"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal
# Parallel Universe
# Sale 341-15-26

**District:** **Forest Grove**

**Date:** **July 23, 2014**

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## cost summary

| | Conifer | Hardwood | Total |
|---|---|---|---|
| **Gross Timber Sale Value** | $4,153,627.57 | $42,393.24 | $4,196,020.81 |
| | | **Project Work:** | $(647,750.00) |
| | | **Advertised Value:** | $3,548,270.81 |

# timber description

**Location:** Portions of Sections 35 and 36, T2N, R6W, portions of Section 31, T2N, R5W, and portions of Sections 1 and 2, T1N, R6W, W.M., Tillamook County, Oregon.

**Stand Stocking:** 20%

| SpecieName | AvgDBH | Amortization (%) | Recovery (%) |
|---|---|---|---|
| Douglas - Fir | 17 | 0 | 98 |
| Western Hemlock / Fir | 18 | 0 | 98 |
| Alder (Red) | 13 | 0 | 98 |

| Volume by Grade | 2S | 3S | 4S | Camprun | Total |
|---|---|---|---|---|---|
| Douglas - Fir | 4,992 | 3,624 | 556 | 0 | 9,172 |
| Western Hemlock / Fir | 78 | 29 | 0 | 0 | 107 |
| Alder (Red) | 0 | 0 | 0 | 108 | 108 |
| Total | 5,070 | 3,653 | 556 | 108 | 9,387 |

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**comments:** Pond Values Used: 2nd Quarter Calendar Year 2014.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$835.33/MBF = $1,050/MBF - $214.67/MBF

SCALING COST ALLOWANCE = $5.00/MBF

FUEL COST ALLOWANCE = $4.00/Gallon

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

Other Costs (with Profit & Risk to be added):
Brand and Paint: 9,387 MBF @ $2/MBF = $18,774
TOTAL Other Costs (with Profit & Risk to be added) = $18,774

Other Costs (No Profit & Risk added):
Machine time to block/waterbar roads,and skid trails:
20 Hours @ $150/Hr. = $3,000
Equipment Cleaning: 4 x $1,000/Piece = $4,000
Machine time to pile landing slash and sort firewood:
20 hrs x $150/hr= $3,000
TOTAL Other Costs (No Profit & Risk added) = $10,000

ROAD MAINTENANCE
Move-in: $2,000
General Road Maintenance: 11.2 miles x $1,000/mile = $11,200
TOTAL: $13,200 / 9,387 MBF = $1.40/MBF

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## logging conditions

**combination#: 1**

| | |
|---|---|
| Douglas - Fir | 50.01% |
| Western Hemlock / Fir | 63.55% |
| Alder (Red) | 61.36% |

**yarding distance:** Medium (800 ft)  **downhill yarding:** No
**logging system:** Shovel  **Process:** Feller Buncher
**tree size:** Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
**loads / day:** 6.0  **bd. ft / load:** 4,500
**cost / mbf:** $53.28

**machines:** Feller Buncher w/ Delimber

**combination#: 2**

| | |
|---|---|
| Douglas - Fir | 31.41% |
| Western Hemlock / Fir | 36.45% |
| Alder (Red) | 38.64% |

**yarding distance:** Medium (800 ft)  **downhill yarding:** No
**logging system:** Cable: Medium Tower >40 - <70  **Process:** Stroke Delimber
**tree size:** Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
**loads / day:** 5.0  **bd. ft / load:** 4,300
**cost / mbf:** $155.54

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

**combination#: 3**

| | |
|---|---|
| Douglas - Fir | 18.58% |

**yarding distance:** Medium (800 ft)  **downhill yarding:** No
**logging system:** Track Skidder  **Process:** Manual Falling/Delimbing
**tree size:** Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
**loads / day:** 8.0  **bd. ft / load:** 4,500
**cost / mbf:** $95.57

**machines:** Log Loader (B)
Track Skidder

## logging costs

| | | | |
|---|---|---|---|
| **Operating Seasons:** | 2.00 | **Profit Risk:** | 15.00% |
| **Project Costs:** | $647,750.00 | **Other Costs (P/R):** | $18,774.00 |
| **Slash Disposal:** | $0.00 | **Other Costs:** | $10,000.00 |

**Miles of Road**

**Road Maintenance:** $1.40

| **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 | 4.4 |
| Western Hemlock / Fir | $0.00 | 2.0 | 4.0 |
| Alder (Red) | $0.00 | 2.0 | 3.8 |

## logging costs breakdown

| Logging | Road Maint | Fire Protect | Hauling | Other P/R appl | Profit & Risk | Slash Disposal | Scaling | Other | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Douglas - Fir** | | | | | | | | | |
| $93.26 | $1.43 | $0.93 | $52.41 | $2.00 | $22.50 | $0.00 | $5.00 | $1.07 | $178.60 |
| **Western Hemlock / Fir** | | | | | | | | | |
| $90.55 | $1.43 | $0.93 | $86.48 | $2.00 | $27.21 | $0.00 | $5.00 | $1.07 | $214.67 |
| **Alder (Red)** | | | | | | | | | |
| $92.79 | $1.43 | $0.93 | $91.02 | $2.00 | $28.23 | $0.00 | $5.00 | $1.07 | $222.47 |

| Specie | Amortization | Pond Value | Stumpage | Amortized |
|---|---|---|---|---|
| Douglas - Fir | $0.00 | $627.86 | $449.26 | $0.00 |
| Western Hemlock / Fir | $0.00 | $523.22 | $308.55 | $0.00 |
| Alder (Red) | $0.00 | $615.00 | $392.53 | $0.00 |

“STEWARDSHIP IN FORESTRY”

# Timber Sale Appraisal
# Parallel Universe
# Sale 341-15-26

**District:** **Forest Grove**

**Date:** **July 23, 2014**

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## summary

**Amortized**

| **Specie** | **MBF** | **Value** | Total |
|---|---|---|---|
| Douglas - Fir | 0 | $0.00 | $0.00 |
| Western Hemlock / Fir | 0 | $0.00 | $0.00 |
| Alder (Red) | 0 | $0.00 | $0.00 |

**Unamortized**

| **Specie** | **MBF** | **Value** | Total |
|---|---|---|---|
| Douglas - Fir | 9,172 | $449.26 | $4,120,612.72 |
| Western Hemlock / Fir | 107 | $308.55 | $33,014.85 |
| Alder (Red) | 108 | $392.53 | $42,393.24 |

### <u>Gross Timber Sale Value</u>

**Recovery:** $4,196,020.81

**Prepared by:** Peter Stone

**Phone:** 503-359-7477

# TIMBER SALE SUMMARY
## Parallel Universe
## Contract No. 341-15-26

1. **Location:** Portions of Sections 35 and 36, T2N, R6W, Section 31 T2N, R5W, Section 31, T2N, R6W, and Sections 1 and 2, T1N, R6W, W.M., Tillamook County.

2. **Type of Sale:** This timber sale is a combination sale consisting of 209 acres of modified clearcut, and 118 acres of partial cut, 1 acre of clearcut, and 2 acres of right-of-way. The timber will be sold on a recovery basis at a sealed bid auction.

3. **Revenue Distribution:** 100% BOF, Tillamook County, Tax Code 56.

4. **Sale Acreage:** Acres are net of stream buffers and road prisms. Acreage was determined using ESRI ArcMap GIS software.

5. **Cruise** : The Timber Sale was cruised by ODF Cruisers in March 2014. For more information see Cruise Report.

6. **Timber Description:** The Timber Sale Area consists of medium to well stocked 60 year old Douglas-fir stands with minor amounts of western hemlock, true firs, and hardwoods. The average “take” Douglas-fir DBH is 17 inches in Areas 1, 2, and 7 and 15 inches in Areas 3, 4, 5, 6, and 8. The estimated average net per acre Douglas-fir “take” volume in Areas 1, 2, and 7 is 37 MBF, and it is 15 MBF in Areas 3, 4, 5, and 6.

7. **Topography and Logging Method:** Slopes within the sale areas range from 2% to 70% and are variable in aspect. Area 1 is 65% ground-based yarding, and 35% cable-based yarding. Area 2 is 56% ground-based yarding, and 44% cable-based logging, Area 3 is 100% ground-based yarding, Area 4 is 100% ground-based yarding, Area 5 is 100% ground-based yarding, Area 6 is 100% ground-based yarding, and Area 8 is 100% ground-based yarding. The average horizontal cable yarding distance is approximately 500 feet and the maximum is approximately 1,000 feet. The average horizontal tractor yarding distance is approximately 400 feet and the maximum is approximately 800 feet

8. **Access:** From Forest Grove travel north seven miles on Highway 8 to its junction with Highway 6 and turn left. Continue west on Highway 6 for 9.5 miles to the Beaverdam Road and turn left. Travel ½ mile to its junction with University Falls Road and turn right. Proceed 1 mile and you will be at Area 3.

**9. Projects:**

| | |
|---|---|
| Project No. 1: Road construction and improvement | $129,259.30 |
| Project No. 2: Road surfacing | $444,688.24 |
| Project No. 3: Stockpile expansion | $59,760.79 |
| Project No. 4: Grass seed, fertilize, and mulch | $4,697.69 |
| Project No. 5: Waterbar, blocking and vacating roads | $4,141.59 |
| Move in and equipment cleaning: | $5,196.00 |
| Total Credit for all Projects (rounded) | $647,750.00 |

# PROJECT COST SUMMARY SHEET

Timber Sale: Parallel Universe    Sale Number: 341-15-26

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## PROJECT NO. 1: ROAD CONSTRUCTION AND IMPROVEMENT

### CONSTRUCTION

| Road Segment | Length | Cost |
|---|---|---|
| A to B | 48+25 | $19,667.25 |
| C to D | 6+50 | $3,011.49 |
| E to F | 5+50 | $2,094.59 |
| G to H | 5+30 | $1,585.30 |
| I to J | 4+00 | $1,284.75 |
| K to L | 8+70 | $3,651.34 |
| M to N | 6+75 | $2,616.68 |
| O to P | 11+30 | $3,388.21 |
| Q to R | 3+00 | $1,049.07 |
| S to T | 2+30 | $888.28 |
| U to V | 7+45 | $2,692.35 |
| W to X | 2+25 | $880.17 |
| Y to Z | 13+25 | $5,293.25 |
| AA to BB | 6+75 | $1,834.42 |
| CC to DD | 2+25 | $1,005.17 |
| TT to UU | 4+50 | $920.39 |

138+05 stations

2.61 miles

SUBTOTAL CONSTRUCTION $51,862.71

### IMPROVEMENT

| Road Segment | Length | Cost |
|---|---|---|
| EE to FF | 237+60 | $15,725.18 |
| GG to HH | 105+20 | $21,838.54 |
| M to II | 13+60 | $820.80 |
| JJ to KK | 4+80 | $1,233.75 |
| LL to S | 6+00 | $1,250.69 |
| MM to NN | 30+00 | $17,861.00 |
| NN to OO | 28+50 | $9,303.66 |
| NN to W | 19+40 | $4,033.51 |
| PP to CC | 62+90 | $4,335.23 |
| QQ to RR | 6+60 | $189.42 |
| RR to SS | 4+00 | $804.79 |

518+60 stations

9.82 miles

SUBTOTAL IMPROVEMENTS $77,396.58

PROJECT NO. 1 COST = $129,259.30

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## PROJECT NO. 2: SURFACING

| Road Segment | Amount | Type | Cost | Road Segment | Amount | Type | Cost |
|---|---|---|---|---|---|---|---|
| A to B | 4,190 cy | 3" - 0 | $49,693.40 | M to II | 322 cy | 1 1/2" - 0 | $3,873.66 |
| | 65 cy | 6" - 0 | $683.15 | | 340 cy | 3" - 0 | $4,090.20 |
| C to D | 803 cy | 3" - 0 | $8,728.61 | JJ to KK | 159 cy | 1 1/2" - 0 | $1,699.71 |
| E to F | 856 cy | 3" - 0 | $9,313.28 | | 149 cy | 3" - 0 | $1,592.81 |
| G to H | 545 cy | 3" - 0 | $5,989.55 | LL to S | 15 cy | 1 1/2" - 0 | $164.70 |
| I to J | 460 cy | 3" - 0 | $5,060.00 | | 53 cy | 3" - 0 | $581.94 |
| K to L | 788 cy | 3" - 0 | $8,715.28 | MM to NN | 2,070 cy | 3" - 0 | $25,316.10 |
| | 65 cy | 6" - 0 | $718.90 | | 145 cy | 1 1/2" - 0 | $1,773.35 |
| M to N | 53 cy | 3" - 0 | $629.11 | | 48 cy | 36" - 24" | $252.00 |
| O to P | 53 cy | 3" - 0 | $638.65 | NN to OO | 40 cy | 1 1/2" - 0 | $510.80 |
| U to V | 53 cy | 3" - 0 | $671.51 | | 1,957 cy | 3" - 0 | $24,990.89 |
| | 65 cy | 6" - 0 | $735.80 | | 225 cy | 6" - 0 | $2,569.50 |
| W to X | 53 cy | 3" - 0 | $605.79 | NN to W | 612 cy | 3" - 0 | $6,995.16 |
| Y to Z | 1,081 cy | 3" - 0 | $13,598.98 | | 20 cy | 1 1/2" - 0 | $228.60 |
| AA to BB | 639 cy | 3" - 0 | $8,064.18 | PP to CC | 49 cy | 1 1/2" - 0 | $469.42 |
| CC to DD | 376 cy | 3" - 0 | $4,530.80 | | 566 cy | 3" - 0 | $5,422.28 |
| EE to FF | 7,462 cy | 1 1/2" - 0 | $83,649.02 | QQ to RR | 277 cy | 1 1/2" - 0 | $2,919.58 |
| | 8,167 cy | 3" - 0 | $91,552.07 | RR to SS | 260 cy | 1 1/2" - 0 | $2,735.20 |
| GG to HH | 2,335 cy | 1 1/2" - 0 | $27,319.50 | TT to UU | 493 cy | 3" - 0 | $6,147.71 |
| | 2,630 cy | 3" - 0 | $30,771.00 | | | | |
| | 19 cy | 6" - 0 | $63.01 | | | | |
| | 132 cy | 36" - 24" | $623.04 | | | | |

| | | |
|---|---|---|
| Totals | 11,084 cy | 1 1/2" - 0 |
| | 26,987 cy | 3" - 0 |
| | 439 cy | 6" - 0 |
| | 180 cy | 36" - 24" |

TOTAL PROJECT NO. 2 COST = $444,688.24

# PROJECT COST SUMMARY SHEET

Timber Sale: Parallel Universe Sale Number: 341-15-26

## PROJECT NO. 3: STOCKPILE EXPANSION

| | | | |
|---|---|---|---|
| Expand stockpile site. | $44,029.44 | | |
| Surface expansion | $15,731.36 | | |
| | | TOTAL PROJECT NO. 3 COST = | $59,760.79 |

## PROJECT NO. 4: INSTALL BIO-BAGS AND APPLY GRASS SEED, FERTILIZE, & MULCH

| | | | |
|---|---|---|---|
| Grass seed, fertilize and mulch soil. | $4,497.69 | | |
| 40 Bio Bags on haul route | $200.00 | | |
| | | TOTAL PROJECT NO. 4 COST = | $4,697.69 |

## PROJECT NO. 5: WATERBARS, BLOCK & VACATE ROADS

| | | | |
|---|---|---|---|
| Block and vacate roads, construct waterbars | $2,360.59 | | |
| Move in Excavator + Equipment Cleaning | $1,781.00 | | |
| | | TOTAL PROJECT NO. 5 COST = | $4,141.59 |

## MOVE IN & EQUIPMENT CLEANING

| | | | |
|---|---|---|---|
| Grader | $363.00 | | |
| Roller (smooth/grid) & Compactors | $410.00 | | |
| Excavators (Large) + Equipment Cleaning | $1,781.00 | | |
| Tractor (D8) + Equipment Cleaning | $1,781.00 | | |
| 10-12 yd Dump Truck (6 each) | $742.00 | | |
| Water Truck (2,500 Gal) | $119.00 | | |
| | | TOTAL MOVE IN & EQUIPMENT CLEANING COST = | $5,196.00 |

| | |
|---|---|
| TOTAL ALL PROJECTS | $647,743.62 |
| TOTAL CREDITS | $647,750.00 |

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: A to B

Construction: 48+25 stations

0.91 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 5.54 | acres @ | $980.00 | per acre = | $5,427.57 | |
| Balanced Road Construction | 48.25 | sta @ | $90.00 | per sta = | $4,342.50 | |
| Construct Turnouts | 2 | ea @ | $60.00 | per ea = | $120.00 | |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 | |
| Approach to landing | 2.00 | sta @ | $118.70 | per sta = | $237.40 | |
| Landing | 4 | ea @ | $285.00 | per ea = | $1,140.00 | |
| Grade, Ditch, and Roll | 48.25 | sta @ | $28.70 | per sta = | $1,384.78 | |
| Install Gate | 1.00 | ea @ | $600.00 | per ea = | $600.00 | |
| | | | | | TOTAL EXCAVATION COSTS= | $13,327.25 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

