CO	UT	22	4		4	.6								4				
DF			Totals		666	2.2	651	99.3		60	26	54	128	118	134	104	19	7		
RA		H	3	40	4	11.1	4	84.2					4							
RA		H	4	22	1		1	15.8			1									
RA			Totals		5	9.5	4	.7			1		4							
Total All Species					670	2.3	655	100.0		60	26	54	132	118	134	104	19	7		

"STEWARDSHIP IN FORESTRY"

Rocky Road

Volume Summary

Area 1-Modifed Clearcut

	113 acres			
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	20.4	2306	1%	2283
Western Hemlock	0.0	0	1%	0
Sitka Spruce	0.0	0	1%	0
Alder	0.5	55	2%	54
TOTAL	20.9	2361		2337

Area 2-Modifed Clearcut

	110 acres			
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	23.9	2625	1%	2599
Western Hemlock	0.0	0	1%	0
Sitka Spruce	0.0	0	1%	0
Red Alder	0.2	18	2%	18
TOTAL	24.0	2643		2616

Area 3-Modifed Clearcut

	96 acres			
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	21.8	2088	1%	2067
Western Hemlock	0.0	0	1%	0
Sitka Spruce	0.0	0	1%	0
Red Alder	1.7	160	2%	157
TOTAL	23.4	2248		2224

Area 4- ROW Harvest

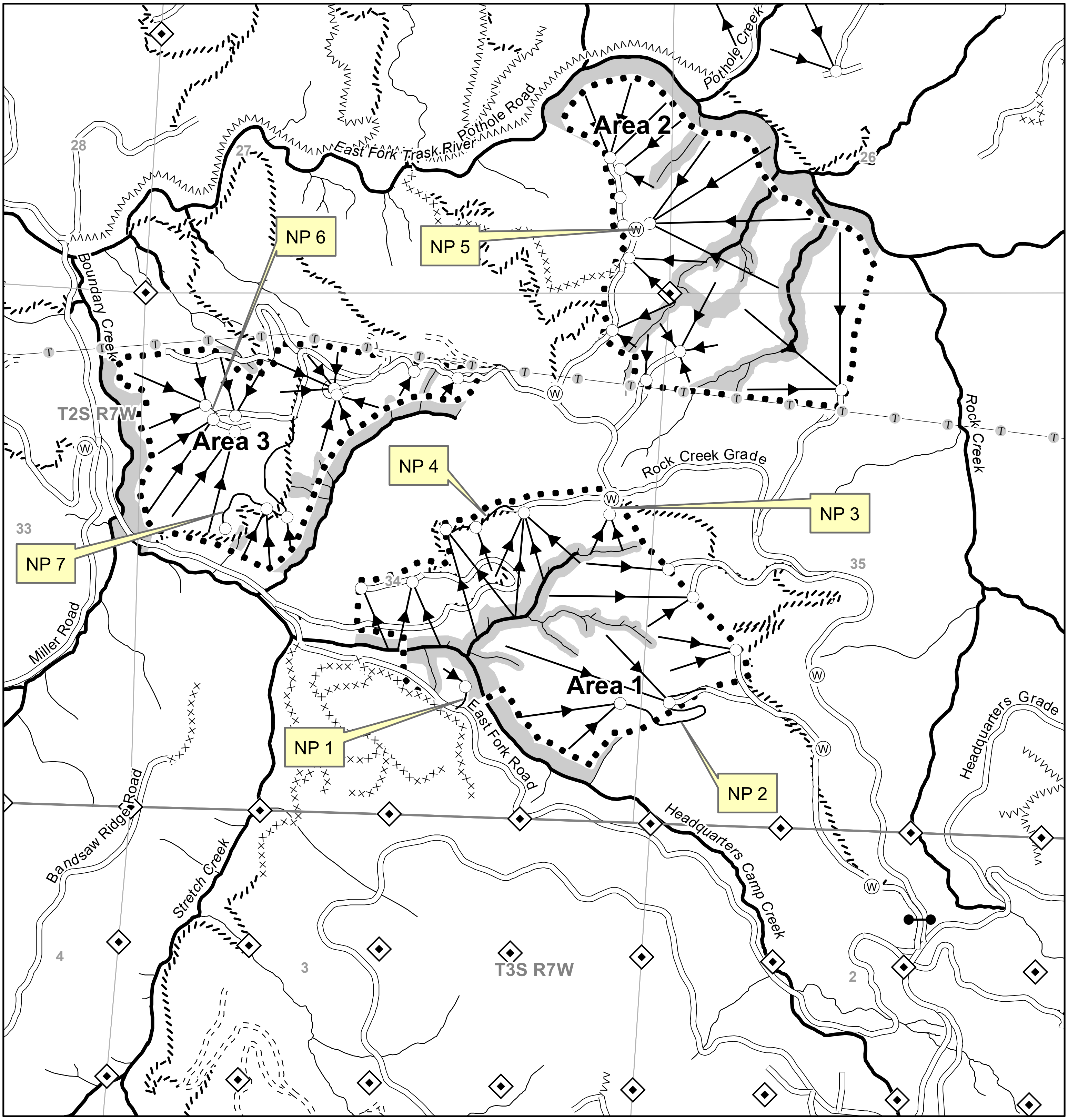
	27 acres			
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	23.9	646	1%	640
Western Hemlock	0.0	0	1%	0
Sitka Spruce	0.0	0	1%	0
Red Alder	0.1	4	2%	4
TOTAL	24.1	650		643

TOTAL SALE VOLUME 346 acres

Rocky Road

Volume Summary

SPECIES	Cruised Net (MBF)	Net Sale (MBF)
Douglas-fir	7665	7589
Western Hemlock	0	0
Sitka Spruce	0	0
Red Alder	237	233
TOTAL	7902	7822



▨ Buffer
☐ Cable yarding
▧ Ground yarding
⚒ Rock source
Ⓢ Stock pile
Ⓦ Waste area
◈ Survey corner
➤ Cable yarding
☐ Ground Landing
○ Yarder Landing
Ⓣ Truck turn-around
Ⓗ Helicopter landing zone

Fish stream
Non-fish stream
Unsurfaced road
Surfaced road
Paved road
VVVVVVV Abandoned road
1 Non-project road
××××× Blocked road
OHV trail
Non-motorized trail
● ● ● ● Sale boundary
●—● Gate
Ⓣ—Ⓣ Transmission line

LOGGING PLAN

Timber Sale Contract No. 341-18-83
ROCKY ROAD
Portions of Sections 26, 27, 33, 34, & 35, T2S, R7W, and
Portions of Sections 1, 2, & 12, T3S, R7W, W.M.,
Tillamook County, Oregon

1,000 0 1,000 Feet

Area	Type of Operation	Acres Gross	Net
1	Modified Clearcut	145	113
2	Modified Clearcut	159	110
3	Modified Clearcut	119	96
4	Right of Way	41	27
Total		464	346

N

Tillamook District GIS
10/3/2017
This product is for informational use and may
not have been prepared or suitable for
legal, engineering, or surveying purposes.