"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wasabi
Sale 341-12-80

District: Tillamook **Date:** May 08, 2012

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$355,372.26	$72,803.51	$428,175.77
		Project Work:	$(109,480.00)
		Advertised Value:	$318,695.77

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Wasabi
Sale 341-12-80

District: Tillamook

Date: May 08, 2012

timber description

Location: Portions of Sections 20 and 21, T2S, R7W, W.M., Tillamook County, Oregon.

Stand Stocking: 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	95
Alder (Red)	13	0	90

Volume by Grade	10" - 11"	2S	3S	4S	6" - 7"	8" - 9"	Total
Douglas - Fir	0	1,021	781	201	0	0	2,003
Alder (Red)	79	0	0	0	113	107	299
Total	79	1,021	781	201	113	107	2,302

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comments: Pond Values Used: 1st Quarter Calendar Year 2012.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost
$130/MBF = $430/MBF - $300/MBF

Western redcedar & Other Cedars Stumpage Price = Pond Value minus Logging Cost
$645/MBF = $945/MBF - $300/MBF

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

SCALING COST ALLOWANCE = $5.00/MBF

FUEL COST ALLOWANCE = $4.00/Gallon

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

Other Costs (with Profit & Risk to be added):
Brand and Paint: $2/MBF x 2,302 MBF = $4,604
Snag Creation (girdling): $10/snag x 150 snags = $1,500
TOTAL Other Costs (with Profit & Risk to be added) = $6,104

Other Costs (No Profit & Risk added):
Slash Piling and Sorting: $5.00/acre cable harvest x 75 acres =$375
Cover Material for Piles: 7 piles x $5/pile = $35
Filters: 2 filters x $75/filter = $150
Tank Traps: 4/tank traps x $75/tank trap = $300
Trail Clearing: $40/station x 14/stations = $560
Culvert Removal: Move-in $500 + 6/hrs. x $150/hr. = $1,400
Culvert Transport: Bring to ODF Tillamook = $250
Trask Public Safety Road Fee: $20/MBF x 2,302 MBF = $46,040
TOTAL Other Costs (No Profit & Risk added) = $49,110

ROAD MAINTENANCE
Maintenance Rock: ($8.73/cu. yd. x 10.5 miles x 20 cu. yd./MMBF/mile x 2.302 MMBF)/2,302 MBF = $1.83/MBF

Final Maintenance:
Grading - $500/Mile x 10.5 miles x 1 grading/2,302 MBF = $2.28/MBF

Vibratory Roller: $17.75/station x 52.8 stations/mile x 3.5 miles/2,302 = $1.42/MBF

TOTAL Maintenance Cost = $5.53/MBF

"STEWARDSHIP IN FORESTRY"

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Wasabi
Sale 341-12-80

District: Tillamook **Date: May 08, 2012**

logging conditions

combination#: 1

	Douglas - Fir	35.00%	
	Alder (Red)	35.00%	
yarding distance:	Long (1,500 ft)	**downhill yarding:**	No
logging system:	Cable: Medium Tower >40 - <70	**Process**:	Stroke Delimber
tree size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
loads / day:	4.0	**bd. ft / load:**	3,700
cost / mbf:	$225.95		

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

combination#: 2

	Douglas - Fir	35.00%	
	Alder (Red)	35.00%	
yarding distance:	Medium (800 ft)	**downhill yarding:**	No
logging system:	Cable: Small Tower <=40	**Process**:	Stroke Delimber
tree size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
loads / day:	4.0	**bd. ft / load:**	3,700
cost / mbf:	$191.50		

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

combination#: 3

	Douglas - Fir	30.00%	
	Alder (Red)	30.00%	
yarding distance:	Short (400 ft)	**downhill yarding:**	No
logging system:	Shovel	**Process**:	Stroke Delimber
tree size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
loads / day:	5.0	**bd. ft / load:**	3,700
cost / mbf:	$77.74		

machines: Stroke Delimber (B)

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wasabi
Sale 341-12-80

District: Tillamook **Date:** May 08, 2012

logging costs

Operating Seasons:	2.00	**Profit Risk:**	10.00%
Project Costs:	$109,480.00	**Other Costs (P/R):**	$6,104.00
Slash Disposal:	$0.00	**Other Costs:**	$49,110.00

Miles of Road

Road Maintenance: $5.53

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	3.0	3.0

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wasabi
Sale 341-12-80

District: Tillamook **Date:** May 08, 2012

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
$169.43	$5.81	$3.81	$100.61	$2.65	$28.23	$0.00	$5.00	$21.33	$336.87
Alder (Red)									
$169.43	$6.08	$3.81	$86.67	$2.65	$26.86	$0.00	$5.00	$21.33	$321.83

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$514.29	$177.42	$0.00
Alder (Red)	$0.00	$565.32	$243.49	$0.00

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wasabi
Sale 341-12-80

District: Tillamook **Date:** May 08, 2012

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	2,003	$177.42	$355,372.26
Alder (Red)	299	$243.49	$72,803.51

Gross Timber Sale Value

Recovery: $428,175.77

Prepared by: Dave Luttrell **Phone:** 503-815-7025

"STEWARDSHIP IN FORESTRY"

PROJECT SUMMARY SHEET

Sale: Wasabi

CONSTRUCTION

Point	A to B	23+40	stations =	$28,472.11
Point	C to D	20+00	stations =	$7,277.80
Point	E to F	2+50	stations =	$3,766.10
Point	G to H	21+25	stations =	$15,284.39
Point	I to J	18+70	stations =	$10,994.44
Point	K to L	1+80	stations =	$858.16
Point	M to N	1+90	stations =	$829.98
			SUBTOTAL CONSTRUCTION	**$67,482.98**

RECONSTRUCTION

Point	A to B	9+40	stations =	$10,143.51
Point	G to H	24+65	stations =	$21,900.72
			SUBTOTAL RECONSTRUCTION	**$32,044.23**

SPECIAL PROJECTS

Brush	8.5	miles of road	@ $750/mile	$6,375.00
			SUBTOTAL SPECIAL PROJECTS	**$6,375.00**

MOVE IN **$3,577.79**

GRAND TOTAL **$109,480.00**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **A to B**

