Timber Sale Appraisal
Red Buzzard
Sale TL-341-2018-53-

District: Tillamook **Date: May 17, 2017**

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$1,685,269.26	$40,876.25	$1,726,145.51
		Project Work:	($262,000.00)
		Advertised Value:	$1,464,145.51

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Timber Description

Location: Portions of Sections 15, 22, and 27, T1N, R7W, W.M., Tillamook County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	20	0	95
Alder (Red)	15	0	95
Maple	14	0	95

Volume by Grade	2S	3S	4S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	4,094	1,214	470	0	0	0	0	5,778
Alder (Red)	0	0	0	23	48	27	52	150
Maple	0	0	0	4	7	0	14	25
Total	4,094	1,214	470	27	55	27	66	5,953

Comments: Pond Values Used: 1st Quarter Calendar Year 2017.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
$195/MBF = $495/MBF - $300/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$875/MBF = $1,175/MBF - $300/MBF

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

SCALING COST ALLOWANCE = $5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = $2.00/MBF

FUEL COST ALLOWANCE = $3.00/Gallon

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

Other Costs (with Profit & Risk to be added):
Snag Creation, Girdling at Base: $10/tree x 588 trees = $5,880
TOTAL Other Costs (with Profit & Risk to be added) = $5,880

Other Costs (No Profit & Risk added):
Machine Cleaning: $1,000/machine x 2 = $2,000
Slash Piling and Sorting (Cable): $5/acre x 251 acres = $1,255
Non-Project Road #1 Construction: 0+65 stations x $125/station = $81
Non-Project Road #2 Construction: 2+05 stations x $125/station = $256
Non-Project Road #3 Construction: 2+00 stations x $125/station = $250
Non-Project Road #4 Construction: 0+75 stations x $125/station = $94
Non-Project Road #5 Construction: 0+60 stations x $125/station = $75
Non-Project Road #6 Construction: 3+30 stations x $125/station = $413
Non-Project Road #7 Construction: 1+65 stations x $125/station = $206
Non-Project Road #8 Construction: 1+65 stations x $125/station = $206
Non-Project Road #9 Construction: 4+55 stations x $125/station = $569

Heliport Slash Sorting: 8 hours x $140/hr = $1,120

Ditch Cleaning and Bank Sluff Removal:
Mobilization: two times – dump truck w/tilt bed & small excavator: $890 x 2 = $1,780
Small excavator (CAT 312 or equivalent): 40 hrs. @ $95/hr = $3,800

TOTAL Other Costs (No Profit & Risk added) = $12,105

ROAD MAINTENANCE:
Spot Rocking: 20cy/mmbf/mile x 5.95 MMBF x $8.60/cy x 8.8 miles/5,953 MBF = $1.51/MBF

Interim Grading: $250/mile x 8.8 miles x 3 times/5,953 MBF = $1.11/MBF

Final Maintenance Grading: $500/mile x 8.8 miles/5,953 MBF = $0.74/MBF

Final Maintenance Compaction: $950/mile x 4.2 miles/5,953 MBF = $0.67/MBF

TOTAL Road Maintenance: $4.03/MBF

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Logging Conditions

Combination#: 1

Douglas - Fir	76.44%
Alder (Red)	60.97%
Maple	97.00%

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

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

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

loads / day: 7 **bd. ft / load:** 4000

cost / mbf: $214.29

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

Combination#: 2

Douglas - Fir	14.99%
Alder (Red)	36.03%

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

yarding distance: Long (1,500 ft) **downhill yarding:** No

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

loads / day: 5 **bd. ft / load:** 4000

cost / mbf: $300.00

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

Combination#: 3

Douglas - Fir	8.56%
Alder (Red)	3.00%
Maple	3.00%

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

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

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

loads / day: 9 **bd. ft / load:** 4000

cost / mbf: $88.11

machines: Stroke Delimber (B)

Timber Sale Appraisal
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District: Tillamook **Date: May 17, 2017**

Logging Costs

Operating Seasons:	2.00	**Profit Risk:**	10%
Project Costs:	$262,000.00	**Other Costs (P/R):**	$5,880.00
Slash Disposal:	$0.00	**Other Costs:**	$12,105.00

Miles of Road **Road Maintenance:** $4.03

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	3.7
Alder (Red)	$0.00	2.0	2.8
Maple	$0.00	2.0	2.8

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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
$216.33	$4.23	$1.47	$110.68	$0.99	$33.37	$0.00	$7.00	$2.03	$376.10
Alder (Red)									
$241.39	$4.23	$1.47	$146.25	$0.99	$39.43	$0.00	$7.00	$2.03	$442.79
Maple									
$210.50	$4.23	$1.47	$146.25	$0.99	$36.34	$0.00	$7.00	$2.03	$408.81

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$667.77	$291.67	$0.00
Alder (Red)	$0.00	$695.10	$252.31	$0.00
Maple	$0.00	$530.00	$121.19	$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
Maple	0	$0.00	$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	5,778	$291.67	$1,685,269.26
Alder (Red)	150	$252.31	$37,846.50
Maple	25	$121.19	$3,029.75

Gross Timber Sale Value

Recovery: $1,726,145.51

Prepared By: Jonah Horn **Phone:** 503-842-2545

"STEWARDSHIP IN FORESTRY"

PROJECT SUMMARY SHEET

Sale: Red Buzzard

CONSTRUCTION

Point	G to H	7+80	stations =	$7,866.36
Point	I to J	5+00	stations =	$3,095.08
Point	K to L	2+60	stations =	$3,524.52
Point	M to N	6+20	stations =	$2,168.64
Point	O to P	1+00	stations =	$299.27
Point	W to X	2+30	stations =	$2,537.90
Point	CC to DD	4+80	stations =	$5,547.36
			SUBTOTAL CONSTRUCTION	**$25,039.13**

IMPROVEMENT

Point	A to B	312+50	stations =	$74,605.18
Point	C to D	313+60	stations =	$54,063.18
Point	E to F	24+40	stations =	$11,901.20
Point	I to J	24+80	stations =	$11,973.55
Point	Q to R	14+40	stations =	$2,530.78
			SUBTOTAL IMPROVEMENT	**$155,073.89**

RECONSTRUCTION

Point	M to N	5+00	stations =	$1,331.91
Point	O to P	5+00	stations =	$1,162.27
Point	S to T	2+60	stations =	$2,491.32
Point	U to V	17+30	stations =	$17,766.13
Point	W to X	6+20	stations =	$6,362.61
Point	Y to Z	10+00	stations =	$3,416.96
Point	AA to BB	5+30	stations =	$1,951.78
			SUBTOTAL RECONSTRUCTION	**$34,482.98**

SPECIAL PROJECTS

Test Holes	16.0	Hours of excavator time		$2,320.00
Bridge Total				$16,940.40
	Fill Removal		$1,470.00	
	Move-In Incl. Bridge		$3,200.00	
	Bridge Installation		$4,800.00	
	Engineering Services		$5,000.00	
	Rock		$2,070.40	
	Seed & Mulch		$400.00	
2 1/2" Stockpile	1160	Cubic Yards		$12,330.80
Brush	11.9	Miles of road		$10,710.00
		SUBTOTAL SPECIAL PROJECTS		**$42,301.20**

MOVE IN **$5,102.80**

GRAND TOTAL **$262,000.00**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **A to B**

Construction -	0+00	stations	Improvement -	312+50	stations	Reconstruction -	0+00	stations
	0.00	miles		5.92	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Side cast	0.040	acres @	$1,500.00	per acre =	$60.00	
Widening	0.277	acres @	$1,500.00	per acre =	$415.50	
				TOTAL CLEARING AND GRUBBING		**$475.50**

IMPROVEMENT: EXCAVATION -

Pullback	139	cy. @	$1.40	per c.y.=	$194.60	
Widening	1720	cy. @	$1.85	per c.y.=	$3,182.00	
				TOTAL EXCAVATION		**$3,376.60**

IMPROVEMENT: ENDHAUL -

Pullback	201+00	to	202+20	30	cy. @	$2.81	per c.y.=	$84.30
Pullback	206+80	to	207+60	39	cy. @	$3.19	per c.y.=	$124.41
Pullback	208+20	to	209+10	70	cy. @	$3.34	per c.y.=	$233.80
Widening	190+40	to	190+70	35	cy. @	$2.88	per c.y.=	$100.80
Widening	206+20	to	209+40	200	cy. @	$3.26	per c.y.=	$652.00
Widening	244+80	to	247+80	146	cy. @	$2.58	per c.y.=	$376.68
Widening	256+30	to	257+10	70	cy. @	$2.99	per c.y.=	$209.30
Widening	264+40	to	267+40	975	cy. @	$2.58	per c.y.=	$2,515.50
Spread & compact				1565	cy. @	$0.25	per c.y.=	$391.25
							TOTAL ENDHAUL	**$4,688.04**

CULVERTS - MATERIALS & INSTALLATION

Culverts

105	LF of 18"	$1,837.50	135	LF of 24"	$3,645.00
170	LF of 30"	$6,120.00	0	LF of 36"	$0.00
		$7,957.50			$3,645.00

Culvert Stakes & Markers

0	stakes	$0.00
27	markers	$216.00
		$216.00

TOTAL CULVERTS **$11,818.50**

ROCK

234+30 to	312+50	2,740	cy. of	Crushed	@	$13.57	per c.y.=	$37,181.80
264+40 to	267+40	180	cy. of	Pit-Run	@	$7.68	per c.y.=	$1,382.40
Culvert Bed / Backfill	All Culverts	110	cy. of	Crushed	@	$14.12	per c.y.=	$1,553.20
Landing Rock	249+00, 255+50	160	cy. of	Pit-Run	@	$8.00	per c.y.=	$1,280.00
Spot Rock	0+00-234+30	200	cy. of	Crushed	@	$15.06	per c.y.=	$3,012.00
Energy Dissipator	All Culverts	55	cy. of	Riprap	@	$14.12	per c.y.=	$776.60
Stockpile	Near Point B	90	cy. of	Pit-Run	@	$6.75	per c.y.=	$607.50
Junction Rock	312+50	20	cy. of	Crushed	@	$13.20	per c.y.=	$264.00
							TOTAL ROCK	**$46,057.50**

