



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Arch Cape Sale 341-05-65

District: Tillamook

Date: 1/10/05

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,803,119.01	\$240,450.84	\$2,043,569.85
		Project Work	(\$293,254.00)
		Advertised Value	\$1,750,315.85



Timber Sale Appraisal Timber Description Arch Cape Sale 341-05-65

"STEWARDSHIP IN FORESTRY"

District: Tillamook

Location: Portions of Sections 6&7, T1N, R7W and Sections 1&12, T1N, R8W, W.M., Tillamook County, Oregon.

Date: 1/10/05

Stand Stocking: 20%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	14	0	95
Alder (Red)	14	0	95

Volume by Grade	Douglas - Fir	Alder (Red)	Total
2S	130	0	130
3S	4,450	0	4,450
4S	1,871	0	1,871
Camprun	0	903	903
Total	6,451	903	7,354

Comments: Pond Values Used: 4th Quarter 2004.

OTHER COSTS (Profit and Risk to be added)

Brand and Paint - \$2/MBF x 7354 MBF = \$14,708

TOTAL OTHER COSTS + (P/R to be added) : \$14,708

ADDITIONAL COSTS (Profit and Risk Included)

Re-open abandoned rds- 111stations x \$15/station = \$3,875
Non-Project Roads-17 stations x \$130/station=\$2,210
Approach rock Pit-Run - 6 stations x 50 cu.yds x \$6.00/cfs= \$1,800
Rock Landings: 15 landings x 20cy x \$6/cy = \$1,800
Barriers to 4X4 4 Barriers x \$75 per Barrier =\$300.00
OHV Trail Clearing 282 stations x \$40 station = \$11,280
Dust Abatement 1 season =\$1,400
Ditch pulling and end haul 100 cuyds x \$5.15 = \$515
Landing Debris/Slash Piling 308 acres x \$2.20 acre = \$678
Temporary stream crossing 3hrs x \$90.00hr = \$270.00

TOTAL ADDITIONAL COSTS: \$24,128

ROAD MAINTENANCE:

Maintenance rock (Includes move in)
(\$4.00/yard x 5.12 miles x 12 yds/MMBF/mile x 7.4MMBF)/7354MBF = \$0.25/MBF

Grading and Compaction

	\$ / Station	MMBF	Stations	\$/MBF
Move in	\$4.83	7.4	270	\$0.18
Water	\$6.75	7.4	270	\$0.25
Compaction	\$11.00	7.4	270	\$0.40
Interim Grading	\$10.00	7.4	270	\$0.37
Final Grading	\$17.00	7.4	270	\$0.62

TOTAL ROAD MAINTENANCE COSTS: \$2.07

CEDAR PRICE = Cedar pond value - Douglas-fir logging costs
\$581.96/MBF = \$875/MBF - \$293.04/MBF

RED ALDER grouped in combination 4 due to short log logging costs.



Timber Sale Appraisal

Logging Conditions

Arch Cape

Sale 341-05-65

"STEWARDSHIP IN FORESTRY"

Combination#: 1	Douglas - Fir	50.84%	
Yarding Distance:	Medium (800 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:	5		Bd. Ft./Load: 3,600
Cost/MBF:	\$202.63		
Machines:			
	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Medium)		
Combination#: 2	Douglas - Fir	47.20%	
	Alder (Red)	47.18%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: Yes
Logging System:	Track Skidder		Process: Manual Falling/Delimiting
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	7		Bd. Ft./Load: 3,600
Cost/MBF:	\$139.55		
Machines:			
	Log Loader (B)		
	Track Skidder		
Combination#: 3	Douglas - Fir	1.95%	
	Alder (Red)	1.99%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: Yes
Logging System:	Cable: Medium Tower >40 - <70		Process: Stroke Delimber
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	3		Bd. Ft./Load: 3,300
Cost/MBF:	\$331.58		
Machines:			
	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Medium)		
Combination#: 4	Alder (Red)	50.83%	
Yarding Distance:	Medium (800 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:	3		Bd. Ft./Load: 3,200
Cost/MBF:	\$341.94		

Machines:

Log Loader (A)

Stroke Delimber (A)

Tower Yarder (Medium)



Timber Sale Appraisal

Logging Costs

Arch Cape

Sale 341-05-65

"STEWARDSHIP IN FORESTRY"

Date: 1/10/05

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$293,254

Other Costs (P/R): \$14,708

Slash Disposal: \$0

Other Costs: \$24,128

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Road Maintenance: \$2.07

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	2.0	3.3
Alder (Red)	\$0.00	3.0	3.2



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Logging Costs Breakdown Arch Cape Sale 341-05-65

Costs	Douglas - Fir	Alder (Red)
Logging	175.37	246.25
Road Maintenance	2.18	2.18
Fire Protection	0.84	0.00
Hauling	69.16	46.11
Other (P/R appl.)	2.28	0.00
Profit & Risk	37.47	44.18
Slash Disposal	0.00	0.00
Scaling	2.00	0.00
Other	3.74	0.00
Total	293.04	338.72

Amortization	0.00	0.00
Pond Value	572.55	605.00
Stumpage	279.51	266.28
Amortized	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Arch Cape Sale 341-05-65

Amortized

	Douglas - Fir	Alder (Red)
MBF	0.00	0.00
Value	0.00	0.00
Total	0.00	0.00

Unamortized

	Douglas - Fir	Alder (Red)
MBF	6,451.00	903.00
Value	279.51	266.28
Total	1,803,119.01	240,450.84

Gross Timber Sale Value

Recovery \$2,043,569.85

Prepared by: Nick Stumpf

Date: 1/10/05

District: Tillamook

Phone: (503) 842-2545



"STEWARDSHIP IN FORESTRY"

