"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Rudder Road
## Sale WO-341-2018-55-

**District: West Oregon** **Date: October 09, 2017**

## Cost Summary

| | Conifer | Hardwood | Total |
|---|---|---|---|
| **Gross Timber Sale Value** | $1,078,416.17 | $5,730.66 | $1,084,146.83 |
| | | **Project Work:** | ($81,297.00) |
| | | **Advertised Value:** | $1,002,849.83 |

# Timber Sale Appraisal
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## Timber Description

**Location:** Portions of Sections 5 and 8, T10S, R8W, W.M., Polk County, Oregon.

**Stand Stocking:** 60%

| Specie Name | AvgDBH | Amortization (%) | Recovery (%) |
|---|---|---|---|
| Douglas - Fir | 31 | 0 | 95 |
| Alder (Red) | 15 | 0 | 95 |
| Maple | 14 | 0 | 95 |

| Volume by Grade | 2S | 3S | 3S 12"+ | 4S | CR 8" - 14" | Total |
|---|---|---|---|---|---|---|
| **Douglas - Fir** | 1,970 | 86 | 89 | 8 | 0 | 2,153 |
| **Alder (Red)** | 0 | 0 | 0 | 0 | 15 | 15 |
| **Maple** | 0 | 0 | 0 | 0 | 3 | 3 |
| **Total** | 1,970 | 86 | 89 | 8 | 18 | 2,171 |

**Comments:** Pond Values Used: Local Pond Values, August 2017.

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
$343.37/MBF = $579.29/MBF - $235.92/MBF

Western Redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$1,087.52/MBF = $1,520.78/MBF - $433.26/MBF

Pulp Logs (Conifer & Hardwood) = $35/MBF

SCALING COST ALLOWANCE = $5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = $2.00/MBF

FUEL COST ALLOWANCE = $3.00/Gallon

LOG HAUL:
Conifer costed to Springfield.
Hardwood costed to Eugene.
Western redcedar costed to Washington.

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

Other Costs (with Profit & Risk to be added):
Felling of Sub-Merchantable Trees: $1,840
TOTAL Other Costs (with Profit & Risk to be added) = $1,840

Other Costs (No Profit & Risk added):
Non-Project Roads and Landings: $750
Invasive Species Equipment Cleaning: $2,000
Firewood Sorting & Landing Piling: 9 landings @ $180/landing: $1,620
TOTAL Other Costs (No Profit & Risk added) = $4,370

SLASH DISPOSAL COSTS:
Move-in: $1,290
Sale Area Moves: $300
Piling Work: $5,100
TOTAL Slash Disposal = $6,690

# Timber Sale Appraisal
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## Logging Conditions

| | | | | |
|---|---|---|---|---|
| **Combination#: 1** | Douglas - Fir | 58.00% | | |
| | Alder (Red) | 58.00% | | |
| | Maple | 58.00% | | |
| **Logging System:** | Cable: Medium Tower >40 - <70 | | **Process:** | Stroke Delimber |
| **yarding distance:** | Medium (800 ft) | | **downhill yarding:** | No |
| **tree size:** | Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF | | | |
| **loads / day:** | 7 | | **bd. ft / load:** | 5000 |
| **cost / mbf:** | $171.43 | | | |
| **machines:** | Log Loader (A)<br>Stroke Delimber (A)<br>Tower Yarder (Medium) | | | |

| | | | | |
|---|---|---|---|---|
| **Combination#: 2** | Douglas - Fir | 42.00% | | |
| | Alder (Red) | 42.00% | | |
| | Maple | 42.00% | | |
| **Logging System:** | Track Skidder | | **Process:** | Stroke Delimber |
| **yarding distance:** | Medium (800 ft) | | **downhill yarding:** | No |
| **tree size:** | Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF | | | |
| **loads / day:** | 7 | | **bd. ft / load:** | 5000 |
| **cost / mbf:** | $90.63 | | | |
| **machines:** | Stroke Delimber (B) | | | |

# Timber Sale Appraisal
# Rudder Road
## Sale WO-341-2018-55-

**District: West Oregon** **Date: October 09, 2017**

## Logging Costs

| | | | |
|---|---|---|---|
| **Operating Seasons:** | 2.00 | **Profit Risk:** | 10% |
| **Project Costs:** | $81,297.00 | **Other Costs (P/R):** | $1,840.00 |
| **Slash Disposal:** | $6,690.00 | **Other Costs:** | $4,370.00 |

**Miles of Road** **Road Maintenance:** $6.19

| Dirt | Rock (Contractor) | Rock (State) | Paved |
|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 |

**Hauling Costs**

| Species | $ / MBF | Trips/Day | MBF / Load |
|---|---|---|---|
| Douglas - Fir | $0.00 | 3.0 | 5.0 |
| Alder (Red) | $0.00 | 1.0 | 3.5 |
| Maple | $0.00 | 1.0 | 3.5 |


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## Logging Costs Breakdown

| Logging | Road Maint | Fire Protect | Hauling | Other P/R appl | Profit & Risk | Slash Disposal | Scaling / Brand & Paint | Other | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Douglas - Fir** | | | | | | | | | |
| $137.49 | $6.50 | $4.04 | $54.60 | $0.85 | $20.35 | $3.08 | $7.00 | $2.01 | $235.92 |
| **Alder (Red)** | | | | | | | | | |
| $137.49 | $6.50 | $4.04 | $234.00 | $0.85 | $38.29 | $3.08 | $7.00 | $2.01 | $433.26 |
| **Maple** | | | | | | | | | |
| $137.49 | $6.50 | $4.04 | $234.00 | $0.85 | $38.29 | $3.08 | $7.00 | $2.01 | $433.26 |

| Specie | Amortization | Pond Value | Stumpage | Amortized |
|---|---|---|---|---|
| Douglas - Fir | $0.00 | $736.81 | $500.89 | $0.00 |
| Alder (Red) | $0.00 | $805.37 | $372.11 | $0.00 |
| Maple | $0.00 | $482.93 | $49.67 | $0.00 |

# Timber Sale Appraisal
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**District: West Oregon** **Date: October 09, 2017**

## Summary

**Amortized**

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

**Unamortized**

| Specie | MBF | Value | Total |
|---|---|---|---|
| Douglas - Fir | 2,153 | $500.89 | $1,078,416.17 |
| Alder (Red) | 15 | $372.11 | $5,581.65 |
| Maple | 3 | $49.67 | $149.01 |

**Gross Timber Sale Value**

**Recovery:** $1,084,146.83

**Prepared By:** Evelyn Hukari **Phone:** 541-929-3266

## SUMMARY OF ALL PROJECT COSTS

**Sale Name:** Rudder Road Date: September 2017

**Project #1 - Road Improvements**

| Road Segment | Length (sta) | Cost | | |
|---|---|---|---|---|
| 1 to 2 | 123.5 | $ 16,730 | | |
| 2 to 3 | 21.6 | $ 12,193 | | |
| 2 to 7 | 24.3 | $ 9,940 | | |
| 7 to 4 | 65.7 | $ 9,931 | | |
| 5 to 6 | 19.9 | $ 10,269 | | |
| 7 to 8 | 10.6 | $ 7,119 | | |
| | 265.6 | SUBTOTAL | $ | 66,182 |

**Project #2 - Mechanical Brushing**

| Road Segment | Length (miles) | Cost | | |
|---|---|---|---|---|
| 1 to 31 (all) | 11.69 | $ 10,469 | | |
| | | SUBTOTAL | $ | 10,469 |

24-25

| **Equipment Move-in** | Cost | | |
|---|---|---|---|
| Dozer, D7 or equiv. | $ 805 | | |
| Grader, G14 or equiv. | $ 778 | | |
| Vibratory Roller | $ 778 | | |
| Backhoe, C580 or equiv. | $ 321 | | |
| Excavator, C325 or equiv. | $ 1,290 | | |
| Highway Dump, 10 -12 CY | $ 163 | | |
| Brush Cutter | $ 321 | | |
| Water Truck, 2,500 gallon | $ 190 | | |
| | SUBTOTAL | $ | 4,646 |
| | **GRAND TOTAL** | **$** | **81,297** |

Compiled by: C. Morgan
Date: 09/22/2017

## SUMMARY OF CONSTRUCTION COST

SALE ROAD: Rudder Road 1 to 2 (surfaced, ditch, outslope) — Project # 1 — LENGTH improve 123.5 sta

**IMPROVEMENT**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pull ditch and scatter waste material | 92 | sta | @ | $44.00 | /sta | = | $ | 4,048.00 |

TOTAL IMPROVEMENT COST = $ 4,048

**SURFACING**

| | | | | | Size | Cost/yd | | | |
|---|---|---|---|---|---|---|---|---|---|
| Turnout Rock | 9 | @ | 10 | cy | 1½ - 0" | $20.62 | = | $ | 1,855.80 |
| Spot Rock | | | 230 | cy | 1½ - 0" | $20.62 | = | $ | 4,742.60 |
| Curve Widening | | | 60 | cy | 1½ - 0" | $20.62 | = | $ | 1,237.20 |
| Grade/compact rock (with vibratory roller) | 123.5 | sta | @ | $36.00 | /sta | | = | $ | 4,446.00 |

