"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Cost Summary
# Wolf's Foot
# Sale 341-03-30

**District: Tillamook** **Date:** 5/9/03

| | Conifer | Hardwood | Total |
|---|---|---|---|
| **Gross Timber Sale Value** | $1,699,596.60 | $0.00 | $1,699,596.60 |
| | | **Project Work** | ($205,198.10) |
| | | **Advertised Value** | $1,494,398.50 |

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Timber Description
# Wolf's Foot
# Sale 341-03-30

**District:** Tillamook

**Location:** Sections 7,18, T1N, R7W, and Section 13, T1N, R8W, W.M., Tillamook County, Oregon

**Date:** 5/9/03 **Stand Stocking:** 40%

| Species | Avg. DBH | Amortized % | Recovery % |
|---|---|---|---|
| Douglas - Fir | 14 | 0 | 95 |

| Volume by Grade | Douglas - Fir | Total |
|---|---|---|
| 2S | 1,670 | 1,670 |
| 3S | 4,521 | 4,521 |
| 4S | 583 | 583 |
| Total | 6,774 | 6,774 |

**Comments:** Pond Values Used: 1st Quarter 2003 + Local Pond Values

See additional cost sheet for additional P&R and Road Maintenance.

Hardwood pond value of $515/MBF was obtained locally in March 2003.
Hardwood stumpage: $515/MBF - $255.96 logging cost = 259.04

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Logging Conditions
# Wolf's Foot
# Sale 341-03-30

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**Combination#: 1** Douglas - Fir 87.39%

**Yarding Distance:** Medium (800 ft) **Downhill Yarding** No

**Logging System:** Cable: Medium Tower >40 - <70 **Process:** Manual Delimbing

**Tree Size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

**Loads/Day:** 7 **Bd. Ft./Load:** 3,400

**Cost/MBF:** $139.35

**Machines:**

Log Loader (A)

Tower Yarder (Medium)

**Combination#: 2** Douglas - Fir 12.61%

**Yarding Distance:** Short (400 ft) **Downhill Yarding** Yes

**Logging System:** Track Skidder **Process:** Manual Falling/Delimbing

**Tree Size:** Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

**Loads/Day:** 8 **Bd. Ft./Load:** 3,400

**Cost/MBF:** $120.05

**Machines:**

Log Loader (B)

Track Skidder

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Logging Costs
# Wolf's Foot
# Sale 341-03-30

**Date:** 5/9/03

**Operating Seasons:** 2.4 **Profit & Risk:** 20%

**Project Costs:** $205,198 **Other Costs (P/R):** $17,508

**Slash Disposal:** $0 **Other Costs:** $8,126

**Road Maintenance:** $0.96

| Miles of Road | | | |
|---|---|---|---|
| **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 | 3.4 |

## Local Pond Values

| Date | Species | Grade | Value |
|---|---|---|---|
| 5/9/03 | Douglas - Fir | 2S | $530.00 |
| 5/9/03 | Douglas - Fir | 3S | $505.00 |
| 5/9/03 | Douglas - Fir | 4S | $455.00 |

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Logging Costs Breakdown
# Wolf's Foot
# Sale 341-03-30

| Costs | Douglas - Fir |
|---|---|
| Logging | 136.92 |
| Road Maintenance | 1.01 |
| Fire Protection | 0.96 |
| Hauling | 69.16 |
| Other (P/R appl.) | 2.58 |
| Profit & Risk | 42.13 |
| Slash Disposal | 0.00 |
| Scaling | 2.00 |
| Other | 1.20 |
| Total | 255.96 |

| | |
|---|---|
| Amortization | 0.00 |
| Pond Value | 506.86 |
| Stumpage | 250.90 |
| Amortized | 0.00 |

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Summary
# Wolf's Foot
# Sale 341-03-30

**Amortized**

| | Douglas - Fir |
|---|---|
| MBF | 0.00 |
| Value | 0.00 |
| Total | 0.00 |

**Unamortized**

| | Douglas - Fir |
|---|---|
| MBF | 6,774.00 |
| Value | 250.90 |
| Total | 1,699,596.60 |

## Gross Timber Sale Value

**Recovery $1,699,596.60**

Prepared by: Tod Haren Date: 5/9/03

District: Tillamook Phone: (503) 842-2545

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Additional Cost Worksheet
# Wolf's Foot
# Sale 341-03-30

| | |
|---|---|
| Cable Yarding Vol. (MBF): | 5920 |
| Ground Yarding Vol. (MBF): | 854 |
| Total Sale Volume: | **6774** |

| ADDITIONAL COSTS - PROFIT & RISK TO BE ADDED | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Yarding & Loading: | | | Cost / MBF | | | Volume (MBF) | | |
| Brand & Paint: | | | $ 2 | x | | 6774 | = | $13,548 |
| Truck Assist/Tractor Swing | | | $ 30 | x | | 132 | = | $3,960 |
| | | | Cost / Each | | | **OTHER COSTS TOTAL** | | $17,508 |
| **ADDITIONAL COSTS - PROFIT & RISK INCLUDED** | | | | | | | | |
| Non-Project Roads (See Logging Plan in Cruise Report) | | | | | | | | |
| Non-Proj. Rd. 1 | 17 | Stations | **x** | $ | 90 | = | | $1,530 |
| Swing Road "A" | 3 | Stations | **x** | $ | 90 | = | | $270 |
| **Totals** | 20 | | | | | | | $1,800 |
| | Stations | x | cys | x | $/cy | | | |
| Approach Rock: Pit-Run | 3 | | 50 | x | $6.00 | | | $900 |
| Bank Slough/Minor Slides/Catch Basins (per CY)[1] | | | $ 19 | x | 150 | | | $2,850 |
| OHV Trail Clearing (per station) | | | $ 40 | x | 4.4 | | | $176 |
| Dust Abatement (per season)[2] | | | $ 1,200 | x | 2 | | | $2,400 |
| | | | | | **OTHER COSTS TOTAL** | | | **$8,126** |

| ROAD MAINTENANCE | | | | | | |
|---|---|---|---|---|---|---|
| | | $/Cu.Y | MMBF | Miles | cu.yds/mile | $/MBF |
| Surfacing[3]: | Pit-Run | $6.00 | 6.8 | 4.5 | 25 | $0.68 |
| | Crushed | $18.00 | 6.8 | 0.4 | 25 | $0.18 |
| | | $/Mile | MMBF | Miles | | |
| Grading[4] | | $ 500 | 6.8 | 0.4 | | $0.10 |
| | | | | | TOTAL ROAD MAINTENANCE COST / MBF: | **$0.96** |

[1]Includes cost for excavating, and hauling material from bank slough and minor slides(50 cys)

[2]Cost for lignin sulfonate application as dust abatement material.