PROJECT SUMMARY SHEET

Sale: Arch Cape

IMPROVEMENT

Point	A to B	393+80	stations =	\$153,507.67
Point	C to D	87+30	stations =	\$38,459.92
Point	E to F	23+35	stations =	\$69,685.59
SUBTOTAL IMPROVEMENT				\$261,653.18

MOVE IN

A to B and C to D	\$1,560.35
E to F	\$1,433.52
SUBTOTAL MOVE IN	\$2,993.87

STOCKPILE

<u>2" - 0" Crushed Rock Stockpile on Fox Creek Ridge Road</u>	<u>\$28,606.49</u>
SUBTOTAL STOCKPILE	\$28,606.49

GRAND TOTAL **\$293,253.54**

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Arch Cape</u>		Road:	<u>A to B</u>
Construction -	0+00 stations <u>0.00</u> miles		Improvement -	393+80 stations <u>7.46</u> miles
CLEARING AND GRUBBING -				
Scattering		1.36 acres @	\$815.00 per acre =	\$1,108.40
Piling - waste area		0.08 acres @	\$905.00 per acre =	\$72.40
			TOTAL CLEARING AND GRUBBING	\$1,180.80
EXCAVATION -				
Ditchline excavation	0+00 to 365+20	331 cy. @	\$4.55 per c.y.=	\$1,506.05
			TOTAL EXCAVATION	\$1,506.05
ENDHAUL -				
To waste area @ on A to B	0+00 to 365+20	331 cy. @	\$4.35 per c.y.=	\$1,439.85
Spread & compact waste area		331 cy. @	\$0.20 per c.y.=	\$66.20
			TOTAL ENDHAUL	\$1,506.05
CULVERTS - MATERIALS & INSTALLATION				
	<u>Culverts</u>			
	0	LF of 18"	\$0.00	0
	0	LF of 30"	\$0.00	0
	0	LF of 42"	\$0.00	0
	0	LF of 54"	\$0.00	0
	0	LF of 66"	\$0.00	0
			<u>\$0.00</u>	<u>\$0.00</u>
	<u>Half Rounds</u>			
	0	LF of 21"	\$0.00	0
	0	LF of 36"	\$0.00	0
			<u>\$0.00</u>	<u>\$0.00</u>
	<u>Culvert Stakes & Markers</u>			
	0	stakes	\$0.00	
	0	markers	\$0.00	
			<u>\$0.00</u>	
				TOTAL CULVERTS
				\$0.00
ROCK-				
0+00 to	252+00	9,081 cy. of	2"-0"	@
252+00 to	393+80	3,447 cy. of	2"-0"	@
				\$11.01 per c.y.=
				\$99,981.81
				\$11.01 per c.y.=
				<u>\$37,951.47</u>
				TOTAL ROCK
				\$137,933.28
SPECIAL PROJECTS				
Construct waste area, turnouts, and ditchouts -		2.5 hours @	\$130.00 per hour	\$325.00
Grade and shape road - ditch		365.20 stations @	\$14.20 per station	\$5,185.84
Grade and shape road - outslope		28.60 stations @	\$9.75 per station	\$278.85
Roll subgrade w/ vibratory roller prior to rocking -		393.80 stations @	\$11.00 per station	\$4,331.80
Grass seed and fertilize -		3.00 acres @	\$220.00 per acre	\$660.00
Mulching - ditches within 50 feet of culverts		1.00 acres @	\$600.00 per acre	\$600.00
			TOTAL SPECIAL PROJECTS	\$11,381.49
			GRAND TOTAL	\$153,507.67

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Arch Cape</u>				Road: <u>C to D</u>
Construction -	<u>0+00</u> stations <u>0.00</u> miles				Improvement - <u>87+30</u> stations <u>1.65</u> miles
CLEARING AND GRUBBING -					
Scattering		0.40 acres @		\$815.00 per acre =	\$326.00
Piling - waste area		0.03 acres @		\$905.00 per acre =	\$27.15
				TOTAL CLEARING AND GRUBBING	\$353.15
EXCAVATION -					
Ditchline excavation	0+00 to 87+30	79 cy. @		\$4.55 per c.y.=	\$359.45
				TOTAL EXCAVATION	\$359.45
ENDHAUL -					
To waste area @ on A to B	0+00 to 87+30	79 cy. @		\$2.93 per c.y.=	\$231.47
Spread & compact waste area		79 cy. @		\$0.20 per c.y.=	\$15.80
				TOTAL ENDHAUL	\$247.27
CULVERTS - MATERIALS & INSTALLATION					
	<u>Culverts</u>				
	0 LF of 18"	\$0.00		0 LF of 24"	\$0.00
	0 LF of 30"	\$0.00		0 LF of 36"	\$0.00
	0 LF of 42"	\$0.00		0 LF of 48"	\$0.00
	0 LF of 54"	\$0.00		0 LF of 60"	\$0.00
	0 LF of 66"	\$0.00		0 LF of 72"	\$0.00
		\$0.00			\$0.00
	<u>Half Rounds</u>				
	0 LF of 21"	\$0.00		0 LF of 30"	\$0.00
	0 LF of 36"	\$0.00		0 LF of 42"	\$0.00
		\$0.00			\$0.00
	<u>Culvert Stakes & Markers</u>				
	0 stakes	\$0.00			
	0 markers	\$0.00			
		\$0.00			
				TOTAL CULVERTS	\$0.00
ROCK-					
0+00 to 87+30	3,125 cy. of 3"-0"	@	\$9.71 per c.y.=	\$30,343.75	
66+30 to 74+50	194 cy. of 2"-0"	@	\$9.61 per c.y.=	\$1,864.34	
0+00 to 25+00	300 cy. of 3"-0" leveling rock	@	\$9.22 per c.y.=	\$2,766.00	
				TOTAL ROCK	\$34,974.09
SPECIAL PROJECTS					
Construct turnouts, and ditchouts -		1.0 hours @	\$130.00 per hour	\$130.00	
Grade and shape road - ditch		87.30 stations @	\$14.20 per station	\$1,239.66	
Roll subgrade w/ vibratory roller prior to rocking -		87.30 stations @	\$11.00 per station	\$960.30	
Grass seed and fertilize -		0.70 acres @	\$220.00 per acre	\$154.00	
Mulching - ditches within 50 feet of culverts		0.07 acres @	\$600.00 per acre	\$42.00	
				TOTAL SPECIAL PROJECTS	\$2,525.96
				GRAND TOTAL	\$38,459.92

