



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Mahrvelous
Sale WO-341-2023-W00996-01

District: West Oregon

Date: October 17, 2022

Cost Summary

| | Conifer | Hardwood | Total |
|-------------------------|----------------|-------------------|----------------|
| Gross Timber Sale Value | \$2,282,152.80 | \$129,712.00 | \$2,411,864.80 |
| | | Project Work: | (\$129,258.00) |
| | | Advertised Value: | \$2,282,606.80 |



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Timber Description

Location: T10S, R7W, Section(s) 16 & 21, W.M., Benton County, Oregon.

Stand Stocking: 40%

| Specie Name | AvgDBH | Amortization (%) | Recovery (%) |
|---------------|--------|------------------|--------------|
| Douglas - Fir | 25 | 0 | 97 |
| Alder (Red) | 12 | 0 | 95 |

| Volume by Grade | 2S | 3S & 4S 6"-11" | Camprun | Total |
|-----------------|-------|----------------|---------|-------|
| Douglas - Fir | 3,046 | 624 | 0 | 3,670 |
| Alder (Red) | 0 | 0 | 400 | 400 |
| Total | 3,046 | 624 | 400 | 4,070 |

Comments: Pond Values Used: Local Pond Values, August, 2022

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
 $\$240.84/\text{MBF} = \$544/\text{MBF} - \$303.16/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$798.84/\text{MBF} = \$1,252/\text{MBF} - \$303.16/\text{MBF} - \$150.00/\text{MBF}(\text{extra haul distance})$

Bigleaf maple and Other Hardwoods Stumpage Price = Hardwood Pulp price using a conversion factor of 10 Ton/MBF: $=\$60.00/\text{MBF}$

PULP (Conifer and Hardwood Price) = $\$6.00/\text{TON}$

Other Costs (with Profit & Risk to be added):

Intermediate Support/Tail Trees: 10 supports @ $\$100/\text{support} = \$1,000$

Flaggers on County Road: 2 Flaggers x 4 days x $\$350/\text{day} = \$2,800$

Directional Felling: 8 acres @ $\$200/\text{acres} = \$1,600$

Loader & Operator Stand-by for clean-up of County Road: 4 Days x 6 hour/day x $\$150/\text{hour} = \$3,600$

TOTAL Other Costs (with Profit & Risk to be added) = $\$9,000$

Other Costs (No Profit & Risk added):

Equipment Cleaning (Invasive Species): $\$2,000$

Landing slash piling/firewood sorting: 6 Landings @ $\$180/\text{Landing} = \$1,080$

TOTAL Other Costs (No Profit & Risk added) = $\$3,080$

ROAD MAINTENANCE

Move-in: (Grader) $\$875$

Move-in: (Roller) $\$875$

Final Road Maintenance: $\$17,874.23$

Fuel Cost Adjustment (10%): $\$1,787.42$

TOTAL Road Maintenance: $\$19,661.65/4,070 \text{ MBF} = \$4.83/\text{MBF}$

SLASH DISPOSAL

Project Work: 48 hrs @ $\$170/\text{hr} = \$8,160$

Weed Wash: $\$300$

Move-in: $\$1,325$

TOTAL Slash Disposal = $\$9,785$



Timber Sale Appraisal
Mahrvelous
Sale WO-341-2023-W00996-01

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Logging Conditions

Combination#: 1 Douglas - Fir 58.00%
 Alder (Red) 58.00%

Logging System: Cable: Large Tower >=70 **Process:** Manual Falling/Delimbing

yarding distance: Short (400 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 7 **bd. ft / load:** 4600

cost / mbf: \$215.63

machines: Log Loader (A)
 Tower Yarder (Large)

Combination#: 2 Douglas - Fir 42.00%
 Alder (Red) 42.00%

Logging System: Shovel **Process:** Manual Falling/Delimbing

yarding distance: Short (400 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 10 **bd. ft / load:** 4600

cost / mbf: \$88.86

machines: Shovel Logger



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Mahrvelous
Sale WO-341-2023-W00996-01

District: West Oregon

Date: October 17, 2022

Logging Costs

| | |
|-----------------------------|-------------------------------|
| Operating Seasons: 3.00 | Profit Risk: 10% |
| Project Costs: \$129,258.00 | Other Costs (P/R): \$9,000.00 |
| Slash Disposal: \$9,785.00 | Other Costs: \$3,080.00 |

Miles of Road

Road Maintenance: \$4.83

| 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 | 4.2 |
| Alder (Red) | \$0.00 | 2.0 | 3.8 |



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Mahrvelous Sale WO-341-2023-W00996-01

District: West Oregon

Date: October 17, 2022

Logging Costs Breakdown

| Logging | Road Maint | Fire Protect | Hauling | Other P/R appl | Profit & Risk | Slash Disposal | Brand & Paint | Other | Total |
|----------------------|------------|--------------|----------|----------------|---------------|----------------|---------------|--------|----------|
| Douglas - Fir | | | | | | | | | |
| \$162.39 | \$4.97 | \$3.24 | \$98.10 | \$2.21 | \$27.09 | \$2.40 | \$2.00 | \$0.76 | \$303.16 |
| Alder (Red) | | | | | | | | | |
| \$162.39 | \$5.07 | \$3.24 | \$165.78 | \$2.21 | \$33.87 | \$2.40 | \$2.00 | \$0.76 | \$377.72 |

| Specie | Amortization | Pond Value | Stumpage | Amortized |
|---------------|--------------|------------|----------|-----------|
| Douglas - Fir | \$0.00 | \$925.00 | \$621.84 | \$0.00 |
| Alder (Red) | \$0.00 | \$702.00 | \$324.28 | \$0.00 |



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Mahrvelous
Sale WO-341-2023-W00996-01

District: West Oregon

Date: October 17, 2022

Summary

Amortized

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

Unamortized

| Specie | MBF | Value | Total |
|---------------|-------|----------|----------------|
| Douglas - Fir | 3,670 | \$621.84 | \$2,282,152.80 |
| Alder (Red) | 400 | \$324.28 | \$129,712.00 |

Gross Timber Sale Value

Recovery: \$2,411,864.80

Prepared By: Aaron McEwen

Phone: 541-929-9168

SUMMARY OF ALL PROJECT COSTS

Sale Name: Mahrvelous

Date: October 2022

Time: 10:57

Project #1 - Construction

| <u>Road Segment</u> | <u>Length</u> | <u>Cost</u> |
|---------------------|---------------|-------------|
| A to B | 4.9 sta | \$12,723 |
| C to D | 1.3 sta | \$4,073 |
| E to F | 2.5 sta | \$5,902 |
| G to H | 1.3 sta | \$3,780 |
| Fuel Cost Increase | | \$2,648 |
| TOTALS | 10.0 sta | \$29,126 |

Project #2 - Improvements

| <u>Road Segment</u> | <u>Length</u> | <u>Cost</u> |
|---------------------|---------------|-------------|
| 1 to 2 | 183.2 sta | \$4,271 |
| 2 to 3 | 156.7 sta | \$25,120 |
| 6 to 7 | 14.9 sta | \$5,164 |
| 10 to 11 | 20.5 sta | \$25 |
| 20 to 21 | 91.4 sta | \$13,672 |
| Fuel Cost Increase | | \$4,825 |
| TOTALS | 466.7 sta | \$53,077 |

Project #3 - Brushing

| | | |
|------------------------------|-------------|----------|
| <u>Brushing</u> | 10.57 miles | \$11,018 |
| <u>Sod and Brush Removal</u> | 7.1 miles | \$5,773 |
| Fuel Cost Increase | | \$1,679 |
| TOTAL | | \$18,470 |

Project #4 - Stockpile Restock

| | |
|--------------------|----------|
| | \$21,104 |
| Fuel Cost Increase | \$2,110 |
| TOTALS | \$23,214 |

Project #5 - Move in

| | <u>Cost</u> |
|----------------------------|-------------|
| Excavator, C325 or equiv. | \$1,450 |
| Dozer, D-7 or equiv. | \$905 |
| Grader, Cat 14-G or equiv. | \$875 |
| Vibratory roller | \$875 |
| Road Brusher | \$778 |
| Fuel Cost Increase | \$488 |
| TOTAL | \$5,371 |