[3]Assumes 25 cys rock per MMBF per mile

[4]Grading once per 2 MMBF hauled

## PROJECT SUMMARY SHEET

Sale: **WOLF'S FOOT**

**CONSTRUCTION**

| | | | | |
|---|---|---|---|---|
| Point | A to B | 27+65 | stations = | $21,649.48 |
| Point | C to D | 7+30 | stations = | $4,404.82 |
| | | | **SUBTOTAL CONSTRUCTION** | **$26,054.30** |

**IMPROVEMENT**

| | | | | |
|---|---|---|---|---|
| Point | A to B | 180+10 | stations = | $141,015.23 |
| Point | C to D | 29+60 | stations = | $17,860.65 |
| Point | E to F | 14+00 | stations = | $15,861.75 |
| | | | **SUBTOTAL IMPROVEMENT** | **$174,737.64** |

**SPECIAL PROJECTS**

| | |
|---|---|
| Remove Culverts from State Lands | **$326.07** |
| **SUBTOTAL SPECIAL PROJECTS** | **$326.07** |

**MOVE IN** **$4,080.10**

**GRAND TOTAL** **$205,198.10**

# SUMMARY OF CONSTRUCTION COST



Sale: WOLF'S FOOT  Road: A to B

Construction - 27+65 stations, 0.52 miles  Improvement - 180+10 stations, 3.41 miles

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **CLEARING AND GRUBBING -** | | | | | | | |
| Roadside Brushing | 1.10 | miles | @ | $1,000.00 | per mile = | $1,099.05 | |
| Side cast | 0.048 | acres | @ | $540.00 | per acre = | $25.72 | |
| Widening | 0.101 | acres | @ | $540.00 | per acre = | $54.30 | |
| Scattering | 9.150 | acres | @ | $815.00 | per acre = | $7,457.25 | |
| Piling | 0.000 | acres | @ | $905.00 | per acre = | $0.00 | |
| Endhaul | 0.000 | acres | @ | $1,500.00 | per acre = | $0.00 | |
| | | | | | TOTAL CLEARING AND GRUBBING | | **$8,636.33** |
| **EXCAVATION -** | | | | | | | |
| Road Earthwork | 21.50 | sta. | @ | $0.00 | per sta. = | $0.00 | |
| Road Earthwork | 135.80 | sta. | @ | $20.00 | per sta. = | $2,716.00 | |
| Road Earthwork | 20.80 | sta. | @ | $65.00 | per sta. = | $1,352.00 | |
| Road Earthwork | 27.65 | sta. | @ | $85.00 | per sta. = | $2,350.25 | |
| Widening | 1437 | cy. | @ | $1.40 | per c.y.= | $2,011.80 | |
| Pullback | 139 | cy. | @ | $1.40 | per c.y.= | $194.60 | |
| Remove outside berm | 130 | cy. | @ | $1.40 | per c.y.= | $182.00 | |
| Slope Stabilization Prep. | 70 | cy. | @ | $1.40 | per c.y.= | $98.00 | |
| Slope Stabilization Prep. | 19 | cy. | @ | $3.20 | per c.y.= | $60.80 | |
| Full Bench | 2665 | cy. | @ | $1.40 | per c.y.= | $3,731.00 | |
| Widening/Full Bench | 2233 | cy. | @ | $1.40 | per c.y.= | $3,126.20 | |
| | | | | | TOTAL EXCAVATION | | **$15,822.65** |
| **ENDHAUL -** | | | | | | | |
| Widening | 1437 | cy. | @ | $0.92 | per c.y.= | $1,322.04 | |
| Pullback | 139 | cy. | @ | $0.94 | per c.y.= | $130.66 | |
| Remove outside berm | 130 | cy. | @ | $0.95 | per c.y.= | $123.50 | |
| Slope Stabilization Prep. | 89 | cy. | @ | $1.02 | per c.y.= | $90.78 | |
| Full Bench | 2665 | cy. | @ | $1.40 | per c.y.= | $3,731.00 | |
| Widening/Full Bench | 2233 | cy. | @ | $1.10 | per c.y.= | $2,456.30 | |
| Spread & compact | 6693 | cy. | @ | $0.35 | per c.y.= | $2,342.55 | |
| | | | | | TOTAL ENDHAUL | | **$10,196.83** |

**CULVERTS - MATERIALS & INSTALLATION**

| | | | | | |
|---|---|---|---|---|---|
| Culverts | | | | | |
| 42 | LF of 18" | $619.50 | 78 | LF of 24" | $1,384.50 |
| 0 | LF of 30" | $0.00 | 42 | LF of 36" | $1,155.70 |
| 82 | LF of 42" | $2,492.70 | 60 | LF of 48" | $3,833.10 |
| 0 | LF of 54" | $0.00 | 52 | LF of 60" | $3,311.70 |
| 0 | LF of 66" | $0.00 | 0 | LF of 72" | $0.00 |
| | | $3,112.20 | | | $9,685.00 |
| Half Rounds | | | | | |
| 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 |
| Culvert Stakes & Markers | | | | | |
| 0 | stakes | $0.00 | | | |
| 8 | markers | $48.00 | | | |
| | | $48.00 | | TOTAL CULVERTS | **$12,845.20** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **SURFACING-** | | | | | | | | |
| 0+00 to | 21+15 | 530 | cy. of | Crushed | @ | $18.05 | per c.y.= | $9,564.38 |
| 21+15 to | 183+75 | 11,847 | cy. of | Pit-Run | @ | $6.00 | per c.y.= | $71,082.00 |
| 183+75 to | 207+75 | 1,378 | cy. of | Pit-Run | @ | $5.95 | per c.y.= | $8,199.10 |
| 81+05 Bedding/backfill | | 40 | cy. of | Crushed | @ | $19.40 | per c.y.= | $775.87 |
| Riprap slope stabilization | | 280 | cy. of | Riprap | @ | $6.92 | per c.y.= | $1,937.60 |
| Riprap slope protection | | 20 | cy. of | Riprap | @ | $6.92 | per c.y.= | $138.40 |
| Riprap energy dissipator | | 50 | cy. of | Riprap | @ | $6.92 | per c.y.= | $346.00 |
| Riprap fill armor | | 60 | cy. of | Riprap | @ | $7.16 | per c.y.= | $429.60 |
| Riprap subgrade protection | | 20 | cy. of | Riprap | @ | $6.84 | per c.y.= | $136.80 |
| Riprap subgrade protection | | 10 | cy. of | Riprap | @ | $6.62 | per c.y.= | $66.20 |
| Riprap subgrade protection | | 10 | cy. of | Riprap | @ | $6.24 | per c.y.= | $62.40 |
| Pit-run stabilization | | 78 | cy. of | Pit-run | @ | $6.22 | per c.y.= | $485.16 |
| Pit-run culvert backfill | | 20 | cy. of | Pit-run | @ | $6.22 | per c.y.= | $124.40 |
| Pit-run roadway fill | | 120 | cy. of | Pit-run | @ | $6.22 | per c.y.= | $746.40 |
| Pit-run ditch/emb. fill | | 50 | cy. of | Pit-run | @ | $6.22 | per c.y.= | $311.00 |
| | | | | | | | TOTAL SURFACING | **$94,405.31** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **SPECIAL PROJECTS** | | | | | | |
| Re-shape dented culvert inlet - | 1.00 | hours | @ | $28.00 | per hour | $28.00 |
| Remove gate assembly - | 0.50 | hours | @ | $88.00 | per hour | $44.00 |
| Construct waste areas - | 7.00 | hours | @ | $130.00 | per hour | $910.00 |
| Construct ditchouts - | 13.00 | | @ | $60.00 | each | $780.00 |
| Fill roadway @ area of 127+80 - | 2.50 | hours | @ | $130.00 | per hour | $325.00 |
| Fill ditch/emb from 128+50 to 129+00 - | 1.50 | hours | @ | $130.00 | per hour | $195.00 |
| Remove log cribbing @ 166+70 - | 0.50 | hours | @ | $130.00 | per hour | $65.00 |
| Grade and shape road - | 207.75 | stations | @ | $14.20 | per station | $2,950.05 |
| Construct/Install rubber water diverter - | 18.00 | | @ | $300.00 | each | $5,400.00 |
| Subgrade protection areas - | 3.00 | | @ | $153.47 | each | $460.41 |
| Roll subgrade w/ vibratory roller prior to rocking - | 207.75 | stations | @ | $11.00 | per station | $2,285.25 |
| Remove log culvert @ stations: 81+05, 109+20 & 122+40 - | 13.00 | hours | @ | $130.00 | per hour | $1,690.00 |
| Remove large stumps - | 1.00 | lump sum | @ | $1,875.00 | | $1,875.00 |
| Grass seed and fertilize - | 7.80 | acres | @ | $180.00 | per acre | $1,403.58 |
| Mulching - | 2.347 | acres | @ | $1,000.00 | per acre | $2,347.11 |
| | | | | | TOTAL SPECIAL PROJECTS | **$20,758.39** |