TOTAL SURFACING COST = $ 12,282

**SPECIAL PROJECTS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24-25 (inlet and outlet) | 16 | culverts | @ | $25.00 | /culvert | = | $ | 400.00 |

TOTAL SPECIAL PROJECTS COST = $ 400

Compiled by: C. Morgan
Date: Sep 22, 2017

**GRAND TOTAL =====> $ 16,730**

## SUMMARY OF CONSTRUCTION COST

SALE ROAD: Rudder Road 2 to 3 (surfaced, ditch, outslope) Project # 1 LENGTH improve 21.6 sta

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **IMPROVEMENT** | | | | | | | | |
| Re-open road (with D7 dozer or grader) | 21.6 | sta | @ | $24.83 | /sta | = | $ | 536.33 |
| Re-open landing (with D7 dozer or equivalent) | 0.5 | hours | @ | $144.00 | /hour | = | $ | 72.00 |
| Pull ditch and scatter waste material | 21.6 | sta | @ | $44.00 | /sta | = | $ | 950.40 |
| | | | | | | TOTAL IMPROVEMENT COST = | $ | 1,559 |
| **SURFACING** | | | | Size | Cost/yd | | | |
| Surface Rock (4" lift) | | 484 | cy | 3-0" | $18.96 | = | $ | 9,176.64 |
| Turnout Rock | 1 | 10 | cy | 3-0" | $18.96 | = | $ | 189.60 |
| Landing Rock | 1 | 40 | cy | jaw run | $17.96 | = | $ | 718.40 |
| Grade/compact rock (with vibratory roller) 24-25 | 21.6 | sta | @ | $24.28 | /sta | = | $ | 524.45 |
| | | | | | | TOTAL SURFACING COST = | | $10,609 |
| **SPECIAL PROJECTS** | | | | | | | | |
| Culvert cleaning (inlet and outlet) | 1 | culvert | @ | $25.00 | /culvert | = | $ | 25.00 |
| | | | | | | TOTAL SPECIAL PROJECTS COST = | $ | 25 |

Compiled by: C. Morgan
Date: Sep 22, 2017

**GRAND TOTAL =====> $12,193**

## SUMMARY OF CONSTRUCTION COST

SALE Rudder Road Project # 1 LENGTH improve 24.3 sta
ROAD 2 to 7 (surfaced, outslope)

**IMPROVEMENT**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Grade/shape/compact (with grader and vibratory roller) | 24.3 | sta | @ | $18.35 | /sta | = | $ | 445.91 |

TOTAL IMPROVEMENT COST = $ 446

**SURFACING**

| | | | | | Size | Cost/yd | | | |
|---|---|---|---|---|---|---|---|---|---|
| Surface Rock (3" lift) | | 408 | cy | | 1½ - 0" | $20.62 | = | $ | 8,412.96 |
| Turnout Rock | 1 | 10 | cy | | 1½ - 0" | $20.62 | = | $ | 206.20 |
| Grade/compact surface rock (with vibratory roller and water truck) | | 24.3 | sta | @ | $36.00 | /sta | = | $ | 874.80 |

TOTAL SURFACING COST = $ 9,494

Compiled by: C. Morgan
24-25 Sep 22, 2017

**GRAND TOTAL =====> $ 9,940**

## SUMMARY OF CONSTRUCTION COST

SALE Rudder Road Project # 1 LENGTH improve 65.7 sta
ROAD 7 to 4 (surfaced, outslope)

**IMPROVEMENT**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Pull ditch and scatter waste material | 65.7 | sta | @ | $44.00 | /sta | = | $ 2,890.80 |

TOTAL IMPROVEMENT COST = $ 2,891

**SURFACING**

| | | | | Size | Cost/yd | | |
|---|---|---|---|---|---|---|---|
| Spot Rock | 140 | cy | | 3/4 - 0" | $20.62 | = | $ 2,886.80 |
| Turnout Rock 2 | 10 | cy | | 3/4 - 0" | $20.62 | = | $ 412.40 |
| Curve Widening | 50 | cy | | 3/4 - 0" | $20.62 | = | $ 1,031.00 |
| Grade/compact rock (with vibratory roller and water truck) | 65.7 | sta | @ | $36.00 | /sta | = | $ 2,365.20 |

TOTAL SURFACING COST = $6,695

**24-25**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cut 20 trees in R/W (small-diameter trees) | 2 | hours | @ | $40.00 | /hour | = | $ 80.00 |
| Culvert cleaning (inlet and outlet) | 4 | culverts | @ | $25.00 | /culvert | = | $ 100.00 |
| Construct rolling dip | 1 | dip | @ | $165.00 | /dip | = | $ 165.00 |

TOTAL SPECIAL PROJECTS COST = $ 345

Compiled by: C. Morgan
Date: Sep 22, 2017

**GRAND TOTAL =====> $9,931**

## SUMMARY OF CONSTRUCTION COST

SALE Rudder Road Project # 1 LENGTH improve 19.9 sta
ROAD 5 to 6 (surfaced, outslope)

**IMPROVEMENT**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Re-open road (with D7 dozer or equivalent) | 19.9 | sta | @ | $18.35 | /sta | = | $ | 365.17 |
| Re-open landing (with D7 dozer or equivalent) | 0.5 | hours | @ | $144.00 | /hour | = | $ | 72.00 |
| Slough Removal (scatter with excavator) | 2 | hrs | @ | $144.00 | /hour | = | $ | 288.00 |

TOTAL IMPROVEMENT COST = $ 725

**SURFACING**

| | | | | Size | Cost/yd | | | |
|---|---|---|---|---|---|---|---|---|
| Surface Rock (4" lift) | | 440 | cy | 3-0" | $18.96 | = | $ | 8,342.40 |
| Landing Rock | 1 | 40 | cy | jaw run | $17.96 | = | $ | 718.40 |
| Grade/compact rock (with vibratory roller) | 19.9 | sta | @ | $24.28 | /sta | = | $ | 483.17 |

24-25

TOTAL SURFACING COST = $9,544

Compiled by: C. Morgan
Date: Sep 22, 2017

**GRAND TOTAL =====> $10,269**

## SUMMARY OF CONSTRUCTION COST

SALE Rudder Road Project # 1 LENGTH improve 10.6 sta
ROAD 7 to 8 (surfaced, outslope)

**IMPROVEMENT**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Re-open road (with D7 dozer or equivalent) | 10.6 | sta | @ | $18.35 | /sta | = $ | 194.51 |
| Re-open landing (with D7 dozer or equivalent) | 0.5 | hours | @ | $144.00 | /hour | = $ | 72.00 |
| Slough Removal (drift with dozer or grader) | 1.5 | hrs | @ | $144.00 | /hour | = $ | 216.00 |

TOTAL IMPROVEMENT COST = $ 483

**EXCAVATION** C325 excavator and D7 dozer or equivalent

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| End-haul excavation (Sta. 10+60) (with C325 excavator or equivalent) | 150 | cy | @ | $5.00 | /cy | = $ | 750.00 |
| Waste area prep (with D7 dozer or equivalent) | 0.5 | hours | @ | $144.00 | /hour | = $ | 72.00 |
| Waste material compaction 24-25 | 150 | cy | @ | $0.40 | /cy | = $ | 60.00 |

TOTAL EXCAVATION COST = $ 882

**SURFACING**

| | | | | Size | Cost/yd | | |
|---|---|---|---|---|---|---|---|
| Surface Rock (4" lift) | | 242 | cy | 3-0" | $18.96 | = | $4,588.32 |
| Turnout Rock | 1 | 10 | cy | 3-0" | $18.96 | = $ | 189.60 |
| Landing Rock | 1 | 40 | cy | jaw run | $17.96 | = $ | 718.40 |
| Grade/compact rock (with vibratory roller) | 10.6 | sta | @ | $24.28 | /sta | = $ | 257.37 |