SPECIAL PROJECTS

Re-shape dented culvert inlet at 71+60 -	1.50	hours @	$28.00	per hour	$42.00
Construct landings at 249+00 & 255+50 -	2.00	@	$300.00	each	$600.00
Construct waste areas -	1.00	hours @	$130.00	per hour	$130.00
Clean ditch and endhaul, remove berms -	50.00	stations @	$80.00	per station	$4,000.00
Compact pitrun fill from 208+60 to 209+00 -	494.00	cubic yards @	$0.45	per cubic yard	$222.30
Reestablish ditch from 286+00 to 288+00 -	2.00	stations @	$90.00	per station	$180.00
Grade and shape road -	78.20	stations @	$15.50	per station	$1,212.10
Roll subgrade w/ vibratory roller prior to rocking -	78.20	stations @	$13.20	per station	$1,032.24
Remove culverts from state lands	8.00	@	$590.00	total	$590.00
Grass seed and fertilize -	0.43	acres @	$220.00	per acre	$94.60
Mulching -	0.143	acres @	$600.00	per acre	$85.80
				TOTAL SPECIAL PROJECTS	**$8,189.04**

GRAND TOTAL **$74,605.18**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **C to D**

Construction -	0+00	stations	Improvement -	313+60	stations	Reconstruction -	0+00	stations
	0.00	miles		5.94	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Widening	0.036	acres @	$1,500.00	per acre =	$54.00		
				TOTAL CLEARING AND GRUBBING			**$54.00**

IMPROVEMENT: EXCAVATION -

Widening	153	cy. @	$1.40	per c.y.=	$214.20		
				TOTAL EXCAVATION			**$214.20**

IMPROVEMENT: ENDHAUL -

Widening	200+40	to	200+70	44	cy. @	$2.98	per c.y.=	$131.12
Widening	273+00	to	274+50	109	cy. @	$3.96	per c.y.=	$431.64
Spread & compact				153	cy. @	$0.25	per c.y.=	$38.25
							TOTAL ENDHAUL	**$601.01**

CULVERTS - MATERIALS & INSTALLATION

Culverts

130	LF of 18"	$2,275.00	0	LF of 24"	$0.00	
		$2,275.00			$0.00	

Culvert Stakes & Markers

0	stakes	$0.00		
14	markers	$112.00		
		$112.00	**TOTAL CULVERTS**	**$2,387.00**

ROCK

226+40 to	313+60	1,950	cy. of	Crushed	@	$14.08	per c.y.=	$27,456.00	
Culvert Bed / Backfill	All Culverts	30	cy. of	Crushed	@	$14.63	per c.y.=	$438.90	
Spot Rock	0+00-226+40	400	cy. of	Crushed	@	$15.56	per c.y.=	$6,224.00	
Bridge Drain Maint.	54+00	10	cy. of	Crushed	@	$14.27	per c.y.=	$142.70	
Outslope	69+00-77+20	80	cy. of	Crushed	@	$15.94	per c.y.=	$1,275.20	
Energy Dissipator	All Culverts	15	cy. of	Riprap	@	$14.63	per c.y.=	$219.45	
								TOTAL ROCK	**$35,756.25**

SPECIAL PROJECTS

Clean ditch and endhaul, remove berms -	65.00	stations @	$80.00	per station	$5,200.00	
Construct ditch to new culvert inlet -	1.00	station @	$100.00	per station	$100.00	
Construct ditchouts from 90+20 to 96+00 -	5.00	@	$60.00	each	$300.00	
Construct ditch and settlement basins at 275+00 & 276+80 -	2.00	@	$90.00	each	$180.00	
Construct drainage for bridge approach -	1.00	lump sum @	$170.00		$170.00	
Grade and shape road -	313.60	stations @	$15.50	per station	$4,860.80	
Roll subgrade w/ vibratory roller prior to rocking -	313.60	stations @	$13.20	per station	$4,139.52	
Grass seed and fertilize -	0.26	acres @	$220.00	per acre	$57.20	
Mulching -	0.072	acres @	$600.00	per acre	$43.20	
				TOTAL SPECIAL PROJECTS		**$15,050.72**

GRAND TOTAL **$54,063.18**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **E to F**

Construction -	0+00	stations	Improvement -	24+40	stations	Reconstruction -	0+00	stations
	0.00	miles		0.46	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Widening	0.012	acres @	$980.00	per acre =	$11.76	
Scattering	0.220	acres @	$980.00	per acre =	$215.60	
				TOTAL CLEARING AND GRUBBING		**$227.36**

IMPROVEMENT: EXCAVATION -

Widening	36	cy. @	$1.40	per c.y.=	$50.40	
				TOTAL EXCAVATION		**$50.40**

IMPROVEMENT: ENDHAUL -

Widening	10+50	to	10+90	18	cy. @	$2.88	per c.y.=	$51.84	
Widening	17+80	to	18+20	18	cy. @	$3.04	per c.y.=	$54.72	
Spread & compact				36	cy. @	$0.25	per c.y.=	$9.00	
							TOTAL ENDHAUL		**$115.56**

ROCK

0+00 to	24+40	600	cy. of	Crushed	@	$13.51	per c.y.=	$8,106.00	
Landing Rock	14+20, 24+40	120	cy. of	Pit-Run	@	$7.62	per c.y.=	$914.40	
Junction Rock	0+00	20	cy. of	Crushed	@	$13.40	per c.y.=	$268.00	
								TOTAL ROCK	**$9,288.40**

SPECIAL PROJECTS

Construct landing at 14+20 and Point F -	2.00	@	$250.00	each	$500.00	
Construct turnaround before landings -	2.00	@	$75.00	each	$150.00	
Construct waste area -	1.00	hour @	$130.00	per hour	$130.00	
Grade and shape road -	24.40	stations @	$14.00	per station	$341.60	
Pull ditch and endhaul -	8.90	stations @	$80.00	per station	$712.00	
Roll subgrade w/ vibratory roller prior to rocking -	24.40	stations @	$13.20	per station	$322.08	
Grass seed and fertilize -	0.29	acres @	$220.00	per acre	$63.80	
				TOTAL SPECIAL PROJECTS		**$2,219.48**

GRAND TOTAL **$11,901.20**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **G to H**

Construction -	7+80	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			
0+00		2+10	10%		Ditch	$143	=	$300.30	
2+10		3+90	25%		Outslope	$165	=	$297.00	
3+90		5+70	35%		Outslope	$191	=	$343.80	
5+70		7+80	15%		Outslope	$107	=	$224.70	
								TOTAL	**$1,165.80**

ROCK

0+00	to	7+80	640	cy. of	Pit-Run	@	$7.66	per c.y.=	$4,902.40	
Landing Rock		7+80	80	cy. of	Pit-Run	@	$7.74	per c.y.=	$619.20	
Junction Rock		0+00	20	cy. of	Pit-Run	@	$7.57	per c.y.=	$151.40	
									TOTAL ROCK	**$5,673.00**

SPECIAL PROJECTS

Construct landing at Point H -	1.00	@	$250.00		$250.00	
Construct turnaround before landing -	1.00	@	$75.00		$75.00	
Grade and shape road -	7.80	stations @	$14.00	per station	$109.20	
Construct ditchouts to drain through-cut -	2.00	@	$60.00	each	$120.00	
Roll subgrade w/ vibratory roller prior to rocking -	7.80	stations @	$13.20	per station	$102.96	
Remove large stumps -	1.00	lump sum @	$300.00		$300.00	
Grass seed and fertilize -	0.32	acres @	$220.00	per acre	$70.40	
				TOTAL SPECIAL PROJECTS		**$1,027.56**

GRAND TOTAL **$7,866.36**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **I to J**

Construction -	5+00	stations	Improvement -	24+80	stations	Reconstruction -	0+00	stations
	0.09	miles		0.47	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			
24+80		26+50	20%		Ditch	$183	=	$311.10	
26+50		27+80	30%		Ditch	$256	=	$332.80	
27+80		29+80	10%		Outslope	$90	=	$180.00	
								TOTAL	**$823.90**

IMPROVEMENT: CLEARING AND GRUBBING -

Widening	0.035	acres @	$980.00	per acre =	$34.30		
Scattering	0.110	acres @	$980.00	per acre =	$107.80		
				TOTAL CLEARING AND GRUBBING			**$142.10**

IMPROVEMENT: EXCAVATION -

Widening	130	cy. @	$1.40	per c.y.=	$182.00		
				TOTAL EXCAVATION			**$182.00**

IMPROVEMENT: ENDHAUL -

Widening	3+40	to	4+00	70	cy. @	$2.58	per c.y.=	$180.60	
Widening	8+00	to	8+60	35	cy. @	$2.73	per c.y.=	$95.55	
Widening	9+70	to	10+30	13	cy. @	$2.88	per c.y.=	$37.44	
Widening	12+00	to	12+50	12	cy. @	$3.19	per c.y.=	$38.28	
Spread & compact				130	cy. @	$0.25	per c.y.=	$32.50	
							TOTAL ENDHAUL		**$384.37**

ROCK

0+00 to	24+80	570	cy. of	Crushed	@	$13.59	per c.y.=	$7,746.30
24+80 to	29+80	420	cy. of	Pit-Run	@	$7.84	per c.y.=	$3,292.80
Landing Rock	29+80	80	cy. of	Pit-Run	@	$7.89	per c.y.=	$631.20
Junction Rock	0+00	20	cy. of	Crushed	@	$13.47	per c.y.=	$269.40
							TOTAL ROCK	**$11,939.70**

SPECIAL PROJECTS

Construct landing at Point J -	1.00	@	$250.00		$250.00
Construct ditchouts at 20+40, 24+20, 27+80 -	3.00	@	$60.00	each	$180.00
Clean ditch and endhaul -	2.00	stations @	$80.00	per station	$160.00
Grade and shape road -	29.80	stations @	$14.00	per station	$417.20
Construct turnaround before landing -	1.00	@	$75.00		$75.00
Roll subgrade w/ vibratory roller prior to rocking -	29.80	stations @	$13.20	per station	$393.36
Grass seed and fertilize -	0.55	acres @	$220.00	per acre	$121.00
				TOTAL SPECIAL PROJECTS	**$1,596.56**

GRAND TOTAL **$15,068.63**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **K to L**

Construction -	2+60	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.05	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			
0+00		0+80	45%		Outslope	$269	=	$215.20	
0+80		2+60	25%		Outslope	$165	=	$297.00	
								TOTAL	**$512.20**