SUMMARY OF CONSTRUCTION COST

Sale:	Arch Cape	Road:	E to F
Construction -	0+00 stations 0.00 miles	Improvement -	23+35 stations 0.44 miles
CLEARING AND GRUBBING -			
Roadside Brushing		0.44 miles @	\$1,000.00 per mile = \$440.00
Scattering		0.750 acres @	\$815.00 per acre = \$611.25
Endhaul		0.00 acres @	\$1,500.00 per acre = \$0.00
		TOTAL CLEARING AND GRUBBING	
			\$1,051.25
EXCAVATION -			
Endhaul Ditchlines		23.35 Sta. @	\$20.00 per Station = \$467.00
Removing Water Bars and Berms		1.00 Hrs. @	\$130.00 per Hour = \$130.00
Widening (Common)		1002 cy. @	\$1.15 per c.y. = \$1,152.30
Widening (Rippable)		529 cy. @	\$2.25 per c.y. = \$1,190.25
Widening (Solid)		436 cy. @	\$4.90 per c.y. = \$2,136.40
		TOTAL EXCAVATION	
			\$5,075.95
ENDHAUL -			
Widening to Waste Area	6+45 to 8+90	1272 cy. @	\$1.57 per c.y. = \$1,997.04
Spread & Compact (Local Fill Material)	19+00 to 20+70	295 cy. @	\$0.30 per c.y. = \$88.50
Spread & compact (Waste Area)	6+45 to 8+90	1272 cy. @	\$0.20 per c.y. = \$254.40
		TOTAL ENDHAUL	
			\$2,339.94
STREAM CROSSING STRUCTURE			
		Surveying	\$3,000.00
		Engineering / Construction Documents	\$10,000.00
		Installation, including all labor and materials	\$33,000.00
		Engineering Inspection Services	\$1,500.00
		TOTAL STREAM CROSSING STRUCTURE	
			\$44,500.00
CULVERTS - MATERIALS & INSTALLATION			
		103"x 71" Aluminized Steel Pipe-Arch	48 LF @ \$104.45/LF = \$5,013.60
		103"x 71"x 24" Aluminized Steel Bands w/ gasket	1 @ \$210.00 = \$210.00
		Bevel Fee	1 @ \$120.00 = \$120.00
		Assembly: 10 Hours; 3 Laborers @ \$28/Hour & 1 Excavator w/ Operator @ \$130/Hour	\$2,996.00
		TOTAL CULVERTS - MATERIALS & INSTALLATION	
			\$8,339.60
ROCK			
E to F: 4+60 to 8+90 (Base)	406 cy. of	Jaw-Run	@ \$4.89 per c.y. = \$1,985.34
E to F: 19+00 to 20+70 (Base)	102 cy. of	Jaw-Run	@ \$4.95 per c.y. = \$504.90
E to F: 4+60 to 8+90 (Cap)	167 cy. of	Crushed	@ \$4.88 per c.y. = \$814.96
E to F: 19+00 to 20+70 (Cap)	40 cy. of	Crushed	@ \$4.94 per c.y. = \$197.60
Culvert Bedding/Backfill (6+05 & 19+70)	360 cy. of	Crushed	@ \$4.33 per c.y. = \$1,558.80
RipRap (Sta. 5+85 to 6+25)	275 cy. of	RipRap	@ \$3.87 per c.y. = \$1,064.25
RipRap (St. 20+60 to 20+80)	60 cy. of	RipRap	@ \$4.22 per c.y. = \$253.20
Spot Rock Base (12+80 to 13+00 & 15+25 to 15+55)	40 cy. of	Jaw-Run	@ \$4.84 per c.y. = \$193.60
Spot Rock Cap (12+80 to 13+00 & 15+25 to 15+55)	20 cy. of	Crushed	@ \$4.83 per c.y. = \$96.60
Backfill Material (Sta. 5+85 to 6+25)	260 cy. of	Pit-Run	@ \$2.29 per c.y. = \$595.40
Backfill Material (Sta. 19+60 to 19+80)	50 cy. of	Pit-Run	@ \$2.63 per c.y. = \$131.50
Fish Culvert Backfill (Interior)	50 cy. of	Pit-Run	@ \$3.13 per c.y. = \$156.50
		TOTAL ROCK	
			\$7,552.65
SPECIAL PROJECTS			
Construct ditchouts -	1.00	@	\$60.00 each = \$60.00
Grade and shape road (Sta. 4+60 to 8+90 & 19+00 to 20+70)-	6.00	stations @	\$14.20 per station = \$85.20
Roll subgrade w/ vibratory -	6.00	stations @	\$11.00 per station = \$66.00
Grass seed and fertilize -	0.75	acres @	\$220.00 per acre = \$165.00
Mulching -	0.750	acres @	\$600.00 per acre = \$450.00
		TOTAL SPECIAL PROJECTS	
			\$826.20
GRAND TOTAL			\$69,685.59

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Crushing Pit - 2"-0" & 3"-0"- Point B	Location:	NE1/4 NW1/4 Sec. 15, T1S, R8W, W.M.
Sale:	Arch Cape	Road:	16,147 c.y.
Swell:	1.40	Stockpile:	2,997 c.y.
Shrinkage:	1.16	Total Truck Loads:	19,144 c.y.
Drill Pct.:	100%	In Place Total:	13,674 c.y.