TOTAL SURFACING COST = $5,754

Compiled by: C. Morgan
Date: Sep 22, 2017

**GRAND TOTAL =====> $ 7,119**

**Rudder Road Timber Sale**
**No. 341-18-55**

**Project No. 2: Mechanical Brushing Costs**

| Road Segment / Point | Road Name | Length (Feet) | Length (Miles) | Brush Density | Cost / Mile | Segment Cost |
|---|---|---|---|---|---|---|
| 1-16 | Beaver Creek Road | 14,645 | 2.77 | Medium | $ 600.00 | $ 1,662.00 |
| 9-10 | | 4,438 | 0.84 | High | $ 1,100.00 | $ 924.00 |
| 11-12 | | 673 | 0.13 | High | $ 1,100.00 | $ 143.00 |
| 13-14 | | 1,160 | 0.22 | High | $ 1,100.00 | $ 242.00 |
| 2-15 | | 431 | 0.08 | High | $ 1,100.00 | $ 88.00 |
| 2-4 | Rudder Creek Road | 9,000 | 1.70 | High | $ 1,100.00 | $ 1,870.00 |
| 2-3 | | 2,156 | 0.41 | High | $ 1,100.00 | $ 451.00 |
| 5-6 | | 2,004 | 0.38 | High | $ 1,100.00 | $ 418.00 |
| 7-8 | | 1,059 | 0.20 | High | $ 1,100.00 | $ 220.00 |
| 16-17 | Hatchery Fall Creek Road | 1,652 | 0.31 | Medium | $ 600.00 | $ 186.00 |
| 17-18 | | 2,179 | 0.41 | Medium | $ 600.00 | $ 246.00 |
| 16-20 | Hatchery Fall Creek Road | 1,516 | 0.29 | Medium | $ 600.00 | $ 174.00 |
| 20-26 | Hatchery Fall Creek Road | 2,140 | 0.41 | Medium | $ 600.00 | $ 246.00 |
| 26-19 | Hatchery Fall Creek Road | 2,288 | 0.43 | High | $ 1,100.00 | $ 473.00 |
| 20-21 | Fish Sticks Road | 5,594 | 1.06 | High | $ 1,100.00 | $ 1,166.00 |
| 22-23 | | 2,958 | 0.56 | High | $ 1,100.00 | $ 616.00 |
| 24-25 | | 766 | 0.15 | High | $ 1,100.00 | $ 165.00 |
| 26-28 | Hatchery Extension Road | 3,096 | 0.59 | Medium | $ 600.00 | $ 354.00 |
| 28-29 | | 1,461 | 0.28 | High | $ 1,100.00 | $ 308.00 |
| 28-31 | | 1,723 | 0.33 | High | $ 1,100.00 | $ 363.00 |
| 27-30 | | 748 | 0.14 | High | $ 1,100.00 | $ 154.00 |
| TOTALS | | | 11.69 | | | $ 10,469.00 |

Compiled by: C. Morgan
Date: Sep 22, 2017

## SUMMARY OF MAINTENANCE COST

SALE Rudder Road — Final Maintenance Cost Estimate

*(Costed in appraisal, not in project costs)*

**Grading** Move-in

| | | |
|---|---|---|
| Grader | $ | 778.00 |
| Vibratory Roller | $ | 778.00 |
| Water Truck | $ | 190.00 |

| Road Segment | Length (sta) | Cost/sta | | Cost | Mileage |
|---|---|---|---|---|---|
| **Surfaced Roads** | | | | | |
| 1 to 2 | 123.5 | $19.20 | $ | 2,371.20 | 2.34 |
| 2 to 3 | 21.6 | $19.20 | $ | 414.72 | 0.41 |
| 2 to 7 | 24.3 | $36.00 | $ | 874.80 | 0.46 |
| 7 to 4 | 65.7 | $36.00 | $ | 2,365.20 | 1.24 |
| 5 to 6 | 19.9 | $19.20 | $ | 382.08 | 0.38 |
| 7 to 8 | 10.6 | $19.20 | $ | 203.52 | 0.20 |
| Subtotal | 265.6 | | $ | 6,611.52 | 5.03 |

1 to 44 (all)

| **Maintenance Rock:** | Volume (CY) | Cost/CY | | Cost |
|---|---|---|---|---|
| 3/4-0" | 50 | $20.62 | $ | 1,031.00 |
| 1½-0" | 150 | $20.62 | $ | 3,093.00 |
| 3-0" | 50 | $18.96 | $ | 948.00 |
| Subtotal | | | $ | 5,072.00 |

| | | | | |
|---|---|---|---|---|
| Grand Total | | | $ | 13,429.52 |
| TS Volume | 2,171 | MBF | | |
| Cost / MBF | | | **$** | **6.19** |

***Note: Process and compact road segments 2 to 7 and 7 to 4.***

**Rock Haul Cost Computation**

SALE NAME: Rudder Road
ROAD NAME: Sale / Haul Roads CLASS: Medium
ROCK SOURCE: Rickard 20 CY truck
Route: Garrett Ln, Hwy 20, Summit Hwy, Logsden Road, Rudder Road

TIME Computation:
Road speed time factors:

| | | | | | |
|---|---|---|---|---|---|
| 1. | 55 MPH | | MRT | 0.0 | minutes |
| 2. | 50 MPH | 12.6 | MRT | 15.1 | minutes |
| 3. | 45 MPH | | MRT | 0.0 | minutes |
| 4. | 40 MPH | | MRT | 0.0 | minutes |
| 5. | 35 MPH | | MRT | 0.0 | minutes |
| 6. | 30 MPH | 33.6 | MRT | 67.2 | minutes |
| 7. | 25 MPH | | MRT | 0.0 | minutes |
| 8. | 20 MPH | 2.4 | MRT | 7.2 | minutes |
| 9. | 15 MPH | | MRT | 0.0 | minutes |
| 10. | 10 MPH | | MRT | 0.0 | minutes |
| ↄ 44 (all) | 05 MPH | | MRT | 0.0 | minutes |

| | | | |
|---|---|---|---|
| Dump or spread time per RT | | 0.50 | minutes |
| Total hauling cycle time for this setting (100% efficiency) | | 90.00 | minutes |
| Operator efficiency correction | 0.85 | 105.88 | minutes |
| Job efficiency correction | 0.75 | 141.17 | minutes |
| Truck capacity (CY) | 20.00 | 7.06 | min/CY |
| Loading time, delay time per CY | | 0.25 | min/CY |
| TIME (minutes) per cubic yard | | 7.31 | min/CY |

COST per CY computation

| | | |
|---|---|---|
| Cost of truck and operator per hour | $79.00 | /hr. |
| Cost of truck and operator per minute | $1.32 | /min |
| Cost per CY | $9.65 | /CY |
| Spread and Compact | | /CY |

| **Size** | **Cost/Yd (Pit)** | **Cost Delivered w/o processing** |
|---|---|---|
| 3/4 - 0" | $ 10.97 | $20.62 |
| 1½ - 0" | $ 10.97 | $20.62 |
| 3 - 0" | $ 9.31 | $18.96 |
| Jaw Run | $ 8.31 | $17.96 |

**Rudder Road (341-18-55)**
**FY 2018**

## TIMBER CRUISE REPORT

1. **Sale Area Location**: Portions of Section 5 & 8, T10S, R08W, W.M., Polk County, Oregon.

2. **Fund Distribution:**
   a. **Fund** BOF 100%
   b. **Tax Code**

3. **Sale Acreage by Area:**

| Area | Treatment | Gross Acres | Stream Buffers | Existing Roads | Green Tree Retention Areas | Net Sale Acres | Acreage Comp. Method |
|---|---|---|---|---|---|---|---|
| 1 | Modified Clearcut | 56 | 5 | 3 | 2 | 46 | Ortho photo, GIS, GPS |
| **Total** | | **56** | **5** | **3** | **2** | **46** | |

4. **Cruisers and Cruise Dates:** This sale was cruised by Carli Morgan and Eric Brekstad in May of 2017.

5. **Cruise Method and Computation:** The Rudder Road timber sale was cruised using variable–radius plot sampling with a 40 BAF. Plots were located 185 feet apart, and cruise lines were located 390 feet apart. A total of 28 plots were cruised: 11 count and 17 full–grade. On count plots, only tree count and species were recorded. On full–grade plots, species, DBH, height, form factor, grade, and defect were measured and recorded. Designated wildlife trees and standing dead trees were not cruised if encountered on a plot. Data was entered into the Atterbury SuperACE cruise program to determine stand statistics and net board foot volume.

   Digital ortho photos, Lidar data, and GPS data were used to map the boundaries for the sale, and ArcMap 10.3 was used to determine gross and net acreage.

6. **Measurement Standards:** Heights were measured to the nearest foot, to a top diameter of 7 inches outside bark or to 40% of form factor. Diameters were measured to the nearest inch, and a form point of 16 feet was used to calculate form factor. Most trees were graded in 40-foot log segments unless breakage, defect, or length to top of grade diameter warranted otherwise.

7. **Timber Description:** Timber primarily consists of 50 to 80-year-old Douglas-fir with minor components of red alder and bigleaf maple. The timber sale was stratified into two cruise types (see attached cruise maps).

   - Cruise Type A includes 9 net acres of modified clearcut. The average DBH for Douglas-fir trees is 30 inches, and the average bole height is 98 feet to a merchantable top. The average DBH for red alder is 15 inches with an average bole height of 37 feet. The average net volume per acre is 33 MBF.

   - Cruise Type B includes 37 net acres of modified clearcut. The average DBH for Douglas-fir trees is 31 inches, and the average bole height is 121 feet to a merchantable top. The average DBH for bigleaf maple is 14 inches with an average bole height of 25 feet. The average net volume per acre is 54 MBF.