ROCK

0+00	to	2+60	220	cy. of	Pit-Run	@	$7.62	per c.y.=	$1,676.40	
Landing Rock		2+60	80	cy. of	Pit-Run	@	$7.65	per c.y.=	$612.00	
Junction Rock		0+00	20	cy. of	Pit-Run	@	$7.59	per c.y.=	$151.80	
									TOTAL ROCK	**$2,440.20**

SPECIAL PROJECTS

Construct landing at Point L -	1.00	@	$250.00		$250.00	
Grade and shape road -	2.60	stations @	$14.00	per station	$36.40	
Construct turnaround before landing -	1.00	@	$75.00		$75.00	
Roll subgrade w/ vibratory roller prior to rocking -	2.60	stations @	$13.20	per station	$34.32	
Remove large stumps -	1.00	lump sum @	$150.00		$150.00	
Grass seed and fertilize -	0.12	acres @	$220.00	per acre	$26.40	
				TOTAL SPECIAL PROJECTS		**$572.12**

GRAND TOTAL **$3,524.52**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **M to N**

Construction -	6+20	stations	Improvement -	0+00	stations	Reconstruction -	5+00	stations
	0.12	miles		0.00	miles		0.09	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			
0+00		1+50	35%		Outslope	$191	=	$286.50	
1+50		2+50	20%		Outslope	$139	=	$139.00	
2+50		3+10	35%		Outslope	$191	=	$114.60	
3+10		3+70	20%		Outslope	$139	=	$83.40	
3+70		4+80	45%		Outslope	$269	=	$295.90	
4+80		6+20	35%		Outslope	$191	=	$267.40	
								TOTAL	**$1,186.80**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.011	acres @	$980.00	per acre =	$10.78		
Scattering	0.320	acres @	$980.00	per acre =	$313.60		
				TOTAL CLEARING AND GRUBBING			**$324.38**

RECONSTRUCTION: EXCAVATION -

Widening	47	cy. @	$1.40	per c.y.=	$65.80		
				TOTAL EXCAVATION			**$65.80**

RECONSTRUCTION: ENDHAUL -

Widening	8+60	to	9+40	47	cy. @	$2.94	per c.y.=	$138.18	
Spread & compact				47	cy. @	$0.25	per c.y.=	$11.75	
							TOTAL ENDHAUL		**$149.93**

ROCK

0+00 to	1+00	80	cy. of	Pit-Run	@	$7.48	per c.y.=	$598.40	
Junction Rock	0+00	20	cy. of	Pit-Run	@	$7.47	per c.y.=	$149.40	
								TOTAL ROCK	**$747.80**

SPECIAL PROJECTS

Reconstruct landing at Point N -	1.00	@	$200.00		$200.00
Construct fill for junction at station 0+00 -	1.50	hours @	$130.00	per hour	$195.00
Grade and shape road -	11.20	stations @	$14.00	per station	$156.80
Construct turnaround before landing -	1.00	@	$75.00		$75.00
Roll subgrade w/ vibratory roller prior to rocking -	11.20	stations @	$13.20	per station	$147.84
Remove large stumps -	1.00	lump sum @	$150.00		$150.00
Grass seed and fertilize -	0.46	acres @	$220.00	per acre	$101.20
				TOTAL SPECIAL PROJECTS	**$1,025.84**

GRAND TOTAL **$3,500.55**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **O to P**

Construction -	1+00	stations	Improvement -	0+00	stations	Reconstruction -	5+00	stations
	0.02	miles		0.00	miles		0.09	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			
0+00		1+00	25%		Outslope	$165	=	$165.00	
							TOTAL		**$165.00**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.014	acres @	$980.00	per acre =	$13.72		
Scattering	0.320	acres @	$980.00	per acre =	$313.60		
				TOTAL CLEARING AND GRUBBING			**$327.32**

RECONSTRUCTION: EXCAVATION -

Widening	44	cy. @	$1.40	per c.y.=	$61.60		
				TOTAL EXCAVATION			**$61.60**

RECONSTRUCTION: DRIFTING -

Widening	1+80	to	2+40	26	cy. @	$2.22	per c.y.=	$57.72	
Widening	3+00	to	3+60	18	cy. @	$1.85	per c.y.=	$33.30	
Spread & compact				44	cy. @	$0.25	per c.y.=	$11.00	
							TOTAL DRIFTING		**$102.02**

SPECIAL PROJECTS

Construct landing at 4+60 -	1.00	@	$250.00		$250.00	
Reconstruct landing at Point P -	1.00	@	$150.00		$150.00	
Grade and shape road -	6.00	stations @	$14.00	per station	$84.00	
Construct turnaround before landings -	1.00	@	$75.00		$75.00	
Roll subgrade w/ vibratory roller prior to rocking -	6.00	stations @	$13.20	per station	$79.20	
Remove large stumps -	1.00	lump sum @	$130.00		$130.00	
Grass seed and fertilize -	0.17	acres @	$220.00	per acre	$37.40	
				TOTAL SPECIAL PROJECTS		**$805.60**

GRAND TOTAL **$1,461.54**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **Q to R**

Construction -	0+00	stations	Improvement -	14+40	stations	Reconstruction -	0+00	stations
	0.00	miles		0.27	miles		0.00	miles

ROCK

0+00 to	1+00	30	cy. of	Crushed	@	$13.47	per c.y.=	$404.10	
Junction Rock	0+00	20	cy. of	Crushed	@	$13.46	per c.y.=	$269.20	
Spot Rock	1+00-14+40	100	cy. of	Pit-Run	@	$7.42	per c.y.=	$742.00	
								TOTAL ROCK	**$1,415.30**

SPECIAL PROJECTS

Construct waste areas -	1.00	hours @	$130.00	per hour	$130.00	
Construct ditchouts at 4+00 & 13+00 -	2.00	@	$60.00	each	$120.00	
Clean ditch and endhaul -	4.00	stations @	$80.00	per station	$320.00	
Grade and shape road -	14.40	stations @	$15.50	per station	$223.20	
Construct turnaround before landing -	1.00	@	$75.00		$75.00	
Roll subgrade w/ vibratory roller prior to rocking -	14.40	stations @	$13.20	per station	$190.08	
Grass seed and fertilize -	0.26	acres @	$220.00	per acre	$57.20	
				TOTAL SPECIAL PROJECTS		**$1,115.48**

GRAND TOTAL **$2,530.78**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **S to T**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	2+60	stations
	0.00	miles		0.00	miles		0.05	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Scattering					0.170	acres	@	$980.00	per acre =	$166.60
									TOTAL CLEARING AND GRUBBING	**$166.60**

ROCK

0+00 to	2+60	140	cy. of	Pit-Run		@	$7.64	per c.y.=	$1,069.60
Landing Rock	2+60	60	cy. of	Pit-Run		@	$7.67	per c.y.=	$460.20
Junction Rock	0+00	20	cy. of	Pit-Run		@	$7.61	per c.y.=	$152.20
								TOTAL ROCK	**$1,682.00**

SPECIAL PROJECTS

Construct landing -	1.00	@	$250.00		$250.00
Grade and shape road -	2.60	stations @	$14.00	per station	$36.40
Roll subgrade w/ vibratory roller prior to rocking -	2.60	stations @	$13.20	per station	$34.32
Remove large stumps -	1.00	lump sum @	$300.00		$300.00
Grass seed and fertilize -	0.10	acres @	$220.00	per acre	$22.00
				TOTAL SPECIAL PROJECTS	**$642.72**

GRAND TOTAL **$2,491.32**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **U to V**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	17+30	stations
	0.00	miles		0.00	miles		0.33	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.120	acres @	$980.00	per acre =	$117.60		
Scattering	1.430	acres @	$980.00	per acre =	$1,401.40		
				TOTAL CLEARING AND GRUBBING		**$1,519.00**	

RECONSTRUCTION: EXCAVATION -

Widening	762	cy. @	$1.40	per c.y.=	$1,066.80		
				TOTAL EXCAVATION		**$1,066.80**	

RECONSTRUCTION: ENDHAUL -

Widening	0+00	to	1+20	47	cy. @	$3.08	per c.y.=	$144.76
Widening	2+50	to	3+60	75	cy. @	$2.26	per c.y.=	$169.50
Widening	6+90	to	8+40	101	cy. @	$2.11	per c.y.=	$213.11
Widening	9+30	to	10+10	62	cy. @	$2.43	per c.y.=	$150.66
Widening	11+00	to	12+00	135	cy. @	$3.04	per c.y.=	$410.40
Widening	13+00	to	13+40	62	cy. @	$3.62	per c.y.=	$224.44
Spread & compact				482	cy. @	$0.25	per c.y.=	$120.50
							TOTAL ENDHAUL	**$1,433.37**

ROCK

0+00 to	17+30	1,320	cy. of	Pit-Run	@	$8.14	per c.y.=	$10,744.80
Landing Rock	14+20, 17+30	160	cy. of	Pit-Run	@	$8.30	per c.y.=	$1,328.00
Junction Rock	0+00	20	cy. of	Pit-Run	@	$7.99	per c.y.=	$159.80
							TOTAL ROCK	**$12,232.60**

SPECIAL PROJECTS

Clear and Reconstruct landings at 14+20 & 17+30 -	2.00	@	$150.00	each	$300.00	
Construct waste areas -	1.50	hours @	$130.00	per hour	$195.00	
Grade and shape road -	17.30	stations @	$14.00	per station	$242.20	
Construct turnaround before Point V -	1.00	@	$75.00		$75.00	
Roll subgrade w/ vibratory roller prior to rocking -	17.30	stations @	$13.20	per station	$228.36	
Remove large stumps -	1.00	lump sum @	$300.00		$300.00	
Grass seed and fertilize -	0.79	acres @	$220.00	per acre	$173.80	
				TOTAL SPECIAL PROJECTS		**$1,514.36**

GRAND TOTAL **$17,766.13**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **W to X**

Construction -	2+30	stations	Improvement -	0+00	stations	Reconstruction -	6+20	stations
	0.04	miles		0.00	miles		0.12	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			
4+70		5+90	30%		Outslope	$191	=	$229.20	
5+90		7+00	40%		Outslope	$243	=	$267.30	
								TOTAL	**$496.50**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.014	acres @	$980.00	per acre =	$13.72		
Scattering	0.510	acres @	$980.00	per acre =	$499.80		
				TOTAL CLEARING AND GRUBBING			**$513.52**