**GRAND TOTAL** **$162,664.71**

# SUMMARY OF CONSTRUCTION COST

Sale: **WOLF'S FOOT** Road: **C to D**

Construction - 7+30 stations, 0.14 miles Improvement - 29+60 stations, 0.56 miles

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CLEARING AND GRUBBING - | | | | | | | | | |
| Side cast | | | | 0.00 | acres @ | $540.00 | per acre = | $0.00 | |
| Widening | | | | 0.00 | acres @ | $540.00 | per acre = | $0.00 | |
| Scattering | | | | 3.398 | acres @ | $815.00 | per acre = | $2,769.05 | |
| Piling | | | | 0.00 | acres @ | $905.00 | per acre = | $0.00 | |
| Endhaul | | | | 0.00 | acres @ | $1,500.00 | per acre = | $0.00 | |
| | | | | | | | TOTAL CLEARING AND GRUBBING | | **$2,769.05** |
| EXCAVATION - | | | | | | | | | |
| Road Earthwork | 0+00 | to | 11+50 | 11.5 | sta. @ | $65.00 | per sta. = | $747.50 | |
| Drift | 11+50 | to | 14+15 | 2.7 | sta. @ | $125.00 | per sta. = | $331.25 | |
| Road Earthwork | 14+15 | to | 17+00 | 2.9 | sta. @ | $65.00 | per sta. = | $185.25 | |
| Road Earthwork | 17+00 | to | 22+90 | 5.9 | sta. @ | $85.00 | per sta. = | $501.50 | |
| Drift | 22+90 | to | 25+90 | 3.0 | sta. @ | $125.00 | per sta. = | $375.00 | |
| Road Earthwork | 25+90 | to | 36+90 | 11.0 | sta. @ | $85.00 | per sta. = | $935.00 | |
| Drill & shoot | | | | 300 | cy. @ | $2.10 | per c.y.= | $630.00 | |
| | | | | | | | TOTAL EXCAVATION | | **$3,705.50** |
| ENDHAUL - | | | | | | | | | |
| Widening/Full Bench | 2+30 | to | 6+70 | 1063 | cy. @ | $0.90 | per cy. = | $959.36 | |
| Widening/Full Bench | 11+50 | to | 12+80 | 40 | cy. @ | $0.96 | per cy. = | $38.48 | |
| Widening/Full Bench | 29+35 | to | 31+40 | 102 | cy. @ | $0.98 | per cy. = | $99.93 | |
| | | | | | | | TOTAL ENDHAUL | | **$1,097.76** |

CULVERTS - MATERIALS & INSTALLATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Culverts | | | | | | |
| 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 | |
| Half Rounds | | | | | | |
| 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 | |
| Culvert Stakes & Markers | | | | | | |
| 0 | stakes | $0.00 | | | | |
| 0 | markers | $0.00 | | | | |
| | | $0.00 | | TOTAL CULVERTS | | **$0.00** |

SURFACING-

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0+00 | to | 36+90 | 2,002 | cy. of | Pit-Run | @ | $6.09 per c.y.= | $12,192.18 |
| | | | | | | | TOTAL SURFACING | **$12,192.18** |

| SPECIAL PROJECTS | | | | | |
|---|---|---|---|---|---|
| Construct waste area @ 8+50 - | 0.50 | hours @ | $130.00 | per hour | $65.00 |
| Construct waste area @ 26+65 - | 0.50 | hours @ | $130.00 | per hour | $65.00 |
| Remove large stumps - | 1.00 | lump sum @ | $687.50 | | $687.50 |
| Grade and shape road - | 36.90 | stations @ | $14.20 | per station | $523.98 |
| Fill roadway @ area of 24+90 - | 2.50 | hours @ | $130.00 | per hour | $325.00 |
| Roll subgrade w/ vibratory roller prior to rocking - | 36.90 | stations @ | $11.00 | per station | $405.90 |
| Grass seed and fertilize - | 2.38 | acres @ | $180.00 | per acre | $428.60 |
| | | | | TOTAL SPECIAL PROJECTS | **$2,500.98** |

**GRAND TOTAL** **$22,265.47**

# SUMMARY OF CONSTRUCTION COST

Sale: **WOLF'S FOOT** Road: **E to F**

Construction - 0+00 stations, 0.00 miles

Improvement - 14+00 stations, 0.27 miles

| | | | | | | |
|---|---|---|---|---|---|---|
| CLEARING AND GRUBBING - | | | | | | |
| Side cast | | 0.00 | acres @ | $540.00 | per acre = | $0.00 |
| Widening | | 0.00 | acres @ | $540.00 | per acre = | $0.00 |
| Scattering | | 0.040 | acres @ | $815.00 | per acre = | $32.60 |
| Piling | | 0.00 | acres @ | $905.00 | per acre = | $0.00 |
| Endhaul | | 0.00 | acres @ | $1,500.00 | per acre = | $0.00 |
| | | | | | TOTAL CLEARING AND GRUBBING | **$32.60** |
| EXCAVATION - | 3690.00 | | | | | |
| Road Earthwork | 0+00 to 14+00 | 4.0 | sta. @ | $0.00 | per sta. = | $0.00 |
| | | | | | TOTAL EXCAVATION | **$0.00** |
| ENDHAUL - | | | | | | |
| Culvert excavation to waste area | | 450 | cy @ | $0.67 | per cy | $302.16 |
| Place and compact | | 450 | cy @ | $0.35 | per cy | $157.50 |
| | | | | | TOTAL ENDHAUL | **$459.66** |