## 8. Statistical Analysis and Stand Summary:

| Cruise Type | Target CV | Target SE | Actual CV | Actual SE |
|---|---|---|---|---|
| **A** | 40 | 9% | 48% | 21% |
| **B** | 40 | 9% | 30% | 7% |
| **Combined** | 40 | 9% | 38% | 7% |

*Note: Statistics shown are for conifer and hardwood trees combined. Percentages are for net board foot volume.*

## 9. Total Volume (MBF) by Species and Grade:

| Species | Gross Cruise Volume | Cruised D & B | Cruised D & B (MBF) | Hidden D & B | Hidden D & B (MBF) | Net Sale Volume |
|---|---|---|---|---|---|---|
| **Cruise Types A and B Combined** | | | | | | |
| Douglas-fir | 2,368 | 4.1% | 97 | 5% | 118 | 2,153 |
| Red alder | 16 | 0% | 0 | 5% | 1 | 15 |
| Bigleaf maple | 3 | 0% | 0 | 5% | <1 | 3 |
| **Total** | 2,387 | | 97 | | 119 | 2,171 |

| Species | Avg. DBH | Net Vol. | 2-Saw | 3-Saw | 3-Saw 12"+ | 4-Saw | Camp Run | % by Species |
|---|---|---|---|---|---|---|---|---|
| **Cruise Types A and B Combined** | | | | | | | | |
| Douglas-fir | Grade Percentages | | 92% | 4% | 4% | <1% | -- | |
| | 31 | 2,153 | 1,970 | 86 | 89 | 8 | -- | 99% |
| Red alder | Grade Percentages | | -- | -- | -- | -- | 100% | |
| | 15 | 15 | -- | -- | -- | -- | 15 | 1% |
| Bigleaf maple | Grade Percentages | | -- | -- | -- | -- | 100% | |
| | 14 | 3 | -- | -- | -- | -- | 3 | <1% |
| **Total** | | 2,171 | 1,970 | 86 | 89 | 8 | 18 | 100% |

Attachments: Statistics
Stand Table Summary
Species, Sort Grade – Board Foot Volumes
Log Stock Table – MBF
Cruise Maps

Prepared by: Carli Morgan Date: _____

Unit Forester: Evelyn Hukari Date: 9/7/17
Evelyn Hukari

TC PSTATS

# PROJECT STATISTICS

PROJECT RUDROAD

PAGE 1
DATE 7/5/2017

| TWP | RGE | SC | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 10S | 08 | 05 | 1 | A | 46.00 | 28 | 121 | 1 | W |
| 10S | 08W | 05 | 1 | B | | | | | |

| | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES |
|---|---|---|---|---|---|
| TOTAL | 28 | 121 | 4.3 | | |
| CRUISE | 17 | 79 | 4.6 | 1,729 | 4.6 |
| DBH COUNT | | | | | |
| REFOREST | | | | | |
| COUNT | 11 | 42 | 3.8 | | |
| BLANKS | | | | | |
| 100 % | | | | | |

## STAND SUMMARY

| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
|---|---|---|---|---|---|---|---|---|---|---|
| DF | 74 | 31.8 | 30.9 | 117 | 29.8 | 165.3 | 51,469 | 49,371 | 9,689 | 9,530 |
| R ALDER | 4 | 4.4 | 14.8 | 37 | 1.4 | 5.2 | 351 | 351 | 126 | 126 |
| BL MAPLE | 1 | 1.4 | 14.0 | 25 | 0.4 | 1.5 | 55 | 55 | 25 | 25 |
| **TOTAL** | *79* | *37.6* | *29.0* | *105* | *32.0* | *172.0* | *51,875* | *49,776* | *9,840* | *9,680* |

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

| CL 68.1 SD: 1.0 | COEFF VAR.% | S.E.% | SAMPLE TREES - BF LOW | AVG | HIGH | # OF TREES REQ. 5 | 10 | INF. POP. 15 |
|---|---|---|---|---|---|---|---|---|
| DF | 50.2 | 5.8 | 1,804 | 1,916 | 2,027 | | | |
| R ALDER | 131.3 | 75.0 | 39 | 155 | 271 | | | |
| BL MAPLE | | | | | | | | |
| **TOTAL** | *57.0* | *6.4* | *1,687* | *1,803* | *1,919* | *130* | *32* | *14* |

| CL 68.1 SD: 1.0 | COEFF VAR.% | S.E.% | TREES/ACRE LOW | AVG | HIGH | # OF PLOTS REQ. 5 | 10 | INF. POP. 15 |
|---|---|---|---|---|---|---|---|---|
| DF | 43.1 | 8.3 | 29 | 32 | 34 | | | |
| R ALDER | 409.3 | 78.7 | 1 | 4 | 8 | | | |
| BL MAPLE | 529.2 | 101.8 | | 1 | 3 | | | |
| **TOTAL** | *48.7* | *9.4* | *34* | *38* | *41* | *98* | *25* | *11* |

| CL 68.1 SD: 1.0 | COEFF VAR.% | S.E.% | BASAL AREA/ACRE LOW | AVG | HIGH | # OF PLOTS REQ. 5 | 10 | INF. POP. 15 |
|---|---|---|---|---|---|---|---|---|
| DF | 35.4 | 6.8 | 154 | 165 | 177 | | | |
| R ALDER | 313.9 | 60.4 | 2 | 5 | 8 | | | |
| BL MAPLE | 529.2 | 101.8 | | 1 | 3 | | | |
| **TOTAL** | *31.0* | *6.0* | *162* | *172* | *182* | *40* | *10* | *4* |

| CL 68.1 SD: 1.0 | COEFF VAR.% | S.E.% | NET BF/ACRE LOW | AVG | HIGH | # OF PLOTS REQ. 5 | 10 | INF. POP. 15 |
|---|---|---|---|---|---|---|---|---|
| DF | 39.4 | 7.6 | 45,627 | 49,371 | 53,115 | | | |
| R ALDER | 325.4 | 62.6 | 131 | 351 | 570 | | | |
| BL MAPLE | 529.2 | 101.8 | | 55 | 110 | | | |
| **TOTAL** | *38.3* | *7.4* | *46,109* | *49,776* | *53,444* | *61* | *15* | *7* |

TC TSTATS

# STATISTICS

PROJECT RUDROAD

PAGE 1
DATE 7/5/2017

| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | A | 9.00 | 6 | 22 | 1 | W |

| | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES |
|---|---|---|---|---|---|
| TOTAL | 6 | 22 | 3.7 | | |
| CRUISE | 6 | 22 | 3.7 | 417 | 5.3 |
| DBH COUNT | | | | | |
| REFOREST | | | | | |
| COUNT | | | | | |
| BLANKS | | | | | |
| 100 % | | | | | |

## STAND SUMMARY

| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
|---|---|---|---|---|---|---|---|---|---|---|
| DF | 18 | 24.0 | 30.3 | 98 | 21.8 | 120.0 | 33,289 | 31,345 | 6,472 | 6,472 |
| R ALDER | 4 | 22.3 | 14.8 | 37 | 6.9 | 26.7 | 1,792 | 1,792 | 643 | 643 |
| **TOTAL** | *22* | *46.3* | *24.1* | *69* | *29.9* | *146.7* | *35,081* | *33,138* | *7,116* | *7,116* |

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

| CL: 68.1 % | COEFF | | **SAMPLE TREES - BF** | | | # OF TREES REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 57.8 | 14.0 | 1,827 | 2,124 | 2,421 | | | |
| R ALDER | 131.3 | 75.0 | 39 | 155 | 271 | | | |
| **TOTAL** | *76.6* | *16.7* | *1,471* | *1,766* | *2,061* | *245* | *61* | *27* |

| CL: 68.1 % | COEFF | | **TREES/ACRE** | | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 76.5 | 34.0 | 16 | 24 | 32 | | | |
| R ALDER | 179.2 | 79.8 | 5 | 22 | 40 | | | |
| **TOTAL** | *67.3* | *30.0* | *32* | *46* | *60* | *215* | *54* | *24* |

| CL: 68.1 % | COEFF | | **BASAL AREA/ACRE** | | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 51.6 | 23.0 | 92 | 120 | 148 | | | |
| R ALDER | 122.5 | 54.5 | 12 | 27 | 41 | | | |
| **TOTAL** | *33.0* | *14.7* | *125* | *147* | *168* | *52* | *13* | *6* |

| CL: 68.1 % | COEFF | | **NET BF/ACRE** | | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 53.7 | 23.9 | 23,857 | 31,345 | 38,833 | | | |
| R ALDER | 129.7 | 57.8 | 757 | 1,792 | 2,828 | | | |
| **TOTAL** | *49.3* | *22.0* | *25,861* | *33,138* | *40,415* | *116* | *29* | *13* |

TC TSTATS

# STATISTICS

PROJECT RUDROAD


DATE 7/5/2017

| TWP | RGE | SECT | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | B | 37.00 | 22 | 99 | 1 | W |

| | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES |
|---|---|---|---|---|---|
| TOTAL | 22 | 99 | 4.5 | | |
| CRUISE | 11 | 57 | 5.2 | 1,312 | 4.3 |
| DBH COUNT | | | | | |
| REFOREST | | | | | |
| COUNT | 11 | 42 | 3.8 | | |
| BLANKS | | | | | |
| 100 % | | | | | |