240 LF of 18" $4,800.00 50 LF of 24" $1,450.00

Culvert Markers

9 markers $90.00

TOTAL CULVERT COSTS = $6,340.00

**PROJECT NO. 1 TOTAL COST = $19,667.25**

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
| A to B | 3,136 | cy of | 3" - 0 | @ | $11.86 | per cy = | $37,192.96 |
| Turnouts | 44 | cy of | 3" - 0 | @ | $11.86 | per cy = | $521.84 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $11.86 | per cy = | $237.20 |
| Junction | 140 | cy of | 3" - 0 | @ | $11.86 | per cy = | $1,660.40 |
| Landings | 720 | cy of | 3" - 0 | @ | $11.86 | per cy = | $8,539.20 |
| Subgrade Reinforcement | 65 | cy of | 6" - 0 | @ | $10.51 | per cy = | $683.15 |
| Approach to landing | 130 | cy of | 3" - 0 | @ | $11.86 | per cy = | $1,541.80 |
| Total = | 4,255 | | | | | | |
| | 4,190 | cy of | 3" - 0 | | $11.86 | per cy = | $49,693.40 |
| | 65 | cy of | 6" - 0 | | $10.51 | per cy = | $683.15 |

**PROJECT NO. 2 TOTAL COST = $50,376.55**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 2.77 | acres @ | $220.00 | per acre = | $609.22 |
| Mulch | 10.00 | bales @ | $4.50 | per bale = | $45.00 |

**PROJECT NO. 4 TOTAL COST = $654.22**

**TOTAL COST = $70,698.01**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: C to D

Construction: 6+50 stations

0.12 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.75 | acres @ | $784.00 | per acre = | $584.94 |
| Balanced Road Construction | 6.50 | sta @ | $90.00 | per sta = | $585.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 2 | ea @ | $285.00 | per ea = | $570.00 |
| Grade, Ditch, and Roll | 6.50 | sta @ | $28.70 | per sta = | $186.55 |

TOTAL EXCAVATION COSTS= $2,001.49

### CULVERTS - MATERIALS & INSTALLATION

Culverts

50 LF of 18" $1,000.00

Culvert Markers

1 markers $10.00

TOTAL CULVERT COSTS = $1,010.00

PROJECT NO. 1 TOTAL COST = $3,011.49

## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| C to D | 423 | cy of | 3" - 0 | @ | $10.87 | per cy = | $4,598.01 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $10.87 | per cy = | $217.40 |
| Landing | 360 | cy of | 3" - 0 | @ | $10.87 | per cy = | $3,913.20 |
| Total = | 803 | | | | | | |
| | 803 | cy of | 3" - 0 | | $10.87 | per cy = | $8,728.61 |

PROJECT NO. 2 TOTAL COST = $8,728.61

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.37 | acres @ | $220.00 | per acre = | $82.07 |

PROJECT NO. 4 TOTAL COST = $82.07

TOTAL COST = $11,822.17

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: E to F

Construction: 5+50 stations

0.10 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.63 | acres @ | $980.00 | per acre = | $618.69 |
| Balanced Road Construction | 5.50 | sta @ | $90.00 | per sta = | $495.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Approach to landing | 1.50 | sta @ | $118.70 | per sta = | $178.05 |
| Landing | 2 | ea @ | $285.00 | per ea = | $570.00 |
| Grade, Ditch, and Roll | 5.50 | sta @ | $28.70 | per sta = | $157.85 |

PROJECT NO. 1 TOTAL COST = $2,094.59

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
| E to F | 358 | cy of | 3" - 0 | @ | $10.88 | per cy = | $3,895.04 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $10.88 | per cy = | $217.60 |
| Junction | 20 | cy of | 3" - 0 | @ | $10.88 | per cy = | $217.60 |
| Landing | 360 | cy of | 3" - 0 | @ | $10.88 | per cy = | $3,916.80 |
| Approach to landing | 98 | cy of | 3" - 0 | @ | $10.88 | per cy = | $1,066.24 |
| Total = | 856 | | | | | | |
| | 856 | cy of | 3" - 0 | | $10.88 | per cy = | $9,313.28 |

PROJECT NO. 2 TOTAL COST = $9,313.28

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.32 | acres @ | $220.00 | per acre = | $69.44 |

PROJECT NO. 4 TOTAL COST = $69.44

TOTAL COST = $11,477.31

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: G to H

Construction: 5+30 stations

0.10 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.61 | acres @ | $980.00 | per acre = | $596.19 |
| Balanced Road Construction | 5.30 | sta @ | $90.00 | per sta = | $477.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade, Ditch, and Roll | 5.30 | sta @ | $28.70 | per sta = | $152.11 |

**PROJECT NO. 1 TOTAL COST = $1,585.30**

## PROJECT NO. 2:

### SURFACING 12 " deep = 65 cy/sta

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| G to H | 345 | cy of | 3" - 0 | @ | $10.99 | per cy = | $3,791.55 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $10.99 | per cy = | $219.80 |
| Landing | 180 | cy of | 3" - 0 | @ | $10.99 | per cy = | $1,978.20 |
| Total = | 545 | | | | | | |
| | 545 | cy of | 3" - 0 | | $10.99 | per cy = | $5,989.55 |

**PROJECT NO. 2 TOTAL COST = $5,989.55**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.30 | acres @ | $220.00 | per acre = | $66.92 |

**PROJECT NO. 4 TOTAL COST = $66.92**

**TOTAL COST = $7,641.77**

# SUMMARY OF CONSTRUCTION COST

|  |  |  |  |
|---|---|---|---|
| Timber Sale: | Parallel Universe | Timber Sale No. : | 341-15-26 |
| Road Segment: | I to J | Construction: | 4+00 stations<br>0.08 miles |

## PROJECT NO. 1

### EXCAVATION

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.46 | acres @ | $980.00 | per acre = | $449.95 |
| Balanced Road Construction | 4.00 | sta @ | $90.00 | per sta = | $360.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade, Ditch, and Roll | 4.00 | sta @ | $28.70 | per sta = | $114.80 |

PROJECT NO. 1 TOTAL COST = $1,284.75

## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta |  |  |  |  |
|---|---|---|---|---|---|---|---|
| I to J | 260 | cy of | 3" - 0 | @ | $11.00 | per cy = | $2,860.00 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $11.00 | per cy = | $220.00 |
| Landing | 180 | cy of | 3" - 0 | @ | $11.00 | per cy = | $1,980.00 |
| Total = | 460 |  |  |  |  |  |  |
|  | 460 | cy of | 3" - 0 |  | $11.00 | per cy = | $5,060.00 |

PROJECT NO. 2 TOTAL COST = $5,060.00

## PROJECT NO. 4:

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.23 | acres @ | $220.00 | per acre = | $50.51 |

PROJECT NO. 4 TOTAL COST = $50.51

**TOTAL COST = $6,395.26**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No.: 341-15-26
Road Segment: K to L
Construction: 8+70 stations
0.16 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 1.00 | acres @ | $980.00 | per acre = | $978.65 | |
| Balanced Road Construction | 8.70 | sta @ | $90.00 | per sta = | $783.00 | |
| Construct Turnouts | 1 | ea @ | $60.00 | per ea = | $60.00 | |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 | |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 | |
| Grade, Ditch, and Roll | 8.70 | sta @ | $28.70 | per sta = | $249.69 | |
| | | | | TOTAL EXCAVATION COSTS= | | $2,431.34 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts
60 LF of 18" $1,200.00

Culvert Markers
2 markers $20.00

TOTAL CULVERT COSTS = $1,220.00

**PROJECT NO. 1 TOTAL COST = $3,651.34**

## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| K to L | 566 | cy of | 3" - 0 | @ | $11.06 | per cy = | $6,259.96 |
| Turnout | 22 | cy of | 3" - 0 | @ | $11.06 | per cy = | $243.32 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $11.06 | per cy = | $221.20 |
| Landing | 180 | cy of | 3" - 0 | @ | $11.06 | per cy = | $1,990.80 |
| Subgrade Reinforcement | 65 | cy of | 6" - 0 | @ | $11.06 | per cy = | $718.90 |
| Total = | 853 | | | | | | |
| | 788 | cy of | 3" - 0 | | $11.06 | per cy = | $8,715.28 |
| | 65 | cy of | 6" - 0 | | $11.06 | per cy = | $718.90 |

**PROJECT NO. 2 TOTAL COST = $9,434.18**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.50 | acres @ | $220.00 | per acre = | $109.85 |
| Mulch | 4.00 | bales @ | $4.50 | per bale = | $18.00 |

**PROJECT NO. 4 TOTAL COST = $127.85**

**TOTAL COST = $13,213.37**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: M to N
Construction: 6+75 stations
0.13 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.46 | acres @ | $980.00 | per acre = | $455.58 | |
| Balanced Road Construction | 6.75 | sta @ | $90.00 | per sta = | $607.50 | |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 | |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 | |
| Grade and Roll (Outslope) | 6.75 | sta @ | $27.20 | per sta = | $183.60 | |
| | | | | TOTAL EXCAVATION COSTS= | | $1,606.68 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | |
|---|---|---|
| 50 | LF of 18" | $1,000.00 |

Culvert Markers

| | | |
|---|---|---|
| 1 | markers | $10.00 |

TOTAL CULVERT COSTS = $1,010.00

**PROJECT NO. 1 TOTAL COST = $2,616.68**

## PROJECT NO. 2:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SURFACING | | 10 | " deep = | 53 cy/sta | | | | |
| M to N | | 53 | cy of | 3" - 0 | @ | $11.87 | per cy = | $629.11 |
| | Total = | 53 | | | | | | |
| | | 53 | cy of | 3" - 0 | | $11.87 | per cy = | $629.11 |

**PROJECT NO. 2 TOTAL COST = $629.11**

## PROJECT NO.5:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.46 | acres @ | $220.00 | per acre = | $102.27 |
| Rip road bed and landing | 6.75 | sta @ | $25.00 | per sta = | $168.75 |
| Construct tank trap | 1.00 | ea @ | $50.00 | per ea = | $50.00 |
| Reestablish ditchline | 1.00 | ea @ | $25.00 | per ea = | $25.00 |

**PROJECT NO. 5 TOTAL COST = $346.02**

**TOTAL COST = $3,591.81**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: O to P

Construction: 11+30 stations

0.21 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 1.04 | acres @ | $980.00 | per acre = | $1,016.90 | |
| Balanced Road Construction | 11.30 | sta @ | $90.00 | per sta = | $1,017.00 | |
| Construct Turnouts | 1 | ea @ | $60.00 | per ea = | $60.00 | |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 | |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 | |
| Grade, Ditch, and Roll | 11.30 | sta @ | $28.70 | per sta = | $324.31 | |
| | | | | TOTAL EXCAVATION COSTS= | | $2,778.21 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | |
|---|---|---|
| 30 | LF of 18" | $600.00 |

Culvert Markers

| | |
|---|---|
| 1 markers | $10.00 |

TOTAL CULVERT COSTS = $610.00

PROJECT NO. 1 TOTAL COST = $3,388.21

## PROJECT NO. 2:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SURFACING | 10 | " deep = | 53 cy/sta | | | | | |
| O to P | 53 | cy of | 3" - 0 | @ | $12.05 | per cy = | $638.65 | |
| Total = | 53 | | | | | | | |
| | 53 | cy of | 3" - 0 | | $12.05 | per cy = | $638.65 | |

PROJECT NO. 2 TOTAL COST = $638.65

## PROJECT NO.5:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 1.04 | acres @ | $220.00 | per acre = | $228.28 |
| Rip road bed and landing | 11.30 | sta @ | $25.00 | per sta = | $282.50 |
| Construct Waterbars | 3.00 | ea @ | $25.00 | per ea = | $75.00 |
| Construct tank trap | 1.00 | ea @ | $50.00 | per ea = | $50.00 |
| Reestablish ditchline | 1.00 | ea @ | $25.00 | per ea = | $25.00 |

PROJECT NO. 5 TOTAL COST = $660.78

**TOTAL COST = $4,687.64**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: Q to R

Construction: 3+00 stations
0.06 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.34 | acres @ | $980.00 | per acre = | $337.47 |
| Balanced Road Construction | 3.00 | sta @ | $90.00 | per sta = | $270.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade and Roll (Outslope) | 3.00 | sta @ | $27.20 | per sta = | $81.60 |

PROJECT NO. 1 TOTAL COST = $1,049.07

## PROJECT NO.5:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.34 | acres @ | $220.00 | per acre = | $75.76 |
| Rip road bed and landing | 3.00 | sta @ | $25.00 | per sta = | $75.00 |
| Construct tank trap | 1.00 | ea @ | $50.00 | per ea = | $50.00 |

PROJECT NO. 5 TOTAL COST = $200.76

TOTAL COST = $1,249.82

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: S to T

Construction : 2+30 stations

0.04 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.26 | acres @ | $980.00 | per acre = | $258.72 |
| Balanced Road Construction | 2.30 | sta @ | $90.00 | per sta = | $207.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade and Roll (Outslope) | 2.30 | sta @ | $27.20 | per sta = | $62.56 |

**PROJECT NO. 1 TOTAL COST = $888.28**

## PROJECT NO.5:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.26 | acres @ | $220.00 | per acre = | $58.08 |
| Rip road bed and landing | 2.30 | sta @ | $25.00 | per sta = | $57.50 |
| Construct tank trap | 1.00 | ea @ | $50.00 | per ea = | $50.00 |

**PROJECT NO. 5 TOTAL COST = $165.58**

**TOTAL COST = $1,053.86**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: U to V

Construction: 7+45 stations

0.14 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.86 | acres @ | $980.00 | per acre = | $838.04 |
| Balanced Road Construction | 7.45 | sta @ | $90.00 | per sta = | $670.50 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade, Ditch, and Roll | 7.45 | sta @ | $28.70 | per sta = | $213.82 |

TOTAL EXCAVATION COSTS= $2,082.35

### CULVERTS - MATERIALS & INSTALLATION

Culverts

30 LF of 18" $600.00

Culvert Markers

1 markers $10.00

TOTAL CULVERT COSTS = $610.00

**PROJECT NO. 1 TOTAL COST = $2,692.35**

## PROJECT NO. 2:

| SURFACING | 10 | " deep = | 53 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| U to V | 53 | cy of | 3" - 0 | @ | $12.67 | per cy = | $671.51 |
| Subgrade Reinforcemen | 65 | cy of | 6" - 0 | @ | $11.32 | per cy = | $735.80 |
| Total = | 118 | | | | | | |
| | 53 | cy of | 3" - 0 | | $12.67 | per cy = | $671.51 |
| | 65 | cy of | 6" - 0 | | $11.32 | per cy = | $735.80 |

**PROJECT NO. 2 TOTAL COST = $1,407.31**

## PROJECT NO. 4:

| | | | | |
|---|---|---|---|---|
| Mulch | 2.00 bales @ | $4.50 | per bale = | $9.00 |

**PROJECT NO. 4 TOTAL COST = $9.00**

## PROJECT NO.5:

| | | | | |
|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.86 acres @ | $220.00 | per acre = | $188.13 |
| Rip road bed and landing | 7.45 sta @ | $25.00 | per sta = | $186.25 |
| Construct tank trap | 1.00 ea @ | $50.00 | per ea = | $50.00 |
| Remove Culvert | 1.00 ea @ | $150.00 | per ea = | $150.00 |

**PROJECT NO. 5 TOTAL COST = $574.38**

**TOTAL COST = $4,683.05**

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: W to X

Construction: 2+25 stations

0.04 miles

### PROJECT NO. 1

#### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.26 | acres @ | $980.00 | per acre = | $253.10 | |
| Balanced Road Construction | 2.25 | sta @ | $90.00 | per sta = | $202.50 | |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 | |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 | |
| Grade, Ditch, and Roll | 2.25 | sta @ | $28.70 | per sta = | $64.58 | |
| | | | | TOTAL EXCAVATION COSTS= | | $880.17 |

PROJECT NO. 1 TOTAL COST = $880.17

### PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACING | 10 | " deep = | 53 cy/sta | | | | |
| W to X | 53 | cy of | 3" - 0 | @ | $11.43 | per cy = | $605.79 |
| Total = | 53 | | | | | | |
| | 53 | cy of | 3" - 0 | | $11.43 | per cy = | $605.79 |