RECONSTRUCTION: EXCAVATION -

Widening	91	cy. @	$1.40	per c.y.=	$127.40		
				TOTAL EXCAVATION			**$127.40**

RECONSTRUCTION: DRIFTING -

Widening	0+90	to	1+80	39	cy. @	$1.48	per c.y.=	$57.72	
Widening	3+50	to	4+70	52	cy. @	$2.31	per c.y.=	$120.12	
Spread & compact				91	cy. @	$0.45	per c.y.=	$40.95	
							TOTAL DRIFTING		**$218.79**

ROCK

0+00 to	8+50	690	cy. of	Pit-Run	@	$8.19	per c.y.=	$5,651.10	
Landing Rock	8+50	80	cy. of	Pit-Run	@	$8.27	per c.y.=	$661.60	
Junction Rock	0+00	20	cy. of	Pit-Run	@	$8.11	per c.y.=	$162.20	
								TOTAL ROCK	**$6,474.90**

SPECIAL PROJECTS

Construct turnaround before landing -	1.00	@	$75.00		$75.00	
Reconstruct and widen landing at Point X -	1.00	@	$175.00		$175.00	
Construct ditchouts -	2.00	@	$60.00	each	$120.00	
Grade and shape road -	8.50	stations @	$14.00	per station	$119.00	
Roll subgrade w/ vibratory roller prior to rocking -	8.50	stations @	$13.20	per station	$112.20	
Remove large stumps -	1.00	lump sum @	$400.00		$400.00	
Grass seed and fertilize -	0.31	acres @	$220.00	per acre	$68.20	
				TOTAL SPECIAL PROJECTS		**$1,069.40**

GRAND TOTAL **$8,900.51**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **Y to Z**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	10+00	stations
	0.00	miles		0.00	miles		0.19	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.025	acres @	$980.00	per acre =	$24.50		
Scattering	0.830	acres @	$980.00	per acre =	$813.40		
				TOTAL CLEARING AND GRUBBING		**$837.90**	

RECONSTRUCTION: EXCAVATION -

Widening	179	cy. @	$2.25	per c.y.=	$402.75		
				TOTAL EXCAVATION		**$402.75**	

RECONSTRUCTION: DRIFTING -

Widening	2+40	to	3+20	62	cy. @	$1.43	per c.y.=	$88.66
Widening	3+20	to	4+70	65	cy. @	$1.26	per c.y.=	$81.90
Widening	5+80	to	7+00	52	cy. @	$1.25	per c.y.=	$65.00
Spread & compact to construct fill -				179	cy. @	$0.45	per c.y.=	$80.55
							TOTAL DRIFTING	**$316.11**

ROCK

0+00 to	1+00	80	cy. of	Pit-Run	@	$8.02	per c.y.=	$641.60	
Junction Rock	0+00	20	cy. of	Pit-Run	@	$8.01	per c.y.=	$160.20	
							TOTAL ROCK		**$801.80**

SPECIAL PROJECTS

Construct ditchouts through berm as needed for through-cut drainage -	3.00	@	$60.00	each	$180.00
Reconstruct landing at Point Z -	1.00	@	$150.00		$150.00
Grade and shape road -	10.00	stations @	$14.00	per station	$140.00
Construct turnaround before Point Z -	1.00	@	$75.00		$75.00
Roll subgrade w/ vibratory roller prior to rocking -	10.00	stations @	$13.20	per station	$132.00
Remove large stumps -	1.00	lump sum @	$300.00		$300.00
Grass seed and fertilize -	0.37	acres @	$220.00	per acre	$81.40
				TOTAL SPECIAL PROJECTS	**$1,058.40**

GRAND TOTAL **$3,416.96**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **AA to BB**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	5+30	stations
	0.00	miles		0.00	miles		0.10	miles

RECONSTRUCTION: CLEARING AND GRUBBING -							
Widening	0.028	acres @	$660.00	per acre =	$18.48		
Scattering	0.440	acres @	$980.00	per acre =	$431.20		
				TOTAL CLEARING AND GRUBBING			**$449.68**
RECONSTRUCTION: EXCAVATION -							
Widening	87	cy. @	$1.40	per c.y.=	$121.80		
				TOTAL EXCAVATION			**$121.80**
RECONSTRUCTION: DRIFTING -							
Widening 0+00 to 2+00	87	cy. @	$1.37	per c.y.=	$119.19		
Spread & compact	87	cy. @	$0.25	per c.y.=	$21.75		
				TOTAL ENDHAUL			**$140.94**
ROCK							
0+00 to 1+00	80	cy. of Pit-Run	@	$7.48	per c.y.=	$598.40	
				TOTAL ROCK			**$598.40**
SPECIAL PROJECTS							
Remove debris from culvert outlet -	1.00	@	$60.00		$60.00		
Remove logging debris from road -	1.00	hours @	$145.00	per hour	$145.00		
Reconstruct landing at Point BB -	1.00	@	$175.00		$175.00		
Construct turnaround before landing -	1.00	@	$75.00		$75.00		
Grade and shape road -	5.30	stations @	$14.00	per station	$74.20		
Roll subgrade w/ vibratory roller prior to rocking -	5.30	stations @	$13.20	per station	$69.96		
Grass seed and fertilize -	0.19	acres @	$220.00	per acre	$41.80		
				TOTAL SPECIAL PROJECTS			**$640.96**
				GRAND TOTAL			**$1,951.78**

SUMMARY OF CONSTRUCTION COST

Sale: **Red Buzzard** Road: **CC to DD**

Construction -	4+80	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			
0+00		0+75	20%		Outslope	$139	=	$104.25	
0+75		2+30	35%		Outslope	$191	=	$296.05	
2+30		3+20	50%		Outslope	$459	=	$413.10	
3+20		4+20	40%		Outslope	$243	=	$243.00	
4+20		4+80	25%		Outslope	$165	=	$99.00	
								TOTAL	**$1,155.40**

ROCK

0+00	to	4+80	410	cy. of	Pit-Run	@	$7.62	per c.y.=	$3,124.20	
Landing Rock		4+80	80	cy. of	Pit-Run	@	$7.65	per c.y.=	$612.00	
Junction Rock		0+00	20	cy. of	Pit-Run	@	$7.59	per c.y.=	$151.80	
									TOTAL ROCK	**$3,888.00**

SPECIAL PROJECTS

Construct landing at Point DD -	1.00	@	$250.00		$250.00	
Grade and shape road -	4.80	stations @	$14.00	per station	$67.20	
Construct turnaround before landing -	1.00	@	$75.00		$75.00	
Roll subgrade w/ vibratory roller prior to rocking -	4.80	stations @	$13.20	per station	$63.36	
Grass seed and fertilize -	0.22	acres @	$220.00	per acre	$48.40	
				TOTAL SPECIAL PROJECTS		**$503.96**

GRAND TOTAL **$5,547.36**

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Pit_run	Location:	NW 1/4, NE 1/4, Sec 21, T1N, R7W, WM		
Sale:	**Red Buzzard**		Road:	5610	c.y.
Swell:	1.40		Stockpile:		c.y.
Shirinkage	1.16		Total Truck Loads:	5610	c.y.
Drill Pct.:	50%		In Place Total:	4007	c.y.

Pit Development & Cleanup, including Clearing and grubbing of Waste Area. Place overburden in Waste Area, spread and compact.							$3,606.89
Drill & Shoot:	$2.50	/cu.yd.	x	2004	cu.yds.	=	$5,010.00
Rip Rock:	$1.90	/cu.yd.	x	2003	cu.yds.	=	$3,805.70
Load Dump Truck:	$0.70	/cu.yd.	x	5610	cu.yds.	=	$3,927.00
					Subtotal		$16,349.59

Move In and set up Drill and Compressor	1	@	$578.45	=	$578.45
Move in Roller and Compactor	1	@	$578.45	=	$578.45
Move in Grader	1	@	$197.10	=	$197.10
Move in D-8	1	@	$902.19	=	$902.19
Move in Excavator	1	@	$996.56	=	$996.56
Move in Trucks	4	@	$190.54	=	$762.16
				Subtotal	$4,014.91

		TOTAL PRODUCTION COSTS	$20,364.50
Base Cost=	$3.63	Per Cu.Yd.	

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 26440 26740 (Pit-Run)	2.95	1.10	3.63	7.68	180		$1,382.40
A to B Landing Rock (Pit-Run)	3.27	1.10	3.63	8.00	160		$1,280.00
A to B Stockpile (Pit-Run)	2.52	0.60	3.63	6.75	90		$607.50
E to F Landing Rock (Pit-Run)	2.89	1.10	3.63	7.62	120		$914.40
G to H 0 780 (Pit-Run)	2.93	1.10	3.63	7.66	640		$4,902.40
G to H Landing Rock (Pit-Run)	3.01	1.10	3.63	7.74	80		$619.20
G to H Junction Rock (Pit-Run)	2.84	1.10	3.63	7.57	20		$151.40
I to J 2480 2980 (Pit-Run)	3.11	1.10	3.63	7.84	420		$3,292.80
I to J Landing Rock (Pit-Run)	3.16	1.10	3.63	7.89	80		$631.20
K to L 0 260 (Pit-Run)	2.89	1.10	3.63	7.62	220		$1,676.40
K to L Landing Rock (Pit-Run)	2.92	1.10	3.63	7.65	80		$612.00
K to L Junction Rock (Pit-Run)	2.86	1.10	3.63	7.59	20		$151.80
M to N 0 100 (Pit-Run)	2.75	1.10	3.63	7.48	80		$598.40
M to N Junction Rock (Pit-Run)	2.74	1.10	3.63	7.47	20		$149.40
Q to R Spot Rock (Pit-Run)	2.69	1.10	3.63	7.42	100		$742.00
S to T 0 260 (Pit-Run)	2.91	1.10	3.63	7.64	140		$1,069.60
S to T Landing Rock (Pit-Run)	2.94	1.10	3.63	7.67	60		$460.20
S to T Junction Rock (Pit-Run)	2.88	1.10	3.63	7.61	20		$152.20
U to V 0 1730 (Pit-Run)	3.41	1.10	3.63	8.14	1320		$10,744.80
U to V Landing Rock (Pit-Run)	3.57	1.10	3.63	8.30	160		$1,328.00
U to V Junction Rock (Pit-Run)	3.26	1.10	3.63	7.99	20		$159.80
W to X 0 850 (Pit-Run)	3.46	1.10	3.63	8.19	690		$5,651.10
W to X Landing Rock (Pit-Run)	3.54	1.10	3.63	8.27	80		$661.60
W to X Junction Rock (Pit-Run)	3.38	1.10	3.63	8.11	20		$162.20
Y to Z 0 100 (Pit-Run)	3.29	1.10	3.63	8.02	80		$641.60
Y to Z Junction Rock (Pit-Run)	3.28	1.10	3.63	8.01	20		$160.20
AA to BB 0 100 (Pit-Run)	2.75	1.10	3.63	7.48	80		$598.40
AA to BB Junction Rock (Pit-Run)	2.73	1.10	3.63	7.46	20		$149.20
CC to DD 0 480 (Pit-Run)	3.05	1.10	3.63	7.78	410		$3,189.80
CC to DD Landing Rock (Pit-Run)	3.10	1.10	3.63	7.83	80		$626.40
CC to DD Junction Rock (Pit-Run)	3.01	1.10	3.63	7.74	20		$154.80
Bridge Base Rock / Fill (Pit-Run)	4.00	1.10	3.63	8.73	80		$698.40
				Total C.Y.	5610	Sub Total	$44,319.60

	TOTAL ROCKING COSTS	$44,319.60

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Crushed		Location:	SW 1/4, NW 1/4, Sec 18, T1N, R6W, WM	
Sale:	**Red Buzzard**			Road:	8130 c.y.
Swell:	1.40			Stockpile:	c.y.
Shirinkage	1.16			Total Truck Loads:	8130 c.y.
Drill Pct.:	100%			In Place Total:	5807 c.y.