CULVERTS - MATERIALS & INSTALLATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Culverts | | | | | | |
| 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 | 102 | LF of 103"x71" | $11,643.20 | |
| | | $0.00 | | | $11,643.20 | |
| Half Rounds | | | | | | |
| 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 | |
| Culvert Stakes & Markers | | | | | | |
| 0 | stakes | $0.00 | | | | |
| 0 | markers | $0.00 | | | | |
| | | $0.00 | | | TOTAL CULVERTS | **$11,643.20** |

| | | | | | | |
|---|---|---|---|---|---|---|
| SURFACING- | | | | | | |
| 1+00 to 3+00 and 12+00 to 14+00 | 88 | cy. of | Crushed | @ | $20.08 per c.y.= | $1,767.31 |
| Riprap fill armor (from Hwy pit) - | 130 | cy. of | Riprap (12"-24") | @ | $5.11 per c.y.= | $663.83 |
| Culvert bedding/backfill (from Ceder Ck Stockpile) | 310 | cy. of | Crushed | @ | $2.93 per c.y.= | $906.86 |
| In-Stream Riprap placement @ outlet | 20 | cy. of | Riprap (24"-48") | @ | $5.11 per c.y.= | $102.13 |
| | | | | | TOTAL SURFACING | **$3,440.12** |

| | | | | |
|---|---|---|---|---|
| SPECIAL PROJECTS | | | | |
| Grade and shape road - | 4.00 | stations @ | $9.75 per station | $39.00 |
| Roll subgrade w/ vibratory roller prior to rocking - | 4.00 | stations @ | $11.00 per station | $44.00 |
| Grass seed and fertilize - | 0.52 | acres @ | $180.00 per acre | $92.98 |
| Mulch ( @ culvert area) - | 0.11 | acres @ | $1,000.00 per acre | $110.19 |
| | | | TOTAL SPECIAL PROJECTS | **$286.17** |

**GRAND TOTAL** **$15,861.75**

# CRUSHED ROCK PIT DEVELOPMENT COST SUMMARY

| | | | |
|---|---|---|---|
| Pit: | COMMERCIAL SOURCE | Location: | TILLAMOOK COUNTY |
| Sale: | WOLF'S FOOT | Road: | 658 c.y. |
| Swell: | 1.30 | Stockpile: | c.y. |
| Shirinkage | 1.16 | Total Truck Loads: | 658 c.y. |
| Drill Pct.: | 0% | In Place Total: | 506 c.y. |

| | | | |
|---|---|---|---|
| Road Brushing: | 0 acres @ | $905.00 per acre = | $0.00 |
| Clear and grub | 0 acres @ | $815.00 per acre = | $0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Drill & Shoot: | $2.10 | /cu.yd. | x | 0 cu.yds. | = | $0.00 |
| Push Rock: | $0.60 | /cu.yd. | x | 0 cu.yds. | = | $0.00 |
| Load crusher: | $0.60 | /cu.yd. | x | 0 cu.yds. | = | $0.00 |
| Crushing | $2.30 | /cu.yd. | x | 0 cu.yds. | = | $0.00 |
| Load Dump Truck: | $0.60 | /cu.yd. | x | 0 cu.yds. | = | $0.00 |
| | | | | | Subtotal | $0.00 |

| | |
|---|---|
| Purchase 1 1/2"-0" Crushed Rock from Commercial Source | $5,101.83 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| Subtotal | $5,101.83 |

| | |
|---|---|
| TOTAL PRODUCTION COSTS | $5,101.83 |

1 1/2"-0" Crushed Base Cost= $7.75 Per Cu.Yd.

| 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 | $8.52 | $1.78 | $7.75 | $18.05 | 530 | | $9,569.79 |
| A-B Culvert bedding | $11.05 | $0.60 | $7.75 | $19.40 | 40 | | $775.87 |
| E to F | $10.56 | $1.78 | $7.75 | $20.08 | 88 | | $1,767.31 |
| | | | | | 658 | Subtotal | $12,112.97 |

| | |
|---|---|
| TOTAL ROCKING COSTS | $12,112.97 |

# ROCK DEVELOPMENT COST SUMMARY

| | | | |
|---|---|---|---|
| Pit: | Pit-Run | Location: | SW 1/4, NE 1/4, SEC 13, T1N, R8W, W.M. |
| Sale: | WOLF'S FOOT | Road: | 15945 c.y. |
| Swell: | 1.30 | Stockpile Base: | c.y. |
| Shirinkage | 1.16 | Total Truck Loads: | 15945 c.y. |
| Drill Pct.: | 75% | In Place Total: | 12265 c.y. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | $2,248.00 |
| Drill and Shoot | $2.10 | /cu.yd. | x | 9199 | cu.yds. | = | $19,317.98 |
| Rip Rock | $1.75 | /cu.yd. | x | 3536 | cu.yds. | = | $6,188.44 |
| Push Rock | $0.60 | /cu.yd. | x | 15945 | cu.yds. | = | $9,567.00 |
| Load Dump Truck: | $0.60 | /cu.yd. | x | 15945 | cu.yds. | = | $9,567.00 |
| Stockpile Oversized | $1.40 | /cu.yd. | x | 1595 | cu.yds. | = | $2,232.30 |
| | | | | | | Subtotal | $49,120.72 |
| Move in Drill & Compressor | | | | | | | 276.58 |
| Move in Loader | | | | | | | 391.46 |
| Move in D8 | | | | | | | 433.09 |
| Move in Roller | | | | | | | 276.58 |
| Move-in Trucks - | | | | | | | 182.40 |
| | | | | | | Subtotal | $1,560.11 |

| | |
|---|---|
| TOTAL PRODUCTION COSTS | $50,680.83 |

Base Cost= $3.18 Per Cu.Yd.

| 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 (12" lift) | $1.92 | $0.90 | $3.18 | $6.00 | 11847 | $71,082.00 |
| A to B (9" lift) | $1.87 | $0.90 | $3.18 | $5.95 | 1378 | $8,199.10 |
| C to D (9" lift) | $2.01 | $0.90 | $3.18 | $6.09 | 2002 | $12,192.18 |
| Riprap A to B | $2.34 | $1.40 | $3.18 | $6.92 | 350 | $2,422.00 |
| Riprap A to B | $2.58 | $1.40 | $3.18 | $7.16 | 60 | $429.60 |
| Riprap A to B | $2.26 | $1.40 | $3.18 | $6.84 | 20 | $136.80 |
| Riprap A to B | $2.04 | $1.40 | $3.18 | $6.62 | 10 | $66.20 |
| Riprap A to B | $1.67 | $1.40 | $3.18 | $6.24 | 10 | $62.40 |
| Misc. Pit-run A to B | $1.64 | $1.40 | $3.18 | $6.22 | 268 | $1,666.96 |
| | | | | Total C.Y. | 15945 | Sub Total $94,461.68 |