## STAND SUMMARY

| | SAMPLE TREES | TREES /ACRE | AVG DBH | BOLE LEN | REL DEN | BASAL AREA | GROSS BF/AC | NET BF/AC | GROSS CF/AC | NET CF/AC |
|---|---|---|---|---|---|---|---|---|---|---|
| DF | 56 | 33.8 | 31.0 | 121 | 31.7 | 176.4 | 55,892 | 53,756 | 10,472 | 10,273 |
| BL MAPLE | 1 | 1.7 | 14.0 | 25 | 0.5 | 1.8 | 68 | 68 | 31 | 31 |
| **TOTAL** | *57* | *35.5* | *30.4* | *116* | *32.3* | *178.2* | *55,960* | *53,824* | *10,502* | *10,304* |

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

| CL: 68.1 % | COEFF | | **SAMPLE TREES - BF** | | | # OF TREES REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 46.6 | 6.2 | 1,734 | 1,849 | 1,964 | | | |
| BL MAPLE | | | | | | | | |
| **TOTAL** | *48.8* | *6.5* | *1,700* | *1,817* | *1,935* | *95* | *24* | *11* |

| CL: 68.1 % | COEFF | | **TREES/ACRE** | | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 34.2 | 7.5 | 31 | 34 | 36 | | | |
| BL MAPLE | 469.0 | 102.2 | | 2 | 3 | | | |
| **TOTAL** | *41.8* | *9.1* | *32* | *35* | *39* | *73* | *18* | *8* |

| CL: 68.1 % | COEFF | | **BASAL AREA/ACRE** | | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 27.7 | 6.0 | 166 | 176 | 187 | | | |
| BL MAPLE | 469.0 | 102.2 | | 2 | 4 | | | |
| **TOTAL** | *28.3* | *6.2* | *167* | *178* | *189* | *34* | *8* | *4* |

| CL: 68.1 % | COEFF | | **NET BF/ACRE** | | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | 30.1 | 6.6 | 50,229 | 53,756 | 57,283 | | | |
| BL MAPLE | 469.0 | 102.2 | | 68 | 138 | | | |
| **TOTAL** | *30.1* | *6.6* | *50,288* | *53,824* | *57,360* | *38* | *9* | *4* |

TC TSTNDSUM

# Stand Table Summary

**Project** **RUDROAD**

**T10S R08W S05 T0001**

| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees |
|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | R | 9.00 | 6 | 22 |

**T10S R08W S05 T0001**



**Date:** 07/05/20

**Time:** 10:30:35AM

| Spc | S T | DBH | Sample Trees | FF 16' | Av Ht Tot | Trees/ Acre | BA/ Acre | Logs Acre | Average Log Net Cu.Ft. | Average Log Net Bd.Ft. | Tons/ Acre | Net Cu.Ft. Acre | Net Bd.Ft. Acre | Totals Tons | Totals Cunits | Totals MBF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DF | | 16 | 1 | 90 | 100 | 4.775 | 6.67 | 9.55 | 29.0 | 115.0 | | 277 | 1,098 | | 25 | 10 |
| DF | | 18 | 1 | 89 | 96 | 3.773 | 6.67 | 7.55 | 35.0 | 115.0 | | 264 | 868 | | 24 | 8 |
| DF | | 23 | 1 | 92 | 119 | 2.311 | 6.67 | 6.93 | 47.0 | 210.0 | | 326 | 1,456 | | 29 | 13 |
| DF | | 28 | 1 | 91 | 119 | 1.559 | 6.67 | 4.68 | 66.7 | 326.7 | | 312 | 1,528 | | 28 | 14 |
| DF | | 29 | 1 | 91 | 132 | 1.453 | 6.67 | 4.36 | 81.0 | 346.7 | | 353 | 1,512 | | 32 | 14 |
| DF | | 32 | 3 | 90 | 134 | 3.581 | 20.00 | 9.55 | 109.1 | 522.5 | | 1,042 | 4,990 | | 94 | 45 |
| DF | | 37 | 1 | 90 | 151 | .893 | 6.67 | 2.68 | 145.7 | 713.3 | | 390 | 1,911 | | 35 | 17 |
| DF | | 40 | 1 | 89 | 158 | .764 | 6.67 | 2.29 | 175.0 | 896.7 | | 401 | 2,055 | | 36 | 18 |
| DF | | 42 | 2 | 91 | 165 | 1.386 | 13.33 | 4.16 | 198.2 | 1066.7 | | 824 | 4,435 | | 74 | 40 |
| DF | | 43 | 1 | 89 | 158 | .661 | 6.67 | 1.98 | 202.0 | 1010.0 | | 401 | 2,003 | | 36 | 18 |
| DF | | 44 | 1 | 90 | 151 | .631 | 6.67 | 1.89 | 199.7 | 993.3 | | 378 | 1,881 | | 34 | 17 |
| DF | | 45 | 1 | 89 | 151 | .604 | 6.67 | 1.81 | 210.7 | 1103.3 | | 381 | 1,998 | | 34 | 18 |
| DF | | 46 | 1 | 90 | 151 | .578 | 6.67 | 1.73 | 220.3 | 1160.0 | | 382 | 2,010 | | 34 | 18 |
| DF | | 48 | 1 | 92 | 158 | .531 | 6.67 | 1.59 | 254.0 | 1306.7 | | 404 | 2,080 | | 36 | 19 |
| DF | | 49 | 1 | 90 | 132 | .509 | 6.67 | 1.53 | 220.7 | 996.7 | | 337 | 1,522 | | 30 | 14 |
| DF | | Totals | 18 | 90 | 124 | 24.007 | 120.00 | 62.28 | 103.9 | 503.3 | | 6,472 | 31,345 | | 583 | 282 |
| RA | | 12 | 2 | 87 | 52 | 16.977 | 13.33 | 16.98 | 18.5 | 50.0 | | 314 | 849 | | 28 | 8 |
| RA | | 18 | 1 | 87 | 48 | 3.773 | 6.67 | 3.77 | 36.0 | 60.0 | | 136 | 226 | | 12 | 2 |
| RA | | 28 | 1 | 86 | 61 | 1.559 | 6.67 | 3.12 | 62.0 | 230.0 | | 193 | 717 | | 17 | 6 |
| RA | | Totals | 4 | 87 | 52 | 22.308 | 26.67 | 23.87 | 26.9 | 75.1 | | 643 | 1,792 | | 58 | 16 |
| Totals | | | 22 | 89 | 89 | 46.315 | 146.67 | 86.15 | 82.6 | 384.7 | | 7116 | 33,138 | | 640 | 298 |

TC TSTNDSUM

# Stand Table Summary

**Project** **RUDROAD**

**T10S R08W S05 T0002**

| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees |
|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | B | 37.00 | 22 | 57 |