Pit Development & Cleanup, including pumping water, clearing and grubbing of Waste Area. Place overburden in Waste Area, spread and compact.							$9,045.00
Drill & Shoot:	$2.50	/cu.yd.	x	5807	cu.yds.	=	$14,517.50
Load Crusher:	$0.70	/cu.yd.	x	8130	cu.yds.	=	$5,691.00
Crush Rock:	$2.70	/cu.yd.	x	8130	cu.yds.	=	$21,951.00
Load Dump Truck:	$0.70	/cu.yd.	x	8130	cu.yds.	=	$5,691.00
					Subtotal		$56,895.50

Move In/Set-up Crusher	1	@	$2,200.00	=	$2,200.00
Move In and set up Drill and Compressor	1	@	$578.45	=	$578.45
Move in Roller and Compactor	1	@	$578.45	=	$578.45
Move in Grader	1	@	$197.10	=	$197.10
Move in D-8	1	@	$902.19	=	$902.19
Move in Loader	1	@	$754.52	=	$754.52
Move in Excavator	1	@	$996.56	=	$996.56
Move in Trucks	4	@	$190.54	=	$762.16
Move in Water Truck	1	@	$223.97	=	$223.97
				Subtotal	$7,193.40

TOTAL PRODUCTION COSTS	$64,088.90

Base Cost= $7.88 Per Cu.Yd.

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 23430 31250 (Crushed)	3.24	2.45	7.88	13.57	2740		$37,181.80
A to B Culvert Bed / Backfill (Crushed)	4.84	1.40	7.88	14.12	110		$1,553.20
A to B Spot Rock (Crushed)	4.73	2.45	7.88	15.06	200		$3,012.00
A to B Energy Dissipator (Riprap)	4.84	1.40	7.88	14.12	55		$776.60
A to B Junction Rock (Crushed)	2.87	2.45	7.88	13.20	20		$264.00
C to D 22640 31360 (Crushed)	3.75	2.45	7.88	14.08	1950		$27,456.00
C to D Culvert Bed / Backfill (Crushed)	5.35	1.40	7.88	14.63	30		$438.90
C to D Spot Rock (Crushed)	5.23	2.45	7.88	15.56	400		$6,224.00
C to D Bridge Drain Maint. (Crushed)	5.79	0.60	7.88	14.27	10		$142.70
C to D Outslope (Crushed)	5.61	2.45	7.88	15.94	80		$1,275.20
C to D Energy Dissipator (Riprap)	5.35	1.40	7.88	14.63	15		$219.45
E to F 0 2440 (Crushed)	3.18	2.45	7.88	13.51	600		$8,106.00
E to F Junction Rock (Crushed)	3.07	2.45	7.88	13.40	20		$268.00
I to J 0 2480 (Crushed)	3.26	2.45	7.88	13.59	570		$7,746.30
I to J Junction Rock (Crushed)	3.14	2.45	7.88	13.47	20		$269.40
Q to R 0 100 (Crushed)	3.14	2.45	7.88	13.47	30		$404.10
Q to R Junction Rock (Crushed)	3.13	2.45	7.88	13.46	20		$269.20
Bridge Stream Armor (Riprap)	4.44	1.40	7.88	13.72	100		$1,372.00
2 1/2-Inch Stockpile (Crush)	1.50	1.25	7.88	10.63	1160		$12,330.80
				Total C.Y.	8130	Sub Total	$109,309.65

TOTAL ROCKING COSTS	$109,309.65

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

Sale: **Red Buzzard**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
36.0	Pavement	30
10.0	Main Lines	7
5.0	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
1	Brush Cutter	$681.95		$4.00	0.00	0.00	0	$0.00	$681.95
1	Excavators (Med.)	$816.62		$35.50	0.00	0.00	1.3	$46.15	$862.77
1	Excavators (Large)	$1,024.16	1	$44.80	0.00	0.00	1.3	$58.24	$1,082.40
1	Tractor (D8)	$957.39	2	$15.10	0.00	0.00	1.3	$19.63	$977.02
2	Dump Truck (10 cy +)	$474.20		$2.85	0.00	0.00	1.3	$7.41	$481.61
1	Dump Truck (Off Hiway)	$816.62	1	$4.75	0.00	0.00	1.3	$6.18	$822.80
1	Water Truck (1500 Gal)	$190.54		$2.85	0.00	0.00	1.3	$3.71	$194.25
						TOTAL MOVE-IN COSTS:			$5,102.80

OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT
Red Buzzard

1. Type of Sale
Modified Clearcut

2. Legal Description
Portions of Sections 15, 22, and 27, T1N, R7W, W.M., Tillamook County, Oregon.

3. Sale Acreage
Sale acreage was determined by GPS and ortho-photographs along with GIS.

ACRES

	Gross	Net
Area 1 (Modified Clearcut)	128	97
Area 2 (Modified Clearcut)	98	84
Area 3 (Modified Clearcut)	135	113

Gross Acres
Area within the Timber Sale Boundary signs

Net acres
Used for calculating the advertised volume.
Gross acres, less green tree retention, roads, Non-required thinning areas, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

4. Cruising Procedures

A. Cruise Method
The timber sale areas were cruised using variable plot sampling. Plot and line spacing was 350’ and 700’ respectively with plot lines laid out on different azimuths for each of the units to provide uniform coverage. All conifers 8” DBH and greater containing 20 board feet and all hardwoods 10” DBH and greater containing 30 board feet were recorded. Species, DBH (to the nearest inch), merchantable bole length (to the nearest foot), form factor, and defect were recorded on all trees. Merchantable heights were recorded to 6” and 7” outside bark for conifers and hardwoods respectively.

B. Plot size
All areas were cruised using a 27.78 BAF. Point of tree observation is at 4 feet.

C. Grading System
All species were graded using 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 area, advertised volume, volume summary, log stock tables, and stand tables for each species and type. Volumes were grown forward to June, 2017 (600 bdft/ac/year) for Douglas-fir only. Grow forward volume is based on Swiss Needle Cast and soil type indexes. SuperAce Log Stock Table and Stand Summary for Douglas-fir will not match the Volume Summary Table.

Net sale acreage was used for volume calculation. Net acreage is the gross acreage (the area within the posted sale boundary) minus the posted buffer areas and roads.

6. Hidden Defect and Breakage

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

Cruise Statistics (Board Foot Volumes)			
Area	Number of Plots	SE (%)	CV (%)
1	18	14	57.6
2	16	13.5	52.4
3	17	7.5	30

7. Timber Description

The sale areas burned in the 1933 Tillamook Fire, 1939 Saddle Mountain Fire, and the 1945 Wilson River Fire. Area 1 was seeded in 1950 and 1960. No data is available for Areas 2 and 3. A small portion of Area 1 was sprayed for Red Alder in 1977.

Previous Management

Area 1: 37 acres within the Past the Buck Thinning (1999 AOP). The remainder of the sale area has not received any previous management.

Area 2: 46 acres within the Past the Buck Thinning (1999 AOP). The remainder of the sale area has not received any previous management.

Area 3: The entire sale area was previously thinned; 8 acres within the Portland Thinning (1992 AOP) and the remaining 105 acres within the Past the Buck Thinning (1999 AOP).

Sale Area – Species	AVG DBH	Merchantable Bole Height	Merchantable Top
Area 1: Douglas-fir	17.5	62	5”
Area 2: Douglas-fir	20.3	66	5”
Area 3: Douglas-fir	21.6	83	5”

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

8. Cruise Dates

Service Contract 2015.

Revenue Distribution

FDF: 100%

Tax Code: 100% - 902

Deed Number: 7% within #157, 22% within #206, 26% within #159, and 45% within #186.