Construction -	23+40	stations	Improvement -	0+00	stations	Reconstruction -	9+40	stations
	0.44	miles		0.00	miles		0.18	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		
0+00		0+50	20%		Outslope	$139	=	$69.50
0+50		1+00	30%		Outslope	$191	=	$95.50
1+00		2+70	60%	0.1	Outslope	$1,521	=	$2,585.70
2+70		3+10	50%		Outslope	$459	=	$183.60
12+50		13+00	45%		Outslope	$269	=	$134.50
13+00		13+50	40%		Outslope	$243	=	$121.50
13+50		14+00	35%		Outslope	$191	=	$95.50
14+00		14+80	25%		Outslope	$165	=	$132.00
14+80		16+50	30%		Outslope	$191	=	$324.70
16+50		18+50	20%		Outslope	$139	=	$278.00
18+50		19+00	40%		Outslope	$243	=	$121.50
19+00		19+80	60%	0.1	Outslope	$1,521	=	$1,216.80
19+80		23+50	20%		Outslope	$139	=	$514.30
23+50		24+50	60%	0.2	Outslope	$1,576	=	$1,576.00
24+50		25+00	50%		Outslope	$459	=	$229.50
25+00		25+50	40%		Outslope	$243	=	$121.50
25+50		27+50	50%		Outslope	$459	=	$918.00
27+50		28+50	65%	0.2	Outslope	$2,001	=	$2,001.00
28+50		29+00	50%		Outslope	$459	=	$229.50
29+00		30+30	40%		Outslope	$243	=	$315.90
30+30		32+80	25%		Outslope	$165	=	$412.50
							TOTAL	**$11,677.00**

RECONSTRUCTION: CLEARING AND GRUBBING -

Scattering	0.343	acres @	$980.00	per acre =	$336.14	
Endhaul	0.343	acres @	$1,500.00	per acre =	$514.50	
				TOTAL CLEARING AND GRUBBING		**$850.64**

RECONSTRUCTION: EXCAVATION -

Widening	1092	cy. @	$1.40	per c.y.=	$1,528.80	
				TOTAL EXCAVATION		**$1,528.80**

RECONSTRUCTION: ENDHAUL -

Widening	3+30	to	4+50	347	cy. @	$1.05	per c.y.=	$364.35
Widening	4+50	to	5+30	116	cy. @	$1.02	per c.y.=	$118.32
Widening	6+00	to	6+30	70	cy. @	$0.99	per c.y.=	$69.30
Widening	6+30	to	7+00	270	cy. @	$0.98	per c.y.=	$264.60
Spread & compact				803	cy. @	$0.25	per c.y.=	$200.75
							TOTAL ENDHAUL	**$1,017.32**

ROCK

0+00 to	32+80	2,430	cy. of	Pit-run	@	$8.01	per c.y.=	$19,464.30	
Landing Rock	32+80	100	cy. of	Pit-Run	@	$8.27	per c.y.=	$827.00	
Junction Rock	0+00	20	cy. of	Pit-run	@	$7.76	per c.y.=	$155.20	
								TOTAL ROCK	**$20,446.50**

SPECIAL PROJECTS

Construct waste areas -	3.00	hours @	$130.00	per hour	$390.00
Construct landing @ 32+80 -	1.00	@	$250.00	each	$250.00
Grade and shape road -	32.80	stations @	$14.00	per station	$459.20
Construct turnaround -	1.00	@	$75.00	each	$75.00
Roll subgrade w/ vibratory roller prior to rocking -	32.80	stations @	$13.20	per station	$432.96
Remove large stumps -	1.00	lump sum @	$1,200.00		$1,200.00
Grass seed and fertilize -	1.01	acres @	$220.00	per acre	$222.20
Mulching -	0.110	acres @	$600.00	per acre	$66.00
				TOTAL SPECIAL PROJECTS	**$3,095.36**

GRAND TOTAL **$38,615.62**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **C to D**

Construction -	20+00	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.38	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION -

Station	to	Station	Avg. Sideslope	Outslope/Ditch	Cost per Station			
0+00		0+90	30%	Outslope	$191	=	$171.90	
0+90		1+80	50%	Outslope	$459	=	$413.10	
1+80		3+30	30%	Outslope	$191	=	$286.50	
3+30		4+10	25%	Outslope	$165	=	$132.00	
4+10		4+70	30%	Outslope	$191	=	$114.60	
4+70		5+00	45%	Outslope	$269	=	$80.70	
5+00		6+50	50%	Outslope	$459	=	$688.50	
6+50		8+00	40%	Outslope	$243	=	$364.50	
8+00		12+00	25%	Outslope	$165	=	$660.00	
12+00		13+80	30%	Outslope	$191	=	$343.80	
13+80		15+30	25%	Outslope	$165	=	$247.50	
15+30		17+80	30%	Outslope	$191	=	$477.50	
17+80		18+50	40%	Outslope	$243	=	$170.10	
18+50		20+00	30%	Outslope	$191	=	$286.50	
							TOTAL	**$4,437.20**

ROCK

0+00	to	1+00	80	cy. of	Pit-run	@	$8.04	per c.y.=	$643.20	
Junction Rock		0+00	20	cy. of	Pit-run	@	$7.89	per c.y.=	$157.80	
									TOTAL ROCK	**$801.00**

SPECIAL PROJECTS

Construct landing @ 20+00 -	1.00	@	$250.00	each	$250.00	
Construct turnaround -	1.00	@	$75.00	each	$75.00	
Fill roadway @ area of 19+30 -	2.00	hours @	$130.00	per hour	$260.00	
Grade and shape road -	20.00	stations @	$14.00	per station	$280.00	
Roll subgrade w/ vibratory roller prior to rocking -	20.00	stations @	$13.20	per station	$264.00	
Remove large stumps -	1.00	lump sum @	$750.00		$750.00	
Grass seed and fertilize -	0.73	acres @	$220.00	per acre	$160.60	
					TOTAL SPECIAL PROJECTS	**$2,039.60**

GRAND TOTAL **$7,277.80**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **E to F**

Construction -	2+50	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+40	30%		Outslope	$191	=	$76.40	
0+40		2+50	20%		Outslope	$139	=	$291.90	
								TOTAL	**$368.30**

ROCK

0+00	to	2+50	210	cy. of	Pit-run	@	$7.98	per c.y.=	$1,675.80	
Landing Rock		2+50	100	cy. of	Pit-Run	@	$8.00	per c.y.=	$800.00	
Junction Rock		0+00	20	cy. of	Pit-Run	@	$7.96	per c.y.=	$159.20	
									TOTAL ROCK	**$2,635.00**

SPECIAL PROJECTS

Grade and shape road -	2.50	stations @	$14.00	per station	$35.00	
Roll subgrade w/ vibratory roller prior to rocking -	2.50	stations @	$13.20	per station	$33.00	
Remove large stumps -	1.00	lump sum @	$375.00		$375.00	
Construct landing -	1.00	@	$300.00	each	$300.00	
Grass seed and fertilize -	0.09	acres @	$220.00	per acre	$19.80	
				TOTAL SPECIAL PROJECTS		**$762.80**