| | |
|---|---|
| TOTAL ROCKING COSTS | $94,461.68 |

# CRUSHED ROCK PIT DEVELOPMENT COST SUMMARY

| | | | |
|---|---|---|---|
| Pit: | CEDER CREEK | Location: | NE 1/4, NW 1/4 SEC 7, T1N, R7W, W.M. |
| Sale: | WOLF'S FOOT | Road: | 310 c.y. |
| Swell: | 1.30 | Stockpile: | c.y. |
| Shirinkage | 1.16 | Total Truck Loads: | 310 c.y. |
| Drill Pct.: | 0% | In Place Total: | 238 c.y. |

| | | | |
|---|---|---|---|
| Road Brushing: | 0 acres @ | $905.00 per acre = | $0.00 |
| Clear and grub | 0 acres @ | $815.00 per acre = | $0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Drill & Shoot: | $2.10 | /cu.yd. | x | 0 | cu.yds. = | $0.00 |
| Push Rock: | $0.60 | /cu.yd. | x | 0 | cu.yds. = | $0.00 |
| Load crusher: | $0.60 | /cu.yd. | x | 0 | cu.yds. = | $0.00 |
| Crushing | $2.30 | /cu.yd. | x | 0 | cu.yds. = | $0.00 |
| Load Dump Truck: | $0.60 | /cu.yd. | x | 0 | cu.yds. = | $0.00 |
| | | | | | Subtotal | $0.00 |

| | |
|---|---|
| Load 1 1/2"-0" Crushed Rock from stockpile | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| | $0.00 |
| Subtotal | $0.00 |

| | |
|---|---|
| TOTAL PRODUCTION COSTS | $0.00 |

1 1/2"-0" Crushed Base Cost= $0.00 Per Cu.Yd.

| 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 | $2.33 | $0.60 | $0.00 | $2.93 | 310 | | $906.86 |
| | | | | | 310 | Subtotal | $906.86 |

| | |
|---|---|
| TOTAL ROCKING COSTS | $906.86 |

MOVE-IN CALCULATIONS

Sale: **WOLF'S FOOT**

| LOWBOY HAUL (Round Trip) | | |
|---|---|---|
| DISTANCE | ROADWAY | AVE SPEED (MPH) |
| 36.0 | Highway | 40 |
| 1.2 | Main Lines (Off Road) | 10 |
| 0.0 | Pulling 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 | Drill & Compressor | $189.17 | | $46.00 | 0.00 | 3.01 | 3.0133 | $138.61 | $327.78 |
| 1 | Brush Cutter | $189.17 | | $4.00 | 0.00 | 1.10 | 1.1 | $4.40 | $193.57 |
| 2 | Graders | $183.62 | | $3.65 | 0.00 | 3.01 | 3.0133 | $22.00 | $205.62 |
| 0 | Loader (Small) | $0.00 | 1 | $3.55 | 0.00 | 1.67 | 1.6686 | $0.00 | $0.00 |
| 1 | Loader (Med. & Large) | $261.49 | 1 | $9.00 | 0.00 | 0.00 | 0 | $0.00 | $261.49 |
| 2 | Rollers & Compactors | $378.34 | | $5.00 | 0.00 | 3.01 | 3.0133 | $30.13 | $408.47 |
| 0 | Excavators (Small) | $0.00 | | $22.00 | 0.00 | 0.00 | 0 | $0.00 | $0.00 |
| 1 | Excavators (Med.) | $223.59 | | $35.50 | 0.00 | 3.01 | 3.0133 | $106.97 | $330.56 |
| 3 | Excavators (Large) | $872.03 | 1 | $44.80 | 0.00 | 1.67 | 1.6686 | $224.25 | $1,096.28 |
| 1 | Rubber Tired Backhoes/Skidders | $189.17 | | $3.00 | 0.00 | 1.73 | 1.7254 | $5.18 | $194.34 |
| 0 | Tractors (D6) | $0.00 | 2 | $7.10 | 0.00 | 0.00 | 0 | $0.00 | $0.00 |
| 1 | Tractors (D7) | $280.12 | 2 | $11.30 | 0.00 | 1.73 | 1.7254 | $19.50 | $299.61 |
| 1 | Tractor (D8) | $291.79 | 2 | $15.10 | 0.00 | 1.67 | 1.6686 | $25.20 | $316.99 |
| 2 | Dump Truck (10 cy +) | $115.75 | | $2.85 | 0.00 | 7.01 | 7.0133 | $39.98 | $155.72 |
| 1 | Dump Truck (Off Hiway) | $223.59 | 1 | $4.75 | 0.00 | 1.73 | 1.7254 | $8.20 | $231.79 |
| 1 | Water Truck (1500 Gal) | $57.87 | | $2.85 | 0.00 | 0.00 | 0 | $0.00 | $57.87 |
| 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: | $4,080.10 |
|---|---|

# OREGON DEPARTMENT OF FORESTRY
# CRUISE REPORT
## Wolf's Foot

1. **Type of Sale**

   Partial Cut/Clearcut - Recovery

2. **Legal Description**

   Portions of Section 13,T1N, R8W, Sections 7,18, T1N, R7W, W.M. Tillamook County, Oregon

3. **Sale Acreage**

   Sale acreage was determined by plotting posted boundaries in ArcView GIS, using digital orthophotos and planimetric themes.

| | ACRES | | |
|---|---|---|---|
| | Sale | Total | Net |
| **Area 1 (Clearcut)** | 116 | 122 | 114 |
| **Area 2 (Clearcut)** | 60 | 55 | 55 |
| **Area 3 (Partial Cut)** | 164 | 155 | 155 |
| **Area 4 (Clearcut)** | 32 | 36 | 32 |
| **Area 5 (Partial Cut)** | 17 | 16 | 16 |
| **Area 6 (Clearcut)** | 32 | 30 | 30 |
| **Total** | 421 | 414 | 402 |

Sale Acres

Area within the Timber Sale Boundary signs

Total acres

*For accomplishment reporting*

**Clearcut harvest** - 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.

**Partial Cut** - Sale acres less areas of low stocking, hardwoods, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

Net acres

*Used for calculating the advertised volume.*

**Clearcut** - Sale acres, less green tree retention, roads, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

**Partial Cut** - Same as total acres

4. **Cruising Procedures**

### A. Cruise Method

Seven cruise lines were established throughout the sale areas, parallel lines were spaced 17 chains apart. Line starting points were located using aerial photographs. 63 sample points were located along these lines using a compass and a rangefinder, or pacing. Sample points were spaced three chains apart. Sample trees were selected using a Relaskop. All selected trees were measured for DBH to the nearest inch.

A sub-sample was chosen at each point to estimate VBAR. At least the first two

Douglas-fir, clockwise from the line and a tree from other species were chosen for the volume sub-sample. Measurements for volume included DBH (nearest tenth inch), form factor at 16', height to a 6" merchantable top (8" for alder), and grades and lengths of each segment. The minimum saw log piece size was 30 b.f.

### B. Plot size

A 28 BAF (27.78 relaskop) was used for tree selection at each point; Point of observation was at 4.5 feet.

### C. Grading System

Trees were graded following the Columbia River Official Log Scaling and Grading Bureau rules.