9. Attachments

Stand Table

Volume Summary

Log Stock Tables

Logging Plan Map

10. Stand and Log Stock Tables Species Key

DF – Douglas-fir
DL – Douglas-fir leave
RA – Red alder
BM – Big Leaf Maple
BL – Big Leaf Maple leave
WH - Western Hemlock
OC – Class 3, 4, or 5 snag

TC TLOGSTVB

Log Stock Table - MBF

Project: REDBUZZA

T01N R07W S27 TAOP

T01N R07W S27 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	27	676	AOP	97.00	18	112

Page 1
Date 5/4/2017
Time 10:08:11AM

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		CO	2	32	68	3.2	66	3.8						37		29				
DF		CO	2	40	1,005	1.4	991	56.8						147	207	407	207	23		
DF		CO	3	20	5		5	.3					5							
DF		CO	3	23	2		2	.1				2								
DF		CO	3	24	8	16.7	7	.4				7								
DF		CO	3	32	73	.6	73	4.2			14	29	30							
DF		CO	3	36	2		2	.1				2								
DF		CO	3	38	3		3	.2			3									
DF		CO	3	40	401	3.5	387	22.2			47	134	205							
DF		CO	4	16	7		7	.4		3	3	1								
DF		CO	4	17	11		11	.6		8	3									
DF		CO	4	18	6		6	.4		4	1	1								
DF		CO	4	19	1		1	.1				1								
DF		CO	4	20	9		9	.5		4		5								
DF		CO	4	21	11		11	.6		6	3	2								
DF		CO	4	22	19		19	1.1		10	8	1								
DF		CO	4	23	2		2	.1				2								
DF		CO	4	24	7		7	.4		7										
DF		CO	4	25	7	25.7	6	.3		6										
DF		CO	4	27	7		7	.4		7										
DF		CO	4	28	7		7	.4		7										
DF		CO	4	29	7		7	.4		7										
DF		CO	4	30	2		2	.1		2										
DF		CO	4	31	4		4	.2		4										
DF		CO	4	32	3		3	.1		3										
DF		CO	4	33	12		12	.7		12										
DF		CO	4	34	9		9	.5		9										
DF		CO	4	35	11		11	.6		11										
DF		CO	4	36	8		8	.4				8								
DF		CO	4	37	17		17	.9		14	3									
DF		CO	4	38	18		18	1.1		18										
DF		CO	4	40	26		26	1.5		26										
DF		Totals			1,779	1.9	1,745	88.9		168	84	195	240	184	236	407	207	23		
RA		H	2	32	14	6.2	13	10.9						13						
RA		H	2	40	15	5.0	14	12.4						14						
RA		H	3	32	11	8.3	10	8.9					10							
RA		H	3	40	29	6.1	28	23.7					28							
RA		H	4	16	2		2	1.6			2									
RA		H	4	19	5		5	4.2			5									
RA		H	4	20	4		4	3.1			4									
RA		H	4	22	2	33.3	2	1.3			2									
RA		H	4	40	45	12.5	40	33.9			17	23								
RA		Totals			128	8.4	117	5.9			29	23	38	27						
DL		CO	2	32	7		7	7.3							7					
DL		CO	2	40	88	3.1	85	88.6							8		57	20		
DL		CO	3	35	3		3	2.9					3							
DL		CO	4	23	1		1	1.3				1								
DL		Totals			99	2.7	96	4.9				1	3		15		57	20		

TC TLOGSTVB

Log Stock Table - MBF

Project: **REDBUZZA**

T01N R07W S27 TAOP

T01N R07W S27 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	**07W**	**27**	**676**	**AOP**	**97.00**	18	112

Date **5/4/2017**

Time **10:08:11AM**

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+
WH		CO	3	40	6	11.1	5	100.0				5								
WH		Totals			6	11.1	5	.3				5								
Total All Species					2,012	2.4	1,964	100.0		168		113	224	281	212	252	407	264	42	

TC TSTNDSUM

Stand Table Summary

Project **REDBUZZA**

T01N R07W S27 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	27	676	AOP	97.00	18	112

T01N R07W S27 TAOP

Page: 1
Date: 05/04/2017
Time: 10:07:14AM

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.	Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		8	1	80	46	4.421	1.54	4.42	5.3	20.0	.67	24	88	65	23	9
DF		9	1	75	78	3.493	1.54	3.49	11.0	40.0	1.09	38	140	106	37	14
DF		10	4	84	75	11.319	6.17	14.15	9.9	42.0	3.98	139	594	386	135	58
DF		11	1	82	63	2.339	1.54	2.34	15.9	40.0	1.06	37	94	103	36	9
DF		12	2	82	40	3.930	3.09	3.93	11.5	30.0	1.29	45	118	125	44	11
DF		13	2	80	67	3.349	3.09	5.02	14.6	43.3	2.09	73	218	203	71	21
DF		14	8	85	82	11.550	12.35	21.66	16.2	59.3	9.97	350	1,285	967	339	125
DF		15	4	80	78	5.030	6.17	8.80	19.6	64.3	4.92	173	566	478	168	55
DF		16	2	86	92	2.211	3.09	4.42	22.8	90.0	2.88	101	398	279	98	39
DF		17	5	84	88	4.896	7.72	9.79	25.1	92.0	7.02	246	901	680	239	87
DF		18	5	85	89	4.367	7.72	7.86	31.2	104.4	6.99	245	821	678	238	80
DF		19	2	83	101	1.568	3.09	3.14	35.2	120.0	3.15	110	376	305	107	36
DF		20	3	87	100	2.122	4.63	4.95	32.6	128.6	4.60	161	637	446	157	62
DF		21	2	82	78	1.283	3.09	1.28	42.3	135.0	1.55	54	173	150	53	17
DF		22	5	84	95	2.923	7.72	6.43	43.0	151.8	7.87	276	976	764	268	95
DF		23	3	84	96	1.605	4.63	3.21	51.8	168.3	4.74	166	540	460	161	52
DF		24	7	85	104	3.439	10.80	7.86	51.0	198.8	11.42	401	1,562	1,108	389	152
DF		25	7	83	109	3.169	10.80	7.70	54.7	210.0	12.00	421	1,616	1,164	409	157
DF		26	5	85	116	2.093	7.72	5.44	58.5	246.2	9.08	318	1,339	880	309	130
DF		27	2	85	114	.776	3.09	2.33	54.2	228.3	3.60	126	532	349	122	52
DF		28	3	85	115	1.083	4.63	2.89	66.2	285.0	5.45	191	823	529	186	80
DF		29	1	84	127	.336	1.54	1.01	67.2	276.7	1.93	68	279	188	66	27
DF		30	4	83	121	1.258	6.17	3.77	69.9	302.5	7.52	264	1,141	729	256	111
DF		31	5	84	122	1.472	7.72	4.42	75.0	332.7	9.44	331	1,469	916	321	143
DF		32	1	82	131	.276	1.54	.83	83.9	393.3	1.98	70	326	192	67	32
DF		33	1	83	123	.260	1.54	.78	86.5	390.0	1.92	67	304	186	65	29
DF		35	2	84	131	.462	3.09	1.39	102.8	485.0	4.06	142	672	394	138	65
DF		Totals	88	83	84	81.029	135.81	143.31	32.4	125.5	132.26	4,641	17,990	12,830	4,502	1,745
RA		13	1	83	96	1.674	1.54	3.35	15.3	50.0	1.41	51	167	137	50	16
RA		14	2	78	67	2.887	3.09	2.89	28.3	60.0	2.25	82	173	218	79	17
RA		15	1	80	74	1.258	1.54	1.26	34.9	80.0	1.21	44	101	117	43	10
RA		17	2	81	73	1.958	3.09	3.92	23.2	72.5	2.50	91	284	242	88	28
RA		18	2	85	73	1.747	3.09	3.49	26.8	90.0	2.58	94	314	250	91	30
RA		19	1	86	80	.784	1.54	1.57	32.9	105.0	1.42	52	165	138	50	16
RA		Totals	9	81	75	10.308	13.89	16.47	25.1	73.1	11.36	413	1,204	1,102	401	117
DL		30	1	85	118	.314	1.54	.94	70.0	323.3	1.82	66	305	176	64	30
DL		31	1	86	125	.294	1.54	.59	111.2	525.0	1.80	65	309	175	64	30
DL		36	1	84	113	.218	1.54	.44	85.4	405.0	1.03	37	177	100	36	17
DL		38	1	83	119	.196	1.54	.20	225.7	1030.0	1.22	44	202	118	43	20
DL		Totals	4	85	119	1.023	6.17	2.16	98.4	458.6	5.86	213	993	568	207	96
WH		20	1	74	57	.707	1.54	.71	55.1	80.0	1.25	39	57	121	38	5
WH		Totals	1	74	57	.707	1.54	.71	55.1	80.0	1.25	39	57	121	38	5
OC		9	1	79	64	3.493	1.54									
OC		12	1	65	39	1.965	1.54									
OC		14	1	78	65	1.444	1.54									
OC		20	1	85	112	.707	1.54									
OC		21	1	80	98	.642	1.54									
OC		35	1	77	48	.231	1.54									
OC		38	2	79	33	.392	3.09									

TC TSTNDSUM

Stand Table Summary

Project **REDBUZZA**

T01N R07W S27 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	27	676	AOP	97.00	18	112

Date: 05/04/2017
Time: 10:07:14AM

Spc	ST	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
OC		43	1	80	17	.153	1.54									
OC		49	1	79	42	.118	1.54									
OC		Totals	10	76	62	9.145	15.43									
Totals			112	82	81	102.213	172.85	162.65	32.6	124.5	150.73	5306	20,243	14,621	5,147	1,964

TC TLOGSTVB

Log Stock Table - MBF

Project: REDBUZZA

T01N R07W S22 TAOP

T01N R07W S22 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	22	10	AOP	84.00	16	100

Page 1
Date 4/24/2017
Time 12:39:11PM

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		CO	2	26	15		15	1.3								15				
DF		CO	2	32	48		48	4.2						48						
DF		CO	2	40	802	1.1	793	67.9						114	182	497				
DF		CO	3	28	2		2	.2			2									
DF		CO	3	32	25	6.6	23	2.0				12	12							
DF		CO	3	33	3		3	.2			3									
DF		CO	3	36	14		14	1.2			12	3								
DF		CO	3	37	3		3	.3			3									
DF		CO	3	39	3		3	.2			3									
DF		CO	3	40	170	1.7	167	14.3			15	94	58							
DF		CO	4	16	2		2	.2		1	1									
DF		CO	4	17	8		8	.7		6	2									
DF		CO	4	18	2		2	.2		1	1									
DF		CO	4	19	5		5	.4		5										
DF		CO	4	20	2		2	.2			2									
DF		CO	4	21	3		3	.2		3										
DF		CO	4	22	6		6	.5		1	3	1								
DF		CO	4	24	4		4	.3		2	1									
DF		CO	4	25	3		3	.2		3										
DF		CO	4	27	13		13	1.1		13										
DF		CO	4	29	2		2	.2		2										
DF		CO	4	30	7		7	.6		7										
DF		CO	4	33	3		3	.3		3										
DF		CO	4	34	2		2	.2		2										
DF		CO	4	35	14		14	1.2		14										
DF		CO	4	38	2		2	.2		2										
DF		CO	4	40	18		18	1.6		18										
DF		Totals			1,181	1.1	1,168	89.4		84	48	110	69	163	182	512				
RA		H	3	12	5		5	13.1					5							
RA		H	3	20	8	14.3	7	19.6					7							
RA		H	4	24	2		2	6.8			2									
RA		H	4	35	9		9	25.5			9									
RA		H	4	37	5	16.7	4	11.3			4									
RA		H	4	39	6		6	17.2			6									
RA		H	4	40	3	16.7	2	6.4			2									
RA		Totals			39	6.4	36	2.8			24		12							
BM		H	3	20	7		7	29.4					7							
BM		H	4	18	11		11	42.9			11									
BM		H	4	31	3	25.0	2	9.9			2									
BM		H	4	40	5	11.1	4	17.7				4								
BM		Totals			26	5.2	25	1.9			13	4	7							
DL		CO	2	32	14		14	18.0						6	8					
DL		CO	2	40	58	1.0	57	74.7								36	21			
DL		CO	3	40	4		4	4.6				4								
DL		CO	4	17	1		1	1.2				1								
DL		CO	4	22	1		1	1.4				1								
DL		Totals			78		77	5.9				6		6	8	36	21			