Pit Development & cleanup for the development area on Exhibit A including the following: clearing and grubbing, access road construction, end-hauling overburden and other waste, placing and compacting overburden and waste in Waste Area.	\$7,066.28
Drill & Shoot - down holes:	\$2.10 /cu.yd. x 13,674 cu.yds. = \$28,715.40
Push Rock:	\$0.60 /cu.yd. x 19,144 cu.yds. = \$11,486.40
Load Crusher:	\$0.60 /cu.yd. x 19,144 cu.yds. = \$11,486.40
Crush 2"-0" Rock	\$2.30 /cu.yd. x 16,019 cu.yds. = \$36,843.70
Crush 3"-0" Rock	\$2.10 /cu.yd. x 3,125 cu.yds. = \$6,562.50
Load Truck - Crushed:	\$0.60 /cu.yd. x 19,144 cu.yds. = \$11,486.40
Change Gradation	\$210.00

Subtotal \$113,857.08

Move In/Set-up Crusher				\$2,528.00
Move In and set up Drill and Compressor	1	@	\$272.39	= \$272.39
Move in Roller	1	@	\$272.39	= \$272.39
Move in Grader	1	@	\$190.39	= \$190.39
Move in D-8	1	@	\$453.72	= \$453.72
Move in Loader	1	@	\$414.60	= \$414.60
Move in Excavator from Pt. B	1	@	\$0.00	= \$0.00
Move in Trucks	5	@	\$89.60	= \$448.00
Move in Water Truck	1	@	\$105.32	= \$105.32

Subtotal \$4,684.81

Base Cost=	\$6.19	Per Cu.Yd.	TOTAL PRODUCTION COSTS	\$118,541.89
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Crushed Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A to B - 2"-0"	3.52	1.30	6.19	11.01	12,528	\$137,933.28
C to D - 3"-0"	2.22	1.30	6.19	9.71	3,125	\$30,343.75
C to D- 2"-0"	2.12	1.30	6.19	9.61	194	\$1,864.34
C to D- 3"-0"	1.73	1.30	6.19	9.22	300	\$2,766.00
Leveling Rock 0+00-25+00						
					Total C.Y.	16,147
						Sub Total \$172,907.37

2"-0" Crushed Stockpile	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
Fox Creek Ridge Rd	2.53	0.60	6.19	9.32	2,997	\$27,932.04
					Total C.Y.	2,997
						Sub Total \$27,932.04

TOTAL ROCKING COSTS	\$200,839.41
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RIPRAP ROCK DEVELOPMENT COST SUMMARY

Pit:	Fisherman's Access Widening	Location:	E to F: Stations 6+45 to 8+90
Sale:	Arch Cape	Road:	335 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	335 c.y.
Drill Pct.:	0%	In Place Total:	239 c.y.

Load Dump Truck: \$1.40 /cu.yd. x 335 cu.yds. = \$469.00
Subtotal \$469.00

Base Cost= \$1.40 Per Cu.Yd. TOTAL PRODUCTION COSTS \$469.00

Road Segment	Haul Cost /cu.yd.	Placement Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E to F (Armor): 5+85 to 6+25	\$1.07	\$1.40	\$1.40	\$3.87	275	\$1,064.25
E to F (Armor): 20+60 to 20+80	\$1.42	\$1.40	\$1.40	\$4.22	60	\$253.20
				Total C.Y.	335	Sub Total \$1,317.45

TOTAL ROCKING COSTS \$1,317.45

PIT-RUN ROCK DEVELOPMENT COST SUMMARY

Pit:	Fisherman's Access Widening	Location:	E to F: Stations 6+45 to 8+90
Sale:	Arch Cape	Road:	360 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	360 c.y.
Drill Pct.:	0%	In Place Total:	257 c.y.

Load Dump Truck: \$0.60 /cu.yd. x 360 cu.yds. = \$216.00

Base Cost= \$0.60 Per Cu.Yd. TOTAL PRODUCTION COSTS \$216.00

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E to F: 5+85 to 6+25 (Fill)	\$0.79	\$0.90	\$0.60	\$2.29	260	\$595.40
E to F: 20+60 to 20+80 (Fill)	\$1.13	\$0.90	\$0.60	\$2.63	50	\$131.50
E to F: 20+60 to 20+80 (Interior)	\$1.13	\$1.40	\$0.60	\$3.13	50	\$156.50
				Total C.Y.	360	Sub Total
						\$986.40

TOTAL ROCKING COSTS \$986.40

JAW-RUN ROCK STOCKPILE COST SUMMARY

Pit:	Highway Pit Pile	Location:	Sec. 19, T1N, R7W, W.M.
Sale:	Arch Cape	Road:	548 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	548 c.y.
Drill Pct.:	0%	In Place Total:	391 c.y.