## 5. Computation Procedure

Stand tables and tree volumes(V-BAR) were calculated with the SuperACE cruise program. Volume per acre was calculated by multiplying the estimated take BA per acre times the VBAR. Estimated take BA per acre was derived from the stand table. For Areas 3 and 5, 40 sq. ft. of BA was subtracted from the current stand BA. For Areas 1, 2, 4, and 6, the take BA was the sum of all the diameter classes less than 21 inches DBH.

## 6. Hidden Defect and Breakage

A five percent reduction was applied to the calculated volume to account for hidden defect and breakage. Visible defect was deducted while cruising.

## 7. Timber Description

The entire sale area burned in both the 1933 and 1939 Tillamook fires. The stand consists primarily of Douglas-fir planted in 1950, and red alder in the draws and on old landings. A few hemlock, spruce, and cedar are scattered through the sale area. The average Douglas-fir merchantable bole length was 64 feet.

## 8. Cruiser Names/Dates

Tod Haren, Dave Wells, Barb Moore: 04/23/2002 – 04/25/2002

## 9. Revenue Distribution

100% FDF

Tax Code: 56(59%), 9-2(41%)

Deed Numbers: 138, 157, 159, 161, 162, 194

100% Rehabilitation Obligated

## 10. Attachments

Volume Summary

Stand Table

VBAR Summary

Logging Plan

X:\StateForests\CentralUnit\Timber Sale Folders\2002 Sale Plan\Wolfs Foot\Documents\WF_Cruise Report.doc

"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Volume Summary
# Wolf's Foot
# Sale 341-03-30

| Area 1, 2, 4, 6 CC (Take all < 21" DBH) | | | | | | |
|---|---|---|---|---|---|---|
| 231 acres | | | | | | |
| SPECIES | Basal Area | W-BAR | Vol/Acre MBF | Gross MBF | D & B | Net Vol MBF |
| Douglas-fir | 181 | 103.7 | 18.8 | 4343 | 5% | 4126 |
| TOTAL | 181 | | 18.8 | 4343 | | 4126 |

| Area 3, 5 PC (Leave 35 - 45 BA) | | | | | | |
|---|---|---|---|---|---|---|
| 171 acres | | | | | | |
| SPECIES | Basal Area | W-BAR | Vol/Acre MBF | Volume MBF | D & B | Net Vol MBF |
| Douglas-fir | 154 | 105.8 | 16.3 | 2787 | 5% | 2648 |
| TOTAL | 154 | | 16.3 | 2787 | | 2648 |

| TOTAL SALE VOLUME | | |
|---|---|---|
| 402 acres | | |
| SPECIES | MBF | MBF NET |
| Douglas-fir | 7130 | 6774 |
| **TOTAL** | **7130** | **6774** |

TC TSTNDSUM

# Stand Table Summary

Project W FOOT

All Areas

T1N R7W S18 TSTND

| Tract | Type | Twp | Rge | Sec | | |
|---|---|---|---|---|---|---|
| STAND INFO | STND | 1N | 7W | 18 | Page: | 1 |

| Acres | Plots | Sample Trees | | | Date: | 1/7/03 |
|---|---|---|---|---|---|---|
| 415.00 | 63 | 458 | | | Time: | 1:54:19PM |

| Spc | S T | DBH | Sample Trees | FF 16 | Trees/ Acre | BA/ Acre | Cumulatives TPA + | TPA - | BA + | BA - |
|---|---|---|---|---|---|---|---|---|---|---|
| DF | | 8 | 2 | 89 | 2.55 | 0.89 | 2.55 | 173.75 | 0.89 | 194.22 |
| DF | | 9 | 8 | 88 | 8.05 | 3.56 | 10.59 | 171.21 | 4.44 | 193.33 |
| DF | | 10 | 22 | 89 | 17.93 | 9.78 | 28.52 | 163.16 | 14.22 | 189.78 |
| DF | | 11 | 21 | 88 | 14.14 | 9.33 | 42.66 | 145.23 | 23.56 | 180.00 |
| DF | | 12 | 37 | 89 | 20.94 | 16.44 | 63.60 | 131.09 | 40.00 | 170.67 |
| DF | | 13 | 42 | 88 | 20.25 | 18.67 | 83.85 | 110.15 | 58.67 | 154.22 |
| DF | | 14 | 48 | 88 | 19.96 | 21.33 | 103.81 | 89.90 | 80.00 | 135.56 |
| DF | | 15 | 48 | 88 | 17.38 | 21.33 | 121.19 | 69.94 | 101.33 | 114.22 |
| DF | | 16 | 48 | 89 | 15.28 | 21.33 | 136.47 | 52.56 | 122.67 | 92.89 |
| DF | | 17 | 42 | 88 | 11.84 | 18.67 | 148.31 | 37.28 | 141.33 | 71.56 |
| DF | | 18 | 38 | 89 | 9.56 | 16.89 | 157.87 | 25.44 | 158.22 | 52.89 |
| DF | | 19 | 29 | 88 | 6.55 | 12.89 | 164.42 | 15.88 | 171.11 | 36.00 |
| DF | | 20 | 23 | 89 | 4.69 | 10.22 | 169.10 | 9.34 | 181.33 | 23.11 |
| DF | | 21 | 7 | 89 | 1.29 | 3.11 | 170.40 | 4.65 | 184.44 | 12.89 |
| DF | | 22 | 10 | 88 | 1.68 | 4.44 | 172.08 | 3.36 | 188.89 | 9.78 |
| DF | | 23 | 4 | 89 | 0.62 | 1.78 | 172.70 | 1.67 | 190.67 | 5.33 |
| DF | | 24 | 3 | 88 | 0.42 | 1.33 | 173.12 | 1.06 | 192.00 | 3.56 |
| DF | | 25 | 3 | 88 | 0.39 | 1.33 | 173.51 | 0.63 | 193.33 | 2.22 |
| DF | | 26 | 2 | 89 | 0.24 | 0.89 | 173.75 | 0.24 | 194.22 | 0.89 |
| DF | | Totals | 437 | 88 | 173.75 | 194.22 | | | | |
| RA | | 9 | 1 | 87 | 1.01 | 0.44 | | | | |
| RA | | 10 | 1 | 87 | 0.81 | 0.44 | | | | |
| RA | | 11 | 1 | 86 | 0.67 | 0.44 | | | | |
| RA | | 12 | 3 | 86 | 1.70 | 1.33 | | | | |
| RA | | 13 | 2 | 87 | 0.96 | 0.89 | | | | |
| RA | | 14 | 1 | 86 | 0.42 | 0.44 | | | | |
| RA | | 15 | 3 | 86 | 1.09 | 1.33 | | | | |
| RA | | 16 | 2 | 86 | 0.64 | 0.89 | | | | |
| RA | | 17 | 4 | 86 | 1.13 | 1.78 | | | | |
| RA | | 18 | 2 | 87 | 0.50 | 0.89 | | | | |
| RA | | 21 | 1 | 86 | 0.18 | 0.44 | | | | |
| RA | | Totals | 21 | 86 | 9.11 | 9.33 | | | | |