GRAND TOTAL \$129,258

Compiled by Cody Valencia

Date 10/26/2022

SUMMARY OF CONSTRUCTION COST

SALE Mahrvelous Project # 1 LENGTH const 4.9 sta
ROAD A to B

CLEARING AND GRUBBING

0.34 acres @ \$1,337.00 /acre = \$455

TOTAL CLEARING AND GRUBBING = \$455

EXCAVATION

With D7 dozer or equivalent

Construct road 4.9 sta @ \$214.00 /sta = \$1,049

Endhaul excess material 100 cy @ \$4.50 /cy = \$450

to Pt. G (expanded 20%)

Construct landing 1 ldg @ \$438.00 /ldg = \$438

Shape subgrade 4.9 sta @ \$20.63 /sta = \$101

(with road grader)

Compact subgrade 4.9 sta @ \$16.00 /sta = \$78

(with vibratory roller)

TOTAL EXCAVATION = \$2,116

SURFACING

| | | Size | Cost/yd | | |
|-------------------------|-----------|---------|--------------|---|---------|
| Base rock (8" lift) | 220 cy of | Jaw-Run | \$29.36 | = | \$6,459 |
| Curve widening rock | 30 cy of | Jaw-Run | \$29.36 | = | \$881 |
| Landing rock | 50 cy of | Jaw-Run | \$29.36 | = | \$1,468 |
| Junction rock | 20 cy of | 3"-0" | \$30.37 | = | \$607 |
| Shape surface | 4.9 sta | @ | \$20.63 /sta | = | \$101 |
| (with road grader) | | | | | |
| Compact surface | 4.9 sta | @ | \$16.00 /sta | = | \$78 |
| (with vibratory roller) | | | | | |

TOTAL ROCK COST = \$9,594

SPECIAL PROJECTS

Cross drain culvert 30 ft @ \$13.75 /ft = \$413

(18" x 30')

Install culvert 1 hr @ \$ 145.00 /hr = \$145

TOTAL SPECIAL PROJECTS COST = \$558

Compiled by: Cody Valencia

Date: Oct 26, 2022

GRAND TOTAL =====>

\$12,723

SUMMARY OF CONSTRUCTION COST

SALE Mahrvelous Project # 1 LENGTH const 1.3 sta
ROAD C to D

CLEARING AND GRUBBING

0.09 acres @ \$1,337.00 /acre = \$120

TOTAL CLEARING AND GRUBBING = \$120

EXCAVATION

With D7 dozer or equivalent

Construct road 1.3 sta @ \$138.00 /sta = \$179

Construct landing 1 ldg @ \$438.00 /ldg = \$438

Shape subgrade 1.3 sta @ \$20.63 /sta = \$27

(with road grader)

Compact subgrade 1.3 sta @ \$16.00 /sta = \$21

(with vibratory roller)

TOTAL EXCAVATION = \$665

SURFACING

| | | | Size | Cost/yd | | |
|-------------------------|-----|-------|---------|--------------|---|---------|
| Base rock (8") | 60 | cy of | Jaw-Run | \$29.36 | = | \$1,762 |
| Landing rock | 40 | cy of | Jaw-Run | \$29.36 | = | \$1,174 |
| Junction rock | 10 | cy of | 3"-0" | \$30.37 | = | \$304 |
| Shape surface | 1.3 | sta | @ | \$20.63 /sta | = | \$27 |
| (with road grader) | | | | | | |
| Compact surface | 1.3 | sta | @ | \$16.00 /sta | = | \$21 |
| (with vibratory roller) | | | | | | |

TOTAL ROCK COST = \$3,288

Compiled by: Cody Valencia

Date: Oct 26, 2022

GRAND TOTAL =====> \$4,073

SUMMARY OF CONSTRUCTION COST

SALE Mahrvelous Project # 1 LENGTH const 2.5 sta
ROAD E to F

CLEARING AND GRUBBING

0.17 acres @ \$1,337.00 /acre = \$227

TOTAL CLEARING AND GRUBBING = \$227

EXCAVATION With D7 dozer or equivalent

Construct road 2.5 sta @ \$138.00 /sta = \$345

Construct landing 1 ldg @ \$438.00 /ldg = \$438

Shape subgrade 2.5 sta @ \$20.63 /sta = \$52
(with road grader)

Compact subgrade 2.5 sta @ \$16.00 /sta = \$40
(with vibratory roller)

TOTAL EXCAVATION = \$875

SURFACING

| | | Size | Cost/yd | | |
|-------------------------|-----------|---------|--------------|---|---------|
| Base rock (8" lift) | 110 cy of | Jaw-Run | \$29.36 | = | \$3,230 |
| Landing rock | 40 cy of | Jaw-Run | \$29.36 | = | \$1,174 |
| Junction rock | 10 cy of | 3"-0" | \$30.37 | = | \$304 |
| Shape surface | 2.5 sta | @ | \$20.63 /sta | = | \$52 |
| (with road grader) | | | | | |
| Compact surface | 2.5 sta | @ | \$16.00 /sta | = | \$40 |
| (with vibratory roller) | | | | | |

TOTAL ROCK COST = \$4,800

Compiled by: Cody Valencia

Date: Oct 26, 2022

GRAND TOTAL =====> \$5,902

SUMMARY OF CONSTRUCTION COST

SALE Mahrvelous Project # 1 LENGTH const 1.3 sta
ROAD G to H

CLEARING AND GRUBBING

0.09 acres @ \$1,337.00 /acre = \$120

TOTAL CLEARING AND GRUBBING = \$120

EXCAVATION With D7 dozer or equivalent

Construct road 1.3 sta @ \$138.00 /sta = \$179

Construct landing 1 ldg @ \$438.00 /ldg = \$438

Shape subgrade 1.3 sta @ \$20.63 /sta = \$27

(with road grader)

Compact subgrade 1.3 sta @ \$16.00 /sta = \$21

(with vibratory roller)

TOTAL EXCAVATION = \$665

SURFACING

| | | Size | Cost/yd | | |
|-------------------------|----------|---------|--------------|---|---------|
| Base rock (8' lift) | 60 cy of | Jaw-Run | \$29.36 | = | \$1,762 |
| Landing rock | 30 cy of | Jaw-Run | \$29.36 | = | \$881 |
| Junction rock | 10 cy of | 3"-0" | \$30.37 | = | \$304 |
| Shape surface | 1.3 sta | @ | \$20.63 /sta | = | \$27 |
| (with road grader) | | | | | |
| Compact surface | 1.3 sta | @ | \$16.00 /sta | = | \$21 |
| (with vibratory roller) | | | | | |

TOTAL ROCK COST = \$2,995

Compiled by: Cody Valencia

Date: Oct 26, 2022

GRAND TOTAL =====> \$3,780

SUMMARY OF CONSTRUCTION COST

| | | | | |
|-----------|----------------------|-----------------------------------|----------------|-----------|
| SALE ROAD | Mahrvelous 1 to 2 | Project # 2 Shingle Creek Road | LENGTH improve | 183.2 sta |
|-----------|----------------------|-----------------------------------|----------------|-----------|

IMPROVEMENT

| | | | | | |
|--|----------|---|--------------|---|-------|
| Shape surface (with road grader) | 30.0 sta | @ | \$20.63 /sta | = | \$619 |
| Compact surface (with vibratory roller) | 30.0 sta | @ | \$16.00 /sta | = | \$480 |

TOTAL IMPROVEMENT = \$1,099

SURFACING

| | | | | | |
|-----------|-----------|----------------|--------------------|---|---------|
| Spot rock | 100 cy of | Size 1½"-0" | Cost/yd \$31.72 | = | \$3,172 |
|-----------|-----------|----------------|--------------------|---|---------|

TOTAL ROCK COST = \$3,172

Compiled by: Cody Valencia
Date: Oct 26, 2022

GRAND TOTAL =====> \$4,271

SUMMARY OF CONSTRUCTION COST

| | | | | |
|-----------|-------------------|-------------|----------------|-----------|
| SALE ROAD | Mahrvelous 2 to 3 | Project # 2 | LENGTH improve | 156.7 sta |
| | Bonner Ridge Road | | | |

EXCAVATION

| | | | | | |
|---|----------|---|--------------|---|------|
| Waste Area Creation (D7 dozer or equivalent) | 0.5 hour | @ | \$128.00 /hr | = | \$64 |
| Waste Area Compaction | 80 cy | @ | \$0.45 /cy | = | \$36 |