**T10S R08W S05 T0002**



**Date:** 07/05/20

**Time:** 10:33:21AM

| Spc | S T | DBH | Sample Trees | FF 16' | Av Ht Tot | Trees/ Acre | BA/ Acre | Logs Acre | Average Log Net Cu.Ft. | Average Log Net Bd.Ft. | Tons/ Acre | Net Cu.Ft. Acre | Net Bd.Ft. Acre | Totals Tons | Totals Cunits | Totals MBF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DF | | 21 | 1 | 90 | 109 | 1.309 | 3.15 | 2.62 | 54.5 | 225.0 | | 143 | 589 | | 53 | 22 |
| DF | | 22 | 2 | 89 | 118 | 2.386 | 6.30 | 4.77 | 51.2 | 215.0 | | 245 | 1,026 | | 90 | 38 |
| DF | | 24 | 1 | 90 | 145 | 1.002 | 3.15 | 3.01 | 51.0 | 233.3 | | 153 | 702 | | 57 | 26 |
| DF | | 26 | 4 | 92 | 146 | 3.417 | 12.60 | 10.25 | 69.8 | 348.3 | | 716 | 3,570 | | 265 | 132 |
| DF | | 27 | 2 | 91 | 148 | 1.584 | 6.30 | 4.75 | 76.3 | 383.3 | | 363 | 1,822 | | 134 | 67 |
| DF | | 28 | 4 | 92 | 151 | 2.946 | 12.60 | 8.84 | 86.1 | 430.0 | | 761 | 3,800 | | 282 | 141 |
| DF | | 29 | 3 | 91 | 142 | 2.060 | 9.45 | 6.18 | 85.2 | 425.6 | | 527 | 2,630 | | 195 | 97 |
| DF | | 30 | 5 | 91 | 155 | 3.208 | 15.75 | 10.27 | 90.5 | 465.0 | | 929 | 4,773 | | 344 | 177 |
| DF | | 31 | 2 | 91 | 155 | 1.202 | 6.30 | 3.61 | 99.7 | 536.7 | | 359 | 1,935 | | 133 | 72 |
| DF | | 32 | 7 | 91 | 160 | 3.947 | 22.05 | 12.97 | 104.1 | 537.8 | | 1,350 | 6,975 | | 499 | 258 |
| DF | | 33 | 4 | 92 | 155 | 2.121 | 12.60 | 6.36 | 114.5 | 600.8 | | 729 | 3,823 | | 270 | 141 |
| DF | | 34 | 2 | 91 | 155 | .999 | 6.30 | 3.00 | 125.5 | 676.7 | | 376 | 2,028 | | 139 | 75 |
| DF | | 35 | 2 | 91 | 171 | .943 | 6.30 | 3.77 | 108.4 | 587.5 | | 409 | 2,215 | | 151 | 82 |
| DF | | 36 | 3 | 91 | 170 | 1.337 | 9.45 | 4.90 | 125.0 | 711.8 | | 613 | 3,489 | | 227 | 129 |
| DF | | 37 | 3 | 90 | 160 | 1.265 | 9.45 | 3.80 | 149.6 | 807.8 | | 568 | 3,066 | | 210 | 113 |
| DF | | 38 | 4 | 92 | 164 | 1.600 | 12.60 | 4.80 | 143.2 | 777.5 | | 687 | 3,731 | | 254 | 138 |
| DF | | 39 | 4 | 90 | 171 | 1.519 | 12.60 | 5.69 | 125.1 | 699.3 | | 713 | 3,982 | | 264 | 147 |
| DF | | 41 | 1 | 91 | 177 | .343 | 3.15 | 1.37 | 154.2 | 877.5 | | 212 | 1,206 | | 78 | 45 |
| DF | | 43 | 1 | 90 | 177 | .312 | 3.15 | 1.25 | 167.8 | 932.5 | | 210 | 1,165 | | 78 | 43 |
| DF | | 48 | 1 | 90 | 184 | .251 | 3.15 | 1.00 | 213.0 | 1225.0 | | 214 | 1,228 | | 79 | 45 |
| DF | | Totals | 56 | 91 | 152 | 33.750 | 176.36 | 103.20 | 99.5 | 520.9 | | 10,273 | 53,756 | | 3,801 | 1,989 |
| BM | | 14 | 1 | 84 | 34 | 1.701 | 1.82 | 1.70 | 18.0 | 40.0 | | 31 | 68 | | 11 | 3 |
| BM | | Totals | 1 | 84 | 34 | 1.701 | 1.82 | 1.70 | 18.0 | 40.0 | | 31 | 68 | | 11 | 3 |
| Totals | | | 57 | 91 | 146 | 35.451 | 178.18 | 104.91 | 98.2 | 513.1 | | 10304 | 53,824 | | 3,812 | 1,991 |

T TSPCSTGR

## Species, Sort Grade - Board Foot Volumes (Type)

Project: RUDROAD

Page 1
Date 7/5/2017
Time 10:30:35AM

T10S R08W S05 T0001

| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | A | 9.00 | 6 | 22 | 1 | W |

T10S R08W S05 T0001

| Spp | ST | So rt | Gr ad | % Net BdFt | Bd. Ft. per Acre Def% | Gross | Net | Total Net MBF | Percent Net Board Foot Volume: Log Scale Dia. 4-5 | 6-11 | 12-16 | 17+ | Log Length 12-20 | 21-30 | 31-35 | 36-99 | Average Log Ln Ft | Dia In | Bd Ft | CF/ Lf | Logs Per /Acre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DF | D | 2 | | 70 | 4.1 | 23,085 | 22,133 | 199 | | | 6 | 94 | | | 3 | 97 | 39 | 21 | 826 | 4.04 | 26.8 |
| DF | D | 3 | | 28 | 9.5 | 9,660 | 8,743 | 79 | | 19 | 23 | 58 | 1 | 1 | 4 | 94 | 37 | 13 | 319 | 2.09 | 27.4 |
| DF | D | 4 | | 2 | 13.5 | 543 | 469 | 4 | | 59 | 41 | | 15 | 12 | 32 | 41 | 28 | 7 | 58 | 0.86 | 8.1 |
| **DF** | **Totals** | | | 95 | 5.8 | 33,289 | 31,345 | 282 | | 6 | 11 | 82 | 0 | 0 | 4 | 95 | 36 | 16 | 503 | 2.86 | 62.3 |
| RA | D | CR | | 100 | | 1,792 | 1,792 | 16 | | 63 | | 37 | 3 | 19 | 37 | 41 | 35 | 7 | 75 | 0.78 | 23.9 |
| **RA** | **Totals** | | | 5 | | 1,792 | 1,792 | 16 | | 63 | | 37 | 3 | 19 | 37 | 41 | 35 | 7 | 75 | 0.78 | 23.9 |
| **Type Totals** | | | | | 5.5 | 35,081 | 33,138 | 298 | | 9 | 11 | 80 | 1 | 1 | 6 | 92 | 36 | 13 | 385 | 2.30 | 86.1 |

T TSPCSTGR

# Species, Sort Grade - Board Foot Volumes (Type)

Project: RUDROAD

Page 1
Date 7/5/2017
Time 10:33:21AM

T10S R08W S05 T0002

| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | B | 37.00 | 22 | 57 | 1 | W |

T10S R08W S05 T0002

| Spp | ST | So | Grad | % Net BdFt | Bd. Ft. per Acre Def% | Gross | Net | Total Net MBF | Percent Net Board Foot Volume: Log Scale Dia. 4-5 | 6-11 | 12-16 | 17+ | Log Length 12-20 | 21-30 | 31-35 | 36-99 | Average Log Ln Ft | Dia In | Bd Ft | CF/ Lf | Logs Per /Acre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DF | | | CU | | 100.0 | 1,242 | | | | | | | | | | | 11 | 25 | | 0.00 | 5.1 |
| DF | | D | 2 | 94 | 1.7 | 51,673 | 50,792 | 1,879 | | | 15 | 85 | 0 | | 4 | 96 | 39 | 20 | 673 | 3.17 | 75.5 |
| DF | | D | 3 | 5 | .5 | 2,880 | 2,867 | 106 | | 71 | 23 | 6 | 16 | 6 | 13 | 64 | 31 | 10 | 113 | 1.13 | 25.3 |
| DF | | D | 4 | 1 | | 97 | 97 | 4 | | 100 | | | 23 | 77 | | | 22 | 8 | 40 | 0.67 | 2.4 |
| **DF** | **Totals** | | | 100 | 3.8 | 55,892 | 53,756 | 1,989 | | 4 | 16 | 80 | 1 | 0 | 4 | 94 | 36 | 17 | 497 | 2.67 | 108.3 |
| BM | | D | 4 | 100 | | 68 | 68 | 3 | | 100 | | | | 100 | | | 24 | 7 | 40 | 0.75 | 1.7 |
| **BM** | **Totals** | | | 0 | | 68 | 68 | 3 | | 100 | | | | 100 | | | 24 | 7 | 40 | 0.75 | 1.7 |
| **Type Totals** | | | | | 3.8 | 55,960 | 53,824 | 1,991 | | 4 | 16 | 80 | 1 | 1 | 4 | 94 | 35 | 17 | 489 | 2.65 | 110.0 |

TC TLOGSTVB

# Log Stock Table - MBF

**Project:** RUDROAD

**T10S R08W S05 T0001**

| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees |
|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | A | 9.00 | 6 | 22 |

**T10S R08W S05 T0001**

Page 1
Date 7/5/2017
Time 10:30:34AM

| 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 | D | 2 | 32 | | 7 | | 7 | 2.3 | | | | | | 3 | 3 | | | | | |
| DF | D | 2 | 36 | | 2 | | 2 | .6 | | | | | | | 2 | | | | | |
| DF | D | 2 | 37 | | 2 | | 2 | .6 | | | | | | | 2 | | | | | |
| DF | D | 2 | 40 | | 198 | 4.3 | 189 | 67.1 | | | | | | | | 23 | 50 | 52 | 64 | |
| DF | D | 3 | 20 | | 1 | | 1 | .2 | | | | 1 | | | | | | | | |
| DF | D | 3 | 22 | | 1 | 18.2 | 1 | .3 | | | | | | | | 1 | | | | |
| DF | D | 3 | 32 | | 1 | 8.3 | 1 | .4 | | | | | 1 | | | | | | | |
| DF | D | 3 | 33 | | 2 | | 2 | .8 | | | 2 | | | | | | | | | |
| DF | D | 3 | 36 | | 1 | | 1 | .5 | | | | | | 1 | | | | | | |
| DF | D | 3 | 37 | | 3 | | 3 | 1.1 | | | | | 2 | | 1 | | | | | |
| DF | D | 3 | 40 | | 77 | 10.3 | 69 | 24.6 | | | | | 10 | 8 | 6 | | | 16 | 29 | |
| DF | D | 4 | 20 | | 1 | | 1 | .2 | | | 1 | | | | | | | | | |
| DF | D | 4 | 22 | | 1 | 20.0 | 1 | .2 | | | | 1 | | | | | | | | |
| DF | D | 4 | 33 | | 2 | 20.0 | 1 | .5 | | | 1 | | | | | | | | | |
| DF | D | 4 | 40 | | 2 | 10.0 | 2 | .6 | | | | | | | | 2 | | | | |
| DF | | | Totals | | 300 | 5.8 | 282 | 94.6 | | | 4 | 1 | 12 | 13 | 15 | 25 | 50 | 68 | 93 | |
| RA | D | CR | 20 | | 0 | | 0 | 2.6 | | | 0 | | | | | | | | | |
| RA | D | CR | 30 | | 3 | | 3 | 18.9 | | | 3 | | | | | | | | | |
| RA | D | CR | 32 | | 6 | | 6 | 37.4 | | | | | | | | 6 | | | | |
| RA | D | CR | 40 | | 7 | | 7 | 41.0 | | | 7 | | | | | | | | | |
| RA | | | Totals | | 16 | | 16 | 5.4 | | | 10 | | | | | 6 | | | | |
| Total All Species | | | | | 316 | 5.5 | 298 | 100.0 | | | 14 | 1 | 12 | 13 | 15 | 31 | 50 | 68 | 93 | |