GRAND TOTAL **$3,766.10**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **G to H**

Construction -	21+25	stations	Improvement -	0+00	stations	Reconstruction -	24+65	stations
	0.40	miles		0.00	miles		0.47	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			
10+00		10+50	25%		Outslope	$165	=		$82.50
10+50		13+40	30%		Outslope	$191	=		$553.90
13+40		13+90	40%		Outslope	$243	=		$121.50
13+90		14+30	25%		Outslope	$165	=		$66.00
14+30		14+90	40%		Outslope	$243	=		$145.80
14+90		17+30	30%		Outslope	$191	=		$458.40
17+30		18+20	40%		Outslope	$243	=		$218.70
18+20		19+10	50%		Outslope	$459	=		$413.10
19+10		21+10	40%		Outslope	$243	=		$486.00
21+10		23+20	30%		Outslope	$191	=		$401.10
23+20		24+80	25%		Outslope	$165	=		$264.00
24+80		25+25	30%		Outslope	$191	=		$85.95
39+90		42+90	45%		Outslope	$269	=		$807.00
42+90		45+90	30%		Outslope	$191	=		$573.00
								TOTAL	**$4,676.95**

RECONSTRUCTION: CLEARING AND GRUBBING -

Scattering	1.450	acres @	$980.00	per acre =	$1,421.00		
Endhaul	0.59	acres @	$1,500.00	per acre =	$885.00		
				TOTAL CLEARING AND GRUBBING		**$2,306.00**	

RECONSTRUCTION: EXCAVATION -

Widening	2207	cy. @	$1.40	per c.y.=	$3,089.80		
				TOTAL EXCAVATION		**$3,089.80**	

RECONSTRUCTION: ENDHAUL -

Widening	0+50	to	2+20	819	cy. @	$1.79	per c.y.=	$1,466.01	
Widening	2+20	to	3+00	642	cy. @	$1.82	per c.y.=	$1,168.44	
Widening	3+00	to	3+40	161	cy. @	$1.84	per c.y.=	$296.24	
Widening	3+40	to	4+00	174	cy. @	$1.85	per c.y.=	$321.90	
Widening	4+00	to	4+50	98	cy. @	$1.87	per c.y.=	$183.26	
Widening	36+65	to	37+95	75	cy. @	$1.09	per c.y.=	$81.75	
Widening	37+95	to	38+85	139	cy. @	$1.12	per c.y.=	$155.68	
Spread & compact				2108	cy. @	$0.25	per c.y.=	$527.00	
							TOTAL ENDHAUL		**$4,200.28**

CULVERTS - MATERIALS & INSTALLATION

Culverts			
120	LF of 30"	$4,320.00	
		$4,320.00	
Culvert Stakes & Markers			
2	markers	$16.00	
		$16.00	
		TOTAL CULVERTS	**$4,336.00**

ROCK

0+00 to	10+00	740	cy. of	Pit-run	@	$13.14	per c.y.=	$9,723.60	
Culvert Backfill	8+90, 31+25	80	cy. of	Crushed	@	$10.83	per c.y.=	$866.40	
Fill Armor	8+90	50	cy. of	Pit-Run	@	$12.70	per c.y.=	$635.00	
Junction Rock	0+00	20	cy. of	Pit-run	@	$13.06	per c.y.=	$261.20	
Energy Dissipator	8+90, 31+25	20	cy. of	Riprap	@	$13.67	per c.y.=	$273.40	
							TOTAL ROCK		**$11,759.60**

SPECIAL PROJECTS

Construct turnaround -	1.00	@	$75.00	each	$75.00
Cut/Drift from 42+00 to 42+90 to reduce grade irregularity	3.50	hours @	$130.00	per hour	$455.00
Construct waste areas -	1.00	hours @	$130.00	per hour	$130.00
Construct ditchouts -	5.00	@	$60.00	each	$300.00
Cut/Drift from 39+90 to 40+65 to reduce grade and construct switchback	4.50	hours @	$130.00	per hour	$585.00
Cut/Drift from 0+00 to 1+50 to reduce grade -	3.50	hours @	$130.00	per hour	$455.00
Cut/Drift from curve above to construct fill @ 15+80 -	2.50	hours @	$130.00	per hour	$325.00
Grade and shape road -	45.90	stations @	$14.00	per station	$642.60
Construct landing @ 45+90 -	1.00	@	$250.00	each	$250.00
Roll subgrade w/ vibratory roller prior to rocking -	45.90	stations @	$13.20	per station	$605.88
Remove log culvert @ station 8+90 -	4.00	hours @	$145.00	per hour	$580.00
Remove large stumps -	1.00	lump sum @	$750.00		$750.00
Construct culvert fills at stations 8+90 & 31+25 -	8.00	hours @	$145.00	per hour	$1,160.00
Grass seed and fertilize -	1.31	acres @	$220.00	per acre	$288.20
Mulching -	0.358	acres @	$600.00	per acre	$214.80
				TOTAL SPECIAL PROJECTS	**$6,816.48**

GRAND TOTAL **$37,185.11**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **I to J**

Construction -	18+70	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.35	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		1+80	25%		Outslope	$165	=	$297.00	
1+80		2+30	40%		Outslope	$243	=	$121.50	
2+30		3+50	65%	0.1	Outslope	$1,931	=	$2,317.20	
3+50		6+50	50%		Outslope	$459	=	$1,377.00	
6+50		7+40	75%	0.1	Outslope	$2,772	=	$2,494.80	
7+40		7+90	50%		Outslope	$459	=	$229.50	
7+90		8+30	35%		Outslope	$191	=	$76.40	
8+30		9+60	25%		Outslope	$165	=	$214.50	
9+60		10+40	40%		Outslope	$243	=	$194.40	
10+40		15+30	30%		Outslope	$191	=	$935.90	
15+30		18+00	40%		Outslope	$243	=	$656.10	
18+00		18+70	25%		Outslope	$165	=	$115.50	
								TOTAL	**$9,029.80**

SPECIAL PROJECTS

Construct waste areas -	2.00	hours @	$130.00	per hour	$260.00	
Construct turnaround -	1.00	@	$75.00	each	$75.00	
Construct landing @ 18+70 -	1.00	@	$435.00	each	$435.00	
Grade and shape road -	18.70	stations @	$14.00	per station	$261.80	
Roll subgrade w/ vibratory roller prior to rocking -	18.70	stations @	$13.20	per station	$246.84	
Remove large stumps -	1.00	lump sum @	$450.00		$450.00	
Grass seed and fertilize -	0.80	acres @	$220.00	per acre	$176.00	
Mulching -	0.100	acres @	$600.00	per acre	$60.00	
				TOTAL SPECIAL PROJECTS		**$1,964.64**