TOTAL EXCAVATION = \$100

IMPROVEMENT

| | | | | | |
|---|-----------|---|--------------|---|---------|
| Ditch re-establishment | 109.0 sta | @ | \$44.00 /sta | = | \$4,796 |
| Endhaul to waste area (Slough and Ditch Waste) | 60 cy | @ | \$3.00 /cy | = | \$180 |
| Shape surface (with road grader) | 156.7 sta | @ | \$20.63 /sta | = | \$3,233 |
| Compact surface (with vibratory roller) | 156.7 sta | @ | \$16.00 /sta | = | \$2,507 |

TOTAL IMPROVEMENT = \$10,716

SURFACING

| | | | Size | Cost/yd | |
|----------------------------------|-----------|--|--------|---------|---------|
| Spot rock | 300 cy of | | 1½"-0" | \$31.72 | \$9,516 |
| Curve widening rock (Sta. 16+32) | 20 cy of | | 1½"-0" | \$31.72 | \$634 |
| Turnout rock (4) | 40 cy of | | 3"-0" | \$30.37 | \$1,215 |

TOTAL ROCK COST = \$11,365

SPECIAL PROJECTS

| | | | | | |
|---|------------|---|------------------|---------|-------|
| Install x-drain (Sta. 39+55) (18"x 35') | 35 ft | @ | \$13.75 /ft | = | \$481 |
| Install x-drain (Sta. 79+92) (18"x 35') | 35 ft | @ | \$13.75 /ft | = | \$481 |
| Culvert install | 5 hrs | @ | \$145.00 /hr | = | \$725 |
| Culvert bedding rock (Sta. 39+55 & Sta. 79+92) | 30 cy of | | 1½"-0" | \$31.72 | \$952 |
| Culvert disposal (1) | 1 | @ | \$50.00 /culvert | = | \$50 |
| Clean out culverts (inlets and outlets) | 6 culverts | @ | \$25.00 ea | = | \$150 |
| Repair culverts | 4 culverts | @ | \$25.00 ea | = | \$100 |

TOTAL SPECIAL PROJECTS COST = \$2,939

Compiled by: Cody Valencia
Date: Oct 26, 2022

GRAND TOTAL =====> \$25,120

SUMMARY OF CONSTRUCTION COST

| | | | | |
|-----------|-------------------|-------------|----------------|----------|
| SALE ROAD | Mahrvelous 6 to 7 | Project # 2 | LENGTH improve | 14.9 sta |
|-----------|-------------------|-------------|----------------|----------|

IMPROVEMENT

| | | | | | |
|--|----------|---|--------------|---|-------|
| Shape surface (with road grader) | 14.9 sta | @ | \$20.63 /sta | = | \$307 |
| Compact surface (with vibratory roller) | 14.9 sta | @ | \$16.00 /sta | = | \$238 |

TOTAL IMPROVEMENT = \$545

SURFACING

| | | | Size | Cost/yd | | |
|--------------|----------|--|--------|---------|---|---------|
| Spot rock | 60 cy of | | 1½"-0" | \$31.72 | = | \$1,903 |
| Landing rock | 30 cy of | | 3"-0" | \$30.37 | = | \$911 |

TOTAL ROCK COST = \$2,814

SPECIAL PROJECTS

| | | | | | | |
|--|----------|---|----------|------------|-------|-------|
| Install x-drain (Pt. 6) (18" x 40') | 40 ft | @ | \$13.75 | /ft = | \$550 | |
| Culvert install | 2 hrs | @ | \$145.00 | /hr = | \$290 | |
| Culvert bedding rock | 10 cy of | | 1½"-0" | \$31.72 | = | \$317 |
| Road stabilization rock (Pt. 6) | 10 cy of | | Jaw-Run | \$29.36 | = | \$294 |
| Road stabilization rock (Pt. 6) | 10 cy of | | 3"-0" | \$30.37 | = | \$304 |
| Culvert disposal (1) | 1 | @ | \$50.00 | /culvert = | \$50 | |

TOTAL SPECIAL PROJECTS COST = \$1,805

| | |
|--------------|---------------|
| Compiled by: | Cody Valencia |
| Date: | Oct 26, 2022 |

GRAND TOTAL =====> \$5,164

SUMMARY OF CONSTRUCTION COST

| | | | | |
|--------------|------------------------|-------------|----------------|----------|
| SALE ROAD | Mahrvelous 10 to 11 | Project # 2 | LENGTH improve | 20.5 sta |
|--------------|------------------------|-------------|----------------|----------|

SPECIAL PROJECTS

| | | | | |
|---|-----------|---|--------------|------|
| Clean out culvert (Sta. 4+29) (inlets and outlets) | 1 culvert | @ | \$25.00 ea = | \$25 |
|---|-----------|---|--------------|------|

| | |
|-------------------------------|------|
| TOTAL SPECIAL PROJECTS COST = | \$25 |
|-------------------------------|------|

| | | | |
|-----------------------|-------------------------------|--------------------|------|
| Compiled by: Date: | Cody Valencia Oct 26, 2022 | GRAND TOTAL =====> | \$25 |
|-----------------------|-------------------------------|--------------------|------|

SUMMARY OF CONSTRUCTION COST

| | | | | |
|-----------|------------------------|-----------------------------------|----------------|----------|
| SALE ROAD | Mahrvulous 20 to 21 | Project # 2 Granite Creek Road | LENGTH improve | 91.4 sta |
|-----------|------------------------|-----------------------------------|----------------|----------|

EXCAVATION

| | | | | | |
|---|--------|---|-------------|---|-------|
| Remove debris | 3.0 hr | @ | \$87.00 /hr | = | \$261 |
| Slough removal (with Backhoe) (Sta. 17+19) | 1.0 hr | @ | \$87.00 /hr | = | \$87 |
| Endhaul to waste area (Slough and Ditch Waste) | 20 cy | @ | \$3.00 /cy | = | \$60 |

TOTAL EXCAVATION = \$408

IMPROVEMENT

| | | | | | |
|--|----------|---|--------------|---|---------|
| Ditch re-establishment | 60.0 sta | @ | \$44.00 /sta | = | \$2,640 |
| Shape surface (with road grader) | 91.4 sta | @ | \$20.63 /sta | = | \$1,886 |
| Compact surface (with vibratory roller) | 91.4 sta | @ | \$16.00 /sta | = | \$1,462 |

TOTAL IMPROVEMENT = \$5,988

SURFACING

| | | | Size | Cost/yd | |
|---------------------------------|-----------|--|--------|---------|-----------|
| Spot rock | 150 cy of | | 1½"-0" | \$31.72 | = \$4,758 |
| Road Alignment Rock (Sta.47+11) | 40 cy of | | 3"-0" | \$30.37 | = \$1,215 |
| Road Alignment Rock (Sta.47+11) | 10 cy of | | 1½"-0" | \$31.72 | = \$317 |
| Turnout rock (3) | 30 cy of | | 3"-0" | \$30.37 | = \$911 |

TOTAL ROCK COST = \$7,201

SPECIAL PROJECTS

| | | | | | |
|--|------------|---|------------|---|------|
| Clean out culverts (inlets and outlets) | 3 culverts | @ | \$25.00 ea | = | \$75 |
|--|------------|---|------------|---|------|

TOTAL SPECIAL PROJECTS COST = \$75

Compiled by:
Date:

Cody Valencia
Oct 26, 2022

GRAND TOTAL =====>

\$13,672

SUMMARY OF BRUSHING AND SOD & DEBRIS REMOVAL COST

| | | | | | | |
|-----------|--------------------------------------|-----------|---|--------|----------|-------------|
| SALE ROAD | Mahrvelous All (Surfaced/unsurfaced) | Project # | 3 | LENGTH | maintain | 10.57 Miles |
|-----------|--------------------------------------|-----------|---|--------|----------|-------------|

LIGHT BRUSHING

| | | | <u>Rate</u> | | | |
|------------------|---------|---|--------------|---|---------|--|
| Pt. 1 to Pt. 2 | 3.47 mi | @ | \$800.00 /mi | = | \$2,776 | |
| Pt. 10 to Pt. 11 | 0.39 mi | @ | \$800.00 /mi | = | \$312 | |
| Pt. 12 to Pt. 13 | 0.34 mi | @ | \$800.00 /mi | = | \$272 | |
| Pt. 14 to Pt. 15 | 0.06 mi | @ | \$800.00 /mi | = | \$48 | |
| Pt. 22 to Pt. 23 | 0.21 mi | @ | \$800.00 /mi | = | \$168 | |

| | | | |
|----------------|---------|-----------------------------|---------|
| TOTAL LENGTH = | 4.47 mi | TOTAL LIGHT BRUSHING COST = | \$3,576 |
|----------------|---------|-----------------------------|---------|