TC TLOGSTVB

## Log Stock Table - MBF

**Project:** RUDROAD

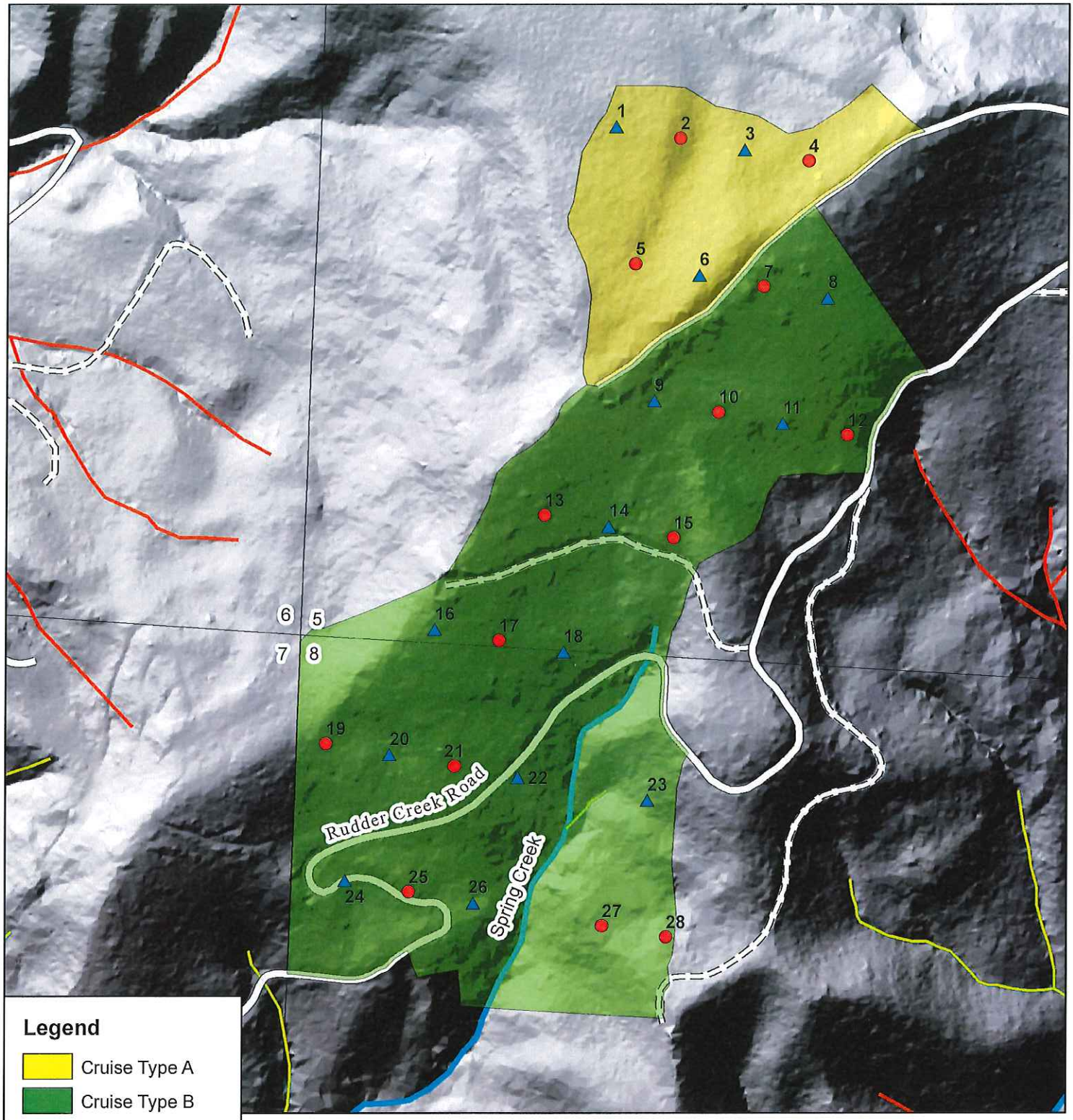
**T10S R08W S05 T0002**

| Twp | Rge | Sec | Tract | Type | Acres | Plots | Sample Trees |
|---|---|---|---|---|---|---|---|
| 10S | 08W | 05 | 1 | B | 37.00 | 22 | 57 |

**T10S R08W S05 T0002**

Page 1
Date 7/5/2017
Time 10:33:21AM

| Spp | S T | So rt | Gr de | Log Len | Gross MBF | % Def | Net MBF | % Spc | Net Volume by Scaling Diameter in Inches 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14-15 | 16-19 | 20-23 | 24-29 | 30-39 | 40+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DF | | | CU | 4 | | | | | | | | | | | | | | | | |
| DF | | | CU | 8 | | | | | | | | | | | | | | | | |
| DF | | | CU | 10 | | | | | | | | | | | | | | | | |
| DF | | | CU | 12 | 8 | 100.0 | | | | | | | | | | | | | | |
| DF | | | CU | 20 | 13 | 100.0 | | | | | | | | | | | | | | |
| DF | | | CU | 45 | 25 | 100.0 | | | | | | | | | | | | | | |
| DF | | D | 2 | 18 | 10 | 10.8 | 9 | .5 | | | | | | | | | | | 9 | |
| DF | | D | 2 | 32 | 70 | | 70 | 3.5 | | | | | | 13 | 15 | 42 | | | | |
| DF | | D | 2 | 38 | 3 | | 3 | .2 | | | | | | 3 | | | | | | |
| DF | | D | 2 | 40 | 1,829 | 1.7 | 1,797 | 90.4 | | | | | | 39 | 109 | 290 | 660 | 620 | 80 | |
| DF | | D | 3 | 14 | 2 | | 2 | .1 | | | | | 1 | 1 | | | | | | |
| DF | | D | 3 | 16 | 10 | | 10 | .5 | | | | | 5 | 4 | 1 | | | | | |
| DF | | D | 3 | 19 | 3 | | 3 | .2 | | | | | 2 | 1 | | | | | | |
| DF | | D | 3 | 20 | 2 | | 2 | .1 | | | | | | 2 | | | | | | |
| DF | | D | 3 | 21 | 3 | | 3 | .2 | | | | | | 2 | 2 | | | | | |
| DF | | D | 3 | 22 | 2 | | 2 | .1 | | | | | 2 | | | | | | | |
| DF | | D | 3 | 25 | 2 | | 2 | .1 | | | | 2 | | | | | | | | |
| DF | | D | 3 | 32 | 14 | | 14 | .7 | | | | 2 | 12 | | | | | | | |
| DF | | D | 3 | 36 | 33 | 1.5 | 33 | 1.7 | | | | 17 | 16 | | | | | | | |
| DF | | D | 3 | 38 | 3 | | 3 | .1 | | | | | 3 | | | | | | | |
| DF | | D | 3 | 40 | 33 | | 33 | 1.6 | | | 3 | 8 | 4 | 12 | | 6 | | | | |
| DF | | D | 4 | 14 | 1 | | 1 | .0 | | | | | 1 | | | | | | | |
| DF | | D | 4 | 24 | 3 | | 3 | .1 | | | 1 | 1 | | | | | | | | |
| DF | | | Totals | | 2,068 | 3.8 | 1,989 | 99.9 | | | 5 | 29 | 45 | 76 | 127 | 338 | 660 | 620 | 89 | |
| BM | | D | 4 | 24 | 3 | | 3 | 100.0 | | | 3 | | | | | | | | | |
| BM | | | Totals | | 3 | | 3 | .1 | | | 3 | | | | | | | | | |
| Total All Species | | | | | 2,071 | 3.8 | 1,991 | 100.0 | | | 7 | 29 | 45 | 76 | 127 | 338 | 660 | 620 | 89 | |




**Legend**

- Cruise Type A
- Cruise Type B
- Surfaced Road
- Unsurfaced Road
- Fish
- Nonfish
- Unknown