GRAND TOTAL **$10,994.44**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **K to L**

Construction -	1+80	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.03	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	Outslope/Ditch	Cost per Station			
0+00		1+80	30%	Outslope	$191	=	$343.80	
							TOTAL	**$343.80**

SPECIAL PROJECTS

Construct landing at 1+80 -	1.00	@	$300.00	each	$300.00	
Grade and shape road -	1.80	stations @	$14.00	per station	$25.20	
Roll subgrade w/ vibratory roller prior to rocking -	1.80	stations @	$13.20	per station	$23.76	
Remove large stumps -	1.00	lump sum @	$150.00		$150.00	
Grass seed and fertilize -	0.07	acres @	$220.00	per acre	$15.40	
				TOTAL SPECIAL PROJECTS		**$514.36**

GRAND TOTAL **$858.16**

SUMMARY OF CONSTRUCTION COST

Sale: **Wasabi** Road: **M to N**

Construction -	1+90	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.04	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	Outslope/Ditch	Cost per Station			
0+00		1+90	30%	Outslope	$191	=	$362.90	
							TOTAL	**$362.90**

SPECIAL PROJECTS

Construct landing @ 1+90 -	1.00	@	$250.00	each	$250.00	
Grade and shape road -	1.90	stations @	$14.00	per station	$26.60	
Roll subgrade w/ vibratory roller prior to rocking -	1.90	stations @	$13.20	per station	$25.08	
Remove large stumps -	1.00	lump sum @	$150.00		$150.00	
Grass seed and fertilize -	0.07	acres @	$220.00	per acre	$15.40	
				TOTAL SPECIAL PROJECTS		**$467.08**

GRAND TOTAL **$829.98**

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Pit_run		Location:	SW 1/4, NE 1/4, Sec. 9, T2S, R7W, W.M.	
Sale:	**Wasabi**			Road:	3810 c.y.
Swell:	1.40			Stockpile:	c.y.
Shirinkage	1.16			Total Truck Loads:	3810 c.y.
Drill Pct.:	25%			In Place Total:	2721 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.							$1,672.52
Drill & Shoot:	$2.50	/cu.yd.	x	680	cu.yds.	=	$1,700.00
Rip Rock:	$1.90	/cu.yd.	x	2041	cu.yds.	=	$3,877.90
Load Dump Truck:	$0.70	/cu.yd.	x	3810	cu.yds.	=	$2,667.00
					Subtotal		$9,917.42

Move In and set up Drill and Compressor	1	@	$546.25	=	$546.25
Move in Roller and Compactor	1	@	$546.25	=	$546.25
Move in Grader	1	@	$171.55	=	$171.55
Move in D-8	1	@	$826.69	=	$826.69
Move in Excavator	1	@	$910.80	=	$910.80
Move in Trucks	2	@	$179.14	=	$358.28
Move in Water Truck	1	@	$210.57	=	$210.57
				Subtotal	$3,570.39

			TOTAL PRODUCTION COSTS	$13,487.81
Base Cost=	$3.54	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 0 3280 (Pit-run)	3.37	1.10	3.54	8.01	2430		$19,464.30
A to B Landing Rock (Pit-Run)	3.63	1.10	3.54	8.27	100		$827.00
A to B Junction Rock (Pit-run)	3.12	1.10	3.54	7.76	20		$155.20
C to D 0 100 (Pit-run)	3.40	1.10	3.54	8.04	80		$643.20
C to D Junction Rock (Pit-run)	3.25	1.10	3.54	7.89	20		$157.80
E to F 0 250 (Pit-run)	3.34	1.10	3.54	7.98	210		$1,675.80
E to F Landing Rock (Pit-Run)	3.36	1.10	3.54	8.00	100		$800.00
E to F Junction Rock (Pit-Run)	3.32	1.10	3.54	7.96	20		$159.20
G to H 0 1000 (Pit-run)	8.50	1.10	3.54	13.14	740		$9,723.60
G to H Fill Armor (Pit-Run)	8.56	0.60	3.54	12.70	50		$635.00
G to H Junction Rock (Pit-run)	8.42	1.10	3.54	13.06	20		$261.20
G to H Energy Dissipator (Riprap)	8.73	1.40	3.54	13.67	20		$273.40
				Total C.Y.	3810	Sub Total	$34,775.70

	TOTAL ROCKING COSTS	$34,775.70

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Stockpile (In Vicinity of Pit-run Quarry)	Crushed		Location:	NE 1/4, SW 1/4, Sec. 9, T2S, R7W, W.M.	
Sale:	**Wasabi**			Road:	80 c.y.
Swell:				Stockpile:	c.y.
Shirinkage				Total Truck Loads:	80 c.y.
Drill Pct.:	0%			In Place Total:	c.y.

Load Dump Truck: $0.70 /cu.yd. x 80 cu.yds. = $56.00

Subtotal $56.00

TOTAL PRODUCTION COSTS $56.00

Base Cost= $0.70 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
G to H Culvert Backfill (Crushed)	8.73	1.40	0.70	10.83	80		$866.40
				Total C.Y.	80	Sub Total	$866.40

TOTAL ROCKING COSTS $866.40

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

Sale: **Wasabi**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
30.0	Pavement	30
11.0	Main Lines	7
4.0	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	$621.00		$4.00	0.00	0.00	0	$0.00	$621.00
1	Excavators (Large)	$933.80	1	$44.80	0.00	7.70	7.7	$344.96	$1,278.76
1	Tractor (D8)	$872.69	2	$15.10	0.00	7.70	7.7	$116.27	$988.96
2	Dump Truck (10 cy +)	$444.09		$2.85	0.00	7.70	7.7	$43.89	$487.98
1	Water Truck (1500 Gal)	$179.14		$2.85	0.00	7.70	7.7	$21.95	$201.09
					TOTAL MOVE-IN COSTS:				$3,577.79

Wasabi Alternative Vegetation Treatment Plan
Tillamook 2012 AOP
East Fork Trask Watershed
Prepared by David Wells, Reviewed by Liz Dent

Background

This Wasabi Timber sale is in the East Fork (EF) Trask River- a Salmon Anchor Habitat watershed and a future Aquatic Anchor Watershed. The EF Trask provides high quality spawning and rearing habitat for Chinook, coho, and steelhead. The NW Oregon State Forests Management Plan (FMP) objective for Riparian areas around fish streams is to "grow and retain vegetation so that over time riparian and aquatic habitat conditions become similar to those associated with mature forest stands." The FMP describes several strategies for achieving this goal including an option to "apply alternative vegetation treatment to achieve habitat objectives". The alternative vegetation treatment allows the application of silvicultural tools using standards that differ from the general riparian management standards for the purposes of "changing the vegetative community to better achieve the plan's aquatic and riparian habitat objectives."