MEDIUM BRUSHING

| | | | <u>Rate</u> | | | |
|------------------|---------|---|----------------|---|---------|--|
| Pt. 2 to Pt. 3 | 2.97 mi | @ | \$1,100.00 /mi | = | \$3,267 | |
| Pt. 6 to Pt. 7 | 0.28 mi | @ | \$1,100.00 /mi | = | \$308 | |
| Pt. 8 to Pt. 9 | 0.35 mi | @ | \$1,100.00 /mi | = | \$385 | |
| Pt. 16 to Pt. 17 | 0.03 mi | @ | \$1,100.00 /mi | = | \$33 | |
| Pt. 18 to Pt. 19 | 0.03 mi | @ | \$1,100.00 /mi | = | \$33 | |

| | | | |
|----------------|---------|------------------------------|---------|
| TOTAL LENGTH = | 3.66 mi | TOTAL MEDIUM BRUSHING COST = | \$4,026 |
|----------------|---------|------------------------------|---------|

HEAVY BRUSHING

| | | | <u>Rate</u> | | | |
|------------------|---------|---|----------------|---|---------|--|
| Pt. 4 to Pt. 5 | 0.71 mi | @ | \$1,400.00 /mi | = | \$994 | |
| Pt. 20 to Pt. 21 | 1.73 mi | @ | \$1,400.00 /mi | = | \$2,422 | |

| | | | |
|----------------|---------|-----------------------------|---------|
| TOTAL LENGTH = | 2.44 mi | TOTAL HEAVY BRUSHING COST = | \$3,416 |
|----------------|---------|-----------------------------|---------|

| | |
|-----------------------------|----------|
| BRUSHING GRAND TOTAL =====> | \$11,018 |
|-----------------------------|----------|

SOD AND DEBRIS REMOVAL

| | | | <u>Rate</u> | | | |
|---|---------|---|--------------|---|---------|--|
| All brushing segments (Except Pt. 1 to Pt. 2) | 7.10 mi | @ | \$813.12 /mi | = | \$5,773 | |

| | |
|-------------------------------------|---------|
| TOTAL SOD AND DEBRIS REMOVAL =====> | \$5,773 |
|-------------------------------------|---------|

| | |
|--------------|---------------|
| Compiled by: | Cody Valencia |
| Date: | Oct 26, 2022 |

SUMMARY OF STOCKPILE RESTOCK COST

SALE Mahrvelous Project # 4
ROAD Stockpiles (2) Bonner Ridge Road

| RESTOCKING | | Size | | Rate | | |
|---------------------|--------|----------|---|-------------|---|----------|
| Stockpile rock (S1) | 500 CY | 1½" - 0" | @ | \$26.02 /CY | = | \$13,010 |
| (using 18 CY truck) | | | | | | |
| Stockpile rock (S2) | 300 CY | 3"-0" | @ | \$24.67 /CY | = | \$7,401 |
| (using 18 CY truck) | | | | | | |
| Front end loader | 9 hrs | | @ | \$77.00 /hr | = | \$693 |

TOTAL RESTOCKING COST = \$21,104

Compiled by: Cody Valencia
Date: Sep 27, 2022

GRAND TOTAL =====> \$ 21,104

| | | |
|------|------------|---|
| SALE | Mahrvelous | Final log haul Maintenance Cost Estimate (Costed in appraisal, not in project costs) |
|------|------------|---|

| | | | |
|---------|------------------|----|-----|
| Move-in | Grader | \$ | 875 |
| | Vibratory Roller | \$ | 875 |

| Road Segment | Length | Cost/Sta | Cost | Mileage |
|--------------|--------|----------|------------|---------|
| 1 to 2 | 183.2 | \$36.63 | \$6,710.62 | 3.47 |
| 2 to 3 | 58.9 | \$36.63 | \$2,157.51 | 1.12 |
| 6 to 7 | 14.9 | \$36.63 | \$545.79 | 0.28 |
| A to B | 4.9 | \$36.63 | \$179.49 | 0.09 |
| C to D | 1.3 | \$36.63 | \$47.62 | 0.02 |
| E to F | 2.5 | \$36.63 | \$91.58 | 0.05 |
| G to H | 1.3 | \$36.63 | \$47.62 | 0.02 |
| Total | 267.0 | | \$9,780.23 | 5.06 |

Maintenance Rock:

| | | | |
|--------|--------|---------|------------|
| 1½"-0" | Volume | Cost/CY | Cost |
| | 200 | \$31.72 | \$6,344.00 |

| | |
|--------------------|--------------|
| Fuel Cost Increase | \$ 1,787.42 |
| Grand Total | \$ 19,661.65 |

TS Volume 4,070 MBF

Cost / MBF = \$4.83

Rock Haul Cost Computation

SALE NAME: Mahrvelous DATE: Oct 26, 2022
ROAD NAME: CLASS: Medium
ROCK SOURCE: Rickard 10 CY truck
Route: Hwy 20 to Hwy 223 to Luckiamute Rd to Hoskins County Rd to Shingle Creek

TIME Computation:

Road speed time factors:

| | | | | |
|-----|--------|-------|-----|--------------|
| 1. | 55 MPH | | MRT | 0.0 minutes |
| 2. | 50 MPH | | MRT | 0.0 minutes |
| 3. | 45 MPH | 17.05 | MRT | 22.7 minutes |
| 4. | 40 MPH | 3.50 | MRT | 5.3 minutes |
| 5. | 35 MPH | | MRT | 0.0 minutes |
| 6. | 30 MPH | | MRT | 0.0 minutes |
| 7. | 25 MPH | 20.00 | MRT | 48.0 minutes |
| 8. | 20 MPH | | MRT | 0.0 minutes |
| 9. | 15 MPH | 1.87 | MRT | 7.5 minutes |
| 10. | 10 MPH | 2.60 | MRT | 15.6 minutes |
| 11. | 05 MPH | | MRT | 0.0 minutes |

| | | |
|----------------------------|------|---------|
| Dump or spread time per RT | 0.50 | minutes |
|----------------------------|------|---------|

| | |
|--|---------------|
| Total hauling cycle time for this setting (100% efficiency) | 99.60 minutes |
|--|---------------|

| | | |
|--------------------------------|------|----------------|
| Operator efficiency correction | 0.85 | 117.18 minutes |
|--------------------------------|------|----------------|

| | | |
|---------------------------|------|----------------|
| Job efficiency correction | 0.90 | 130.20 minutes |
|---------------------------|------|----------------|

| | | | |
|---------------------|-------|-------|--------|
| Truck capacity (CY) | 10.00 | 13.02 | min/CY |
|---------------------|-------|-------|--------|

| | | |
|---------------------------------|------|--------|
| Loading time, delay time per CY | 0.25 | min/CY |
|---------------------------------|------|--------|

| | | |
|-------------------------------|-------|--------|
| TIME (minutes) per cubic yard | 13.27 | min/CY |
|-------------------------------|-------|--------|

COST per CY computation

| | |
|-------------------------------------|--------------|
| Cost of truck and operator per hour | \$90.00 /hr. |
|-------------------------------------|--------------|

| | |
|---------------------------------------|-------------|
| Cost of truck and operator per minute | \$1.50 /min |
|---------------------------------------|-------------|

| | |
|-------------|-------------|
| Cost per CY | \$19.91 /CY |
|-------------|-------------|

| | | |
|--------------------|------------------------------|------------|
| Spread and compact | Water truck, Grader & Roller | \$1.50 /CY |
|--------------------|------------------------------|------------|

| Size | Cost/Yd (Pit) | Cost Delivered w/o processing | Cost Delivered with processing |
|----------|---------------|----------------------------------|-----------------------------------|
| 1½" - 0" | \$ 11.81 | \$31.72 | \$33.22 |
| 3" - 0" | \$ 10.46 | \$30.37 | \$31.87 |
| Jaw-Run | \$ 9.45 | \$29.36 | \$30.86 |
| Pit-Run | \$ 7.76 | \$27.67 | \$29.17 |