PROJECT NO. 2 TOTAL COST = $605.79

### PROJECT NO.5:

| | | | | |
|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.26 acres @ | $220.00 | per acre = | $56.82 |
| Rip road bed and landing | 2.25 sta @ | $25.00 | per sta = | $56.25 |
| Construct tank trap | 1.00 ea @ | $50.00 | per ea = | $50.00 |

PROJECT NO. 5 TOTAL COST = $163.07

TOTAL COST = $1,649.03

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: Y to Z
Construction: 13+25 stations
0.25 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 1.52 | acres @ | $980.00 | per acre = | $1,490.47 |
| Balanced Road Construction | 13.25 | sta @ | $90.00 | per sta = | $1,192.50 |
| Construct Junction | 1 | ea @ | $90.00 | per sta = | $90.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade, Ditch, and Roll | 13.25 | sta @ | $28.70 | per sta = | $380.28 |

TOTAL EXCAVATION COSTS= $3,513.25

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | | | | |
|---|---|---|---|---|---|
| 30 | LF of 18" | $600.00 | 40 | LF of 24" | $1,160.00 |

Culvert Markers

2 markers $20.00

TOTAL CULVERT COSTS = $1,780.00

PROJECT NO. 1 TOTAL COST = $5,293.25

## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| Y to Z | 861 | cy of | 3" - 0 | @ | $12.58 | per cy = | $10,831.38 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $12.58 | per cy = | $251.60 |
| Junction | 20 | cy of | 3" - 0 | @ | $12.58 | per cy = | $251.60 |
| Landing | 180 | cy of | 3" - 0 | @ | $12.58 | per cy = | $2,264.40 |
| Total = | 1,081 | | | | | | |
| | 1,081 | cy of | 3" - 0 | | $12.58 | per cy = | $13,598.98 |

PROJECT NO. 2 TOTAL COST = $13,598.98

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.76 | acres @ | $220.00 | per acre = | $167.30 |
| Mulch | 2.00 | bales @ | $4.50 | per bale = | $9.00 |

PROJECT NO. 4 TOTAL COST = $176.30

**TOTAL COST = $19,068.53**

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: AA to BB

Construction: 6+75 stations

0.13 miles

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### PROJECT NO. 1

EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.77 | acres @ | $980.00 | per acre = | $759.30 |
| Balanced Road Construction | 6.75 | sta @ | $90.00 | per sta = | $607.50 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade, Ditch, and Roll | 3.75 | sta @ | $28.70 | per sta = | $107.63 |

PROJECT NO. 1 TOTAL COST = $1,834.42

---

### PROJECT NO. 2:

SURFACING 12 " deep = 65 cy/sta

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| AA to BB | 439 | cy of | 3" - 0 | @ | $12.62 | per cy = | $5,540.18 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $12.62 | per cy = | $252.40 |
| Landing | 180 | cy of | 3" - 0 | @ | $12.62 | per cy = | $2,271.60 |
| Total = | 639 | | | | | | |
| | 639 | cy of | 3" - 0 | | $12.62 | per cy = | $8,064.18 |

PROJECT NO. 2 TOTAL COST = $8,064.18

---

### PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.39 | acres @ | $220.00 | per acre = | $85.23 |

PROJECT NO. 4 TOTAL COST = $85.23

---

TOTAL COST = $9,983.83

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: CC to DD

Construction: 2+25 stations

0.04 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.26 | acres @ | $980.00 | per acre = | $253.10 |
| Balanced Road Construction | 2.25 | sta @ | $90.00 | per sta = | $202.50 |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 |
| Grade, Ditch, and Roll | 2.25 | sta @ | $28.70 | per sta = | $64.58 |
| Construct Heliport | 1 | ea @ | $200.00 | per ea = | $200.00 |

PROJECT NO. 1 TOTAL COST = $1,005.17

## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| CC to DD | 146 | cy of | 3" - 0 | @ | $12.05 | per cy = | $1,759.30 |
| Landing | 180 | cy of | 3" - 0 | @ | $12.05 | per cy = | $2,169.00 |
| Heliport | 50 | cy of | 3" - 0 | @ | $12.05 | per cy = | $602.50 |
| Total = | 376 | | | | | | |
| | 376 | cy of | 3" - 0 | | $12.05 | per cy = | $4,530.80 |

PROJECT NO. 2 TOTAL COST = $4,530.80

## PROJECT NO. 4:

| | | | | |
|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.13 acres @ | $220.00 | per acre = | $28.41 |

PROJECT NO. 4 TOTAL COST = $28.41

TOTAL COST = $5,564.38

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: EE to FF (Beaverdam Rd)
Improvement: 237+60 stations
4.50 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Cutbank Clearing - Endhaul | 0.55 | acres @ | $980.00 | per acre = | $543.09 | |
| Pull Ditch and Endhaul Waste Material | 30.30 | sta @ | $100.00 | per sta = | $3,030.00 | |
| Cutbank Removal | | | | | | |
| Excavate & Load | 1,200 | cy @ | $1.00 | per cy = | $1,200.00 | |
| Endhaul Material | 1,560 | cy @ | $3.94 | per cy = | $6,146.40 | |
| Compact Waste Area | 1,560 | cy @ | $0.25 | per cy = | $390.00 | |
| Sidecast Pullback | | | | | | |
| Excavate & Load | 58 | cy @ | $1.00 | per cy = | $58.00 | |
| Endhaul Material | 75 | cy @ | $3.94 | per cy = | $297.08 | |
| Compact Waste Area | 75 | cy @ | $0.25 | per cy = | $18.85 | |
| Bridge Approaches | | | | | | |
| Excavate & Load | 13 | cy @ | $1.00 | per cy = | $12.96 | |
| Endhaul Material | 17 | cy @ | $2.28 | per cy = | $38.42 | |
| Compact Waste Area | 17 | cy @ | $0.45 | per cy = | $7.58 | |
| Grade and Ditch | 237.60 | sta @ | $15.50 | per sta = | $3,682.80 | |
| Grade and Roll Parking Area | 1 | ea @ | $150.00 | per ea = | $150.00 | |
| Remove and Reinstall Culvert | 1 | ea @ | $150.00 | per ea = | $150.00 | |
| | | | | TOTAL EXCAVATION COSTS= | | $15,725.18 |

PROJECT NO. 1 TOTAL COST = $15,725.18

## PROJECT NO. 2:

| | | | | |
|---|---|---|---|---|
| | 20 feet wide | 6 | " deep = | 52 cy/sta |
| | 16 feet wide | 5 | " deep = | 33 cy/sta |
| | 16 feet wide | 4 | " deep = | 26 cy/sta |
| | 14 feet wide | 5 | " deep = | 29 cy/sta |
| SURFACING | 14 feet wide | 4 | " deep = | 23 cy/sta |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Base Rock (0+00 to 39+60) | 2,060 | cy of | 3" - 0 | @ | $11.21 | per cy = | $23,092.60 |
| Surfacing Rock (0+00 to 39+60) | 2,060 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $23,092.60 |
| Base Rock (39+60 to 118+00) | 2,588 | cy of | 3" - 0 | @ | $11.21 | per cy = | $29,011.48 |
| Surfacing Rock (39+60 to 118+00) | 2,039 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $22,857.19 |
| Base Rock (118+00 to 237+60) | 3,469 | cy of | 3" - 0 | @ | $11.21 | per cy = | $38,887.49 |
| Surfacing Rock (118+00 to 237+60) | 2,751 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $30,838.71 |
| Turnouts | 350 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $3,923.50 |
| Large Turnouts | 140 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $1,569.40 |
| Junction | 110 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $1,233.10 |
| Parking Area | 50 | cy of | 3" - 0 | @ | $11.21 | per cy = | $560.50 |
| Culvert Backfill | 12 | cy of | 1 1/2" - 0 | @ | $11.21 | per cy = | $134.52 |
| Total = | 15,629 | | | | | | |
| | 7,462 | cy of | 1 1/2" - 0 | | $11.21 | per cy = | $83,649.02 |
| | 8,167 | cy of | 3" - 0 | | $11.21 | per cy = | $91,552.07 |

PROJECT NO. 2 TOTAL COST = $175,201.09

## PROJECT NO. 3:

| | | | | | |
|---|---|---|---|---|---|
| Bio-Bags | 20 | each @ | $5.00 | per each = | $100.00 |
| Grass seed and fertilize areas of disturbed soil. | 2.19 | acres @ | $220.00 | per acre = | $481.92 |
| Mulch | 2.19 | acres @ | $600.00 | per acre = | $1,314.33 |

PROJECT NO. 4 TOTAL COST = $1,896.24

TOTAL COST = $192,822.52

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: GG to HH (University Falls Road)

Improvement: 105+20 stations

1.99 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Cutbank Clearing - Endhaul | 0.19 | acres @ | $980.00 | per acre = | $182.12 | |
| Pull Ditch and Endhaul Waste Material | 21.30 | sta @ | $100.00 | per sta = | $2,130.00 | |
| Bridge Approaches | | | | | | |
| Excavate & Load | 26 | cy @ | $1.00 | per cy = | $25.93 | |
| Endhaul Material | 34 | cy @ | $2.28 | per cy = | $76.84 | |
| Compact Waste Area | 34 | cy @ | $0.45 | per cy = | $15.17 | |
| Cutbank Removal | | | | | | |
| Excavate & Load | 959 | cy @ | $4.94 | per cy = | $4,737.46 | |
| Endhaul Material | 1,247 | cy @ | $2.28 | per cy = | $2,842.48 | |
| Compact Waste Area | 1,247 | cy @ | $0.25 | per cy = | $311.68 | |
| Puncheon Excavation | | | | | | |
| Excavate existing puncheon | 73 | cy @ | $1.00 | per cy = | $73.00 | |
| Endhaul unsuitable fill material | 19 | cy @ | $2.28 | per cy = | $43.27 | |
| Place fill and 6"-0 rock | 95 | cy @ | $2.12 | per cy = | $201.19 | |
| Compact fill with plate compactor | 95 | cy @ | $0.45 | per cy = | $42.71 | |
| Compact Waste Area | 19 | cy @ | $0.25 | per cy = | $4.75 | |
| Sidecast Pullback | | | | | | |
| Excavate & Load | 115 | cy @ | $4.94 | per cy = | $568.10 | |
| Endhaul Material | 150 | cy @ | $2.28 | per cy = | $340.86 | |
| Compact Waste Area | 150 | cy @ | $0.25 | per cy = | $37.38 | |
| Construct Settling Ponds | 3 | ea @ | $25.00 | per ea = | $75.00 | |
| Remove Existing Culvert | 1 | ea @ | $150.00 | per ea = | $150.00 | |
| Grade and Ditch | 105.20 | sta @ | $15.50 | per sta = | $1,630.60 | |
| | | | | | TOTAL EXCAVATION COSTS= | $13,488.54 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | | | | |
|---|---|---|---|---|---|
| 310 | LF of 18" | $6,200.00 | 70 | LF of 24" | $2,030.00 |

Culvert Markers

12 markers $120.00

TOTAL CULVERT COSTS = $8,350.00

**PROJECT NO. 1 TOTAL COST = $21,838.54**

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 5 | " deep = | 25 cy/sta | | | | |
| SURFACING | 4 | " deep = | 20 cy/sta | | | | |
| Base Rock | 2,630 | cy of | 3" - 0 | @ | $11.70 | per cy = | $30,771.00 |
| Surfacing Rock | 2,104 | cy of | 1 1/2" - 0 | @ | $11.70 | per cy = | $24,616.80 |
| Junction | 80 | cy of | 1 1/2" - 0 | @ | $11.70 | per cy = | $936.00 |
| Culvert Bedding | 104 | cy of | 1 1/2" - 0 | @ | $11.70 | per cy = | $1,216.80 |
| Culvert Bedding | 35 | cy of | 1 1/2" - 0 | @ | $11.70 | per cy = | $409.50 |
| Culvert Backfill | 12 | cy of | 1 1/2" - 0 | @ | $11.70 | per cy = | $140.40 |
| Energy Dissipator | 108 | cy of | 36" - 24" | @ | $4.72 | per cy = | $509.76 |
| Puncheon Fill | 19 | cy of | 6" - 0 | @ | $3.32 | per cy = | $63.01 |
| Fill Armor | 24 | cy of | 36" - 24" | @ | $4.72 | per cy = | $113.28 |
| Total = | 5,116 | | | | | | |
| | 2,335 | cy of | 1 1/2" - 0 | | $11.70 | per cy = | $27,319.50 |
| | 2,630 | cy of | 3" - 0 | | $11.70 | per cy = | $30,771.00 |
| | 19 | cy of | 6" - 0 | | $3.32 | per cy = | $63.01 |
| | 132 | cy of | 36" - 24" | | $4.72 | per cy = | $623.04 |

**PROJECT NO. 2 TOTAL COST = $58,776.55**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Bio-Bags | 20 | each @ | $5.00 | per each = | $100.00 |
| Grass seed and fertilize areas of disturbed soil. | 0.91 | acres @ | $220.00 | per acre = | $200.28 |
| Mulch | 0.91 | acres @ | $600.00 | per acre = | $546.21 |

**PROJECT NO. 4 TOTAL COST = $846.49**

**TOTAL COST = $81,461.58**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No.: 341-15-26
Road Segment: M to II (Crossover)
Improvement: 13+60 stations
0.26 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Grade and Ditch | 13.60 | sta @ | $15.50 per sta = | $210.80 | |
| | | | TOTAL EXCAVATION COSTS= | | $210.80 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | |
|---|---|---|
| 30 | LF of 18" | $600.00 |

Culvert Markers

| | | |
|---|---|---|
| 1 | markers | $10.00 |

TOTAL CULVERT COSTS = $610.00

**PROJECT NO. 1 TOTAL COST = $820.80**

## PROJECT NO. 2:

| | | | |
|---|---|---|---|
| | 5 | " deep = | 25 cy/sta |
| SURFACING | 4 | " deep = | 20 cy/sta |

| | | | | | | |
|---|---|---|---|---|---|---|
| Base Rock | 340 | cy of | 3" - 0 | @ | $12.03 per cy = | $4,090.20 |
| Surfacing Rock | 272 | cy of | 1 1/2" - 0 | @ | $12.03 per cy = | $3,272.16 |
| Junction | 40 | cy of | 1 1/2" - 0 | @ | $12.03 per cy = | $481.20 |
| Culvert Bedding | 10 | cy of | 1 1/2" - 0 | @ | $12.03 per cy = | $120.30 |
| Total = | 662 | | | | | |
| | 322 | cy of | 1 1/2" - 0 | | $12.03 per cy = | $3,873.66 |
| | 340 | cy of | 3" - 0 | | $12.03 per cy = | $4,090.20 |

**PROJECT NO. 2 TOTAL COST = $7,963.86**

**TOTAL COST = $8,784.66**

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: JJ to KK (Crossover Y)
Improvement: 4+80 stations
0.09 miles

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## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.06 | acres @ | $980.00 | per acre = | $53.99 | |
| Road Widening (Drift) | 4.80 | sta @ | $90.00 | per sta = | $432.00 | |
| Grade, Ditch, and Roll | 4.80 | sta @ | $28.70 | per sta = | $137.76 | |
| | | | | TOTAL EXCAVATION COSTS= | | $623.75 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | |
|---|---|---|
| 30 | LF of 18" | $600.00 |

Culvert Markers

| | | |
|---|---|---|
| 1 | markers | $10.00 |

TOTAL CULVERT COSTS = $610.00

**PROJECT NO. 1 TOTAL COST = $1,233.75**

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## PROJECT NO. 2:

| SURFACING | 6 | " deep = | 31 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| Base Rock | 149 | cy of | 3" - 0 | @ | $10.69 | per cy = | $1,592.81 |
| Surfacing Rock | 149 | cy of | 1 1/2" - 0 | @ | $10.69 | per cy = | $1,592.81 |
| Culvert Bedding | 10 | cy of | 1 1/2" - 0 | @ | $10.69 | per cy = | $106.90 |
| Total = | 308 | | | | | | |
| | 159 | cy of | 1 1/2" - 0 | | $10.69 | per cy = | $1,699.71 |
| | 149 | cy of | 3" - 0 | | $10.69 | per cy = | $1,592.81 |

**PROJECT NO. 2 TOTAL COST = $3,292.52**

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## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.11 | acres @ | $220.00 | per acre = | $24.24 |

**PROJECT NO. 4 TOTAL COST = $24.24**

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**TOTAL COST = $4,550.52**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: LL to S (OHV trail)
Improvement: 6+00 stations
0.11 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.07 | acres @ | $980.00 | per acre = | $67.49 | |
| Construct Junction | 1.00 | ea @ | $90.00 | per ea = | $90.00 | |
| Construct Settling ponds | 2 | ea @ | $25.00 | per ea = | $50.00 | |
| Grade and Roll (Outslope) | 6.00 | sta @ | $27.20 | per sta = | $163.20 | |
| | | | | TOTAL EXCAVATION COSTS= | | $370.69 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | |
|---|---|---|
| 30 | LF of 24" | $870.00 |