Wasabi Timber Sale: Area 1 is 116 acres of a modified clearcut and Area 2 is a road right-of-way harvest along a one-half mile portion of the East Fork Trask Road. The sale areas are partially within 100 feet of two large Type F streams, EF Trask and Pigeon Creek.

Portions of the riparian areas of EF Trask River and Pigeon Creek contain the East Fork Trask River Road. There are places where the center of the road is within 25 feet from the average annual high water marks on both streams. The road location is a permanently compacted surface which interrupts riparian functions such as introduction of large wood and shade. The proximity of the road to the stream in some sections creates a risk for sediment delivery to the rivers. The potential for road-sediment contributions to Pigeon Creek and EF Trask River could be reduced by removing some trees close to the road to allow more sun to the road surface, drying the road out between storms, and reducing road runoff.

The riparian areas have a range of stand conditions. On the creek-side of the road the riparian areas are predominately 50 year old alder with scattered maple. On the uphill side of the road there are pockets dominated by 50-70 year old alder separated by overstocked conifer stands with occasional "wolfy" larger conifers (18-24 inch diameter). Current riparian stand conditions are not ideal for large wood recruitment goals or meeting mature forest desired future condition.

Watershed Analysis

The Trask Watershed Analysis found that the Trask River Watershed is low on large conifer wood in streams and would benefit from establishing large conifers in riparian areas.

Goals for Alternative Vegetation Treatment Plan

Issue 1: Increased risk for sediment delivery due to wet road conditions because of heavy shading.

Action:

- Remove alder and conifers within 25 feet of the centerline of the EF Trask Road within Area 2 to increase sunlight getting to the road allowing it to dry out faster.

- Large confers, large alders (16" DBH and greater), and other hardwood species within 100' of Pigeon Creek will be retained. Leave trees have been marked with yellow paint.

Issue 2: The current stand conditions adjacent to streams will not likely to grow into large conifers to meet mature desired forest conditions.

Action:

- Within Area 1 actively manage the area above the East Fork Trask Road and within 100 feet of Pigeon Creek and the East Fork Trask River.
- Areas of overstocked Douglas-fir will be thinned to retain 50 conifer TPA favoring the larger diameter conifer trees, maintaining a 25% SDI, and meeting FMP Appendix J strategies. Leave trees have been marked with yellow paint.
- Re-establishing a conifer stand by removing approximately ¼ acre of alder at the north end of the unit and reforesting with conifers.
- Retaining all other species and alder at the south end of the unit (near beginning of new road construction) as it is unlikely to support conifers given a previous landslide because of wet soils and competition with salmonberry.

Multidisciplinary Approach

This project has been planned with collective input from Contract Unit foresters, the Reforestation Unit forester, and the ODF Hydrologist. ODFW fish biologist provided an office review.

Monitor

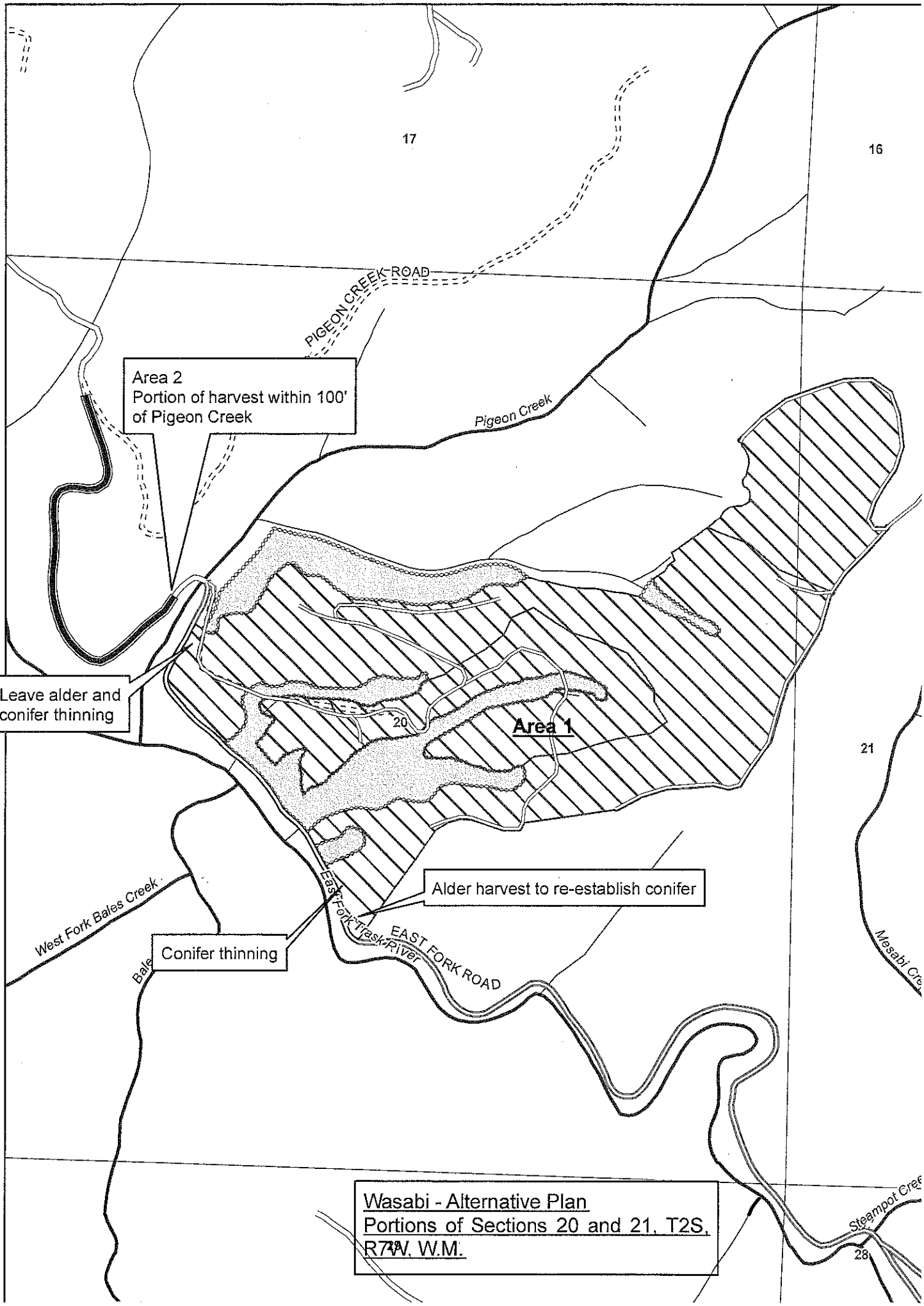
This project will be monitored by the reforestation unit during stocking surveys to assure successful reforestation in riparian areas.