Rock Haul Cost Computation

SALE NAME: Mahrvelous

DATE: Oct 26, 2022

ROAD NAME:

CLASS: Medium

ROCK SOURCE: Rickard

18 CY truck

Route: Hwy 20 to Hwy 223 to Luckiamute Rd to Hoskins County Rd to Shingle Cree

TIME Computation:

Road speed time factors:

| | | | | |
|-----|--------|-------|-----|--------------|
| 1. | 55 MPH | | MRT | 0.0 minutes |
| 2. | 50 MPH | | MRT | 0.0 minutes |
| 3. | 45 MPH | 17.05 | MRT | 22.7 minutes |
| 4. | 40 MPH | 3.50 | MRT | 5.3 minutes |
| 5. | 35 MPH | | MRT | 0.0 minutes |
| 6. | 30 MPH | | MRT | 0.0 minutes |
| 7. | 25 MPH | 20.00 | MRT | 48.0 minutes |
| 8. | 20 MPH | | MRT | 0.0 minutes |
| 9. | 15 MPH | 1.87 | MRT | 7.5 minutes |
| 10. | 10 MPH | 2.60 | MRT | 15.6 minutes |
| 11. | 05 MPH | | MRT | 0.0 minutes |

Dump or spread time per RT

0.50 minutes

Total hauling cycle time for this setting
(100% efficiency)

99.60 minutes

Operator efficiency correction

0.85

117.18 minutes

Job efficiency correction

0.90

130.20 minutes

Truck capacity (CY)

18.00

7.23 min/CY

Loading time, delay time per CY

0.25 min/CY

TIME (minutes) per cubic yard

7.48 min/CY

COST per CY computation

Cost of truck and operator per hour

\$114.00 /hr.

Cost of truck and operator per minute

\$1.90 /min

Cost per CY

\$14.21 /CY

Spread and compact

Water truck, Grader & Roller

\$1.50 /CY

| Size | Cost/Yd (Pit) | Cost Delivered w/o processing | Cost Delivered with processing |
|----------|---------------|----------------------------------|-----------------------------------|
| 1½" - 0" | \$ 11.81 | \$26.02 | \$27.52 |
| 3" - 0" | \$ 10.46 | \$24.67 | \$26.17 |
| Jaw-Run | \$ 9.45 | \$23.66 | \$25.16 |
| Pit-Run | \$ 7.76 | \$21.97 | \$23.47 |

TIMBER CRUISE REPORT

Mahrvelous (WO-341-2023-W00996-01) FY 2023

1. **Sale Area Location:** Portions of Section 16 & 21, T10S, R7W, W.M., Benton County, Oregon.

2. **Fund Distribution:**

a. **Fund** BOF 75%, CSL 25%

3. **Sale Acreage by Area:**

| Area | Treatment | Gross Acres | Stream Buffers | Slope Buffer | Existing Roads | Green Tree Reserve Area | Net Sale Acres | Acreage Comp. Method |
|------|-------------------|-------------|----------------|--------------|----------------|-------------------------|----------------|----------------------|
| 1 | Modified Clearcut | 102 | 8 | 1 | 7 | 3 | 83 | GIS |

4. **Cruisers and Cruise Dates:** The sale was cruised by Aaron McEwen and Jessica Westcott in August 2022.

5. **Cruise Method and Computation:** The sale consists of one modified clearcut area that was cruised using variable radius plot sampling. The sale area was cruised on a 3x4 chain grid using a 40 BAF. A total of 55 plots were taken with 29 measure plots and 26 count plots.

Measure plots were measured for DBH, height, form factor, grade, and defect. Data was entered into the Atterbury SuperACE cruise program to determine stand statistics and net board foot volume. Additional volume was removed to account for hidden defect and breakage.

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

6. **Measurement Standards:** Tree heights were measured to the nearest foot, to a top diameter of 6 inches inside bark or to 40% of form factor. Diameters at breast height (DBH) were measured to the nearest inch, and a form point of 16 feet was used to calculate form factor. Form factors were measured or estimated on every tree. Most trees were graded in 40 foot log segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.

7. **Timber Description:** Timber in the sale area includes 83 acres of 50 to 77 year-old Douglas-fir and red alder with some scattered bigleaf maple. The average Douglas-fir to be removed is approximately 25 inches DBH, with an average height of 99 feet to a merchantable top. The average red alder is approximately 12 inches DBH, with an average height of 39 feet to a merchantable top. The average volume per acre to be harvested (net) is approximately 49 MBF.

8. **Statistical Analysis and Stand Summary:** (See attached "Statistics").

| Area | Target CV | Target SE | Actual CV | Actual SE |
|------|-----------|-----------|-----------|-----------|
| 1 | 60% | 9% | 45.8% | 6.2% |

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

9. **Total Volume (MBF) by Species and Grade:** (See attached volume report “Species, Sort Grade – Board Foot Volumes - Project”).

| Species | Gross Cruise Volume | Cruised D & B | Cruised D & B (MBF) | Hidden D & B | Hidden D & B (MBF) | Net Sale Volume |
|--------------|---------------------|---------------|---------------------|--------------|--------------------|-----------------|
| Douglas-fir | 3,822 | 1.0% | 38 | 3% | 114 | 3,670 |
| Red Alder | 417 | 1.1% | 5 | 3% | 12 | 400 |
| Total | 4,239 | -- | 43 | -- | 126 | 4,070 |

| Species | Ave. DBH | Net Vol. | 2-Saw | 3-Saw | 4-Saw | Camp Run |
|--------------|----------|----------|-------|-------|-------|----------|
| Douglas-fir | 25 | Grade % | 83% | 14% | 3% | - |
| | | 3,670 | 3,046 | 514 | 110 | - |
| Red Alder | 12 | Grade % | - | - | - | 100% |
| | | 400 | - | - | - | 400 |
| Total | | 4,070 | 3,046 | 514 | 110 | 400 |

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

Prepared by: Jessica Westcott

Date: 8/22/2022

Unit Forester: 
Cody Valencia

Date: 6/25/2022

**CRUISE DESIGN
WEST OREGON DISTRICT**

Sale Name: Mahrvelous Unit 1

Harvest Type: MC

Approx. Cruise Acres: 85 Estimated CV% 50 /Acre Net BF SE% Objective 9 /Acre Net BF

Planned Sale Volume: 3.3 MMBF Estimated Sale Area Value/Acre: \$ 21,175

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and 10 hardwood trees:
(b) Sample 55 cruise plots (31 grade: 24 count); (c) Other goals X Determine log grades for sale value; Determine take and leave tree species and sizes.

(Special cruising directions – leave trees etc.) Take plots as shown on map. Do not take plots in buffers.

DO NOT RECORD 12', 22' and 32' (for Hardwoods).

DO NOT RECORD 22' LENGTHS.

B. Cruise Design:

1. **Plot Cruises:** BAF 40 Full point
Cruise Line Direction(s) 90°/270°
Cruise Line Spacing 3/198 (chains) (feet)
Cruise Plot Spacing 4/264 (chains) (feet)
Grade/Count Ratio 1:1

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods.
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7", 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for