TC TLOGSTVB

Log Stock Table - MBF

Project: **REDBUZZA**

T01N R07W S22 TAOP

T01N R07W S22 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	**07W**	**22**	**10**	**AOP**	**84.00**	16	100

Date **4/24/2017**

Time **12:39:11PM**

Spp	S T	So 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+
Total All Species				1,323	1.3	1,306	100.0		84		86		120		88		169		190		548		21		

TC TSTNDSUM

Stand Table Summary

Project **REDBUZZA**

T01N R07W S22 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	22	10	AOP	84.00	16	100

T01N R07W S22 TAOP

Page: 1
Date: 04/24/2017
Time: 12:37:57PM

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.	Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		11	3	79	42	7.893	5.21	7.89	10.1	30.0	2.28	80	237	191	67	20
DF		13	2	85	66	3.767	3.47	5.65	14.5	50.0	2.33	82	283	196	69	24
DF		14	2	81	50	3.248	3.47	3.25	21.1	40.0	1.96	69	130	164	58	11
DF		15	1	87	82	1.415	1.74	2.83	11.1	40.0	.90	32	113	75	26	10
DF		16	1	84	75	1.243	1.74	2.49	20.8	65.0	1.48	52	162	124	44	14
DF		17	1	82	84	1.102	1.74	2.20	25.5	90.0	1.60	56	198	134	47	17
DF		18	3	82	69	2.948	5.21	4.91	28.2	78.0	3.95	139	383	332	116	32
DF		19	6	85	86	5.291	10.42	10.58	31.3	105.8	9.43	331	1,120	792	278	94
DF		20	1	83	91	.796	1.74	1.59	19.3	65.0	.88	31	103	74	26	9
DF		21	5	86	91	3.609	8.68	7.22	39.5	133.0	8.13	285	960	683	240	81
DF		22	3	86	96	1.973	5.21	3.95	47.3	163.3	5.32	187	645	447	157	54
DF		23	2	86	97	1.204	3.47	3.01	41.6	156.0	3.57	125	469	300	105	39
DF		24	7	85	108	3.869	12.15	9.40	49.5	201.2	13.26	465	1,890	1,114	391	159
DF		25	9	84	97	4.584	15.63	8.66	56.7	215.9	13.99	491	1,869	1,176	412	157
DF		26	5	85	105	2.355	8.68	5.18	64.3	255.5	9.50	333	1,323	798	280	111
DF		27	6	85	101	2.620	10.42	5.24	69.6	269.2	10.40	365	1,410	873	306	118
DF		28	6	84	106	2.436	10.42	6.09	66.0	258.7	11.46	402	1,575	962	338	132
DF		29	4	83	107	1.514	6.95	3.41	75.8	302.2	7.36	258	1,030	618	217	86
DF		Totals	67	84	81	51.866	116.33	93.54	40.4	148.6	107.77	3,782	13,901	9,053	3,176	1,168
DL		29	1	83	113	.379	1.74	1.14	62.7	273.3	1.96	71	310	165	60	26
DL		30	1	83	104	.354	1.74	.71	92.9	350.0	1.81	66	248	152	55	21
DL		31	1	87	116	.331	1.74	.99	73.9	360.0	2.02	73	358	170	62	30
DL		Totals	3	84	111	1.063	5.21	2.84	74.2	322.8	5.79	210	916	486	177	77
RA		10	1	84	37	3.183	1.74									
RA		12	2	75	42	4.421	3.47	2.21	17.2	50.0	1.04	38	111	88	32	9
RA		15	2	74	53	2.830	3.47	2.83	15.9	50.0	1.24	45	141	104	38	12
RA		16	1	83	51	1.243	1.74	1.24	31.1	60.0	1.06	39	75	89	32	6
RA		17	1	69	58	1.102	1.74									
RA		18	2	75	42	1.965	3.47	1.97	26.7	40.0	1.44	52	79	121	44	7
RA		24	1	83	46	.553	1.74	.55	66.8	50.0	1.01	37	28	85	31	2
RA		Totals	10	77	45	15.297	17.36	8.80	24.0	49.2	5.80	211	433	487	177	36
BM		10	2	69	30	6.367	3.47	6.37	6.7	20.0	1.13	43	127	95	36	11
BM		14	1	75	38	1.624	1.74									
BM		15	1	74	31	1.415	1.74									
BM		16	1	76	38	1.243	1.74	1.24	19.4	70.0	.64	24	87	54	20	7
BM		18	1	78	39	.983	1.74	.98	30.4	30.0	.79	30	29	67	25	2
BM		22	2	75	39	1.315	3.47	.66	64.7	80.0	1.13	43	53	95	36	4
BM		Totals	8	72	33	12.947	13.89	9.25	15.0	32.0	3.69	139	296	310	117	25
BL		24	1	69	35	.553	1.74									
BL		Totals	1	69	35	.553	1.74									
OC		27	1	79	12	.437	1.74									
OC		28	2	84	17	.812	3.47									
OC		35	1	83	52	.260	1.74									
OC		38	1	79	64	.220	1.74									
OC		48	2	80	57	.276	3.47									
OC		50	1	86	48	.127	1.74									
OC		52	1	75	33	.118	1.74									
OC		59	1	80	31	.091	1.74									

TC TSTNDSUM

Stand Table Summary

Project **REDBUZZA**

T01N R07W S22 TAOP

T01N R07W S22 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	22	10	AOP	84.00	16	100

Date: 04/24/2017

Time: 12:37:57PM

Spc	ST	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
OC		69	1	78	116	.067	1.74									
OC		Totals	11	81	34	2.409	19.10									
Totals			100	81	66	84.135	173.63	114.43	37.9	135.9	123.04	4342	15,546	10,336	3,647	1,306

TC TLOGSTVB

Log Stock Table - MBF

Project: REDBUZZA

T01N R07W S22 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	22	674	AOP	113.00	17	99

T01N R07W S22 TAOP

Page 1
Date 4/13/2017
Time 9:39:09AM

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	16	14		14	.5									14			
DF		CO	2	30	21		21	.8							21					
DF		CO	2	32	95	.4	94	3.7						47	38	9				
DF		CO	2	40	1,857	2.4	1,812	70.5						357	529	642	284			
DF		CO	3	19	1		1	.1				1								
DF		CO	3	22	2		2	.1				2								
DF		CO	3	23	2		2	.1				2								
DF		CO	3	25	2		2	.1				2								
DF		CO	3	30	2		2	.1				2								
DF		CO	3	32	94	.7	94	3.6				36	57							
DF		CO	3	33	3		3	.1			3									
DF		CO	3	35	3		3	.1			3									
DF		CO	3	40	375	1.5	370	14.4			84	74	211							
DF		CO	4	13	2		2	.1		2										
DF		CO	4	16	9		9	.3		3	3	2								
DF		CO	4	17	8		8	.3		2	4	2								
DF		CO	4	18	5		5	.2		3	2									
DF		CO	4	19	4		4	.2			4									
DF		CO	4	20	8		8	.3		6	3									
DF		CO	4	21	7		7	.3		4	3									
DF		CO	4	22	3		3	.1		1	2									
DF		CO	4	23	10		10	.4		3	4	3								
DF		CO	4	24	5		5	.2			2	3								
DF		CO	4	25	4		4	.1		2	2									
DF		CO	4	26	3		3	.1		3										
DF		CO	4	27	4		4	.1			4									
DF		CO	4	29	9		9	.4		9										
DF		CO	4	30	4		4	.2		4										
DF		CO	4	31	2		2	.1		2										
DF		CO	4	33	9		9	.4		9										
DF		CO	4	34	3		3	.1		3										
DF		CO	4	35	3		3	.1		3										
DF		CO	4	37	14		14	.5		14										
DF		CO	4	40	35		35	1.4		28	7									
DF		Totals			2,622	1.9	2,571	100.0		101	130	131	268	405	587	651	299			
Total All Species					2,622	1.9	2,571	100.0		101	130	131	268	405	587	651	299			

TC TSTNDSUM

Stand Table Summary

Project **REDBUZZA**

T01N R07W S22 TAOP

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
01N	07W	22	674	AOP	113.00	17	99