Approval

The final alternative vegetation treatment plan will be approved, signed and dated by the District Forester and placed in the sale folder.

Dan Goody
District Forester

4/5/2012
Date


17
16
PIGEON CREEK ROAD
Area 2
Portion of harvest within 100' of Pigeon Creek
Pigeon Creek
Leave alder and conifer thinning
20
Area 1
21
Alder harvest to re-establish conifer
East Fork Trask River
EAST FORK ROAD
West Fork Bales Creek
Conifer thinning
Mesabi Cre
Steampot Cree
28
Wasabi - Alternative Plan
Portions of Sections 20 and 21, T2S, R7W, W.M.

TC TLOGSTVB

Log Stock Table - MBF

Project: WASABI

T02S R07W S20 TSALE

T02S R07W S20 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	20	AREA 1	SALE	116.00	16	96

Page 1
Date 3/15/2012
Time 9:15:15AM

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	14	9		9	.4						9						
DF		CO	2	16	13		13	.6							13					
DF		CO	2	38	21		21	1.0						21						
DF		CO	2	40	1,047	.6	1,041	49.5						432	368	242				
DF		CO	3	33	9		9	.4				9								
DF		CO	3	34	16		16	.8				16								
DF		CO	3	38	3		3	.1			3									
DF		CO	3	40	784	.4	781	37.2			197	226	359							
DF		CO	4	12	5		5	.3		4	2									
DF		CO	4	13	3		3	.1		2	1									
DF		CO	4	14	3		3	.2		3										
DF		CO	4	15	4		4	.2		4										
DF		CO	4	16	3		3	.2		3										
DF		CO	4	17	6		6	.3		6										
DF		CO	4	18	7		7	.4		7										
DF		CO	4	20	2		2	.1		2										
DF		CO	4	21	3		3	.2		3										
DF		CO	4	22	3		3	.1		3										
DF		CO	4	24	5		5	.2		5										
DF		CO	4	26	4		4	.2		4										
DF		CO	4	27	3		3	.2		3										
DF		CO	4	28	6		6	.3		4	2									
DF		CO	4	30	18		18	.8		18										
DF		CO	4	31	23		23	1.1		23										
DF		CO	4	32	12		12	.6		12										
DF		CO	4	33	7		7	.3		7										
DF		CO	4	36	3		3	.1		3										
DF		CO	4	37	3		3	.1		3										
DF		CO	4	38	16		16	.7		16										
DF		CO	4	39	15		15	.7		15										
DF		CO	4	40	54		54	2.6		35				19						
DF		Totals			2,111		2,103	85.5		185	204	251	359	481	381	242				
RA		H	3	40	54		54	16.3					54							
RA		H	4	14	5		5	1.6			5									
RA		H	4	19	6		6	1.7			6									
RA		H	4	21	19		19	5.8			19									
RA		H	4	24	21		21	6.4			21									
RA		H	4	26	5		5	1.6			5									
RA		H	4	30	6		6	1.9			6									
RA		H	4	32	20		20	5.9				20								
RA		H	4	38	27		27	8.1			27									
RA		H	4	40	168		168	50.7			37	101	30							
RA		Totals			332		332	13.5			127	120	84							
DL		CO	3	40	26		26	99.2			11						15			
DL		CO	4	14	0		0	.8		0										
DL		Totals			26		26	1.1		0	11						15			
Total All Species					2,469		2,461	100.0		185	343	372	443	481	381	242	15			

TC TLOGSTVB

Log Stock Table - MBF

Project: **WASABI**

T02S R07W S20 TSALE

T02S R07W S20 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	20	AREA 2	SALE	1.00	4	10

Page 1
Date 3/20/2012
Time 8:23:00AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches: 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		H	4	33	1		1	38.5				1								
RA		H	4	37	1	33.3	0	30.8				0								
RA		H	4	39	1	33.3	0	30.8				0								
RA		Totals			2	23.5	1	19.4				1								
DF		CO	2	40	2		2	37.0						2						
DF		CO	3	40	2		2	33.3					2							
DF		CO	4	22	1		1	11.1		1										
DF		CO	4	23	0		0	3.7		0										
DF		CO	4	35	0		0	7.4		0										
DF		CO	4	39	0		0	7.4		0										
DF		Totals			5		5	80.6		2			2	2						
Total All Species					7	5.6	7	100.0		2		1	2	2						

TC TSTNDSUM

Stand Table Summary

Project **WASABI**

T02S R07W S20 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	20	AREA 1	SALE	116.00	16	96