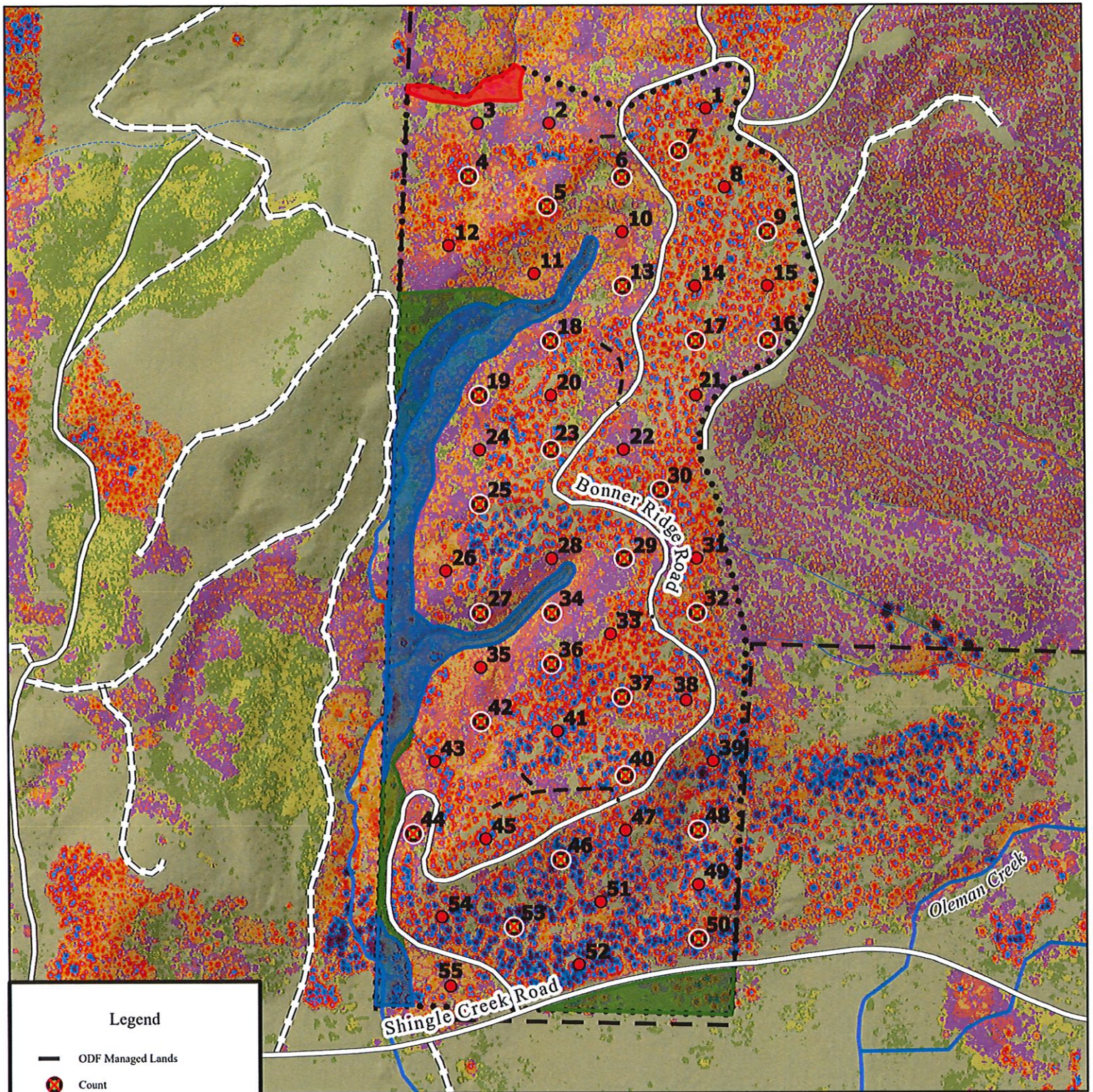
hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. log segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

- 6. Species, Sort, and Grade Codes:** A. Species: Record as DF (Douglas-fir); WH (Western hemlock); SS (Sitka Spruce); RC (Western red cedar); NF (Noble fir); SF (Silver fir); RA (Red alder); BM (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DFL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; K = Camp Run; 0 = Cull ;
Hardwoods: K = Camprun; #1 Sawmill = 12"+ scaling diameter; #2 Sawmill = 10" and 11"; #3 Sawmill = 8" and 9"; #4 Sawmill = 6" and 7"
- 7. Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
- 8. Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning points with red flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie red flagging above eye level near plot center and another red flagging around a sturdy wooden stake marking plot center. On red flagging, write the plot identification number. On "measure/grade" plots write the tree number and/or tree diameter on all measured trees (clockwise from the line direction) in yellow paint. Mark leave trees with an L for leave.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.
- 9. Cruising Equipment:** Relaskop, Rangefinder or Lazer, Logger's Tape (with dbh on back), Biltmore Stick, Compass, Cruise Cards or Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.
- 10. Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Jessica Westcott _____

Approved by: _____

Date: _____



Mahrvelous Cruise Map

Portions of Section 16 & 21, T10S, R7W, W.M.
Benton County

BAF: 40
Spacing: 3 X 4 Chains

Scale: 1:6,000



| TC PSTATS | | | | PROJECT STATISTICS | | | | | PAGE | 1 | | | |
|--|------|-------|-------|--------------------|-----------|---------|-------|-------|-----------------|--------|-----------|--------|--------|
| | | | | PROJECT | MAHRVEL | | | DATE | 10/24/2022 | | | | |
| TWP | RGE | SC | TRACT | TYPE | ACRES | PLOTS | TREES | CuFt | BdFt | | | | |
| 10S | 07 | 22 | MCI | 00CC | 83.00 | 55 | 312 | 1 | W | | | | |
| | | | | TREES | ESTIMATED | PERCENT | | | | | | | |
| | | | | PER PLOT | TOTAL | SAMPLE | | | | | | | |
| | | | | TREES | TREES | TREES | | | | | | | |
| TOTAL | | | | 55 | 312 | 5.7 | | | | | | | |
| CRUISE | | | | 31 | 173 | 5.6 | 9,813 | 1.8 | | | | | |
| DBH COUNT | | | | | | | | | | | | | |
| REFOREST | | | | | | | | | | | | | |
| COUNT | | | | 24 | 124 | 5.2 | | | | | | | |
| BLANKS | | | | | | | | | | | | | |
| 100 % | | | | | | | | | | | | | |
| STAND SUMMARY | | | | | | | | | | | | | |
| SAMPLE | | | | TREES | AVG | BOLE | REL | BASAL | GROSS | NET | GROSS | NET | |
| TREES | | | | /ACRE | DBH | LEN | DEN | AREA | BF/AC | BF/AC | CF/AC | CF/AC | |
| DF | | | | 134 | 51.4 | 25.0 | 99 | 35.1 | 175.3 | 46,054 | 45,571 | 9,480 | 9,480 |
| R ALDER | | | | 32 | 59.2 | 11.7 | 39 | 13.0 | 44.4 | 5,028 | 4,975 | 1,411 | 1,411 |
| SNAG | | | | 6 | 7.0 | 11.5 | 42 | 1.5 | 5.1 | | | | |
| BL MAPLE | | | | 1 | .6 | 15.0 | 23 | 0.2 | .7 | 30 | 30 | 10 | 10 |
| TOTAL | | | | 173 | 118.2 | 18.7 | 65 | 52.1 | 225.5 | 51,111 | 50,575 | 10,901 | 10,901 |
| CONFIDENCE LIMITS OF THE SAMPLE | | | | | | | | | | | | | |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR | | | | | | | | | | | | | |
| CL | 68.1 | COEFF | | SAMPLE TREES - BF | | | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | | | 5 | 10 | 15 | | |
| DF | | 64.8 | 5.6 | 1,276 | 1,351 | 1,427 | | | | | | | |
| R ALDER | | 78.5 | 13.9 | 100 | 116 | 132 | | | | | | | |
| SNAG | | | | | | | | | | | | | |
| BL MAPLE | | | | | | | | | | | | | |
| TOTAL | | 87.3 | 6.6 | 998 | 1,068 | 1,139 | 305 | 76 | 34 | | | | |
| CL | 68.1 | COEFF | | SAMPLE TREES - CF | | | | | # OF TREES REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | | | 5 | 10 | 15 | | |
| DF | | 56.0 | 4.8 | 256 | 269 | 282 | | | | | | | |
| R ALDER | | 69.4 | 12.3 | 29 | 33 | 37 | | | | | | | |
| SNAG | | | | | | | | | | | | | |
| BL MAPLE | | | | | | | | | | | | | |
| TOTAL | | 77.9 | 5.9 | 202 | 214 | 227 | 242 | 61 | 27 | | | | |
| CL | 68.1 | COEFF | | TREES/ACRE | | | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | | | 5 | 10 | 15 | | |
| DF | | 71.8 | 9.7 | 46 | 51 | 56 | | | | | | | |
| R ALDER | | 185.1 | 24.9 | 44 | 59 | 74 | | | | | | | |
| SNAG | | 447.3 | 60.3 | 3 | 7 | 11 | | | | | | | |
| BL MAPLE | | 741.6 | 99.9 | 0 | 1 | 1 | | | | | | | |
| TOTAL | | 92.9 | 12.5 | 103 | 118 | 133 | 345 | 86 | 38 | | | | |
| CL | 68.1 | COEFF | | BASAL AREA/ACRE | | | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | | | 5 | 10 | 15 | | |
| DF | | 54.9 | 7.4 | 162 | 175 | 188 | | | | | | | |
| R ALDER | | 175.8 | 23.7 | 34 | 44 | 55 | | | | | | | |
| SNAG | | 401.6 | 54.1 | 2 | 5 | 8 | | | | | | | |
| BL MAPLE | | 741.6 | 99.9 | 0 | 1 | 1 | | | | | | | |
| TOTAL | | 35.7 | 4.8 | 215 | 225 | 236 | 51 | 13 | 6 | | | | |
| CL | 68.1 | COEFF | | NET BF/ACRE | | | | | # OF PLOTS REQ. | | INF. POP. | | |
| SD: | 1.0 | VAR.% | S.E.% | LOW | AVG | HIGH | | | 5 | 10 | 15 | | |
| DF | | 58.6 | 7.9 | 41,975 | 45,571 | 49,166 | | | | | | | |
| R ALDER | | 181.8 | 24.5 | 3,757 | 4,975 | 6,193 | | | | | | | |
| SNAG | | | | | | | | | | | | | |
| BL MAPLE | | 741.6 | 99.9 | 0 | 30 | 59 | | | | | | | |

