



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Dragon Buster

Sale AT-341-2015-07-

District: Astoria

Date: May 06, 2015

## Cost Summary

|                         | Conifer      | Hardwood          | Total          |
|-------------------------|--------------|-------------------|----------------|
| Gross Timber Sale Value | \$883,553.36 | \$1,021.30        | \$884,574.66   |
|                         |              | Project Work:     | (\$148,664.00) |
|                         |              | Advertised Value: | \$735,910.66   |



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## Timber Description

**Location:** Portions of Sections 14, 15, 22, and 23, T5N, R6W, W.M., Clatsop County, Oregon.

**Stand Stocking:** 60%

| Specie Name           | AvgDBH | Amortization (%) | Recovery (%) |
|-----------------------|--------|------------------|--------------|
| Douglas - Fir         | 19     | 0                | 97           |
| Western Hemlock / Fir | 19     | 0                | 97           |
| Maple                 | 14     | 0                | 95           |

| Volume by Grade       | 2S    | 3S  | 4S | Camprun | Total |
|-----------------------|-------|-----|----|---------|-------|
| Douglas - Fir         | 1,879 | 568 | 86 | 0       | 2,533 |
| Western Hemlock / Fir | 14    | 4   | 0  | 0       | 18    |
| Maple                 | 0     | 0   | 0  | 7       | 7     |
| <b>Total</b>          | 1,893 | 572 | 86 | 7       | 2,558 |

**Comments:** Pond Values Used: 1st Quarter Calendar Year 2015.

Expected Log Markets: Mist, Clatskanie, Tillamook, Forest Grove, Longview, and Garibaldi.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:  
\$916.37/MBF = \$1,185/MBF - \$268.63/MBF

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$3.00/Gallon

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

Other Costs (with Profit & Risk to be added):  
100% Brand and Paint: \$1/MBF x 2,556/MBF = \$2,556  
Machine Washing for Noxious Weed Compliance = \$2,000  
Log Loader Slash & Landing Piling (includes Move-In and Pile Materials): (see attached appraisal) = \$4,455  
TOTAL Other Costs (with Profit & Risk to be added) = \$9,011

Other Costs (No Profit & Risk added):  
None.



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## Logging Conditions

**Combination#: 1**

|                       |        |
|-----------------------|--------|
| Douglas - Fir         | 79.00% |
| Western Hemlock / Fir | 79.00% |
| Maple                 | 79.00% |

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

**yarding distance:** Medium (800 ft) **downhill yarding:** No

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

**loads / day:** 12 **bd. ft / load:** 4500

**cost / mbf:** \$72.92

**machines:** Shovel Logger

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**Combination#: 2**

|                       |        |
|-----------------------|--------|
| Douglas - Fir         | 21.00% |
| Western Hemlock / Fir | 21.00% |
| Maple                 | 21.00% |

**Logging System:** Cable: Small Tower <=40 **Process:** Manual Delimbing

**yarding distance:** Medium (800 ft) **downhill yarding:** No

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

**loads / day:** 8 **bd. ft / load:** 4500

**cost / mbf:** \$158.33

**machines:** Log Loader (A)  
Tower Yarder (Small)

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"STEWARDSHIP IN FORESTRY"

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Date: May 06, 2015

## Logging Costs

|                             |                               |
|-----------------------------|-------------------------------|
| Operating Seasons: 3.00     | Profit Risk: 12%              |
| Project Costs: \$148,664.00 | Other Costs (P/R): \$9,011.00 |
| Slash Disposal: \$0.00      | Other Costs: \$0.00           |

Miles of Road

Road Maintenance: \$5.61

| Dirt | Rock<br>(Contractor) | Rock<br>(State) | Paved |
|------|----------------------|-----------------|-------|
| 0.0  | 0.0                  | 0.0             | 0.0   |

### Hauling Costs

| Species               | \$ / MBF | Trips/Day | MBF / Load |
|-----------------------|----------|-----------|------------|
| Douglas - Fir         | \$0.00   | 2.0       | 4.0        |
| Western Hemlock / Fir | \$0.00   | 2.0       | 3.7        |
| Maple                 | \$0.00   | 2.0       | 3.5        |