**Cruise Points**

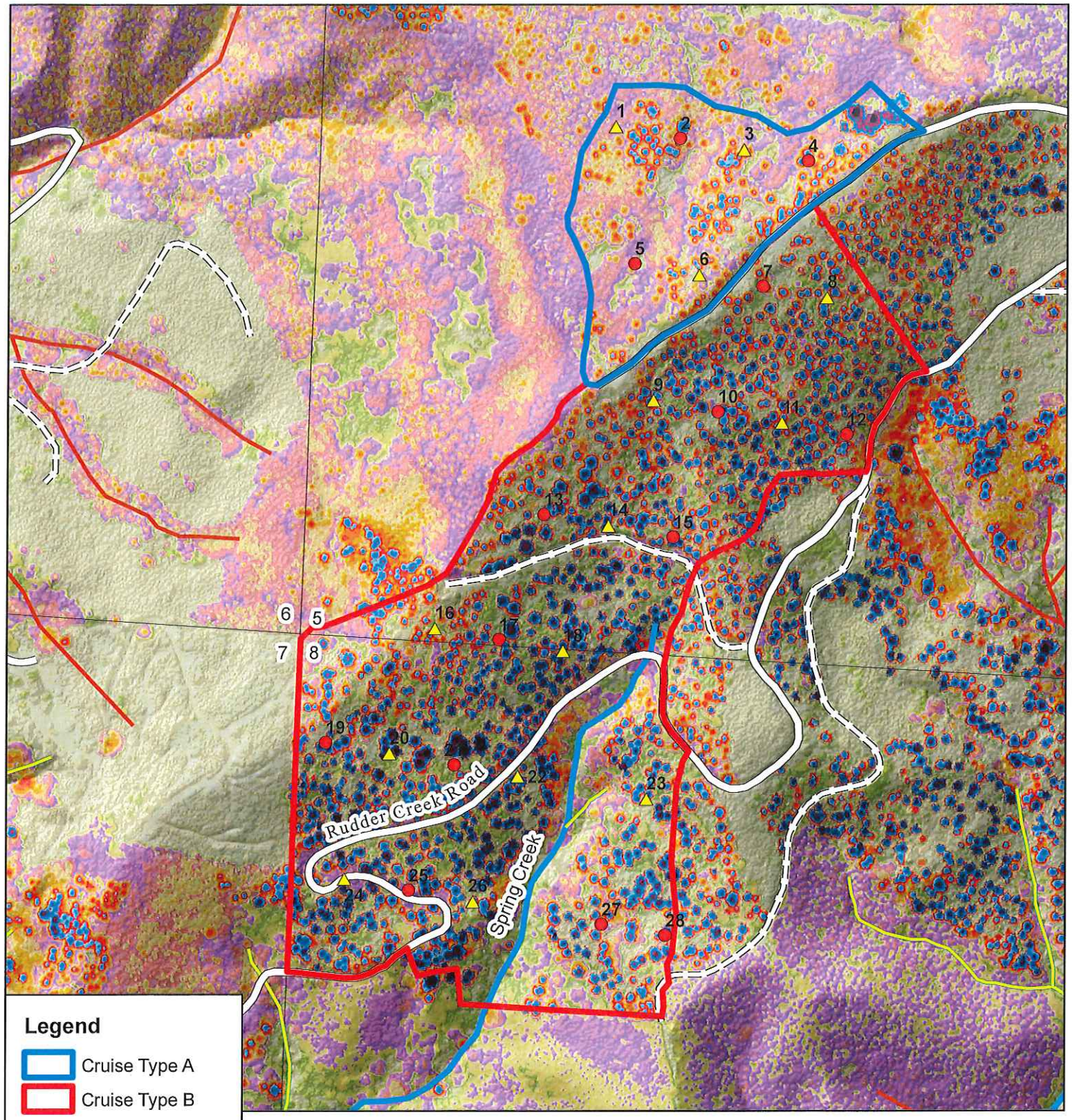
- Count
- Full Grade

## Rudder Road

PORTIONS OF SECTIONS 5 & 8
T10S, R08W, W.M.
POLK COUNTY, OREGON

N

0 125 250 500 750 1,000 Feet




**Legend**

- Cruise Type A
- Cruise Type B
- Surfaced Road
- Unsurfaced Road
- Fish
- Nonfish
- Unknown

**Cruise Points**

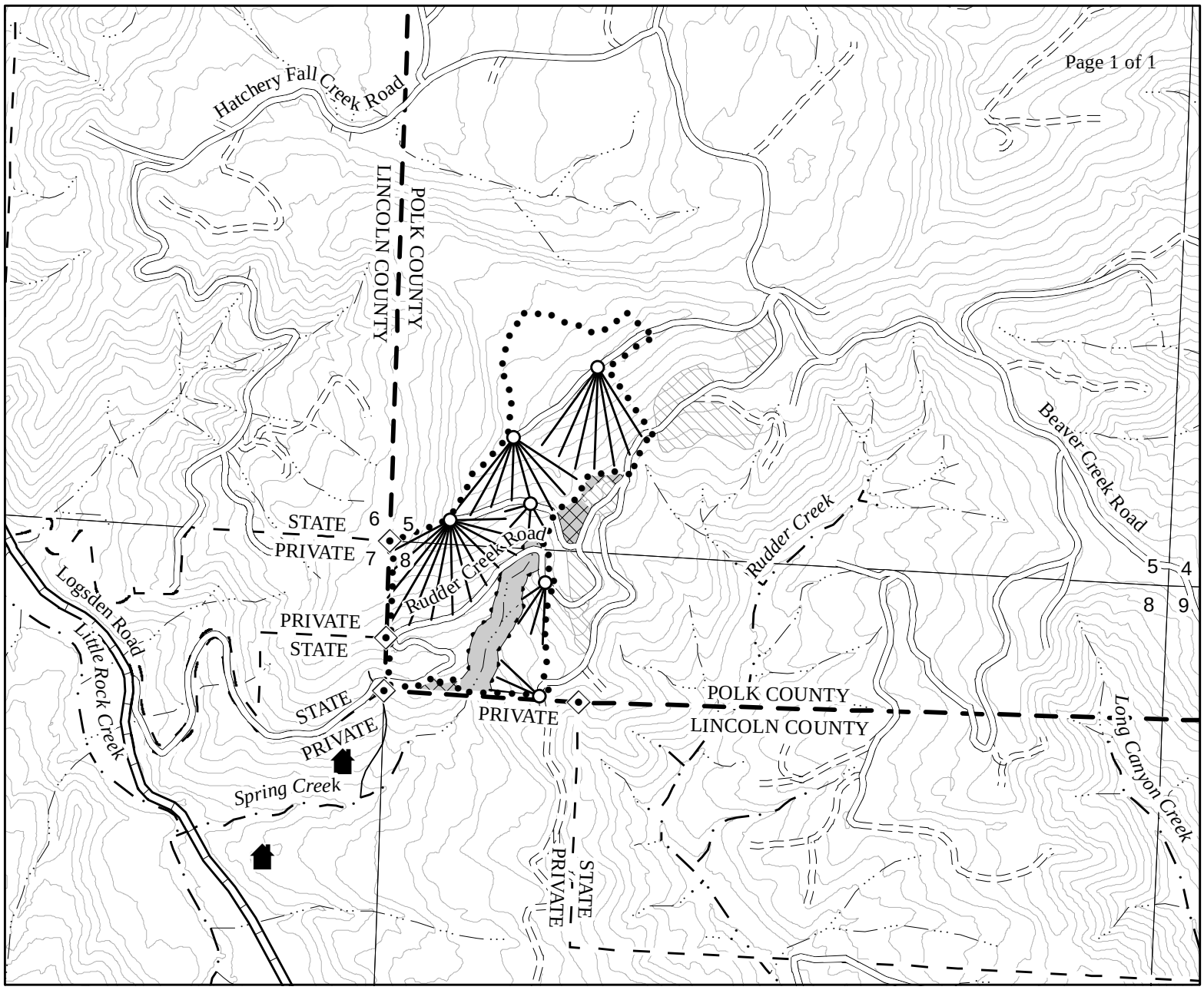
- Count
- Full Grade

# Rudder Road

PORTIONS OF SECTIONS 5 & 8
T10S, R08W, W.M.
POLK COUNTY, OREGON

N

0 125 250 500 750 1,000 Feet




Legend

Boundaries

- Timber Sale Boundary
- State Forest Property Boundary
- County Line

Roads

- County Road
- Surfaced Road
- Unsurfaced Road

Streams

- Type F Stream
- Type D Stream
- Type N Stream
- Posted Stream Buffer
- Stream Buffer
- Reforestation Area
- Cable Corridors
- Land Survey Monument
- Green Tree Retention Area
- Residence

# LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-18-055
RUDDER ROAD
PORTIONS OF SECTIONS 5 & 8, T10S, R8W, W.M.,
POLK COUNTY, OREGON

NET ACRES Cable = 27
NET ACRES Tractor = 19

This product is for informational use and may not have been prepared for or be suitable for legal, engineering or survey purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of this information.

Scale

1:12,000

1,000 0 1,000 2,000 Feet

N

Created By: Blake McKinley
blake.mckinley@oregon.gov
Date: 09/25/2017