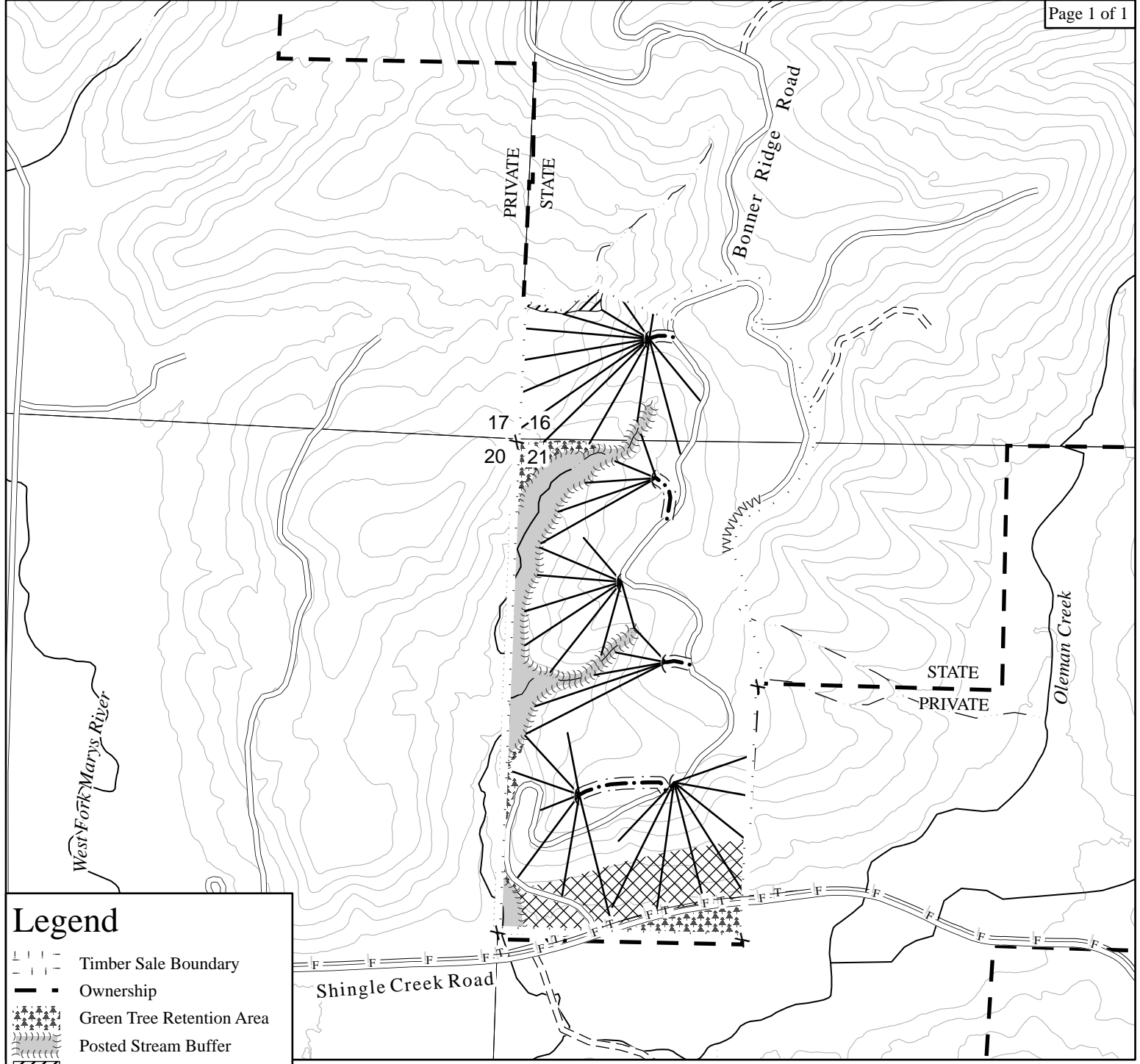
| | | | | | | | | | | |
|-----------|------|---------------------------|-------|------------------|--------|--------|--------|-----------------|------|------------|
| TC PSTATS | | PROJECT STATISTICS | | | | | | | PAGE | 2 |
| | | PROJECT MAHRVEL | | | | | | | DATE | 10/24/2022 |
| TWP | RGE | SC | TRACT | TYPE | | ACRES | PLOTS | TREES | CuFt | BdFt |
| 10S | 07 | 22 | MC1 | 00CC | | 83.00 | 55 | 312 | 1 | W |
| CL | 68.1 | | COEFF | NET BF/ACRE | | | | # OF PLOTS REQ. | | INF. POP. |
| SD: | 1.00 | | VAR. | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| TOTAL | | | 45.8 | 6.2 | 47,458 | 50,575 | 53,693 | 84 | 21 | 9 |
| CL | 68.1 | | COEFF | NET CUFT FT/ACRE | | | | # OF PLOTS REQ. | | INF. POP. |
| SD: | 1.0 | | VAR.% | S.E.% | LOW | AVG | HIGH | 5 | 10 | 15 |
| DF | | | 56.5 | 7.6 | 8,758 | 9,480 | 10,202 | | | |
| R ALDER | | | 179.3 | 24.2 | 1,070 | 1,411 | 1,752 | | | |
| SNAG | | | | | | | | | | |
| BL MAPLE | | | 741.6 | 99.9 | 0 | 10 | 20 | | | |
| TOTAL | | | 41.3 | 5.6 | 10,295 | 10,901 | 11,507 | 68 | 17 | 8 |

| TC | | PSPCSTGR Species, Sort Grade - Board Foot Volumes (Project) | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--------|---|----------|-------------------|------------------|--------|--------|------------------|----------------------------------|------|-------|-----|------------|-------|-------|-----------------|-------------|-----------|----------|-----------|----------------------|
| <div>T10S R07W S22 Ty00CC83.00</div> | | | | Project: MAHRVELO | | | | | | | | | | | | Page 1 | | | | | |
| | | | | Acres 83.00 | | | | | | | | | | | | Date 10/24/2022 | | | | | |
| | | | | | | | | | | | | | | | | Time 12:44:10PM | | | | | |
| Spp | S T | So rt | Gr ad | % Net BdFt | Bd. Ft. per Acre | | | Total Net MBF | Percent of Net Board Foot Volume | | | | | | | | Average Log | | | | Logs Per /Acre |
| | | | | | | | | | Log Scale Dia. | | | | Log Length | | | | Ln Ft | Dia In | Bd Ft | CF/ Lf | |
| | | | | | Def% | Gross | Net | | 4-5 | 6-11 | 12-16 | 17+ | 12-20 | 21-30 | 31-35 | 36-99 | | | | | |
| RA | | DO | CR | 100 | 1.1 | 5,028 | 4,975 | 413 | 82 | 16 | 2 | 12 | 10 | 24 | 54 | 29 | 7 | 64 | 0.62 | 78.1 | |
| RA Totals | | | | 10 | 1.1 | 5,028 | 4,975 | 413 | 82 | 16 | 2 | 12 | 10 | 24 | 54 | 29 | 7 | 64 | 0.62 | 78.1 | |
| DF | | DO | 2M | 83 | 1.1 | 38,528 | 38,095 | 3,162 | | | 20 | 80 | | | 100 | 40 | 18 | 584 | 2.81 | 65.2 | |
| DF | | DO | 3M | 14 | .5 | 6,467 | 6,436 | 534 | | 65 | 29 | 6 | 0 | 8 | 29 | 63 | 36 | 10 | 131 | 1.01 | 49.1 |
| DF | | DO | 4M | 3 | 1.7 | 1,058 | 1,040 | 86 | | 96 | 4 | | 54 | 27 | 19 | | 18 | 7 | 30 | 0.57 | 34.5 |
| DF Totals | | | | 90 | 1.0 | 46,054 | 45,571 | 3,782 | 11 | 21 | 68 | 1 | 2 | 4 | 93 | 34 | 13 | 306 | 1.89 | 148.8 | |
| BM | | DO | CR | 100 | | 30 | 30 | 2 | 100 | | | | 100 | | | | 20 | 9 | 50 | 0.85 | .6 |
| BM Totals | | | | 0 | | 30 | 30 | 2 | 100 | | | | 100 | | | | 20 | 9 | 50 | 0.85 | .6 |
| Totals | | | | | 1.0 | 51,111 | 50,575 | 4,198 | 18 | 20 | 62 | 2 | 3 | 6 | 89 | 32 | 11 | 222 | 1.49 | 227.5 | |