Culvert Markers

| | | |
|---|---|---|
| 1 | markers | $10.00 |

TOTAL CULVERT COSTS = $880.00

**PROJECT NO. 1 TOTAL COST = $1,250.69**

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACING | 10 | " deep = | 53 cy/sta | | | | |
| LL to S (OHV trail) | 53 | cy of | 3" - 0 | @ | $10.98 | per cy = | $581.94 |
| Culvert Bedding | 15 | cy of | 1 1/2" - 0 | @ | $10.98 | per cy = | $164.70 |
| Total = | 68 | | | | | | |
| | 15 | cy of | 1 1/2" - 0 | | $10.98 | per cy = | $164.70 |
| | 53 | cy of | 3" - 0 | | $10.98 | per cy = | $581.94 |

**PROJECT NO. 2 TOTAL COST = $746.64**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.17 | acres @ | $220.00 | per acre = | $37.88 |
| Mulch | 4.00 | bales @ | $4.50 | per bale = | $18.00 |

**PROJECT NO. 4 TOTAL COST = $55.88**

## PROJECT NO.5:

| | | | | | |
|---|---|---|---|---|---|
| Construct drivable waterbars | 5.00 | ea @ | $50.00 | per ea = | $250.00 |

**PROJECT NO. 5 TOTAL COST = $250.00**

**TOTAL COST = $2,303.21**

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: MM to NN

Improvement: 30+00 stations
0.57 miles

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## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Road Improvement | 30.00 | sta @ | $90.00 | per sta = | $2,700.00 |
| Road Widening (Drift) | 10.50 | sta @ | $90.00 | per sta = | $945.00 |
| Construct Turnouts | 4 | ea @ | $60.00 | per ea = | $240.00 |
| Grade, Ditch, and Roll | 30.00 | sta @ | $28.70 | per sta = | $861.00 |

TOTAL EXCAVATION COSTS= $4,746.00

### CULVERTS - MATERIALS & INSTALLATION

Culverts

259 LF of 18" $5,180.00 115 LF of 24" $3,335.00

Culvert Markers

10 markers $100.00

Additional Culvert Installation Cost

20 Hrs @ $225.00 per hr = $4,500.00

TOTAL CULVERT COSTS = $13,115.00

**PROJECT NO. 1 TOTAL COST = $17,861.00**

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## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| MM to NN | 1,950 | cy of | 3" - 0 | @ | $12.23 | per cy = | $23,848.50 |
| Turnouts | 80 | cy of | 3" - 0 | @ | $12.23 | per cy = | $978.40 |
| Culvert Bedding | 87 | cy of | 1 1/2" - 0 | @ | $12.23 | per cy = | $1,064.01 |
| Culvert Bedding | 58 | cy of | 1 1/2" - 0 | @ | $12.23 | per cy = | $709.34 |
| Junction | 40 | cy of | 3" - 0 | @ | $12.23 | per cy = | $489.20 |
| Fill Armor | 12 | cy of | 36" - 24" | @ | $5.25 | per cy = | $63.00 |
| Energy Dissipator | 36 | cy of | 36" - 24" | @ | $5.25 | per cy = | $189.00 |
| Total = | 2,263 | | | | | | |
| | 145 | cy of | 1 1/2" - 0 | | $12.23 | per cy = | $1,773.35 |
| | 2,070 | cy of | 3" - 0 | | $12.23 | per cy = | $25,316.10 |
| | 48 | cy of | 36" - 24" | | $5.25 | per cy = | $252.00 |

**PROJECT NO. 2 TOTAL COST = $27,341.45**

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## PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil. 0.69 acres @ $220.00 per acre = $151.52

**PROJECT NO. 4 TOTAL COST = $151.52**

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**TOTAL COST = $45,353.97**

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: NN to OO
Improvement: 28+50 stations
0.54 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.33 | acres @ | $980.00 | per acre = | $320.59 |
| Road Widening (Drift) (7+50-9+00) | 1.50 | sta @ | $90.00 | per sta = | $135.00 |
| Construct Ditch on Both Sides of Road (7+50-9+00) | 1.50 | sta @ | $120.00 | per sta = | $180.00 |
| Endhaul Unsuitable Material (10+70-13+00) | | | | | |
| Excavate & Load | 225 | cy @ | $1.00 | per cy = | $225.00 |
| Endhaul Material | 293 | cy @ | $2.39 | per cy = | $699.08 |
| Compact Waste Area | 293 | cy @ | $0.25 | per cy = | $73.13 |
| Puncheon Culvert Removal (Culverts Nos. 43, 44 & 45) | | | | | |
| Excavate and load | 267 | cy @ | $1.00 | per cy = | $266.67 |
| Endhaul unsuitable fill material | 347 | cy @ | $4.64 | per cy = | $1,608.53 |
| Compact Waste Area | 347 | cy @ | $0.25 | per cy = | $86.67 |
| Haul fill material | 332 | cy @ | $2.39 | per cy = | $793.15 |
| Place fill and rock | 332 | cy @ | $2.12 | per cy = | $703.55 |
| Compact fill with plate compactor | 332 | cy @ | $0.45 | per cy = | $149.34 |
| Pump culvert installation | 16 | hr @ | $5.00 | per hr = | $80.00 |
| Construct Turnouts | 2 | ea @ | $60.00 | per ea = | $120.00 |
| Construct Turnaround | 1 | ea @ | $75.00 | per ea = | $75.00 |
| Grade, Ditch, and Roll | 28.50 | sta @ | $28.70 | per sta = | $817.95 |
| Install Gate | 1 | ea @ | $600.00 | per ea = | $600.00 |

TOTAL EXCAVATION COSTS= $6,933.66

### CULVERTS - MATERIALS & INSTALLATION

Culverts
30 LF of 18" $600.00 60 LF of 24" $1,740.00

Culvert Markers
3 markers $30.00

TOTAL CULVERT COSTS = $2,370.00

**PROJECT NO. 1 TOTAL COST = $9,303.66**

## PROJECT NO. 2:

### SURFACING

12 " deep = 65 cy/sta

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NN to OO | 1,853 | cy of | 3" - 0 | @ | $12.77 | per cy = | $23,662.81 |
| Turnouts | 44 | cy of | 3" - 0 | @ | $12.77 | per cy = | $561.88 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $12.77 | per cy = | $255.40 |
| Junction | 40 | cy of | 3" - 0 | @ | $12.77 | per cy = | $510.80 |
| Culvert Bedding | 30 | cy of | 1 1/2" - 0 | @ | $12.77 | per cy = | $383.10 |
| Culvert Bedding | 10 | cy of | 1 1/2" - 0 | @ | $12.77 | per cy = | $127.70 |
| Subgrade Reinforcement | 225 | cy of | 6" - 0 | @ | $11.42 | per cy = | $2,569.50 |
| Total = | 2,222 | | | | | | |
| | 40 | cy of | 1 1/2" - 0 | | $12.77 | per cy = | $510.80 |
| | 1,957 | cy of | 3" - 0 | | $12.77 | per cy = | $24,990.89 |
| | 225 | cy of | 6" - 0 | | $11.42 | per cy = | $2,569.50 |

**PROJECT NO. 2 TOTAL COST = $28,071.19**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.65 | acres @ | $220.00 | per acre = | $143.94 |
| Mulch | 4.00 | bales @ | $4.50 | per bale = | $18.00 |

**PROJECT NO. 4 TOTAL COST = $161.94**

**TOTAL COST = $37,536.79**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe
Timber Sale No. : 341-15-26
Road Segment: NN to W
Improvement: 19+40 stations
0.37 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.22 | acres @ | $980.00 | per acre = | $218.23 |
| Drift | 5.00 | sta @ | $150.00 | per sta = | $750.00 |
| Road Widening (Drift) | 14.40 | sta @ | $90.00 | per sta = | $1,296.00 |
| Grade, Ditch, and Roll | 14.40 | sta @ | $28.70 | per sta = | $413.28 |
| Grade and Roll (Outslope) | 5.00 | sta @ | $27.20 | per sta = | $136.00 |

TOTAL EXCAVATION COSTS= $2,813.51

### CULVERTS - MATERIALS & INSTALLATION

Culverts
60 LF of 18" $1,200.00

Culvert Markers
2 markers $20.00

TOTAL CULVERT COSTS = $1,220.00

PROJECT NO. 1 TOTAL COST = $4,033.51

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACING | 6 | " deep = | 31 cy/sta | | | | |
| NN to W | 601 | cy of | 3" - 0 | @ | $11.43 | per cy = | $6,869.43 |
| Turnout | 11 | cy of | 3" - 0 | @ | $11.43 | per cy = | $125.73 |
| Culvert Bedding | 20 | cy of | 1 1/2" - 0 | @ | $11.43 | per cy = | $228.60 |
| Total = | 632 | | | | | | |
| | 20 | cy of | 1 1/2" - 0 | | $11.43 | per cy = | $228.60 |
| | 612 | cy of | 3" - 0 | | $11.43 | per cy = | $6,995.16 |

PROJECT NO. 2 TOTAL COST = $7,223.76

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.45 | acres @ | $220.00 | per acre = | $97.98 |
| Mulch | 4.00 | bales @ | $4.50 | per bale = | $18.00 |

PROJECT NO. 4 TOTAL COST = $115.98

TOTAL COST = $11,373.25

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: PP to CC

Improvement: 62+90 stations
1.19 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Construct "Y" Junction | 1 | ea @ | $90.00 | per ea = | $90.00 | |
| Remove existing culvert | 1 | ea @ | $150.00 | per ea = | $150.00 | |
| Grade, Ditch, and Roll | 62.90 | sta @ | $28.70 | per sta = | $1,805.23 | |
| | | | | TOTAL EXCAVATION COSTS= | | $2,105.23 |

### CULVERTS - MATERIALS & INSTALLATION

Culverts

| | | |
|---|---|---|
| 110 | LF of 18" | $2,200.00 |

Culvert Markers

| | |
|---|---|
| 3 markers | $30.00 |

TOTAL CULVERT COSTS = $2,230.00

**PROJECT NO. 1 TOTAL COST = $4,335.23**

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 6 | " deep = | 31 cy/sta | | | | |
| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
| PP to A (6" deep) | 411 | cy of | 3" - 0 | @ | $9.58 | per cy = | $3,937.38 |
| Y Junction (12" deep) | 65 | cy of | 3" - 0 | @ | $9.58 | per cy = | $622.70 |
| Spot Rock | 50 | cy of | 3" - 0 | @ | $9.58 | per cy = | $479.00 |
| Junction | 40 | cy of | 3" - 0 | @ | $9.58 | per cy = | $383.20 |
| Culvert Backfill | 12 | cy of | 1 1/2" - 0 | @ | $9.58 | per cy = | $114.96 |
| Culvert Bedding | 37 | cy of | 1 1/2" - 0 | @ | $9.58 | per cy = | $354.46 |
| Total = | 615 | | | | | | |
| | 49 | cy of | 1 1/2" - 0 | | $9.58 | per cy = | $469.42 |
| | 566 | cy of | 3" - 0 | | $9.58 | per cy = | $5,422.28 |

**PROJECT NO. 2 TOTAL COST = $5,891.70**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.05 | acres @ | $220.00 | per acre = | $11.00 |
| Mulch | 6.00 | bales @ | $4.50 | per bale = | $27.00 |

**PROJECT NO. 4 TOTAL COST = $38.00**

**TOTAL COST = $10,264.93**

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: QQ to RR

Improvement: 6+60 stations
0.13 miles

## PROJECT NO. 1

EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Grade, Ditch, and Roll | 6.60 | sta @ | $28.70 | per sta = | $189.42 |

PROJECT NO. 1 TOTAL COST = $189.42

## PROJECT NO. 2:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACING | 8 | " deep = | 42 cy/sta | | | | |
| QQ to RR | 277 | cy of | 1 1/2" - 0 | @ | $10.54 | per cy = | $2,919.58 |
| Total = | 277 | | | | | | |
| | 277 | cy of | 1 1/2" - 0 | | $10.54 | per cy = | $2,919.58 |

PROJECT NO. 2 TOTAL COST = $2,919.58

TOTAL COST = $3,109.00

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: RR to SS

Improvement: 4+00 stations

0.08 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.09 | acres @ | $980.00 | per acre = | $89.99 |
| Road Widening (Drift) | 4.00 | sta @ | $90.00 | per sta = | $360.00 |
| Construct Ditch and Endhaul Waste Material | 4.00 | sta @ | $60.00 | per sta = | $240.00 |
| Grade, Ditch, and Roll | 4.00 | sta @ | $28.70 | per sta = | $114.80 |

PROJECT NO. 1 TOTAL COST = $804.79

## PROJECT NO. 2:

SURFACING 12 " deep = 65 cy/sta

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| RR to SS | 260 | cy of | 1 1/2" - 0 | @ | $10.52 | per cy = | $2,735.20 |
| Total = | 260 | | | | | | |
| | 260 | cy of | 1 1/2" - 0 | | $10.52 | per cy = | $2,735.20 |

PROJECT NO. 2 TOTAL COST = $2,735.20

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.05 | acres @ | $220.00 | per acre = | $10.10 |
| Mulch | 4.00 | bales @ | $4.50 | per bale = | $18.00 |

PROJECT NO. 4 TOTAL COST = $28.10

TOTAL COST = $3,568.09

# SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Timber Sale No. : 341-15-26

Road Segment: TT to UU

Construction 4+50 stations

0.09 miles

## PROJECT NO. 1

### EXCAVATION

| | | | | | | |
|---|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 0.10 | acres @ | $980.00 | per acre = | $101.24 | |
| Balanced Road Construction | 4.50 | sta @ | $90.00 | per sta = | $405.00 | |
| Landing | 1 | ea @ | $285.00 | per ea = | $285.00 | |
| Grade, Ditch, and Roll | 4.50 | sta @ | $28.70 | per sta = | $129.15 | |
| | | | | TOTAL EXCAVATION COSTS= | | $920.39 |

**PROJECT NO. 1 TOTAL COST = $920.39**

## PROJECT NO. 2:

| SURFACING | 12 | " deep = | 65 cy/sta | | | | |
|---|---|---|---|---|---|---|---|
| TT to UU | 293 | cy of | 3" - 0 | @ | $12.47 | per cy = | $3,653.71 |
| Turnaround | 20 | cy of | 3" - 0 | @ | $12.47 | per cy = | $249.40 |
| Landing | 180 | cy of | 3" - 0 | @ | $12.47 | per cy = | $2,244.60 |
| Total = | 493 | | | | | | |
| | 493 | cy of | 3" - 0 | | $12.47 | per cy = | $6,147.71 |

**PROJECT NO. 2 TOTAL COST = $6,147.71**

## PROJECT NO. 4:

| | | | | | |
|---|---|---|---|---|---|
| Grass seed and fertilize areas of disturbed soil. | 0.05 | acres @ | $220.00 | per acre = | $11.36 |
| Mulch | 4.00 | bales @ | $4.50 | per bale = | $18.00 |

**PROJECT NO. 4 TOTAL COST = $29.36**

**TOTAL COST = $7,097.46**

## SUMMARY OF CONSTRUCTION COST

Timber Sale: Parallel Universe

Stockpile Expansion

Timber Sale No. : 341-15-26

### PROJECT NO. 3

| | | | | | |
|---|---|---|---|---|---|
| Clearing and Grubbing (Scatter) | 1.20 | acres @ | $980.00 | per acre = | $1,176.00 |
| Excavate material from pit | 15,000 | cy @ | $1.60 | per cy = | $24,000.00 |
| Haul material from pit | 15,000 | cy @ | $0.76 | per cy = | $11,400.00 |
| Compact fill | 15,000 | cy @ | $0.45 | per cy = | $6,750.00 |
| Grade , shape and roll stockpile area | 1.20 | acres @ | $435.60 | per acre = | $522.72 |
| Surface with 6"-0", 10" deep | 1,607 | cy @ | $9.79 | per cy = | $15,731.36 |
| Grass seed and fertilize areas of disturbed soil. | 0.22 | acres @ | $220.00 | per acre = | $48.48 |
| Mulch | 0.22 | acres @ | $600.00 | per bale = | $132.23 |

TOTAL COST = $59,760.79

# ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Timber Sale: **Parallel Universe**

Sale Number: **341-15-26**

Pit Name: Browns Camp Pit

| | | | |
|---|---|---|---|
| Swell: | 130% | 1-1/2"-0 (trk measure) | 11,084 cy |
| Shrinkage: | 116% | 3"-0 (trk measure) | 26,987 cy |
| Drill Pct.: | 100% | 6"-0 (trk measure) | 2,046 cy |
| | | Total Truck Yardage: | 40,117 cy |
| | | Total In Place Yardage: | 30,859 cy |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pit Development<br>(Overburden removal included with Project No. 3) | | | | | | $500.00 |
| Drill & Shoot: | $2.50 | /cy x | 30,859 | cy | = | $77,148.04 |
| Push Rock: | $0.70 | /cy x | 2,815 | cy | = | $1,970.37 |
| Load Crusher: | $0.70 | /cy x | 40,117 | cy | = | $28,081.89 |
| Crushing (1-1/2" - 0): | $3.00 | /cy x | 11,084 | cy | = | $33,252.00 |
| Crushing (3" - 0): | $3.00 | /cy x | 26,987 | cy | = | $80,961.00 |
| Crushing (6" - 0): | $1.90 | /cy x | 2,046 | cy | = | $3,887.36 |
| Load Dump Truck: | $0.70 | /cy x | 40,117 | cy | = | $28,081.89 |
| | | | | Subtotal | | $253,882.54 |
| Equipment Cleaning | | | | | | $2,000.00 |
| Move in Crusher (3 Stage) | | | | | | $2,987.00 |
| Set up Crusher | | | | | | $3,024.00 |
| Move in and set up Drill and Compressor | | | | | | $335.15 |
| Move in Excavator | | | | | | $622.87 |
| Move in D-8 | | | | | | $623.96 |
| Move in Loader | | | | | | $560.03 |
| Clean Up Pit | | | | | | $300.00 |
| Gradation Tests ($65/2000 cy) | $65.00 | cy/2000cy x | 21 | tests | | $1,365.00 |
| Change Gradation | | | | | | $210.00 |
| | | | | Subtotal | | $12,028.01 |

ROCK DEVELOPMENT COST = $6.63/cy

TOTAL PRODUCTION COST $265,910.55

# CRUISE REPORT
# Parallel Universe
# 341-15-26

**1. LOCATION:** Portions of Sections 35 and 36, T2N, R6W, Section 31, T2N, R5W, Section 31, T2N, R6W, and Sections 1 and 2, T1N, R6W, W.M., Tillamook County.