CC

194
-40
154

PC

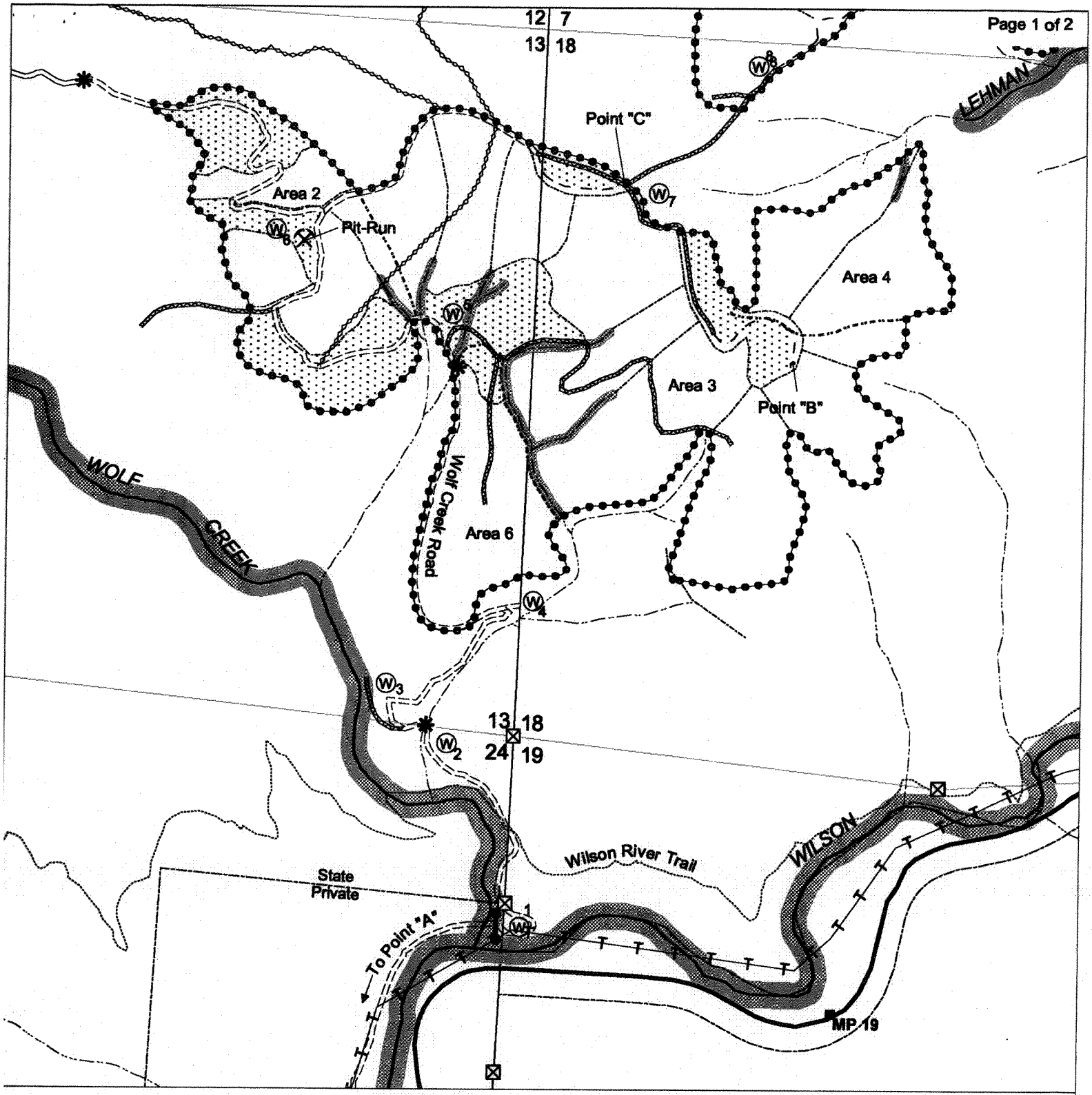
**Wolf's Foot VBAR calculations**
Tree Volume Data From SuperACE
VBAR calculated on a per tree basis

**Areas 3 & 5**

| | | | | |
|---|---|---|---|---|
| DBH X(quad.) | 16.9 | Low | High | DBH = ALL |
| VBAR X-- | 105.8 | 103.1 | 108.6 | |
| VBAR CV% | 28.3 | | | |
| VBAR SE% | 2.6 | | | |
| N | 118 | | | |

**Areas 1, 2, 4, & 6**

| | | | | |
|---|---|---|---|---|
| DBH X(quad.) | 15.6 | Low | High | DBH < 21 |
| VBAR X-- | 103.7 | 100.8 | 106.6 | |
| VBAR CV% | 28.51 | | | |
| VBAR SE% | 2.84 | | | |
| N | 101 | | | |




Rock source
Stockpile
Waste area
Cable landing
Tractor landing
Cable yarding
Ground yarding
Buffer zone

Setting boundary
Area boundary
Sale boundary
Type-F stream
Type-N stream
Surfaced road
Unsurfaced road
State highway
Non-project road
Swing road
Abandoned road
Non-Motorized Trail
Motorized Trail
Transmission Line

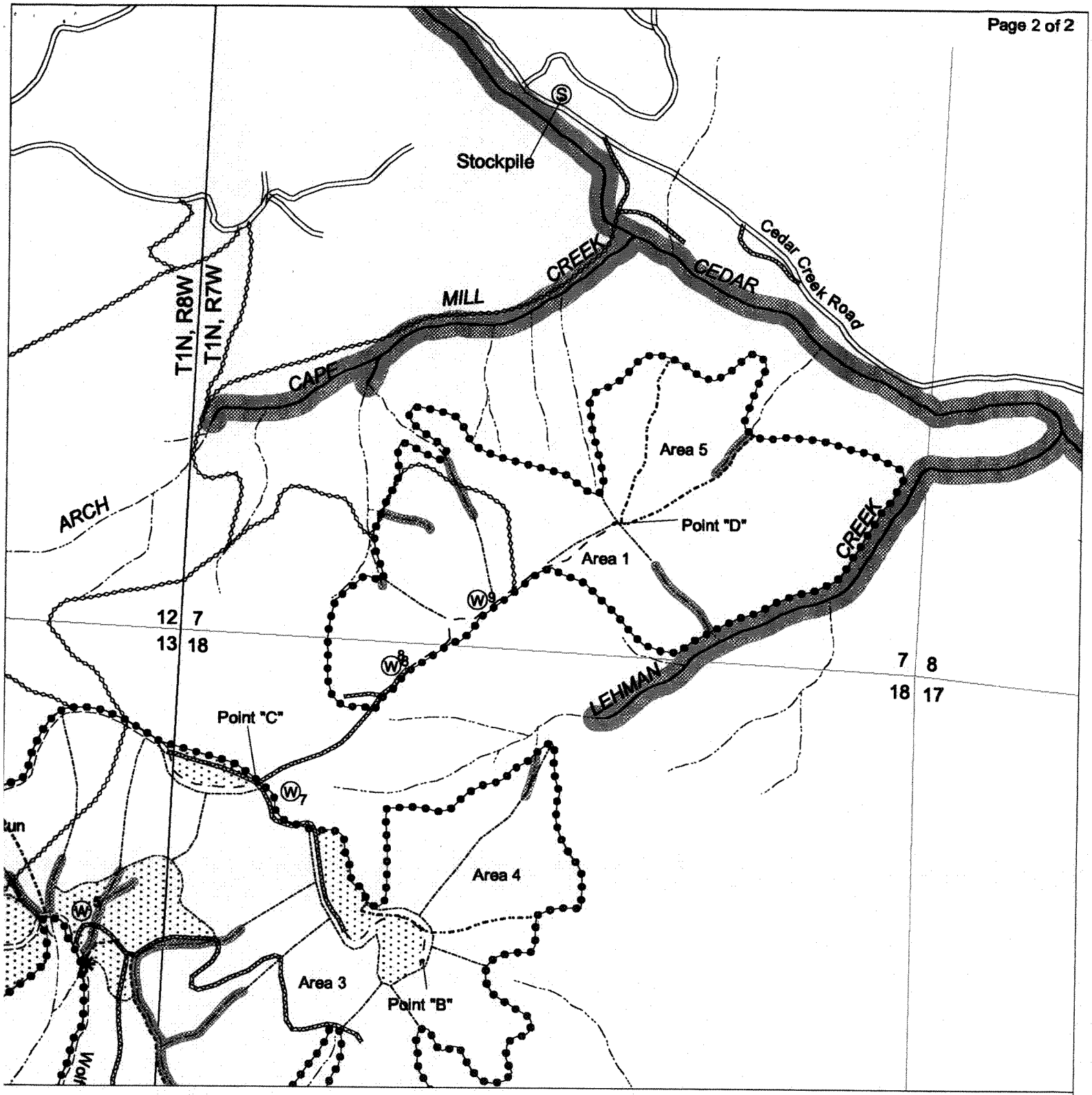
# LOGGING PLAN
Timber Sale Contract 341-03-30
Wolf's Foot
Section 13, T1N, R8W, and
Sections 7 and 18, T1N, R7W, W. M.
Tillamook County, Oregon