Load Dump Truck:	\$0.60	/cu.yd.	x	548	cu.yds.	=	\$328.80
					Subtotal		\$328.80
Move in Loader	1		@	\$109.12		=	\$109.12
Move in Trucks	3		@	\$38.09		=	\$114.27
					Subtotal		\$223.39

Base Cost=	\$0.80	Per Cu.Yd.	TOTAL PRODUCTION COSTS	\$440.50
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Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E to F: 4+60 to 8+90	\$2.79	\$1.30	\$0.80	\$4.89	406	\$1,985.34
E to F: 19+00 to 20+70	\$2.85	\$1.30	\$0.80	\$4.95	102	\$504.90
E to F: Spot Rock	\$2.74	\$1.30	\$0.80	\$4.84	40	\$193.60
				Total C.Y.	548	Sub Total
						\$2,796.84

TOTAL ROCKING COSTS	\$2,796.84
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CRUSHED ROCK STOCKPILE COST SUMMARY

Pit:	Highway Pit Pile	Location:	Sec. 19, T1N, R7W, W.M.
Sale:	Arch Cape	Road:	587 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	587 c.y.
Drill Pct.:	0%	In Place Total:	419 c.y.

Load Dump Truck: \$0.60 /cu.yd. x 587 cu.yds. = \$352.20
Subtotal \$352.20

Move in Loader 1 @ \$109.12 = \$109.12
 Move in Trucks 3 @ \$38.09 = \$114.27
Subtotal \$223.39

Base Cost= \$0.79 Per Cu.Yd. TOTAL PRODUCTION COSTS \$463.90

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST	
E to F: 4+60 to 8+90	2.79	1.30	0.79	4.88	18	814.96	
E to F: 19+00 to 20+70	2.85	1.30	0.79	4.94	40	197.60	
E to F: Spot Rock	2.74	1.30	0.79	4.83	20	96.60	
E to F: Culvert Bedding	2.64	0.90	0.79	4.33	360	1,558.80	
Total C.Y.					587	Sub Total	4,761.31

TOTAL ROCKING COSTS 4,761.31

SUMMARY OF CONSTRUCTION COST

Sale:	<u>Arch Cape</u>		Road: <u>Stockpile on Fox Creek Ridge Road</u> <u>at 4.87 mile.</u>								
Construction -	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">0+00</td> <td style="text-align: left;">stations</td> </tr> <tr> <td style="text-align: right; border-top: 1px solid black;">0.00</td> <td style="text-align: left; border-top: 1px solid black;">miles</td> </tr> </table>	0+00	stations	0.00	miles		<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">+00</td> <td style="text-align: left;">stations</td> </tr> <tr> <td style="text-align: right; border-top: 1px solid black;">0.00</td> <td style="text-align: left; border-top: 1px solid black;">miles</td> </tr> </table>	+00	stations	0.00	miles
0+00	stations										
0.00	miles										
+00	stations										
0.00	miles										
CLEARING AND GRUBBING - Piling - waste at stockpile site		0.29 acres @	\$905.00 per acre = <u>\$262.45</u>								
			TOTAL CLEARING AND GRUBBING								
EXCAVATION - Earthwork for stockpile site		3.00 hr. @	\$130.00 hrs. = <u>\$390.00</u>								
			TOTAL EXCAVATION								
ENDHAUL -			TOTAL ENDHAUL								
			\$0.00								
CULVERTS - MATERIALS & INSTALLATION											
	<u>Culverts</u>										
	0 LF of 18"	\$0.00	0 LF of 24" \$0.00								
	0 LF of 30"	\$0.00	0 LF of 36" \$0.00								
	0 LF of 42"	\$0.00	0 LF of 48" \$0.00								
	0 LF of 54"	\$0.00	0 LF of 60" \$0.00								
	0 LF of 66"	\$0.00	0 LF of 72" \$0.00								
		\$0.00	\$0.00								
	<u>Half Rounds</u>										
	0 LF of 21"	\$0.00	0 LF of 30" \$0.00								
	0 LF of 36"	\$0.00	0 LF of 42" \$0.00								
		\$0.00	\$0.00								
	<u>Culvert Stakes & Markers</u>										
	0 stakes	\$0.00									
	0 markers	\$0.00									
		\$0.00									
ROCK- Stockpile	2,997 cy. of	2'-0"	@ \$9.32 per c.y. = <u>\$27,932.04</u>								
			TOTAL ROCK								
			\$27,932.04								
		\$0.00	TOTAL CULVERTS								
			\$0.00								
SPECIAL PROJECTS											
Grass seed and fertilize -	0.10 acres @	\$220.00 per acre	\$22.00								
			TOTAL SPECIAL PROJECTS								
			\$22.00								
			GRAND TOTAL								
			\$28,606.49								

MOVE-IN CALCULATIONS

Sale: Arch Cape
E to F

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
23.0	Highway	43
2.0	Main Lines	15
0.0	Steep Grades	4

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area			Within		
				Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Area Cost	Total Cost
1	Drill & Compressor	\$137.27		\$46.00	0.00	1.64	1.64	\$75.44	\$212.71
1	Brush Cutter	\$137.27		\$4.00	0.00	1.10	1.1	\$4.40	\$141.67
1	Graders	\$63.27		\$3.65	0.00	1.10	1.1	\$4.02	\$67.29
0	Loader (Small)	\$0.00	1	\$3.55	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Med. & Large)	\$0.00	1	\$9.00	0.00	0.00	0	\$0.00	\$0.00
0	Rollers & Compactors	\$0.00		\$5.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Small)	\$0.00		\$22.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Med.)	\$0.00		\$35.50	0.00	0.00	0	\$0.00	\$0.00
2	Excavators (Large)	\$432.91	1	\$44.80	0.00	1.10	1.1	\$98.56	\$531.47
0	Tired Backhoes/Skidlers	\$0.00		\$3.00	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D6)	\$0.00	2	\$7.10	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D7)	\$0.00	2	\$11.30	0.00	0.00	0	\$0.00	\$0.00
1	Tractor (D8)	\$216.00	2	\$15.10	0.00	1.10	1.1	\$16.61	\$232.61
3	Dump Truck (10 cy +)	\$114.27		\$2.85	0.00	1.10	1.1	\$9.41	\$123.68
0	Dump Truck (Off Hiway)	\$0.00	1	\$4.75	0.00	0.00	0	\$0.00	\$0.00
2	Concrete Truck	\$76.18		\$2.85	0.00	0.00	0	\$0.00	\$76.18
1	Water Truck (2500 Gal)	\$44.77		\$2.85	0.00	1.10	1.1	\$3.14	\$47.91
0	Jaw	\$1,066.00							
0	2-Stage Crusher	\$1,597.00							
0	3-Stage Crusher	\$2,489.00							