## 2. CRUISE DESIGN:

**Clearcuts:** The cruise design assumed a Coefficient of Variation (CV%) of 55%, an average stand diameter of 15 inches, a desired sampling error (SE%) of %9 and a minimum sample size of 100 grade trees. Pre-cruise plots indicated that approximately 6 trees per plot could be realized with a 40 BAF prism.

**Thinning:** The cruise design assumed a Coefficient of Variation (CV%) of 45%, an average stand diameter of 16 inches, a desired sampling error (SE%) of %10 and a minimum sample size of 100 grade trees. Pre-cruise plots indicated that approximately 12 trees per plot could be realized with a 20 BAF prism.

## 3. SAMPLING METHOD:

**Clearcuts:** Sale Areas 1 & 2 were cruised in March 2014 with 52 variable radius grade and count plots using a 40 BAF prism. Plots were laid out on a 7 chain x 6 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

**Thinning:** Sale Areas 3, 4, 5, and 6 were cruised in March 2014 with 20 variable radius grade plots using a 20 BAF prism. Plots were laid out on a 7 chain x 8 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain. Cruisers 'thinned' plots from below to 140 $ft^2$ of basal area by assigning a 'Take' or 'Leave' status to each tree in every plot.

## 4. CRUISE RESULTS

**Clearcuts:** 125 trees were measured and graded producing a cumulative Douglas-fir Basal Area sampling error of 6.2% and 6.3% on the Board Foot Volume.

**Thinning:** 98 trees were measured and graded producing a cumulative Douglas-fir Basal Area sampling error of 13.6% and 11.8% on the Board Foot Volume.

* Area 7 volume was extrapolated from Areas 1 and 2 cruise results.
* Area 8 volume was extrapolated from Areas 3, 4, 5, and 6 cruise results.

## 5. TREE MEASUREMENT AND GRADING:

All trees assigned a ‘Take’ status were measured and graded following Columbia River Log Scale grade rules and favoring 40 foot segments.

a) **Height Standards:**
Total tree heights were measured to the nearest foot. Bole heights were calculated to a six inch top.

b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.

c) **Form Factors** were estimated and measured for each grade tree using a form point of 16 feet.

## 5. DATA PROCESSING

a) **Volumes and Statistics**, Cruise volume estimates, and sampling statistics, were derived from Super Ace 2008 cruise software.

b) **Deductions:** Two percent of the volume was subtracted from the computed volumes to account for hidden defect and breakage.

**6. Cruisers:** The sale was cruised by ODF cruisers (Savage, Koch, Stone).

Prepared by: ______________________________________
ODF Forester Date

Reviewed by: ______________________________________
Erik Marcy Date

TC PSTATS

# PROJECT STATISTICS

PROJECT PARUNI

PAGE 1
DATE 5/21/2014

| TWP | RGE | SC | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 02N | 06 | 31 | 6 | R/W | 2.00 | 20 | 241 | S | W |

| | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES |
|---|---|---|---|---|---|
| TOTAL | 20 | 241 | 12.1 | | |
| CRUISE | 20 | 241 | 12.1 | 303 | 79.4 |
| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| DOUG FIR-L | 123 | 52.7 | 20.7 | 107 | 27.0 | 123.0 | 25,779 | 25,779 | 5,277 | 5,277 |
| DOUG FIR-T | 98 | 83.5 | 14.7 | 98 | 25.6 | 98.0 | 14,734 | 14,728 | 3,415 | 3,415 |
| WHEMLOCK-L | 13 | 8.3 | 16.9 | 97 | 3.2 | 13.0 | 2,446 | 2,446 | 528 | 528 |
| NOB FIR-L | 4 | 2.2 | 18.2 | 74 | 0.9 | 4.0 | 788 | 788 | 159 | 159 |
| R ALDER-L | 3 | 5.1 | 10.4 | 65 | 0.9 | 3.0 | 316 | 316 | 71 | 71 |
| **TOTAL** | *241* | *151.7* | *17.1* | *99* | *58.3* | *241.0* | *44,063* | *44,057* | *9,450* | *9,450* |

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 |
| DOUG FIR-L | 82.2 | 7.4 | 809 | 873 | 938 | | | |
| DOUG FIR-T | 71.4 | 7.2 | 228 | 246 | 263 | | | |
| WHEMLOCK-L | 87.7 | 25.3 | 376 | 503 | 630 | | | |
| NOB FIR-L | 84.2 | 48.1 | 501 | 965 | 1,429 | | | |
| R ALDER-L | 70.5 | 48.8 | 44 | 87 | 129 | | | |
| **TOTAL** | *105.6* | *6.8* | *550* | *590* | *630* | *445* | *111* | *49* |

| CL 68.1 | COEFF | | | **TREES/ACRE** | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-L | 63.5 | 14.6 | 45 | 53 | 60 | | | |
| DOUG FIR-T | 91.9 | 21.1 | 66 | 83 | 101 | | | |
| WHEMLOCK-L | 247.3 | 56.7 | 4 | 8 | 13 | | | |
| NOB FIR-L | 310.9 | 71.3 | 1 | 2 | 4 | | | |
| R ALDER-L | 447.2 | 102.5 | | 5 | 10 | | | |
| **TOTAL** | *61.3* | *14.0* | *130* | *152* | *173* | *158* | *39* | *18* |

| CL 68.1 | COEFF | | | **BASAL AREA/ACRE** | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-L | 29.0 | 6.7 | 115 | 123 | 131 | | | |
| DOUG FIR-T | 59.2 | 13.6 | 85 | 98 | 111 | | | |
| WHEMLOCK-L | 230.2 | 52.8 | 6 | 13 | 20 | | | |
| NOB FIR-L | 205.2 | 47.0 | 2 | 4 | 6 | | | |
| R ALDER-L | 447.2 | 102.5 | | 3 | 6 | | | |
| **TOTAL** | *23.7* | *5.4* | *228* | *241* | *254* | *24* | *6* | *3* |

| CL 68.1 | COEFF | | | **NET BF/ACRE** | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-L | 29.3 | 6.7 | 24,045 | 25,779 | 27,514 | | | |
| DOUG FIR-T | 51.6 | 11.8 | 12,985 | 14,728 | 16,470 | | | |
| WHEMLOCK-L | 215.2 | 49.3 | 1,239 | 2,446 | 3,654 | | | |
| NOB FIR-L | 227.1 | 52.1 | 378 | 788 | 1,198 | | | |
| R ALDER-L | 447.2 | 102.5 | | 316 | 639 | | | |
| **TOTAL** | *19.4* | *4.4* | *42,099* | *44,057* | *46,014* | *16* | *4* | *2* |

TC PLOGSTVB

# Log Stock Table - MBF

TT2N RR6W S31 Ty00MC 210.00

**Project:** **PARUNI**
**Acres** **210.00**

**Page** **1**
**Date** **5/21/2014**
**Time** **6:24:30AM**

| Spp | S T | So Gr rt 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 | | 2M | 12 | 19 | | 19 | .2 | | | | | | 19 | | | | | | |
| DF | | 2M | 40 | 4,610 | 1.3 | 4,552 | 60.4 | | | | | | 1161 | 1169 | 1526 | 696 | | | |
| DF | | 3M | 20 | 32 | | 32 | .4 | | | | | | | 32 | | | | | |
| DF | | 3M | 26 | 11 | | 11 | .2 | | | | 11 | | | | | | | | |
| DF | | 3M | 28 | 4 | | 4 | .1 | | | 4 | | | | | | | | | |
| DF | | 3M | 30 | 5 | | 5 | .1 | | | 5 | | | | | | | | | |
| DF | | 3M | 32 | 173 | | 173 | 2.3 | | | 106 | 58 | 9 | | | | | | | |
| DF | | 3M | 34 | 249 | | 249 | 3.3 | | | 30 | 150 | 33 | 35 | | | | | | |
| DF | | 3M | 36 | 24 | | 24 | .3 | | | 24 | | | | | | | | | |
| DF | | 3M | 38 | 139 | | 139 | 1.9 | | | 112 | 27 | | | | | | | | |
| DF | | 3M | 40 | 1,912 | | 1,909 | 25.3 | | | 394 | 674 | 842 | | | | | | | |
| DF | | 4M | 12 | 21 | | 21 | .3 | | | 21 | | | | | | | | | |
| DF | | 4M | 14 | 18 | | 18 | .2 | | | 18 | | | | | | | | | |
| DF | | 4M | 16 | 98 | | 98 | 1.3 | | | 98 | | | | | | | | | |
| DF | | 4M | 18 | 46 | | 46 | .6 | | | 46 | | | | | | | | | |
| DF | | 4M | 20 | 51 | | 51 | .7 | | 3 | 45 | 3 | | | | | | | | |
| DF | | 4M | 22 | 43 | | 43 | .6 | | | 37 | 6 | | | | | | | | |
| DF | | 4M | 24 | 47 | | 47 | .6 | | | 47 | | | | | | | | | |
| DF | | 4M | 26 | 4 | | 4 | .1 | | | 4 | | | | | | | | | |
| DF | | 4M | 27 | 3 | | 3 | .0 | | | 3 | | | | | | | | | |
| DF | | 4M | 28 | 51 | | 51 | .7 | | | 51 | | | | | | | | | |
| DF | | 4M | 30 | 39 | | 39 | .5 | | | 39 | | | | | | | | | |
| DF | | Totals | | 7,599 | | 7,538 | 97.3 | | 3 | 1084 | 929 | 885 | 1215 | 1200 | 1526 | 696 | | | |
| RA | | R | 12 | 5 | | 5 | 4.3 | | | | 5 | | | | | | | | |
| RA | | R | 14 | 3 | | 3 | 2.8 | | | 3 | | | | | | | | | |
| RA | | R | 16 | 19 | | 19 | 17.5 | | | 4 | 15 | | | | | | | | |
| RA | | R | 20 | 7 | | 7 | 6.5 | | | 7 | | | | | | | | | |
| RA | | R | 24 | 8 | | 8 | 7.4 | | | 8 | | | | | | | | | |
| RA | | R | 26 | 9 | | 9 | 8.7 | | | 9 | | | | | | | | | |
| RA | | R | 28 | 14 | | 14 | 12.9 | | | 14 | | | | | | | | | |
| RA | | R | 30 | 14 | | 14 | 12.9 | | | 14 | | | | | | | | | |
| RA | | R | 40 | 29 | | 29 | 27.1 | | | | 29 | | | | | | | | |
| RA | | Totals | | 109 | | 109 | 1.4 | | | 59 | 49 | | | | | | | | |
| WH | | 2M | 40 | 88 | 8.3 | 80 | 78.6 | | | | | | 80 | | | | | | |
| WH | | 3M | 40 | 22 | | 22 | 21.4 | | | 22 | | | | | | | | | |

TC PLOGSTVB

# Log Stock Table - MBF

TT2N RR6W S31 Ty00MC 210.00

**Project:** **PARUNI**
**Acres** **210.00**

**Page** **2**
**Date** **5/21/2014**
**Time** **6:24:30AM**

| 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+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WH | | Totals | | | 110 | 6.7 | 102 | 1.3 | | | 22 | | | 80 | | | | | | |
| Total | | All Species | | | 7,817 | | 7,749 | 100.0 | | 3 | 1166 | 978 | 885 | 1296 | 1200 | 1526 | 696 | | | |

TC PLOGSTVB

# Log Stock Table - MBF

T02N R06W S31 Ty00PC 118.00

**Project:** PARUNI
**Acres** 118.00

**Page** 1
**Date** 5/21/2014
**Time** 6:27:33AM

| Spp | S T | So rt | Gr de | Log Len | Gross MBF | Def % | Net MBF | % Spc | 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14-15 | 16-19 | 20-23 | 24-29 | 30-39 | 40+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | **Net Volume by Scaling Diameter in Inches** | | | | | | | | | | | |
| DF | | | 2M | 16 | 9 | | 9 | .5 | | | | | | | | 9 | | | | |
| DF | | | 2M | 40 | 505 | | 505 | 29.1 | | | | | | 267 | 67 | 171 | | | | |
| DF | | | 3M | 32 | 12 | | 12 | .7 | | | 2 | 11 | | | | | | | | |
| DF | | | 3M | 34 | 13 | | 13 | .8 | | | 3 | 11 | | | | | | | | |
| DF | | | 3M | 36 | 168 | | 168 | 9.7 | | | 43 | 114 | 11 | | | | | | | |
| DF | | | 3M | 40 | 888 | | 888 | 51.1 | | | 270 | 167 | 451 | | | | | | | |
| DF | | | 4M | 16 | 61 | | 61 | 3.5 | | | 61 | | | | | | | | | |
| DF | | | 4M | 20 | 10 | | 10 | .6 | | | 10 | | | | | | | | | |
| DF | | | 4M | 24 | 22 | | 22 | 1.3 | | | 22 | | | | | | | | | |
| DF | | | 4M | 30 | 11 | | 11 | .6 | | | 11 | | | | | | | | | |
| DF | | | 4M | 32 | 9 | 8.8 | 8 | .4 | | | 8 | | | | | | | | | |
| DF | | | 4M | 36 | 5 | | 5 | .3 | | | 5 | | | | | | | | | |
| DF | | | 4M | 40 | 25 | | 25 | 1.5 | | | 25 | | | | | | | | | |
| DF | | Totals | | | 1,739 | | 1,738 | 100.0 | | | 460 | 302 | 462 | 267 | 67 | 180 | | | | |
| Total | | All Species | | | 1,739 | | 1,738 | 100.0 | | | 460 | 302 | 462 | 267 | 67 | 180 | | | | |