T02S R07W S20 TSALE

Page: 1
Date: 03/15/201
Time: 9:18:46AM

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		9	2	85	80	7.860	3.47	7.86	9.2	45.0	2.06	72	354	239	84	41
DF		10	1	87	74	3.183	1.74	3.18	11.6	40.0	1.05	37	127	122	43	15
DF		11	1	82	72	3.183	2.10	3.18	17.1	60.0	1.55	55	191	180	63	22
DF		13	3	85	82	5.651	5.21	11.30	12.6	46.7	4.05	142	527	470	165	61
DF		14	1	85	77	1.624	1.74	3.25	14.5	55.0	1.35	47	179	156	55	21
DF		15	6	85	82	8.588	10.42	17.18	16.9	59.9	8.29	291	1,029	962	337	119
DF		16	9	85	97	11.713	16.35	23.43	23.4	89.2	15.65	549	2,089	1,816	637	242
DF		17	4	83	89	4.406	6.95	8.81	24.3	81.3	6.10	214	716	708	248	83
DF		18	7	84	99	7.084	12.52	15.15	29.0	105.4	12.52	439	1,596	1,452	509	185
DF		19	7	85	101	6.173	12.15	13.23	32.2	112.7	12.14	426	1,490	1,409	494	173
DF		20	9	85	105	7.330	15.99	15.45	36.8	137.6	16.21	569	2,127	1,880	660	247
DF		21	4	85	105	3.039	7.31	6.80	40.6	149.2	7.88	276	1,015	914	321	118
DF		22	7	84	112	5.087	13.25	10.17	48.8	184.2	14.16	497	1,873	1,643	576	217
DF		23	3	80	90	1.805	5.21	3.61	48.6	143.3	5.00	176	518	581	204	60
DF		24	6	85	105	3.316	10.42	7.74	50.4	190.7	11.10	390	1,476	1,288	452	171
DF		25	1	82	99	.616	2.10	1.23	60.6	210.0	2.13	75	259	247	87	30
DF		26	3	81	92	1.413	5.21	2.83	62.9	206.7	5.06	178	584	587	206	68
DF		27	4	84	102	1.747	6.95	3.93	65.2	254.4	7.30	256	1,000	847	297	116
DF		28	3	82	99	1.303	5.57	2.61	77.0	270.3	5.72	201	705	664	233	82
DF		29	1	84	106	.379	1.74	.76	89.7	360.0	1.93	68	273	224	79	32
DF		Totals	82	84	93	85.500	146.38	161.70	30.7	112.1	141.28	4,957	18,126	16,388	5,750	2,103
RA		9	1	90	50	4.406	1.74	4.41	6.5	30.0	.79	29	132	92	33	15
RA		10	1	86	80	3.851	2.10	3.85	14.1	60.0	1.49	54	231	173	63	27
RA		12	2	85	81	4.618	3.47	4.62	19.7	70.0	2.51	91	323	291	106	37
RA		13	3	86	91	6.628	5.94	13.26	14.3	56.4	5.20	189	748	603	219	87
RA		14	1	86	92	1.965	2.10	3.93	18.5	75.0	1.99	73	295	231	84	34
RA		15	2	85	90	3.423	4.20	6.85	21.1	82.5	3.97	145	565	461	168	66
RA		16	1	82	94	1.504	2.10	3.01	24.2	90.0	2.01	73	271	233	85	31
RA		17	1	85	95	1.333	2.10	2.67	28.8	110.0	2.11	77	293	245	89	34
RA		Totals	12	86	82	27.728	23.75	42.58	17.1	67.1	20.08	730	2,858	2,329	847	332
DL		15	1	83	68	1.415	1.74	1.41	29.9	70.0	1.16	42	99	135	49	11
DL		42	1	86	59	.180	1.74	.36	117.2	355.0	1.16	42	128	135	49	15
DL		Totals	2	83	67	1.595	3.47	1.78	47.6	127.9	2.33	85	227	270	98	26
Totals			96	85	90	114.823	173.60	206.05	28.0	102.9	163.68	5771	21,211	18,987	6,695	2,461

TC TSTNDSUM

Stand Table Summary

Project **WASABI**

T02S R07W S20 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02S	07W	20	AREA 2	SALE	1.00	4	10

T02S R07W S20 TSALE

Date: 03/20/201

Time: 8:20:40AM

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		9	3	85	36	30.000	13.25	30.00	5.4	20.0	4.63	163	600	5	2	1
DF		11	1	85	29	10.000	6.60	10.00	7.5	20.0	2.14	75	200	2	1	0
DF		17	1	85	103	10.000	15.76	20.00	30.1	110.0	17.17	603	2,200	17	6	2
DF		19	1	85	94	10.000	19.69	20.00	35.6	120.0	20.30	712	2,400	20	7	2
DF		Totals	6	85	56	60.000	55.31	80.00	19.4	67.5	44.24	1,552	5,400	44	16	5
RA		12	1	85	51	10.000	7.85	10.00	16.2	50.0	4.45	162	500	4	2	1
RA		13	1	85	23	10.000	9.22									
RA		17	1	85	47	10.000	15.76	10.00	32.8	40.0	9.02	328	400	9	3	0
RA		21	1	85	47	10.000	24.05	10.00	50.7	40.0	13.95	507	400	14	5	0
RA		Totals	4	85	42	40.000	56.89	30.00	33.2	43.3	27.42	997	1,300	27	10	1
Totals			10	85	50	100.000	112.19	110.00	23.2	60.9	71.66	2550	6,700	72	25	7

"STEWARDSHIP IN FORESTRY"

Wasabi

Volume Summary

Area 1-Modified Clearcut				
	116 acres			
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	18.1	2103	5%	1997
Hemlock		0	5%	0
Spruce		0	5%	0
Noble Fir		0	5%	0
Alder	2.9	332	10%	298
TOTAL	21.0	2434		2296

Areas 2-Right-of-way				
	1 acres			
	Cruised Net	Cruised Net	Hidden	Net Sale
SPECIES	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	5.4	5	5%	5
Hemlock		0	5%	0
Spruce		0	5%	0
Noble Fir		0	5%	0
Alder	1.3	1	10%	1
TOTAL	6.7	7		6

TOTAL SALE VOLUME	117 acres	
SPECIES	Cruised Net (MBF)	Net Sale (MBF)
Douglas-fir	2108	2003
Hemlock	0	0
Spruce	0	0
Noble Fir	0	0
Red Alder	333	300
TOTAL	2441	2302

OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT
Wasabi

1. Type of Sale
Regeneration harvest, Recovery.

2. Legal Description
Sections 20, 21, T 2 S, R 7 W, W.M. Tillamook County, Oregon.

3. Sale Acreage
How the acreage was determined (Sale acreage was determined by GPS and orthophotographs along with GIS).

	ACRES	
	Gross	**Net**
Area 1 (Clearcut)	143	116
Area 2 (Right-of-Way)	3	1

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

- **Area 1**: 16 plots were sampled on a rectangular grid pattern spaced 350' between plots and 700' between cruise lines.
- **Area 2:** A strip cruise was used to sample 4 plots. For every 528' traveled a 52.8' x 50' strip was taken along East Creek Road. A blow up factor of 10 was used for a 10% sample.

All conifers 8 inches DBH and greater containing 20 net board feet and all hardwoods 9 inches DBH and greater containing 30 net board feet were sampled for tree species, DBH, form factor, merchantable height, visible defect and grade. Diameters were measured outside bark to the nearest inch and merchantable heights were recorded to the nearest foot. The point of tree observation was 4.5 feet on all plots.

B. Plot size

In Area 1, all plots were variable radius plots. A BAF of 40 was used for all species. In Area 2 all trees were cruised on each plot. The point of tree observation was 4.5 feet.

C. Grading System

Tree heights were measured to a 6" merchantable top for conifers, and 7" for hardwoods. All measurements were outside the bark. All species were graded using Columbia River Log Scaling and Grading Bureau rules, favoring a 40' log.