TOTAL MOVE-IN COSTS:	\$1,433.52
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MOVE-IN CALCULATIONS

Sale: Arch Cape
A to B and C to D

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
28.6	Highway	50
0.0	Main Lines	15
0.0	Steep Grades	5

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
0	Drill & Compressor	\$0.00		\$46.00	0.00	0.00	0	\$0.00	\$0.00
0	Brush Cutter	\$0.00		\$4.00	0.00	0.00	0	\$0.00	\$0.00
0	Graders	\$0.00		\$3.65	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Small)	\$0.00	1	\$3.55	0.00	0.00	0	\$0.00	\$0.00
0	Loader (Med. & Large)	\$0.00	1	\$9.00	0.00	0.00	0	\$0.00	\$0.00
0	Rollers & Compactors	\$0.00		\$5.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Small)	\$0.00		\$22.00	0.00	0.00	0	\$0.00	\$0.00
0	Excavators (Med.)	\$0.00		\$35.50	0.00	0.00	0	\$0.00	\$0.00
1	Excavators (Large)	\$198.74	1	\$44.80	0.00	18.31	18	\$820.29	\$1,019.03
0	Tired Backhoes/Skidlers	\$0.00		\$3.00	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D6)	\$0.00	2	\$7.10	0.00	0.00	0	\$0.00	\$0.00
1	Tractors (D7)	\$194.14	2	\$11.30	0.00	13.09	13	\$147.92	\$342.06
0	Tractor (D8)	\$0.00	2	\$15.10	0.00	0.00	0	\$0.00	\$0.00
3	Dump Truck (10 cy +)	\$97.81		\$2.85	0.00	6.04	6	\$51.64	\$149.45
0	Dump Truck (Off Hiway)	\$0.00	1	\$4.75	0.00	0.00	0	\$0.00	\$0.00
1	Water Truck (1500 Gal)	\$32.60		\$2.85	0.00	6.04	6	\$17.21	\$49.81
0	Water Truck (2500 Gal)	\$0.00		\$2.85	0.00	0.00	0	\$0.00	\$0.00
0	Jaw	\$1,066.00							
0	2-Stage Crusher	\$1,597.00							
0	3-Stage Crusher	\$2,489.00							

TOTAL MOVE-IN COSTS:	\$1,560.35
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**OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT**

Arch Cape

"STEWARDSHIP IN FORESTRY"

1. **Type of Sale:** Regeneration Harvest (Modified Clearcut, Retention cut); Recovery
2. **Legal Description:** Portions of sections 6 and 7, T1N, R7W, and sections 1 and 12, T1N, R8W, W.M., Tillamook County, Oregon.
3. **Sale Acreage:** The sale boundaries were plotted on a digital orthophotograph and the acreage was calculated with GIS.

ACRES			
Area	Sale	Total	Net
1 Retention cut	123	120	120
2 Modified Clearcut	127	107	107
3 Retention cut	46	42	42
4 Modified Clearcut	33	36	32
5 Retention cut	170	154	154
6 Modified Clearcut	187	160	146
Sub Total: Retention	339	316	316
Modified CC	347	303	285
Total	686	619	601

Sale Acres: Area within the Timber Sale Boundary signs.

Total Acres: For accomplishment reporting: Sale acres; plus green tree retention acres outside the sale boundary; less roads and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Net Acres: Used for calculating the advertised volume: Sale acres; less green tree retention, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

3. **Cruising Procedures:**

A. **Cruise Method:** A total of 156 variable radius full point plots were established on the sale areas. A ratio of two count plots per one measured plot was established. Conifer with less than 7" DBH and alder with less than 10" DBH were not recorded. On the count plots the species and tree count were recorded. On the measure plots the species, diameter at breast height, height to a 5" merchantable top for conifer and 8" for alder, form factor at 16', and grades, lengths and defect of each segment were recorded.

B. **Plot size:** Areas 2,3,5 and 6: 28 BAF. Areas 1 and 4: 40 BAF.

- C. **Point of observation:** 4.5 feet
- D. **Grading System:** Columbia River Official Log Scaling and Grading Bureau rules.
- E. **Diameter Standards:** 4.5 feet (DBH) to the nearest inch.
- F. **Form Point:** 16 feet for conifers.
- G. **Form Factor:** A form factor was recorded for all trees on measure plots. The average for Douglas-fir was 85 and the average form factor for red alder was 82.
5. **Computation Procedure:** The volumes and statistics for the timber cruised were computed using Atterbury Consultants, Inc. SUPER A.C.E. 98 program. The coefficient of variation for the combined sale areas was 46.8%. The standard error was 3.7%. For Areas 1,3 and 5, the retention cut, the largest trees (19 inches and larger DBH) were removed from the sale volume since they are planned to be reserve timber to achieve approximately 36 square feet residual basal area.
6. **Defect and Breakage:** A 5% reduction for defect and breakage was applied to the volume.
7. **Timber Description:** The sale area is composed of 45 year old Douglas-fir with scattered alder. The sale area burned in the 1933 Tillamook Fire and the 1939 Saddle Mountain Fire. Area 1 was planted in 1970. The remaining areas were planted or seeded in 1958. Alder naturally regenerated. Areas 1 and 4 have no prior stand management. Areas 2 and 3 were commercially thinned in 1999 (Cedar Jones Thin). Areas 5 and 6 were commercially thinned in 1997 (Wolf Point Thin). The Douglas-fir has moderate to severe Swiss needle cast symptoms. Portions of the alder components of these stands were aerially sprayed to release planted conifer in the 1970's resulting in alder trees with short boles and many limbs. Most of the alder in Area 1 does not appear to have been sprayed. Needle cast symptoms in Area 1 was rated low to moderate. The dominant trees had a foot or better in height growth in the last year and diameter growth was in the 5 to 7 rings per inch range.
8. **Cruiser Names/Dates:** Bob Thurman, Nick Stumpf, Dwayne Shotton, and Jay Anderson, September 2004.
9. **Revenue Distribution:**
100 % FDF
Tax Code: 56
Deed Numbers: 138/161/96
99% Rehabilitation Obligated
10. **Attachments:**
Volume Summary
Logging Plan