TC PLOGSTVB

# Log Stock Table - MBF

T02N R06W S31 TyR/W 2.00

**Project:** **PARUNI**
**Acres** **2.00**

**Page** **1**
**Date** **5/21/2014**
**Time** **6:32:29AM**

| 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+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WH | | | 3M | 30 | 1 | | 1 | 12.5 | | | | | 0 | | 0 | | | | | |
| WH | | | 3M | 31 | 0 | | 0 | .6 | | 0 | | | | | | | | | | |
| WH | | | 3M | 32 | 0 | | 0 | 1.1 | | 0 | | | | | | | | | | |
| WH | | | 3M | 33 | 0 | | 0 | 5.0 | | | | | 0 | | | | | | | |
| WH | | | 3M | 34 | 2 | | 2 | 32.7 | | 0 | | 0 | | 0 | 0 | 1 | | | | |
| WH | | | 3M | 35 | 1 | | 1 | 10.3 | | 0 | | | | | | | 0 | | | |
| WH | | | 3M | 36 | 1 | | 1 | 13.4 | | 0 | | | 0 | | | 0 | | | | |
| WH | | | 3M | 37 | 0 | | 0 | .9 | | 0 | | | | | | | | | | |
| WH | | | 3M | 38 | 0 | | 0 | 1.3 | | 0 | | | | | | | | | | |
| WH | | | 3M | 40 | 1 | | 1 | 22.0 | | 0 | | | | 0 | | 1 | 0 | | | |
| WH | | Totals | | | 5 | | 5 | 5.6 | | 1 | | 0 | 1 | 0 | 1 | 1 | 1 | | | |
| DF | | | 2M | 16 | 0 | | 0 | .2 | | | | | | | | 0 | | | | |
| DF | | | 2M | 40 | 9 | | 9 | 10.6 | | | | | | 5 | 1 | 3 | | | | |
| DF | | | 3M | 27 | 0 | | 0 | .2 | | | | | | 0 | | | | | | |
| DF | | | 3M | 28 | 2 | | 2 | 2.7 | | 0 | | 0 | 0 | 1 | 0 | 0 | | | | |
| DF | | | 3M | 29 | 1 | | 1 | 1.0 | | 0 | | 0 | | | 1 | | | | | |
| DF | | | 3M | 30 | 9 | | 9 | 10.5 | | 0 | | | 1 | 0 | 1 | 1 | 0 | 4 | 1 | |
| DF | | | 3M | 31 | 2 | | 2 | 2.2 | | 0 | | | 0 | | 1 | | | 0 | | |
| DF | | | 3M | 32 | 8 | | 8 | 10.0 | | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 1 | 1 | |
| DF | | | 3M | 33 | 0 | | 0 | .5 | | | | | 0 | | 0 | | | | | |
| DF | | | 3M | 34 | 8 | | 8 | 10.4 | | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 1 | | | |
| DF | | | 3M | 35 | 1 | | 1 | 1.3 | | 0 | | | 0 | 0 | 0 | 0 | | 0 | | |
| DF | | | 3M | 36 | 12 | | 12 | 15.0 | | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | | |
| DF | | | 3M | 37 | 2 | | 2 | 2.4 | | 0 | | | | 0 | | 0 | 1 | 0 | | |
| DF | | | 3M | 38 | 6 | | 6 | 7.0 | | 0 | | | 0 | 0 | 1 | 1 | 2 | 0 | | |
| DF | | | 3M | 39 | 1 | | 1 | 1.3 | | 0 | | | | | | 0 | 0 | 0 | | |
| DF | | | 3M | 40 | 17 | | 17 | 21.6 | | 0 | 5 | 3 | 8 | 1 | 0 | 1 | | 1 | | |
| DF | | | 3M | 41 | 0 | | 0 | .1 | | 0 | | | | | | | | | | |
| DF | | | 4M | 16 | 1 | | 1 | 1.3 | | | 1 | | | | | | | | | |
| DF | | | 4M | 20 | 0 | | 0 | .4 | | | 0 | | | | | | | | | |
| DF | | | 4M | 24 | 0 | | 0 | .5 | | | 0 | | | | | | | | | |
| DF | | | 4M | 30 | 0 | | 0 | .2 | | | 0 | | | | | | | | | |
| DF | | | 4M | 32 | 0 | 8.8 | 0 | .2 | | | 0 | | | | | | | | | |
| DF | | | 4M | 36 | 0 | | 0 | .1 | | | 0 | | | | | | | | | |
| DF | | | 4M | 40 | 0 | | 0 | .5 | | | 0 | | | | | | | | | |
| DF | | Totals | | | 81 | | 81 | 91.9 | | 3 | 8 | 5 | 13 | 10 | 11 | 13 | 7 | 8 | 1 | |

TC PLOGSTVB

# Log Stock Table - MBF

T02N R06W S31 TyR/W 2.00

**Project:** PARUNI
**Acres** 2.00

**Page** 2
**Date** 5/21/2014
**Time** 6:32:29AM

| 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+ |
| NF | | | 3M | 34 | 1 | | 1 | 53.3 | | | | | | 0 | | 0 | | 0 | | |
| NF | | | 3M | 35 | 0 | | 0 | .8 | | 0 | | | | | | | | | | |
| NF | | | 3M | 36 | 0 | | 0 | 9.6 | | 0 | | | | | | | | | | |
| NF | | | 3M | 40 | 1 | | 1 | 33.8 | | | | | | | | 0 | | 0 | | |
| NF | | | 3M | 41 | 0 | | 0 | 2.4 | | 0 | | | | | | | | | | |
| NF | | Totals | | | 2 | | 2 | 1.8 | | 0 | | | | 0 | | 1 | | 1 | | |
| RA | | | R | 16 | 0 | | 0 | 18.2 | | | 0 | | | | | | | | | |
| RA | | | R | 27 | 0 | | 0 | 28.2 | | | | 0 | | | | | | | | |
| RA | | | R | 28 | 0 | | 0 | 12.1 | | 0 | | | | | | | | | | |
| RA | | | R | 30 | 0 | | 0 | 32.6 | | | | | 0 | | | | | | | |
| RA | | | R | 32 | 0 | | 0 | 8.9 | | 0 | | | | | | | | | | |
| RA | | Totals | | | 1 | | 1 | .7 | | 0 | 0 | 0 | 0 | | | | | | | |
| Total | | All Species | | | 88 | | 88 | 100.0 | | 4 | 8 | 6 | 15 | 10 | 11 | 15 | 7 | 9 | 1 | |

TC PSPCSTGR

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

TT2N RR6W S31 Ty00MC 210.00

**Project:** **PARUNI**

**Acres** **210.00**

**Page** **1**
**Date** **5/21/2014**
**Time** **6:24:29AM**

| | | | | % | Bd. Ft. per Acre | | | | Percent of Net Board Foot Volume | | | | | | | | Average Log | | | | Logs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S | So | Gr | Net | | | | Total | Log Scale Dia. | | | | Log Length | | | | Ln | Dia | Bd | CF/ | Per |
| Spp | T | rt | ad | BdFt | Def% | Gross | Net | Net MBF | 4-5 | 6-11 | 12-16 | 17+ | 12-20 | 21-30 | 31-35 | 36-99 | Ft | In | Ft | Lf | /Acre |
| DF | | | CU | | | | | | | | | | | | | | 4 | 14 | | 0.00 | 2.9 |
| DF | | | 2M | 60 | 1.3 | 22,039 | 21,763 | 4,570 | | | 64 | 36 | 0 | | | 100 | 39 | 15 | 335 | 1.89 | 65.0 |
| DF | | | 3M | 34 | .1 | 12,139 | 12,126 | 2,546 | | 97 | 3 | | 1 | 1 | 17 | 81 | 38 | 8 | 97 | 0.64 | 124.9 |
| DF | | | 4M | 6 | | 2,005 | 2,005 | 421 | 1 | 99 | | | 56 | 44 | | | 19 | 6 | 23 | 0.32 | 85.4 |
| **DF** | **Totals** | | | 97 | .8 | 36,183 | 35,894 | 7,538 | 0 | 38 | 40 | 22 | 4 | 3 | 6 | 88 | 32 | 9 | 129 | 0.93 | 278.1 |
| RA | | | R | 100 | | 517 | 517 | 109 | | 100 | | | 31 | 42 | | 27 | 23 | 8 | 44 | 0.56 | 11.7 |
| **RA** | **Totals** | | | 1 | | 517 | 517 | 109 | | 100 | | | 31 | 42 | | 27 | 23 | 8 | 44 | 0.56 | 11.7 |
| WH | | | 2M | 78 | 8.3 | 418 | 383 | 80 | | | 100 | | | | | 100 | 40 | 13 | 220 | 1.25 | 1.7 |
| WH | | | 3M | 22 | | 104 | 104 | 22 | | 100 | | | | | | 100 | 40 | 6 | 60 | 0.56 | 1.7 |
| **WH** | **Totals** | | | 1 | 6.7 | 522 | 488 | 102 | | 21 | 79 | | | | | 100 | 40 | 10 | 140 | 0.90 | 3.5 |
| **Totals** | | | | | 0.9 | 37,223 | 36,899 | 7,749 | 0 | 39 | 40 | 21 | 4 | 3 | 5 | 87 | 32 | 9 | 126 | 0.92 | 293.3 |

TC PSPCSTGR

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

T02N R06W S31 Ty00PC 118.00

**Project:** **PARUNI**

**Acres** **118.00**

**Page** **1**
**Date** **5/21/2014**
**Time** **6:27:32AM**

| | | | | % | | | | | Percent of Net Board Foot Volume | | | | | | | | Average Log | | | | Logs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Net | Bd. Ft. per Acre | | | Total | Log Scale Dia. | | | | Log Length | | | | Ln | Dia | Bd | CF/ | Per |
| Spp | S T | So rt | Gr ad | BdFt | Def% | Gross | Net | Net MBF | 4-5 | 6-11 | 12-16 | 17+ | 12-20 | 21-30 | 31-35 | 36-99 | Ft | In | Ft | Lf | /Acre |
| DF | | | CU | | | | | | | | | | | | | | 10 | 15 | | 0.00 | .5 |
| DF | | | 2M | 29 | | 4,352 | 4,352 | 514 | | | 76 | 24 | 2 | | | 98 | 39 | 14 | 276 | 1.51 | 15.8 |
| DF | | | 3M | 62 | | 9,166 | 9,166 | 1,082 | | 100 | | | | | 2 | 98 | 39 | 8 | 97 | 0.59 | 94.3 |
| DF | | | 4M | 9 | .5 | 1,216 | 1,209 | 143 | | 100 | | | 50 | 23 | 5 | 21 | 21 | 6 | 27 | 0.33 | 44.2 |
| **DF** | **Totals** | | | 100 | .0 | 14,734 | 14,728 | 1,738 | | 70 | 23 | 7 | 5 | 2 | 2 | 92 | 34 | 8 | 95 | 0.65 | 154.7 |
| **Totals** | | | | | 0.0 | 14,734 | 14,728 | 1,738 | | 70 | 23 | 7 | 5 | 2 | 2 | 92 | 34 | 8 | 95 | 0.65 | 154.7 |

TC PSPCSTGR

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

T02N R06W S31 TyR/W 2.00

**Project:** **PARUNI**

**Acres** **2.00**

**Page** **1**
**Date** **5/21/2014**
**Time** **6:32:28AM**

| Spp | S T | So Gr rt ad | % Net BdFt | Bd. Ft. per Acre Def% | Gross | Net | Total Net MBF | Percent of 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WH | | 3M | 100 | | 2,446 | 2,446 | 5 | 12 | 30 | 25 | 33 | | 13 | 50 | 38 | 35 | 9 | 133 | 0.83 | 18.4 |
| **WH Totals** | | | 6 | | 2,446 | 2,446 | 5 | 12 | 30 | 25 | 33 | | 13 | 50 | 38 | 35 | 9 | 133 | 0.83 | 18.4 |
| DF | | CU | | | | | | | | | | | | | | 10 | 15 | | 0.00 | .5 |
| DF | | 2M | 10 | | 4,352 | 4,352 | 9 | | | 76 | 24 | 2 | | | 98 | 39 | 14 | 276 | 1.51 | 15.8 |
| DF | | 3M | 86 | | 34,888 | 34,888 | 70 | 5 | 35 | 25 | 35 | | 17 | 28 | 55 | 36 | 10 | 157 | 0.93 | 221.5 |
| DF | | 4M | 4 | .5 | 1,273 | 1,267 | 3 | | 100 | | | 52 | 22 | 5 | 20 | 21 | 6 | 27 | 0.33 | 47.1 |
| **DF Totals** | | | 92 | .0 | 40,513 | 40,507 | 81 | 4 | 33 | 29 | 33 | 2 | 15 | 24 | 59 | 34 | 9 | 142 | 0.91 | 284.8 |
| NF | | 3M | 100 | | 788 | 788 | 2 | 13 | | 25 | 63 | | | 54 | 46 | 36 | 10 | 219 | 1.23 | 3.6 |
| **NF Totals** | | | 2 | | 788 | 788 | 2 | 13 | | 25 | 63 | | | 54 | 46 | 36 | 10 | 219 | 1.23 | 3.6 |
| RA | | R | 100 | | 316 | 316 | 1 | 21 | 79 | | | 18 | 73 | 9 | | 24 | 7 | 43 | 0.41 | 7.3 |
| **RA Totals** | | | 1 | | 316 | 316 | 1 | 21 | 79 | | | 18 | 73 | 9 | | 24 | 7 | 43 | 0.41 | 7.3 |
| **Totals** | | | | 0.0 | 44,063 | 44,057 | 88 | 5 | 33 | 29 | 33 | 2 | 15 | 26 | 57 | 33 | 9 | 140 | 0.90 | 314.2 |

**TC PSTATS**

# PROJECT STATISTICS

**PROJECT** **PARUNI**

PAGE **1**
DATE 5/21/2014

| **TWP** | **RGE** | **SC** | **TRACT** | **TYPE** | **ACRES** | **PLOTS** | **TREES** | **CuFt** | **BdFt** |
|---|---|---|---|---|---|---|---|---|---|
| T2N | R6 | 31 | TAKE | 00MC | 210.00 | 52 | 290 | S | W |

| | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES |
|---|---|---|---|---|---|
| TOTAL | 52 | 290 | 5.6 | | |
| CRUISE | 20 | 125 | 6.3 | 29,515 | .4 |
| DBH COUNT | | | | | |
| REFOREST | | | | | |
| COUNT | 31 | 164 | 5.3 | | |
| BLANKS | 1 | | | | |
| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| DOUG FIR-T | 117 | 131.6 | 17.2 | 101 | 51.3 | 213.1 | 36,183 | 35,894 | 8,380 | 8,380 |
| R ALDER-T | 7 | 7.2 | 12.5 | 92 | 1.7 | 6.2 | 517 | 517 | 153 | 153 |
| WHEMLOCK-T | 1 | 1.7 | 18.0 | 102 | 0.7 | 3.1 | 522 | 488 | 126 | 126 |
| **TOTAL** | *125* | *140.5* | *17.0* | *100* | *53.9* | *222.3* | *37,223* | *36,899* | *8,660* | *8,660* |

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 |
| DOUG FIR-T | 70.0 | 6.5 | 432 | 461 | 491 | | | |
| R ALDER-T | 46.8 | 19.0 | 65 | 80 | 95 | | | |
| WHEMLOCK-T | | | | | | | | |
| **TOTAL** | *74.1* | *6.6* | *410* | *439* | *468* | *219* | *55* | *24* |

| CL 68.1 | COEFF | | | **TREES/ACRE** | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-T | 55.5 | 7.7 | 121 | 132 | 142 | | | |
| R ALDER-T | 498.7 | 69.1 | 2 | 7 | 12 | | | |
| WHEMLOCK-T | 434.3 | 60.2 | 1 | 2 | 3 | | | |
| **TOTAL** | *49.7* | *6.9* | *131* | *141* | *150* | *99* | *25* | *11* |

| CL 68.1 | COEFF | | | **BASAL AREA/ACRE** | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-T | 44.4 | 6.2 | 200 | 213 | 226 | | | |
| R ALDER-T | 470.9 | 65.2 | 2 | 6 | 10 | | | |
| WHEMLOCK-T | 434.3 | 60.2 | 1 | 3 | 5 | | | |
| **TOTAL** | *38.9* | *5.4* | *210* | *222* | *234* | *61* | *15* | *7* |

| CL 68.1 | COEFF | | | **NET BF/ACRE** | | # OF PLOTS REQ. | | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-T | 45.6 | 6.3 | 33,624 | 35,894 | 38,164 | | | |
| R ALDER-T | 464.0 | 64.3 | 185 | 517 | 849 | | | |
| WHEMLOCK-T | 434.3 | 60.2 | 194 | 488 | 781 | | | |
| **TOTAL** | *41.4* | *5.7* | *34,781* | *36,899* | *39,017* | *69* | *17* | *8* |

TC PSTATS

# PROJECT STATISTICS

PROJECT PARUNI

PAGE 1
DATE 5/21/2014

| TWP | RGE | SC | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt |
|---|---|---|---|---|---|---|---|---|---|
| 02N | 06 | 31 | TAKE | 00PC | 118.00 | 20 | 98 | S | W |

|  | PLOTS | TREES | TREES PER PLOT | ESTIMATED TOTAL TREES | PERCENT SAMPLE TREES |
|---|---|---|---|---|---|
| TOTAL | 20 | 98 | 4.9 |  |  |
| CRUISE | 20 | 98 | 4.9 | 9,849 | 1.0 |
| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| DOUG FIR-T | 98 | 83.5 | 14.7 | 98 | 25.6 | 98.0 | 14,734 | 14,728 | 3,415 | 3,415 |
| **TOTAL** | *98* | *83.5* | *14.7* | *98* | *25.6* | *98.0* | *14,734* | *14,728* | *3,415* | *3,415* |