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Dragon Buster

Sale AT-341-2015-07-

District: Astoria

Date: May 06, 2015

## Logging Costs Breakdown

| Logging                      | Road Maint | Fire Protect | Hauling  | Other P/R appl | Profit & Risk | Slash Disposal | Scaling | Other  | Total    |
|------------------------------|------------|--------------|----------|----------------|---------------|----------------|---------|--------|----------|
| <b>Douglas - Fir</b>         |            |              |          |                |               |                |         |        |          |
| \$90.86                      | \$5.78     | \$5.14       | \$100.42 | \$3.52         | \$24.69       | \$0.00         | \$5.00  | \$0.00 | \$235.41 |
| <b>Western Hemlock / Fir</b> |            |              |          |                |               |                |         |        |          |
| \$90.86                      | \$5.78     | \$5.14       | \$108.57 | \$3.52         | \$25.66       | \$0.00         | \$5.00  | \$0.00 | \$244.53 |
| <b>Maple</b>                 |            |              |          |                |               |                |         |        |          |
| \$90.86                      | \$5.89     | \$5.14       | \$117.00 | \$3.52         | \$26.69       | \$0.00         | \$5.00  | \$0.00 | \$254.10 |

| Specie                | Amortization | Pond Value | Stumpage | Amortized |
|-----------------------|--------------|------------|----------|-----------|
| Douglas - Fir         | \$0.00       | \$582.53   | \$347.12 | \$0.00    |
| Western Hemlock / Fir | \$0.00       | \$483.33   | \$238.80 | \$0.00    |
| Maple                 | \$0.00       | \$400.00   | \$145.90 | \$0.00    |



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# Timber Sale Appraisal Dragon Buster

Sale AT-341-2015-07-

District: Astoria

Date: May 06, 2015

## Summary

### Amortized

| Specie                | MBF | Value  | Total  |
|-----------------------|-----|--------|--------|
| Douglas - Fir         | 0   | \$0.00 | \$0.00 |
| Western Hemlock / Fir | 0   | \$0.00 | \$0.00 |
| Maple                 | 0   | \$0.00 | \$0.00 |

### Unamortized

| Specie                | MBF   | Value    | Total        |
|-----------------------|-------|----------|--------------|
| Douglas - Fir         | 2,533 | \$347.12 | \$879,254.96 |
| Western Hemlock / Fir | 18    | \$238.80 | \$4,298.40   |
| Maple                 | 7     | \$145.90 | \$1,021.30   |

### Gross Timber Sale Value

Recovery: \$884,574.66

Prepared By: Nick Haile

Phone: 503-325-5451

# Road Maintenance Cost Summary

**Sale:** Dragon Buster  
**Date:** 24-Feb-14  
**By:** N. Haile

**MBF:** 2,558  
**\$/MBF:** \$5.61

| Type                              | Equipment/Rationale      | Move In | Times | Hours | Rate  | Cost     |
|-----------------------------------|--------------------------|---------|-------|-------|-------|----------|
| Progressive Operations 1st Entry  | Grader 14G               | \$778   | 1     | 10    | \$100 | \$1,778  |
| Final Haul Maintenance Haul Route | Grader 14G               | \$778   | 1     | 32    | \$100 | \$3,978  |
|                                   | Dump Truck 12CY          | \$163   | 1     | 8     | \$79  | \$795    |
|                                   | Vibratory Roller         | \$778   | 1     | 32    | \$77  | \$3,242  |
|                                   | Water Truck 2,500 gallon | \$190   | 1     | 16    | \$89  | \$1,614  |
|                                   | FE Loader C966           | \$778   | 1     | 8     | \$83  | \$1,442  |
|                                   | Rubber Tire Backhoe      | \$321   | 1     | 10    | \$77  | \$1,091  |
| <b>Total</b>                      |                          |         |       |       |       | \$14,340 |

| Production Rates | Miles/day | Distance(miles) | Days |
|------------------|-----------|-----------------|------|
| Grader           | 2.5       | 5.5             | 2.2  |

| Production Rates | Miles/day | Distance(miles) | Days |
|------------------|-----------|-----------------|------|
| Grader           | 1.5       | 6.4             | 4.3  |
| Vibratory Roller | 1.5       | 6.4             | 4.3  |