| TC | | PSTNDSUM | | Stand Table Summary | | | | | | | Page | |
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| TC | | PSTNDSUM | | | | | | | | | | Stand Table Summary | | | | | Page | | 2 | | | |
| | | | | | | | | | | | | Date: | | 10/24/2022 | | | | | | | | |
| | | T10S R07W S22 Ty00CC | | | | | 83.00 | | | | | Project | | MAHRVELO | | | | | Time: | | 12:44:10PM | |
| | | | | | | | | | | | | Acres | | 83.00 | | | | | Grown Year: | | | |
| S | Spec | T | DBH | Sample Trees | FF 16' | Tot Av Ht | Trees/ Acre | BA/ Acre | Logs Acre | Average Log | | Tons/ Acre | Net Cu.Ft. Acre | Net Bd.Ft. Acre | T o t a l s | | | | | | | |
| | | | | | | | | | | Net Cu.Ft. | Net Bd.Ft. | | | | Tons | Cunits | MBF | | | | | |
| | SN | | 12 | 1 | 98 | 32 | 1.080 | .85 | | | | | | | | | | | | | | |
| | SN | | 13 | 2 | 98 | 58 | 1.841 | 1.70 | | | | | | | | | | | | | | |
| | SN | | 16 | 1 | 99 | 60 | .608 | .85 | | | | | | | | | | | | | | |
| | SN | | Totals | | 6 | 98 | 49 | 7.005 | 5.09 | | | | | | | | | | | | | |
| | Totals | | | | 173 | 89 | 93 | 118.230 | 225.45 | 227.55 | 47.9 | 222.3 | 10,901 | 50,575 | 9,048 4,198 | | | | | | | |

| TC | | PLOGSTVB | | Log Stock Table - MBF | | | | | | | | | | | | | | | | | |
|----------------------|--------|-------------|----------|-----------------------|--------------|-------------------|------------|-------------|--|--------|-----|-----------------|-------|-----------------|-------|-------|-------|-------|-------|-----|--|
| T10S R07W S22 Ty00CC | | | | 83.00 | | Project: MAHRVELO | | Acres 83.00 | | Page 1 | | Date 10/24/2022 | | Time 11:50:34AM | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| 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+ | |
| RA | | DO | CR | 14 | 7 | | 7 | 1.6 | | | 7 | | | | | | | | | | |
| RA | | DO | CR | 16 | 29 | | 29 | 6.9 | | | 29 | | | | | | | | | | |
| RA | | DO | CR | 20 | 15 | | 15 | 3.7 | | | 5 | | | | 10 | | | | | | |
| RA | | DO | CR | 24 | 41 | 1.6 | 41 | 9.9 | | | 41 | | | | | | | | | | |
| RA | | DO | CR | 32 | 101 | 3.0 | 98 | 23.7 | | | 42 | 35 | 13 | 8 | | | | | | | |
| RA | | DO | CR | 36 | 4 | | 4 | .9 | | | 4 | | | | | | | | | | |
| RA | | DO | CR | 40 | 221 | | 220 | 53.3 | | | 86 | 37 | 41 | 56 | | | | | | | |
| RA | | Totals | | | 417 | 1.1 | 413 | 9.8 | | | 212 | 72 | 54 | 64 | 10 | | | | | | |
| DF | | DO | 2M | 40 | 3,198 | 1.1 | 3,162 | 83.6 | | | | | 254 | 222 | 796 | 981 | 735 | | 173 | | |
| DF | | DO | 3M | 20 | 1 | | 1 | .0 | | | | | 1 | | | | | | | | |
| DF | | DO | 3M | 24 | 5 | | 5 | .1 | | | | 5 | | | | | | | | | |
| DF | | DO | 3M | 28 | 11 | | 11 | .3 | | | 3 | 1 | 2 | 2 | | 3 | | | | | |
| DF | | DO | 3M | 30 | 27 | | 27 | .7 | | | 1 | | 8 | 7 | 6 | 4 | | | | | |
| DF | | DO | 3M | 32 | 154 | | 152 | 4.0 | | | 16 | 42 | 30 | 32 | 10 | 16 | 6 | | | | |
| DF | | DO | 3M | 36 | 4 | | 4 | .1 | | | 4 | | | | | | | | | | |
| DF | | DO | 3M | 40 | 336 | | 334 | 8.8 | | | 34 | 54 | 146 | 24 | 47 | 29 | | | | | |
| DF | | DO | 4M | 12 | 20 | | 20 | .5 | | | 8 | 7 | 4 | 1 | | | | | | | |
| DF | | DO | 4M | 16 | 19 | 1.2 | 18 | .5 | | | 11 | 5 | 3 | | | | | | | | |
| DF | | DO | 4M | 18 | 5 | | 5 | .1 | | | 4 | 1 | | | | | | | | | |
| DF | | DO | 4M | 20 | 3 | | 3 | .1 | | | 2 | | 1 | | | | | | | | |
| DF | | DO | 4M | 24 | 18 | | 18 | .5 | | | 13 | 3 | | 1 | | | | | | | |
| DF | | DO | 4M | 26 | 1 | | 1 | .0 | | | | 1 | | | | | | | | | |
| DF | | DO | 4M | 28 | 1 | | 1 | .0 | | | 1 | | | | | | | | | | |
| DF | | DO | 4M | 30 | 3 | | 3 | .1 | | | 3 | | | | | | | | | | |
| DF | | DO | 4M | 32 | 18 | 7.2 | 16 | .4 | | | 4 | 3 | 8 | 2 | | | | | | | |
| DF | | Totals | | | 3,822 | 1.0 | 3,782 | 90.1 | | | 104 | 117 | 207 | 326 | 286 | 848 | 987 | 735 | | 173 | |
| BM | | DO | CR | 20 | 2 | | 2 | 100.0 | | | 2 | | | | | | | | | | |
| BM | | Totals | | | 2 | | 2 | .1 | | | 2 | | | | | | | | | | |
| Total | | All Species | | | 4,242 | 1.0 | 4,198 | 100.0 | | | 316 | 192 | 261 | 390 | 286 | 858 | 987 | 735 | | 173 | |



Legend

- Timber Sale Boundary
- Ownership
- Green Tree Retention Area
- Posted Stream Buffer
- Slope Buffer
- Controlled Felling Area
- Roads
 - Surfaced Road
 - Unsurfaced Road
 - Old Roadbed, Undrivable
 - New Construction
- Streams
 - Type F Stream
 - Type N Stream
- Overhead Transmission Line
- Buried Fiber Optic Line
- Cable Corridor
- Landing
- Land Survey Monument

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. WO-341-2023-W00996-01
MAHRVELOUS
PORTIONS OF SECTIONS 16 & 21, T10S, R07W, W.M.,
BENTON COUNTY, OREGON

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

| UNIT | TRACTOR | CABLE |
|--------|---------|-------|
| | ACRES | ACRES |
| 1 (MC) | 35 | 48 |
| TOTAL | 35 | 48 |