N

1000 0 1000 Feet

1:12000

1/28/03




- Rock source
- Stockpile
- Waste area
- Cable landing
- Tractor landing
- Cable yarding
- Ground yarding
- Buffer zone
- Setting boundary
- Area boundary
- Sale boundary
- Type-F stream
- Type-N stream
- Surfaced road
- Unsurfaced road
- State highway
- Non-project road
- Swing road
- Abandoned road
- Non-Motorized Trail
- Motorized Trail
- Transmission Line

# LOGGING PLAN
Timber Sale Contract 341-03-30
Wolf's Foot
Section 13, T1N, R8W, and
Sections 7 and 18, T1N, R7W, W. M.
Tillamook County, Oregon

N

1000 0 1000 Feet

1:12000

1/28/03

"STEWARDSHIP IN FORESTRY"

# OREGON DEPARTMENT OF FORESTRY
# WRITTEN PLAN

**SALE NAME:** Wolf's Foot

**LOCATION:** Portions of section 13, T1N, R8W, and portions of sections 7, 18, T1N, R7W, W.M., Tillamook County, Oregon.

**ACTIVITIES:** Felling and yarding within or adjacent to Type F stream buffers.

**PROTECTED RESOURCES:**

**Streams:** Large Type F Stream - Cedar Creek; Medium Type F Streams – Wolf Creek, Arch Cape Mill Creek; Small Type F Stream – Lehman Creek

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

**PROTECTION MEASURES:**

**YARDING and FELLING:**

Streams:

- All trees in the RMA outside of cable corridors are reserved from cutting.
- Trees felled for cable corridors within the RMA will not be removed.
- When cable yarding lines are strung across the RMA they will be pulled out of RMA prior to rigging the next yarding road.
- Adjacent trees will be felled away from or parallel to the RMA.
- If trees or logs fall or slide into a stream channel they will not be limbed, bucked, or removed without approval from State.
- When cable yarding lines are strung across RMA's they will be an average of 150 feet apart and pulled out prior to rigging the next yarding road.
- Ground yarding shall not be allowed within 50 feet of Type F streams

PREPARED BY: Tod Haren
Forester, Central Unit
January 28, 2003

OREGON DEPARTMENT OF FORESTRY

WRITTEN PLAN
WOLF'S FOOT

Protected Waters: Wolf Creek, a large type F tributary of the Wilson River, a large type F stream. Two small type F unnamed tributaries of Cedar Creek, a large type F tributary of the Wilson River.

Location: Portion of Sections 13, 24, 25, T1N, R8W. W.M. and sections 5, 7, 8, 18, 19, T1N, R7W, W.M. Tillamook County, Oregon.

Activity: Road improvement (Widening, cross drain culverts and road rocking) within 100' of a type F stream. Culvert replacement on two type F streams.

Protection Measures: No in stream activity will be conducted prior to July 1st or after September 15th without prior approval. Work will only be performed during dry weather periods and low water stream flows. Machine activity in the stream will be kept to a minimum. Water will be diverted around the work area to avoid producing stream sediment. Disturbance of existing vegetation will be kept to a minimum. Fill slopes will be constructed at a 1 ½:1 fill width to height ratio. Rip rap rock will be used to armor the inlet and outlet fill slopes to minimize erosion. Waste material will be end-hauled to stable locations marked in the field. Fill material will be placed and compacted in 8 inch lifts. All disturbed areas will be grass seeded and fertilized to minimize erosion.

Pipe Geometry: The culvert replacement at station 2+00 of segment E to F has an existing stream gradient of 7.3 %. A streambed simulation is designed for this location (Option #4). The active channel width was measured at 7.9 feet. Streambed material consists of small cobbles, fine gravel's and sand. A 54' long 103" x 71" aluminized steel arch culvert will be installed at 5.8%. The culvert's outlet invert of the culvert will be placed 1.7 feet below the existing stream gradient. The culvert's inlet invert of the culvert will be placed 2.5 feet below the existing stream gradient. This will result in a cross sectional area at the inlet of 25.1 square feet. The required 50 year peak flow for this drainage is 36 cubic feet per second with a minimum cross sectional area of 9.6 square feet. The site will be monitored to ensure that embedding is achieved. Further information is available in Exhibit "B" of the Wolf's Foot Timber Sale.

The culvert replacement at station 13+00 of segment point E to F has an existing stream gradient of 4.6 %. A streambed simulation is designed for this location (Option #4). The active channel width was measured at 8.5' feet. Streambed material consists of small cobbles, fine gravel's and sand. A 48' long 103" x 71" aluminized steel arch culvert will be installed at 3.1%. The culvert's outlet invert of the culvert will be placed 1.8 feet below the existing stream gradient. The culvert's inlet invert of the culvert will be placed 2.5 feet below the existing stream gradient. This will result in a cross sectional area at the inlet of 25.1 square feet. The required 50 year peak flow for this drainage is 46 cubic feet per second with a minimum cross sectional area of 9.6 square feet. The site will be monitored to ensure that embedding is achieved. Further information is available in Exhibit "B" of the Wolf's Foot Timber Sale.

Prepared by: Gary Baker
Road Specialist

Date: June 3, 2002

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