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 |
| DOUG FIR-T | 71.4 | 7.2 | 228 | 246 | 263 |  |  |  |
| **TOTAL** | *71.4* | *7.2* | *228* | *246* | *263* | *204* | *51* | *23* |

| CL 68.1 | COEFF |  |  | **TREES/ACRE** |  | # OF PLOTS REQ. |  | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-T | 91.9 | 21.1 | 66 | 83 | 101 |  |  |  |
| **TOTAL** | *91.9* | *21.1* | *66* | *83* | *101* | *355* | *89* | *39* |

| CL 68.1 | COEFF |  |  | **BASAL AREA/ACRE** |  | # OF PLOTS REQ. |  | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-T | 59.2 | 13.6 | 85 | 98 | 111 |  |  |  |
| **TOTAL** | *59.2* | *13.6* | *85* | *98* | *111* | *147* | *37* | *16* |

| CL 68.1 | COEFF |  |  | **NET BF/ACRE** |  | # OF PLOTS REQ. |  | INF. POP. |
|---|---|---|---|---|---|---|---|---|
| SD: 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DOUG FIR-T | 51.6 | 11.8 | 12,985 | 14,728 | 16,470 |  |  |  |
| **TOTAL** | *51.6* | *11.8* | *12,985* | *14,728* | *16,470* | *112* | *28* | *12* |

TC PSTNDSUM

# Stand Table Summary

**Page** 1
**Date:** 5/21/2014

TT2N RR6W S31 Ty00MC 210.00

**Project** PARUNI
**Acres** 210.00

**Time:** 6:24:28AM
**Grown Year:**

| Spc | S T | DBH | Sample Trees | FF 16' | Tot Av Ht | 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 | | 8 | 2 | 86 | 58 | 10.435 | 3.64 | 10.43 | 4.4 | 20.0 | 1.31 | 46 | 209 | 275 | 97 | 44 |
| DF | | 9 | 2 | 87 | 68 | 8.245 | 3.64 | 8.24 | 8.2 | 40.0 | 1.92 | 67 | 330 | 404 | 142 | 69 |
| DF | | 10 | 5 | 86 | 82 | 16.695 | 9.11 | 20.03 | 10.7 | 51.7 | 6.08 | 213 | 1,035 | 1,277 | 448 | 217 |
| DF | | 11 | 2 | 85 | 87 | 5.519 | 3.64 | 8.28 | 12.2 | 50.0 | 2.88 | 101 | 414 | 605 | 212 | 87 |
| DF | | 12 | 3 | 85 | 90 | 6.956 | 5.46 | 11.59 | 13.3 | 54.0 | 4.40 | 154 | 626 | 924 | 324 | 131 |
| DF | | 13 | 3 | 86 | 95 | 5.927 | 5.46 | 11.85 | 13.8 | 56.7 | 4.66 | 164 | 672 | 979 | 344 | 141 |
| DF | | 14 | 6 | 87 | 99 | 10.222 | 10.93 | 20.44 | 17.9 | 74.2 | 10.43 | 366 | 1,516 | 2,190 | 768 | 318 |
| DF | | 15 | 1 | 85 | 94 | 1.484 | 1.82 | 4.45 | 10.5 | 50.0 | 1.34 | 47 | 223 | 281 | 99 | 47 |
| DF | | 16 | 3 | 86 | 100 | 3.913 | 5.46 | 7.83 | 24.4 | 96.7 | 5.44 | 191 | 757 | 1,141 | 400 | 159 |
| DF | | 17 | 5 | 87 | 114 | 5.777 | 9.11 | 15.02 | 23.6 | 100.0 | 10.10 | 355 | 1,502 | 2,122 | 745 | 315 |
| DF | | 18 | 8 | 85 | 115 | 8.245 | 14.57 | 19.58 | 29.4 | 117.4 | 16.39 | 575 | 2,298 | 3,441 | 1,207 | 483 |
| DF | | 19 | 6 | 87 | 118 | 5.550 | 10.93 | 13.87 | 32.6 | 132.7 | 12.87 | 452 | 1,841 | 2,703 | 948 | 387 |
| DF | | 20 | 12 | 86 | 116 | 10.017 | 21.85 | 27.55 | 31.7 | 125.5 | 24.86 | 872 | 3,456 | 5,221 | 1,832 | 726 |
| DF | | 21 | 8 | 86 | 117 | 6.057 | 14.57 | 16.66 | 36.3 | 150.5 | 17.24 | 605 | 2,506 | 3,621 | 1,271 | 526 |
| DF | | 22 | 10 | 87 | 124 | 6.899 | 18.21 | 20.01 | 39.7 | 174.8 | 22.66 | 795 | 3,498 | 4,759 | 1,670 | 735 |
| DF | | 23 | 3 | 87 | 128 | 1.894 | 5.46 | 5.68 | 42.8 | 187.8 | 6.93 | 243 | 1,067 | 1,455 | 510 | 224 |
| DF | | 24 | 10 | 86 | 126 | 5.797 | 18.21 | 17.39 | 46.4 | 199.3 | 23.02 | 808 | 3,467 | 4,834 | 1,696 | 728 |
| DF | | 25 | 3 | 84 | 120 | 1.603 | 5.46 | 4.81 | 47.3 | 196.7 | 6.49 | 228 | 946 | 1,362 | 478 | 199 |
| DF | | 26 | 6 | 85 | 125 | 2.964 | 10.93 | 8.89 | 53.9 | 231.7 | 13.66 | 479 | 2,060 | 2,869 | 1,007 | 433 |
| DF | | 27 | 2 | 88 | 121 | .916 | 3.64 | 2.75 | 59.3 | 273.3 | 4.65 | 163 | 751 | 976 | 342 | 158 |
| DF | | 28 | 6 | 85 | 133 | 2.555 | 10.93 | 7.67 | 66.5 | 295.6 | 14.53 | 510 | 2,266 | 3,051 | 1,070 | 476 |
| DF | | 29 | 2 | 86 | 126 | .794 | 3.64 | 2.38 | 68.0 | 301.7 | 4.62 | 162 | 719 | 970 | 340 | 151 |
| DF | | 30 | 4 | 88 | 140 | 1.484 | 7.28 | 4.82 | 76.0 | 378.5 | 10.44 | 366 | 1,825 | 2,193 | 770 | 383 |
| DF | | 31 | 3 | 83 | 129 | 1.042 | 5.46 | 3.13 | 76.5 | 333.3 | 6.82 | 239 | 1,042 | 1,432 | 502 | 219 |
| DF | | 33 | 2 | 85 | 138 | .613 | 3.64 | 1.84 | 97.3 | 473.3 | 5.10 | 179 | 871 | 1,072 | 376 | 183 |
| DF | | Totals | 117 | 86 | 101 | 131.602 | 213.08 | 275.21 | 30.5 | 130.4 | 238.84 | 8,380 | 35,894 | 50,157 | 17,599 | 7,538 |
| RA | | 11 | 2 | 74 | 92 | 2.664 | 1.76 | 2.66 | 15.3 | 50.0 | 1.12 | 41 | 133 | 235 | 85 | 28 |
| RA | | 12 | 2 | 73 | 97 | 2.239 | 1.76 | 4.48 | 8.0 | 30.0 | .98 | 36 | 134 | 207 | 75 | 28 |
| RA | | 13 | 1 | 74 | 83 | .954 | .88 | 1.91 | 10.3 | 40.0 | .54 | 20 | 76 | 113 | 41 | 16 |
| RA | | 15 | 1 | 73 | 93 | .716 | .88 | 1.43 | 19.6 | 55.0 | .77 | 28 | 79 | 162 | 59 | 17 |
| RA | | 16 | 1 | 74 | 89 | .630 | .88 | 1.26 | 23.0 | 75.0 | .80 | 29 | 94 | 167 | 61 | 20 |
| RA | | Totals | 7 | 74 | 92 | 7.203 | 6.15 | 11.74 | 13.0 | 44.0 | 4.21 | 153 | 517 | 885 | 322 | 109 |
| WH | | 18 | 1 | 93 | 102 | 1.741 | 3.08 | 3.48 | 36.2 | 140.0 | 4.03 | 126 | 488 | 846 | 264 | 102 |
| WH | | Totals | 1 | 93 | 102 | 1.741 | 3.08 | 3.48 | 36.2 | 140.0 | 4.03 | 126 | 488 | 846 | 264 | 102 |
| Totals | | | 125 | 86 | 100 | 140.546 | 222.31 | 290.43 | 29.8 | 127.0 | 247.08 | 8,660 | 36,899 | 51,888 | 18,185 | 7,749 |

TC PSTNDSUM

# Stand Table Summary

**Page** 1
**Date:** 5/21/2014

T02N R06W S31 Ty00PC 118.00

**Project** PARUNI
**Acres** 118.00

**Time:** 6:27:31AM
**Grown Year:**

| Spc | S T | DBH | Sample Trees | FF 16' | Tot Av Ht | Trees/ Acre | BA/ Acre | Logs Acre | Average Log Net Cu.Ft. | Net Bd.Ft. | Tons/ Acre | Net Cu.Ft. Acre | Net Bd.Ft. Acre | Totals Tons | Cunits | MBF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DF | | 10 | 6 | 88 | 85 | 11.001 | 6.00 | 11.00 | 12.8 | 60.0 | 4.00 | 140 | 660 | 472 | 166 | 78 |
| DF | | 11 | 6 | 87 | 85 | 9.092 | 6.00 | 10.61 | 13.4 | 55.7 | 4.07 | 143 | 591 | 480 | 168 | 70 |
| DF | | 12 | 14 | 88 | 90 | 17.825 | 14.00 | 33.10 | 12.1 | 51.9 | 11.40 | 400 | 1,719 | 1,345 | 472 | 203 |
| DF | | 13 | 2 | 88 | 82 | 2.170 | 2.00 | 4.34 | 12.4 | 50.0 | 1.53 | 54 | 217 | 181 | 63 | 26 |
| DF | | 14 | 8 | 88 | 92 | 7.484 | 8.00 | 14.97 | 16.7 | 68.8 | 7.12 | 250 | 1,029 | 841 | 295 | 121 |
| DF | | 15 | 10 | 89 | 107 | 8.149 | 10.00 | 16.30 | 22.4 | 100.0 | 10.39 | 365 | 1,630 | 1,226 | 430 | 192 |
| DF | | 16 | 10 | 89 | 107 | 7.162 | 10.00 | 14.32 | 26.3 | 115.5 | 10.75 | 377 | 1,654 | 1,269 | 445 | 195 |
| DF | | 17 | 8 | 89 | 104 | 5.075 | 8.00 | 10.15 | 28.3 | 116.9 | 8.18 | 287 | 1,186 | 965 | 339 | 140 |
| DF | | 18 | 10 | 89 | 113 | 5.659 | 10.00 | 11.88 | 32.4 | 128.6 | 10.97 | 385 | 1,528 | 1,295 | 454 | 180 |
| DF | | 19 | 8 | 89 | 115 | 4.063 | 8.00 | 10.67 | 30.5 | 127.6 | 9.27 | 325 | 1,361 | 1,094 | 384 | 161 |
| DF | | 20 | 4 | 89 | 120 | 1.833 | 4.00 | 5.04 | 31.8 | 140.0 | 4.57 | 160 | 706 | 539 | 189 | 83 |
| DF | | 21 | 2 | 89 | 121 | .832 | 2.00 | 2.49 | 35.0 | 163.3 | 2.49 | 87 | 407 | 294 | 103 | 48 |
| DF | | 23 | 3 | 89 | 118 | 1.040 | 3.00 | 3.12 | 41.4 | 188.9 | 3.68 | 129 | 589 | 434 | 152 | 70 |
| DF | | 24 | 3 | 89 | 122 | .955 | 3.00 | 2.86 | 46.5 | 214.4 | 3.79 | 133 | 614 | 448 | 157 | 72 |
| DF | | 25 | 2 | 89 | 117 | .587 | 2.00 | 1.76 | 49.0 | 225.0 | 2.46 | 86 | 396 | 290 | 102 | 47 |
| DF | | 26 | 2 | 90 | 127 | .542 | 2.00 | 1.63 | 57.0 | 270.0 | 2.64 | 93 | 439 | 312 | 110 | 52 |
| DF | | Totals | 98 | 88 | 98 | 83.468 | 98.00 | 154.25 | 22.1 | 95.5 | 97.32 | 3,415 | 14,728 | 11,484 | 4,030 | 1,738 |
| Totals | | | 98 | 88 | 98 | 83.468 | 98.00 | 154.25 | 22.1 | 95.5 | 97.32 | 3,415 | 14,728 | 11,484 | 4,030 | 1,738 |