T01N R07W S22 TAOP

Page: 1
Date: 04/13/2017
Time: 9:38:16AM

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.	Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		11	1	85	63	2.476	1.63	2.48	13.6	40.0	.96	34	99	109	38	11
DF		12	1	86	52	2.081	1.63	2.08	14.7	40.0	.87	31	83	99	35	9
DF		13	1	87	85	1.773	1.63	3.55	13.8	50.0	1.39	49	177	157	55	20
DF		14	1	87	72	1.529	1.63	3.06	14.3	50.0	1.24	44	153	141	49	17
DF		16	1	87	91	1.170	1.63	2.34	22.8	90.0	1.52	53	211	172	60	24
DF		17	5	88	94	5.184	8.17	10.37	26.8	106.0	7.92	278	1,099	895	314	124
DF		18	2	87	94	1.849	3.27	3.70	23.9	87.5	2.52	89	324	285	100	37
DF		19	6	87	103	4.980	9.80	9.13	33.2	122.7	8.64	303	1,120	976	343	127
DF		20	8	87	107	5.992	13.07	14.23	33.4	129.5	13.54	475	1,843	1,530	537	208
DF		21	11	87	102	7.473	17.98	17.66	36.8	145.8	18.54	650	2,575	2,095	735	291
DF		22	5	87	100	3.095	8.17	6.81	43.9	169.1	8.52	299	1,151	962	338	130
DF		23	5	87	109	2.832	8.17	6.80	45.0	187.5	8.71	306	1,274	985	345	144
DF		24	6	88	113	3.121	9.80	7.28	47.0	193.6	9.76	343	1,410	1,103	387	159
DF		25	12	87	108	5.753	19.61	13.42	54.0	222.9	20.64	724	2,991	2,333	819	338
DF		26	7	86	118	3.102	11.44	8.86	51.6	229.0	13.03	457	2,030	1,472	516	229
DF		27	3	87	131	1.233	4.90	3.70	62.2	282.2	6.56	230	1,044	741	260	118
DF		28	3	87	116	1.146	4.90	3.44	59.4	270.0	5.82	204	929	658	231	105
DF		29	3	86	127	1.069	4.90	3.21	69.0	318.9	6.31	221	1,022	712	250	116
DF		30	4	85	118	1.332	6.54	3.66	67.6	300.0	7.05	247	1,099	797	280	124
DF		31	1	83	117	.312	1.63	.62	71.2	325.0	1.26	44	203	143	50	23
DF		32	1	84	133	.293	1.63	.88	87.6	410.0	2.19	77	360	248	87	41
DF		33	3	84	123	.825	4.90	2.48	86.3	378.9	6.09	214	938	688	241	106
DF		34	1	86	113	.259	1.63	.78	86.1	406.7	1.91	67	316	215	76	36
DF		35	1	84	117	.245	1.63	.73	93.7	410.0	1.96	69	301	221	78	34
DF		Totals	92	87	101	59.123	150.34	131.26	42.0	173.3	156.97	5,508	22,751	17,738	6,224	2,571
OC		18	1	88	86	.925	1.63									
OC		21	1	74	12	.679	1.63									
OC		36	1	79	17	.231	1.63									
OC		44	1	79	12	.155	1.63									
OC		46	1	85	42	.142	1.63									
OC		50	1	79	17	.120	1.63									
OC		72	1	79	17	.058	1.63									
OC		Totals	7	82	44	2.309	11.44									
Totals			99	87	99	61.432	161.78	131.26	42.0	173.3	156.97	5508	22,751	17,738	6,224	2,571

"STEWARDSHIP IN FORESTRY"

Red Buzzard

Volume Summary

Area 1-Modified Clearcut				
		97 acres		
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	17.990	1745.0	1%	1728
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	1.204	116.8	2%	114
TOTAL	19.19	1862		1842

Areas 2-Modified Clearcut				
		84 acres		
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	13.901	1167.7	1%	1156
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	0.433	36.4	2%	36
TOTAL	14.33	1204		1192

Areas 3-Modified Clearcut				
		113 acres		
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	22.751	2571	1%	2545
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	0.0	0	2%	0
TOTAL	22.8	2571		2545

"STEWARDSHIP IN FORESTRY"

Red Buzzard

Volume Summary

Areas 4-Modified Clearcut				
		acres		
SPECIES	Cruised Net MBF/ Acre	Cruised Net MBF	Hidden D&B	Net Sale MBF
Douglas-fir			1%	0
Hemlock			1%	0
Spruce			1%	0
Noble Fir			1%	0
Alder			2%	0
TOTAL				0

Areas 5-Modified Clearcut				
		acres		
SPECIES	Cruised Net MBF/ Acre	Cruised Net MBF	Hidden D&B	Net Sale MBF
Douglas-fir			1%	0
Hemlock			1%	0
Spruce			1%	0
Noble Fir			1%	0
Alder			2%	0
TOTAL	0.0	0		0

"STEWARDSHIP IN FORESTRY"

Red Buzzard

Volume Summary

TOTAL SALE VOLUME	**294**	**acres**
SPECIES	Cruised Net (MBF)	Net Sale (MBF)
Douglas-fir	5484	5429
Hemlock	0	0
Spruce	0	0
Noble Fir	0	0
Red Alder	153	150
TOTAL	5637	5579

"STEWARDSHIP IN FORESTRY"

Red Buzzard

Volume Summary

Area 1-Modified Clearcut				
		97 acres		
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	19.190	1861.4	1%	1843
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	1.204	116.8	2%	114
TOTAL	20.39	1978		1957

Areas 2-Modified Clearcut				
		84 acres		
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	15.101	1268.5	1%	1256
Big Leaf Maple	0.3	25	2%	25
Spruce	0.000	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	0.433	36.4	2%	36
TOTAL	15.83	1330		1317

Areas 3-Modified Clearcut				
		113 acres		
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	23.951	2706	1%	2679
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	0.0	0	2%	0
TOTAL	24.0	2706		2679

"STEWARDSHIP IN FORESTRY"

Red Buzzard

Volume Summary

Areas 4-Modified Clearcut				
			acres	
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir			1%	0
Hemlock			1%	0
Spruce			1%	0
Noble Fir			1%	0
Alder			2%	0
TOTAL				0

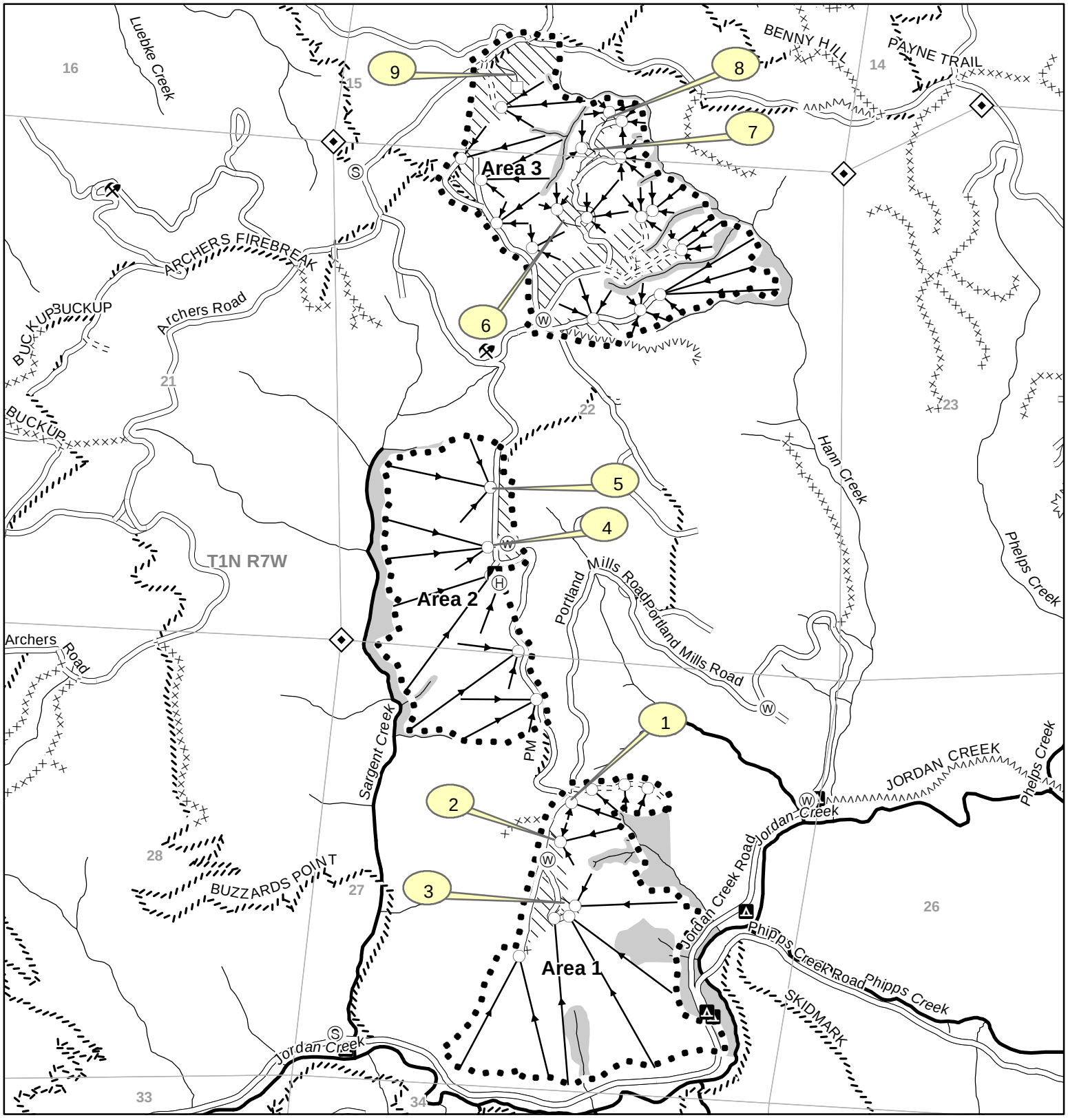
Areas 5-Modified Clearcut				
			acres	
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir			1%	0
Hemlock			1%	0
Spruce			1%	0
Noble Fir			1%	0
Alder			2%	0
TOTAL	0.0	0		0

"STEWARDSHIP IN FORESTRY"

Red Buzzard

Volume Summary

TOTAL SALE VOLUME	**294**	**acres**
SPECIES	Cruised Net (MBF)	Net Sale (MBF)
Douglas-fir	5836	5778
Hemlock	25	25
Spruce	0	0
Noble Fir	0	0
Red Alder	153	150
TOTAL	6014	5953



Rock source
Stock pile
Waste area
Bridge
Gate
Survey corner
Campsites
Truck turn-around
Helicopter landing zone
Cultural site
Cable yarding
Ground Landing
Yarder Landing

Buffer
Non-required thinning
Cable yarding
Ground yarding
Helicopter yarding
Downhill yarding
Green tree retention area
Restricted area
Area boundary
Sale boundary
Ownership boundary

Fish stream
Non-fish stream
Unsurfaced road
Surfaced road
Paved road
Abandoned road
Swing road
Non-project road
Blocked road
OHV trail
Non-motorized trail
Transmission line
Railroad

LOGGING PLAN

Timber Sale Contract No. 341-18-053
RED BUZZARD
Portions of Sections 15, 22, & 27
T1N, R7W, W.M.,
Tillamook County, Oregon

1,000 0 1,000 Feet

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Area	Type of Operation	Acres Gross	Net
1	Modified Clearcut	128	97
2	Modified Clearcut	98	84
3	Modified Clearcut	135	113
Total		361	294

Tillamook District GIS
04/26/2017
This product is for informational use and may not have been prepared or suitable for legal, engineering, or surveying purposes.