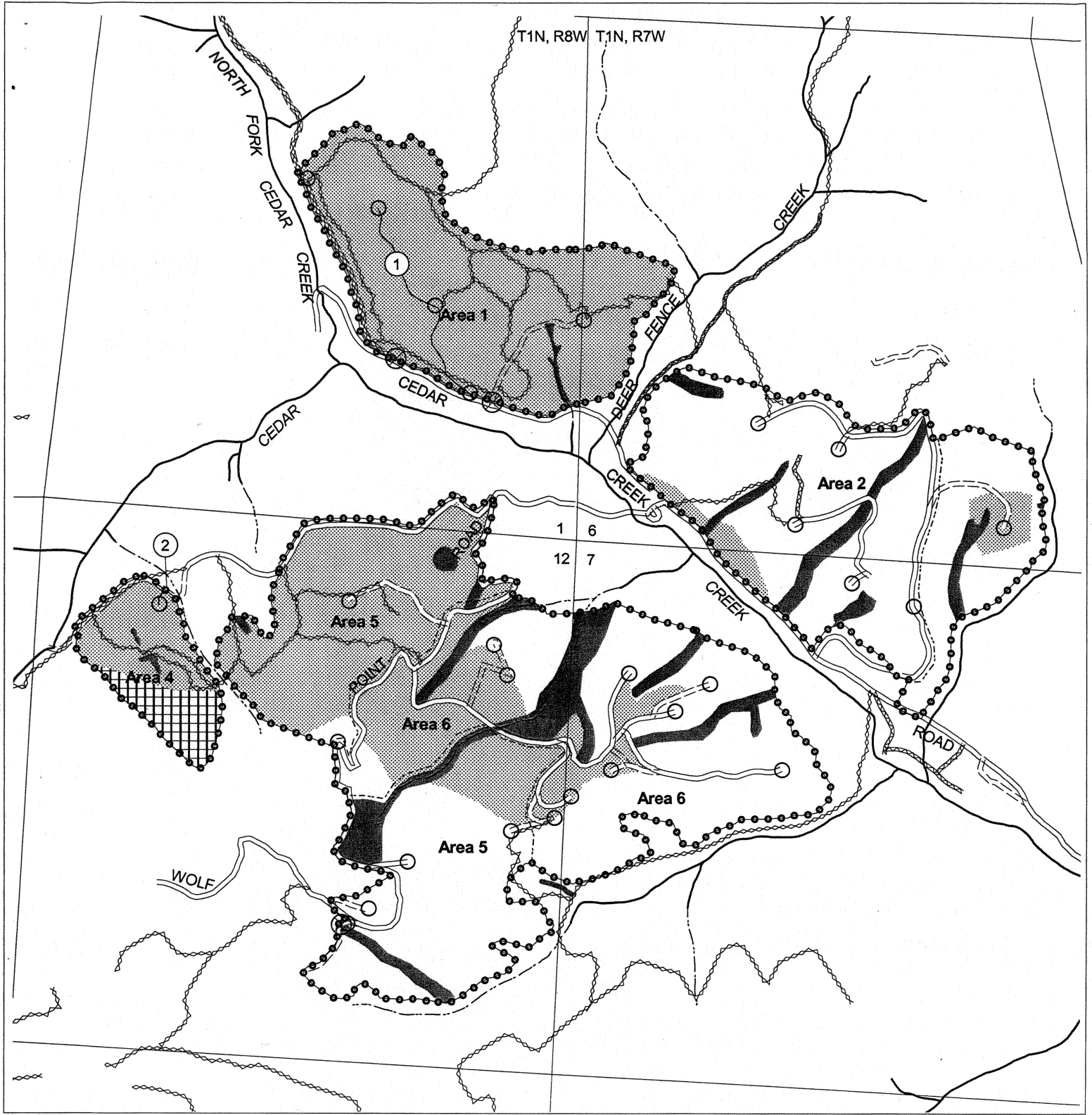
"STEWARDSHIP IN FORESTRY"

Sale Name
Arch Cape
Volume Summary

Modified Clear-cuts, Areas 2,4, and 6					
289 acres					
SPECIES	Basal Area Per Acre	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	109.59	11.3	3266	5%	3103
Red Alder	21.49	1.1	317	5%	301
TOTAL	131.08	12.4	3583		3404

Retention cuts, Areas 1,3, and 5					
316 acres					
SPECIES	Basal Area Per Acre	Vol/Acre MBF	Volume MBF	D & B	Net Vol MBF
Douglas-fir	106.52	11.2	3524	5%	3348
Red Alder	30.48	2.0	634	5%	602
TOTAL	137	13.2	4158		3950