5. Computation Procedure

The volumes and statistics for the timber cruised were computed using SuperACE 2004, developed by Atterbury Consultants, Inc. The standard error and the coefficient of variation for the cruise as based on net board feet per acre shown in the table below.

Area	C.V. (%)	S.E. (%)
1	41.7	10.8
2	96.7	55.2

6. Hidden Defect and Breakage

A 5% reduction was applied to conifers and a 10% reduction to hardwood volumes for hidden defect and breakage. This was in addition to visual defect deducted during the cruise.

7. Timber Description

Three historic fires have burned through the area, the 1939 Saddle Mountain Fire burned the entire area, the 1951 North Fork Fire re-burned another 100 acres from the East Fork to the northeast and finally the 1958 Elkhorn Fire burned an additional 40 acres closer to the upper ridges.

Approximately 80 acres of the sale was seeded during the 1951-1952 season, the rest of the area is natural reproduction. The stand is primarily Douglas-fir with occasional alder clumps near the draws. The area was pre-commercially thinned in 1979 and 1980. A couple *Phellinus* (root rot) pockets were mapped during the layout process.

Sale Area – Species (%)	DBH	*Merchantable Bole Height	Merchantable Top
Area 1 - Douglas-fir (87%)	17.8	71	5"
Area 1 - Alder (13%)	12.5	51	6"
Area 2 – Douglas-fir (81%)	13.0	42	5"
Area 2 - Alder (19%)	16.1	33	6"

8. Cruiser Names/Dates

2011 Contract Cruise

9. Revenue Distribution

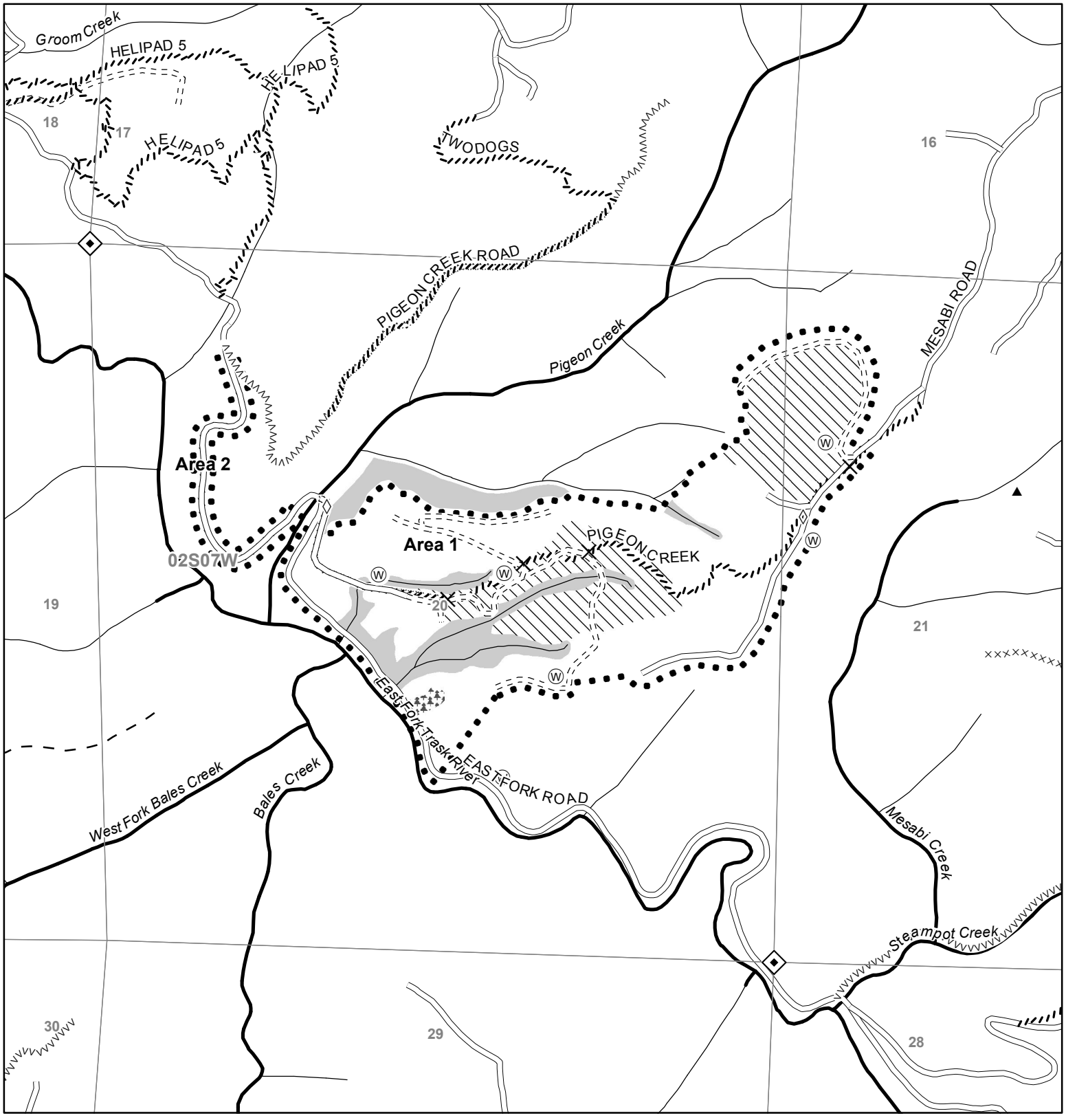
FDF 100%
Tax Code: 9-1 100%
Deed Numbers: 169

10. Attachments

Stand Table
Volume Summaries
Log Stock Tables
Logging Plan

11. Stand and Log Stock Tables Species Key

DL – Douglas-fir leave
DF – Douglas-fir take
NF – Noble fir reserved
RA – Red alder take
RC – Western red cedar reserved
SS – Sitka spruce reserved
WH – Western hemlock reserved



- Rock source
- Stock pile
- Waste area
- Bridge
- Gate
- Survey corner
- Domestic water supply intake
- Truck turn-around
- Helicopter landing zone
- Cultural site
- 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
- Perennial Type-F stream
- Perennial Type-N 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. 341-12-080
WASABI
Portions of Sections 20 and 21
T2S, R7W, W.M.,
Tillamook County, Oregon

1,000 0 1,000 Feet

Area	Type of Operation	Acres Gross	Net
1	Modified clearcut	142	116
2	Right-of-way	3	1
Total		145	117

N

Tillamook District GIS
03-16-2012
This product is for informational use and may not have been prepared or suitable for legal, engineering, or surveying purposes.