### Site Prep Appraisal

**Sale Number:** 341-15-07  
**Sale Name:** Dragon Buster  
**Date:** 02/24/2014

| Vegetation Type/Zone | Vegetation Type/Zone Code | Production Rate (hr/ac) | Estimated Piles/Acre |
|----------------------|---------------------------|-------------------------|----------------------|
| Doug-fir             | A                         | 0.5                     | 1.0                  |
| Hemlock/Fir          | B                         | 1.5                     | 2.0                  |
| Hemlock/Spruce       | C                         | 2.0                     | 3.0                  |
| Hemlock              | D                         | 2.0                     | 3.0                  |
| Conifer/Hardwood     | E                         | 1.5                     | 2.0                  |

| Sale Area                          | Harvest Type                   | Veg Type/Zone           | Ground Based Yarding Acres | Estimated Piling Hours/Area | Cost/Hour          | Total Cost/Area |            |
|------------------------------------|--------------------------------|-------------------------|----------------------------|-----------------------------|--------------------|-----------------|------------|
| 1                                  | MC                             | A                       | 54                         | 27                          | \$110.00           | \$2,970.00      |            |
| Sub Total =                        |                                |                         |                            |                             |                    |                 | \$2,970.00 |
| Sale Area                          | Number of Landings to be Piled | Cost/Landing Pile*      | Total Cost/Area            | Number of In-Unit Piles     | Material Cost/Pile | Total Cost/Area |            |
| 1                                  | 4                              | \$220.00                | \$880.00                   | 54                          | \$10.00            | \$540.00        |            |
| *Cost includes separating firewood |                                |                         |                            |                             |                    |                 |            |
| Sub Total =                        |                                |                         |                            |                             |                    |                 | \$540.00   |
| Move-In Allowance                  | Number of Move-In's            | Total Move-In Allowance |                            |                             |                    |                 |            |
| \$945.00                           | 1                              | \$945.00                | Sub Total =                |                             |                    |                 |            |
|                                    |                                |                         |                            |                             |                    |                 | \$945.00   |
| Grand Total =                      |                                |                         |                            |                             |                    |                 | \$4,455.00 |

*Charles A. May 3-9-2015*



## SUMMARY OF ALL PROJECT COSTS

SALE NAME: Dragon Buster

### ROAD CONSTRUCTION:

| <u>Road segment</u>       | <u>Length/Sta</u> | <u>Cost</u>     |
|---------------------------|-------------------|-----------------|
| 1A to 1B (Rock)           | 36.00             | \$41,198        |
| 1C to 1D, 1E to 1F (Dirt) | 8.00              |                 |
|                           |                   |                 |
|                           |                   |                 |
|                           |                   |                 |
| <b>TOTALS</b>             |                   | <b>\$41,198</b> |

### ROAD IMPROVEMENT:

| <u>Road segment</u>                           | <u>Length/Sta</u> | <u>Cost</u>     |
|-----------------------------------------------|-------------------|-----------------|
| 11 to 12, 13 to 14, 15 to 16,<br>and 17 to 18 | 186.3             | \$83,914        |
|                                               |                   |                 |
|                                               |                   |                 |
|                                               |                   |                 |
| <b>TOTALS</b>                                 |                   | <b>\$83,986</b> |

### SPECIAL PROJECTS:

| <u>Description</u>       | <u>Cost</u>     |
|--------------------------|-----------------|
| Project Road Maintenance | \$14,941        |
| <b>TOTAL</b>             | <b>\$14,941</b> |

### MOVE IN:

| <u>Equipment</u>           | <u>Cost</u>       |
|----------------------------|-------------------|
| Dozer (D8)                 | \$1,406.00        |
| Excavator (C330)           | \$1,406.00        |
| Excavator (C315)           | \$805.00          |
| Dump Trucks (12cy x 6)     | \$978.00          |
| Dump Trucks (20cy x 2)     | \$382.00          |
| Front End Loader           | \$778.00          |
| Grader (14G)               | \$778.00          |
| Vibratory Roller           | \$778.00          |
| Rubber Tire Skidder (C518) | \$717.00          |
| Water Truck (2,500 gallon) | \$190.00          |
| Backhoe (C 580)            | \$321.00          |
| <b>TOTAL</b>               | <b>\$8,539.00</b> |