TOTAL SALE VOLUME			
SPECIES	MBF		Net Vol. (MBF)
Douglas-fir	6790		6451
Red Alder	951		903
TOTAL	7741		7354



LOGGING PLAN
 Timber Sale Contract No. 341-05-65
 Arch Cape
 Portions of Sections 1 and 12,
 T1N, R8W, W. M.
 and Portions of Sections 6 and 7,
 T1N, R7W, W.M.
 Tillamook County, Oregon

Area	Type of Operation	Acres	
		Sale	Net
1	Retention Cut	123	120
2	Modified Clearcut	127	107
3	Retention Cut	46	42
4	Modified Clearcut	33	32
5	Retention Cut	170	154
6	Modified Clearcut	187	146
Total		686	601

1000 0 1000 Feet

Tillamook District GIS
 11-18-04
 This product is for informational use and
 may not have been prepared for, or suitable
 for legal, engineering, or surveying purposes.



- Landing
- ▲ Domestic water supply
- ⊗ Blocked
- ▭ Cable yarding
- ▨ Ground yarding
- ▩ Helicopter yarding
- ▧ Downhill yarding
- Buffer
- ▤ Non-required thinning
- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream
- Perennial Type-N stream
- == Surfacd road
- === Unsurfaced road
- State highway
- County road
- Non-project road
- ② Swing road
- Abandoned road
- OHV trail
- Non-motorized trail
- T T Transmission line



OREGON DEPARTMENT OF FORESTRY WRITTEN PLAN

SALE NAME: Arch Cape

LOCATION: Portions of Sections 6 and 7 T1N, R7W, and Sections 1 and 12 T1N, R8W, W.M., Tillamook County, Oregon.

ACTIVITIES: Cable corridors across Type F riparian management areas.

PROTECTED RESOURCES:

Streams: Medium Type F include: Deer Fence Creek, Arch Cape Mill Creek and the unnamed tributary of Cedar Creek east of Area 3. Large Type F include: Cedar Creek and the North Fork of Cedar Creek

Riparian Management Area (RMA): The area within 100 feet and 75 feet slope distance from the high water mark on each side of large and medium Type F streams.

PROTECTION MEASURES:

YARDING :

- All trees, outside of cable corridors, in the RMA are reserved from cutting.
- Trees felled for cable corridors within the RMA will be incidental and will not be removed.
- Cable yarding lines will be pulled out of the RMA prior to rigging the next yarding road.
- If trees or logs fall or slide into a stream channel they will not be limbed, bucked, or removed without approval from State.
- Cable yarding lines across RMA's will be an average of at least 150 feet apart.

PREPARED BY: Nick Stumpf
Forester, Central Unit
November 29, 2004

OREGON DEPARTMENT OF FORESTRY
WRITTEN PLAN
FOR PROJECT WORK ROAD SEGMENT "E to F" ONLY

SALE NAME: Arch Cape

PROTECTED WATERS Wilson River, Large Type F, and 2 Unnamed Tributary of the Wilson River, one small Type F and one small Type N.

LOCATIONS: Portions of the following: Sections 11 T1S, R8W, W.M. Tillamook County, Oregon.

ACTIVITIES: Culvert installation and rip-rap placement in Type F stream, road reconstruction, and Bottomless Structure installation, rip-rap placement in unnamed tributary.

PROTECTION MEASURES:

- No in stream activity will be conducted prior to July 1st or after September 15th without prior approval.
- All necessary measures will be taken to prevent sediment from entering "live" streams, including but not limited to:
 - Machine activity in the stream and disturbance of existing vegetation will be kept to a minimum.
 - Work will be performed only during dry weather periods and low water stream flows.
 - Operations will cease when rain or periods of high stream flows result in a visual increase in turbidity.
 - Stream water will be diverted around the work areas when water quality is likely to be jeopardized.
 - Ditchouts and culvert leadoff ditches will be constructed to direct water with sediment away from streams.
 - Sediment catch basins will be constructed to remove sediment from ditchline water.
 - Fill material will be placed and compacted in 8 inch lifts. Fill slopes will be constructed at a 1 ½:1 fill width to height ratio.
 - Waste material will be end-hauled to stable locations marked in the field.
 - Riprap rock will be placed by a track mount excavator to minimize erosion.
 - All disturbed soil will be grass seeded, fertilized and mulched to minimize erosion.

PIPE GEOMETRY FOR FISH PASSAGE CULVERT:

Unnamed Small Type F Tributary of Wilson River

- The existing stream gradient is 5.0%. The full bank stream width is 8.5 feet.
- Bed material consists of medium cobbles and fines.
- A 103" x 71" x 48' aluminized steel culvert will be installed at 3.5%.
- The inlet invert of the culvert will be placed 3.68 feet below the existing stream gradient. The result will be an embedded natural stream bottom through the length of

the culvert. This will result in a cross sectional area at the inlet of 21.1 square feet which can handle a maximum flow of 130 cubic feet per second.

- The 100 year peak flow for this drainage is 34 cubic feet per second.
- Pit-run shall be placed to a depth of one foot throughout the entire length and width of the culvert.

The site will be monitored to insure that additional embedding is achieved. Further information is available in Exhibit "B" of the contract.

PIPE GEOMETRY FOR BOTTOMLESS STRUCTURE:

Unnamed Small Type N Tributary of Wilson River (site approx. 650 feet away from the Wilson River)

- Bed material consists of bedrock.
- A structure providing a minimum of 16' width x 5'3" height shall be installed.
- The 100 year peak flow for this drainage is 100 cubic feet per second.

The site will be surveyed and a design done by a licensed engineer. Further information will be available at that time.

PREPARED BY: David L. Stone, Road Specialist
November 30, 2004