TC PSTNDSUM

# Stand Table Summary

Page 1
Date: 5/21/2014

T02N R06W S31 TyR/W 2.00

**Project** PARUNI
**Acres** 2.00

**Time:** 6:32:27AM
**Grown Year:**

| Spc | S T | DBH | Sample Trees | FF 16' | Tot Av Ht | 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 | | 8 | 2 | 86 | 74 | 5.730 | 2.00 | 5.73 | 6.0 | 30.0 | .97 | 34 | 172 | 2 | 1 | 0 |
| DF | | 9 | 3 | 87 | 72 | 6.791 | 3.00 | 6.79 | 8.9 | 46.7 | 1.73 | 61 | 317 | 3 | 1 | 1 |
| DF | | 10 | 6 | 88 | 85 | 11.001 | 6.00 | 11.00 | 12.8 | 60.0 | 4.00 | 140 | 660 | 8 | 3 | 1 |
| DF | | 11 | 6 | 87 | 85 | 9.092 | 6.00 | 10.61 | 13.4 | 55.7 | 4.07 | 143 | 591 | 8 | 3 | 1 |
| DF | | 12 | 14 | 88 | 90 | 17.825 | 14.00 | 33.10 | 12.1 | 51.9 | 11.40 | 400 | 1,719 | 23 | 8 | 3 |
| DF | | 13 | 2 | 88 | 82 | 2.170 | 2.00 | 4.34 | 12.4 | 50.0 | 1.53 | 54 | 217 | 3 | 1 | 0 |
| DF | | 14 | 8 | 88 | 92 | 7.484 | 8.00 | 14.97 | 16.7 | 68.8 | 7.12 | 250 | 1,029 | 14 | 5 | 2 |
| DF | | 15 | 10 | 89 | 107 | 8.149 | 10.00 | 16.30 | 22.4 | 100.0 | 10.39 | 365 | 1,630 | 21 | 7 | 3 |
| DF | | 16 | 13 | 89 | 105 | 9.311 | 13.00 | 18.62 | 25.9 | 111.9 | 13.76 | 483 | 2,084 | 28 | 10 | 4 |
| DF | | 17 | 12 | 89 | 103 | 7.613 | 12.00 | 16.49 | 26.0 | 106.5 | 12.21 | 428 | 1,757 | 24 | 9 | 4 |
| DF | | 18 | 18 | 89 | 111 | 10.186 | 18.00 | 24.33 | 28.4 | 118.6 | 19.72 | 692 | 2,886 | 39 | 14 | 6 |
| DF | | 19 | 23 | 89 | 116 | 11.681 | 23.00 | 33.52 | 27.9 | 124.5 | 26.65 | 935 | 4,175 | 53 | 19 | 8 |
| DF | | 20 | 6 | 89 | 121 | 2.750 | 6.00 | 7.79 | 32.2 | 147.6 | 7.15 | 251 | 1,151 | 14 | 5 | 2 |
| DF | | 21 | 16 | 89 | 120 | 6.652 | 16.00 | 19.96 | 33.6 | 157.9 | 19.12 | 671 | 3,151 | 38 | 13 | 6 |
| DF | | 22 | 3 | 89 | 121 | 1.136 | 3.00 | 3.41 | 38.5 | 177.8 | 3.74 | 131 | 606 | 7 | 3 | 1 |
| DF | | 23 | 6 | 89 | 122 | 2.080 | 6.00 | 6.24 | 42.4 | 195.6 | 7.53 | 264 | 1,220 | 15 | 5 | 2 |
| DF | | 24 | 17 | 89 | 123 | 5.411 | 17.00 | 16.23 | 46.9 | 220.0 | 21.69 | 761 | 3,571 | 43 | 15 | 7 |
| DF | | 25 | 7 | 89 | 118 | 2.053 | 7.00 | 6.16 | 48.5 | 227.1 | 8.51 | 299 | 1,399 | 17 | 6 | 3 |
| DF | | 26 | 5 | 89 | 125 | 1.356 | 5.00 | 4.07 | 56.1 | 267.3 | 6.51 | 228 | 1,088 | 13 | 5 | 2 |
| DF | | 27 | 4 | 89 | 123 | 1.006 | 4.00 | 3.02 | 61.1 | 305.0 | 5.25 | 184 | 921 | 11 | 4 | 2 |
| DF | | 28 | 10 | 89 | 128 | 2.339 | 10.00 | 7.02 | 66.4 | 327.0 | 13.27 | 466 | 2,294 | 27 | 9 | 5 |
| DF | | 29 | 1 | 90 | 120 | .218 | 1.00 | .65 | 67.2 | 333.3 | 1.25 | 44 | 218 | 3 | 1 | 0 |
| DF | | 31 | 1 | 90 | 135 | .191 | 1.00 | .57 | 86.2 | 416.7 | 1.41 | 49 | 238 | 3 | 1 | 0 |
| DF | | 32 | 5 | 90 | 132 | .895 | 5.00 | 2.86 | 83.6 | 423.1 | 6.83 | 240 | 1,212 | 14 | 5 | 2 |
| DF | | 33 | 1 | 90 | 125 | .168 | 1.00 | .51 | 92.3 | 460.0 | 1.33 | 47 | 232 | 3 | 1 | 0 |
| DF | | 34 | 1 | 90 | 135 | .159 | 1.00 | .48 | 103.4 | 503.3 | 1.40 | 49 | 239 | 3 | 1 | 0 |
| DF | | 35 | 2 | 89 | 126 | .299 | 2.00 | .90 | 105.6 | 546.7 | 2.70 | 95 | 491 | 5 | 2 | 1 |
| DF | | 36 | 5 | 89 | 132 | .707 | 5.00 | 2.26 | 105.8 | 566.9 | 6.83 | 240 | 1,283 | 14 | 5 | 3 |
| DF | | 37 | 1 | 89 | 132 | .134 | 1.00 | .40 | 125.5 | 656.7 | 1.44 | 50 | 264 | 3 | 1 | 1 |
| DF | | 38 | 9 | 90 | 134 | 1.143 | 9.00 | 4.44 | 99.2 | 564.9 | 12.56 | 441 | 2,510 | 25 | 9 | 5 |
| DF | | 40 | 1 | 89 | 135 | .115 | 1.00 | .46 | 104.5 | 617.5 | 1.36 | 48 | 283 | 3 | 1 | 1 |
| DF | | 41 | 1 | 89 | 135 | .109 | 1.00 | .44 | 112.1 | 675.0 | 1.39 | 49 | 294 | 3 | 1 | 1 |
| DF | | 42 | 1 | 89 | 140 | .104 | 1.00 | .42 | 120.2 | 710.0 | 1.42 | 50 | 295 | 3 | 1 | 1 |
| DF | | 50 | 1 | 90 | 140 | .073 | 1.00 | .29 | 175.0 | 1050.0 | 1.46 | 51 | 308 | 3 | 1 | 1 |
| DF | | Totals | 221 | 88 | 101 | 136.130 | 221.00 | 284.38 | 30.6 | 142.4 | 247.72 | 8,692 | 40,507 | 495 | 174 | 81 |
| WH | | 11 | 1 | 91 | 100 | 1.515 | 1.00 | 3.03 | 11.9 | 55.0 | 1.15 | 36 | 167 | 2 | 1 | 0 |
| WH | | 13 | 1 | 91 | 90 | 1.085 | 1.00 | 2.17 | 14.9 | 60.0 | 1.04 | 32 | 130 | 2 | 1 | 0 |
| WH | | 14 | 1 | 91 | 80 | .935 | 1.00 | 1.87 | 16.5 | 70.0 | .99 | 31 | 131 | 2 | 1 | 0 |
| WH | | 15 | 2 | 90 | 90 | 1.630 | 2.00 | 3.26 | 21.0 | 92.5 | 2.19 | 69 | 302 | 4 | 1 | 1 |
| WH | | 16 | 1 | 92 | 90 | .716 | 1.00 | 1.43 | 23.9 | 95.0 | 1.10 | 34 | 136 | 2 | 1 | 0 |
| WH | | 17 | 1 | 89 | 85 | .634 | 1.00 | 1.27 | 26.6 | 105.0 | 1.08 | 34 | 133 | 2 | 1 | 0 |
| WH | | 19 | 1 | 92 | 110 | .508 | 1.00 | 1.52 | 28.5 | 143.3 | 1.39 | 43 | 218 | 3 | 1 | 0 |
| WH | | 24 | 1 | 88 | 140 | .318 | 1.00 | .95 | 57.7 | 270.0 | 1.76 | 55 | 258 | 4 | 1 | 1 |
| WH | | 25 | 1 | 93 | 120 | .293 | 1.00 | .88 | 53.4 | 263.3 | 1.50 | 47 | 232 | 3 | 1 | 0 |
| WH | | 26 | 1 | 90 | 120 | .271 | 1.00 | .81 | 54.9 | 263.3 | 1.43 | 45 | 214 | 3 | 1 | 0 |
| WH | | 30 | 2 | 94 | 128 | .407 | 2.00 | 1.22 | 83.4 | 430.0 | 3.26 | 102 | 526 | 7 | 2 | 1 |
| WH | | Totals | 13 | 91 | 97 | 8.314 | 13.00 | 18.43 | 28.6 | 132.8 | 16.89 | 528 | 2,446 | 34 | 11 | 5 |
| NF | | 11 | 1 | 88 | 50 | 1.515 | 1.00 | 1.52 | 12.3 | 40.0 | .45 | 19 | 61 | 1 | 0 | 0 |
| NF | | 22 | 1 | 91 | 125 | .379 | 1.00 | 1.14 | 39.4 | 183.3 | 1.08 | 45 | 208 | 2 | 1 | 0 |
| NF | | 34 | 2 | 90 | 125 | .317 | 2.00 | .95 | 100.6 | 545.0 | 2.30 | 96 | 519 | 5 | 2 | 1 |
| NF | | Totals | 4 | 89 | 74 | 2.211 | 4.00 | 3.60 | 44.2 | 218.6 | 3.82 | 159 | 788 | 8 | 3 | 2 |

TC PSTNDSUM

# Stand Table Summary

**Page** 2
**Date:** 5/21/2014

T02N R06W S31 TyR/W 2.00

**Project** PARUNI
**Acres** 2.00

**Time:** 6:32:27AM
**Grown Year:**

| Spc | S T | DBH | Sample Trees | FF 16' | Tot Av Ht | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RA | | 8 | 1 | 87 | 55 | 2.865 | 1.00 | 2.86 | 3.7 | 20.0 | .29 | 11 | 57 | 1 | 0 | 0 |
| RA | | 12 | 1 | 91 | 75 | 1.273 | 1.00 | 2.55 | 11.5 | 50.0 | .80 | 29 | 127 | 2 | 1 | 0 |
| RA | | 14 | 1 | 92 | 80 | .935 | 1.00 | 1.87 | 16.5 | 70.0 | .85 | 31 | 131 | 2 | 1 | 0 |
| RA | | Totals | 3 | 89 | 65 | 5.073 | 3.00 | 7.28 | 9.7 | 43.3 | 1.94 | 71 | 316 | 4 | 1 | 1 |
| Totals | | | 241 | 89 | 99 | 151.729 | 241.00 | 313.69 | 30.1 | 140.4 | 270.37 | 9,450 | 44,057 | 541 | 189 | 88 |

# Residual Stand Specifications

## Parallel Universe
## 341-15-26

## AREAS 3, 4, 5, and 6

Residual QMD assumption (from cruise leave tree information) - 17.
Target Relative Density - 34

| | Minimum | Target | Maximum |
|---|---|---|---|
| **Relative Density** | 32 | 34 | 36 |
| **Basal Area** | 130 | 140 | 150 |
| **Trees per Acre** | 82 | 89 | 95 |

$RD = BA/\sqrt{DBH}$

$BA = \sqrt{DBH}(RD)$

$BA/tree = (\pi r^2)/(144)$

$TPA = (BA/acre)/(BA/tree)$

# VOLUME SUMMARY

(Shown in MBF)

**Parallel Universe**
**341-15-26**
**April 2014**

### AREAS 1, 2, and 7: MC (210 ACRES)

| **SPECIES** | | **2 SAW** | **3 SAW** | **4 SAW** | **Camprun** | **TOTAL** |
|---|---|---|---|---|---|---|
| Douglas-fir | Cruise Volume | 4,570 | 2,546 | 421 | 0 | 7,537 |
| | Hidden D&B (2%) | (91) | (51) | (8) | () | (150) |
| | **NET TOTAL** | 4,479 | 2,495 | 413 | 0 | 7,387 |
| | % of Total | 61 | 34 | 6 | 0 | |

| **SPECIES** | | **2 SAW** | **3 SAW** | **4 SAW** | **Camprun** | **TOTAL** |
|---|---|---|---|---|---|---|
| Western Hemlock | Cruise Volume | 80 | 22 | 0 | 0 | 102 |
| | Hidden D&B (2%) | (2) | () | () | () | (2) |
| | **NET TOTAL** | 78 | 22 | 0 | 0 | 100 |
| | % of Total | 78 | 22 | 0 | 0 | |

| **SPECIES** | | **2 SAW** | **3 SAW** | **4 SAW** | **Camprun** | **TOTAL** |
|---|---|---|---|---|---|---|
| Red alder | Cruise Volume | 0 | 0 | 0 | 109 | 109 |
| | Hidden D&B (2%) | () | () | () | (2) | (2) |
| | **NET TOTAL** | 0 | 0 | 0 | 107 | 107 |
| | % of Total | 0 | 0 | 0 | 100 | |

### AREAS 3, 4, 5, and 6: PC-M (118 ACRES)

| **SPECIES** | | **2 SAW** | **3 SAW** | **4 SAW** | **Camprun** | **TOTAL** |
|---|---|---|---|---|---|---|
| Douglas-fir | Cruise Volume | 514 | 1,082 | 143 | 0 | 1,739 |
| | Hidden D&B (2%) | (10) | (22) | (3) | () | (35) |
| | **NET TOTAL** | 504 | 1,060 | 140 | 0 | 1,704 |
| | % of Total | 30 | 62 | 8 | 0 | |

### AREA 8: R/W (2 ACRES)

| **SPECIES** | | **2 SAW** | **3 SAW** | **4 SAW** | **Camprun** | **TOTAL** |
|---|---|---|---|---|---|---|
| Douglas-fir | Cruise Volume | 9 | 70 | 3 | 0 | 82 |
| | Hidden D&B (2%) | () | (1) | () | () | (1) |
| | **NET TOTAL** | 9 | 69 | 3 | 0 | 81 |
| | % of Total | 11 | 85 | 4 | 0 | |

| **SPECIES** | | **2 SAW** | **3 SAW** | **4 SAW** | **Camprun** | **TOTAL** |
|---|---|---|---|---|---|---|
| Western Hemlock & Noble fir | Cruise Volume | 0 | 7 | 0 | 0 | 7 |
| | Hidden D&B (2%) | () | () | () | () | () |
| | **NET TOTAL** | 0 | 7 | 0 | 0 | 7 |
| | % of Total | 0 | 100 | 0 | 0 | |

**AREA 8: R/W (2 ACRES)**

| SPECIES | | 2 SAW | 3 SAW | 4 SAW | Camprun | TOTAL |
|---|---|---|---|---|---|---|
| Red alder | Cruise Volume | 0 | 0 | 0 | 1 | 1 |
| | Hidden D&B (2%) | () | () | () | () | () |
| | **NET TOTAL** | 0 | 0 | 0 | 1 | 1 |
| | % of Total | 0 | 0 | 0 | 100 | |

**SALE TOTAL**

| SPECIES | 2 SAW | 3 SAW | 4 SAW | Camprun | TOTAL |
|---|---|---|---|---|---|
| Douglas-fir | 4,992 | 3,624 | 556 | 0 | 9,172 |
| W.hemlock and noble fir | 78 | 29 | 0 | 0 | 107 |
| Red alder | 0 | 0 | 0 | 108 | 108 |

9,387

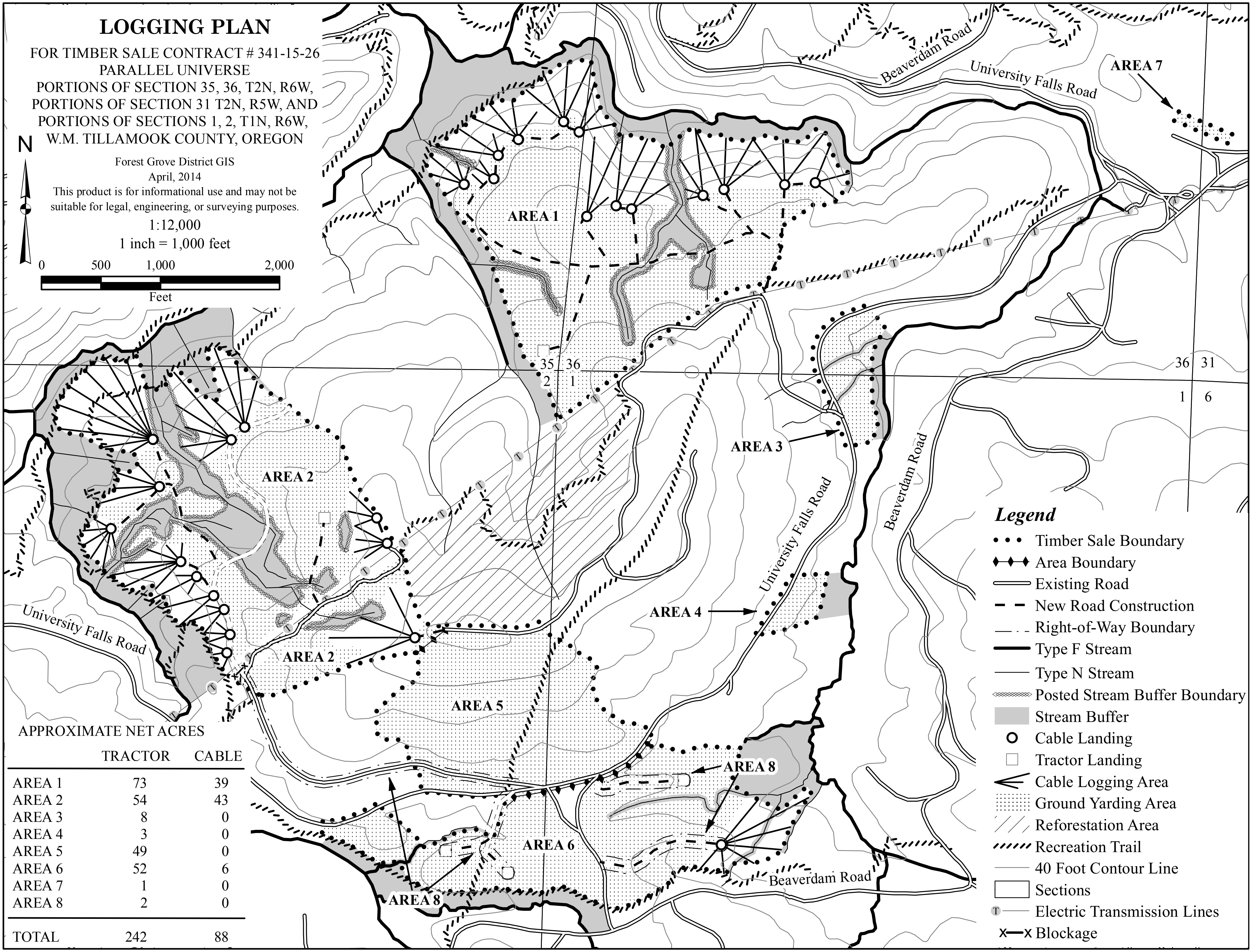
# LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-15-26
PARALLEL UNIVERSE
PORTIONS OF SECTION 35, 36, T2N, R6W,
PORTIONS OF SECTION 31 T2N, R5W, AND
PORTIONS OF SECTIONS 1, 2, T1N, R6W,
W.M. TILLAMOOK COUNTY, OREGON

Forest Grove District GIS
April, 2014

This product is for informational use and may not be suitable for legal, engineering, or surveying purposes.

1:12,000
1 inch = 1,000 feet



APPROXIMATE NET ACRES

| | TRACTOR | CABLE |
|---|---|---|
| AREA 1 | 73 | 39 |
| AREA 2 | 54 | 43 |
| AREA 3 | 8 | 0 |
| AREA 4 | 3 | 0 |
| AREA 5 | 49 | 0 |
| AREA 6 | 52 | 6 |
| AREA 7 | 1 | 0 |
| AREA 8 | 2 | 0 |
| TOTAL | 242 | 88 |