**GRAND TOTAL** **\$148,664**

Compiled By: N. Haile FL Date: 03/18/2015

SALE NAME: Dragon Buster  
ROAD: 1A to 1B, 1C to 1D, and 1E to 1F  
POINTS: \_\_\_\_\_

|                   |                   |          |                   |       |
|-------------------|-------------------|----------|-------------------|-------|
| NEW CONSTRUCTION: | <u>44.00</u>      | STATIONS | <u>0.83</u>       | MILES |
| IMPROVEMENT:      | <u>          </u> | STATIONS | <u>          </u> | MILES |

|          | Method                          | Acres/amount | x | Rate     | = | Cost       |
|----------|---------------------------------|--------------|---|----------|---|------------|
| 1A to 1B | Scatter outside of Right of Way | 3.25         | x | \$ 1,337 | = | \$4,345.25 |
| 1C to 1D | Scatter outside of Right of Way | 0.5          | x | \$ 1,337 | = | \$668.50   |
| 1E to 1F | Scatter outside of Right of Way | 0.25         | x | \$ 1,337 | = | \$334.25   |

|           | Material                                      | Sta/amount | x | Rate     | = | Cost       |
|-----------|-----------------------------------------------|------------|---|----------|---|------------|
| 1A to 1B  | Balanced Construction \$/sta                  | 34.00      | x | \$122.00 | = | \$4,148.00 |
|           | Common Drift \$/sta                           | 2.00       | x | \$190.00 | = | \$380.00   |
|           | Landing Construction \$/ldg                   | 1          | x | \$389.00 | = | \$389.00   |
|           | Excavator time for ditch-out work on 1A to 1B | 3.00       | x | \$155.00 | = | \$465.00   |
| 1C to 1D  | Balanced Construction \$/sta                  | 2.50       | x | \$122.00 | = | \$305.00   |
|           | Landing Construction \$/ldg                   | 1          | x | \$389.00 | = | \$389.00   |
| 1E to 1F  | Balanced Construction \$/sta                  | 5.50       | x | \$122.00 | = | \$671.00   |
|           | Landing Construction \$/ldg                   | 1          | x | \$389.00 | = | \$389.00   |
| 1G and 1H | Landing Construction \$/ldg                   | 2          | x | \$389.00 | = | \$778.00   |

[illegible]

|                           | Description                                | Quantity | Rate    | Cost     |
|---------------------------|--------------------------------------------|----------|---------|----------|
| Other/miscellaneous:      | Close and Waterbar (1C to 1D and 1E to 1F) | 8.00     | \$15.96 | \$127.68 |
|                           |                                            |          |         |          |
| Culvert stakes & markers: | Carsonite Culvert Markers                  | 3        | \$20.00 | \$60.00  |

|                                          |                 |
|------------------------------------------|-----------------|
| <i>Subtotal of Clearing, Exc., Culv.</i> | <b>\$15,403</b> |
|------------------------------------------|-----------------|

|                                                    |  |  |  |                     |   |                  |          |
|----------------------------------------------------|--|--|--|---------------------|---|------------------|----------|
| <b>SURFACING</b>                                   |  |  |  | Stations/<br>amount | x | Rate/<br>sta/amt | Cost     |
| Subgrade prep: Description                         |  |  |  | 36.00               | x | \$24.83          | \$893.88 |
| Grade, Shape and Ditch 16' (1A to 1B)              |  |  |  | 36.00               | x | \$20.19          | \$726.84 |
| Subgrade Compaction (1A to 1B, 1C to 1D, 1E to 1F) |  |  |  | 8.00                | x | \$20.19          | \$161.52 |
| Outslope (1C to 1D, 1E to 1F)                      |  |  |  |                     |   |                  |          |

| ROAD SEGMENT 1A to 1B        |                       |                                                    |                              | POINT TO POINT                 |    | Sta. to Sta.                  |       | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost     |
|------------------------------|-----------------------|----------------------------------------------------|------------------------------|--------------------------------|----|-------------------------------|-------|-------------------------|------------------------|----------|
| Application                  | Rock Size<br>and Type | Location                                           | Depth of<br>Rock<br>(inches) | 1A to 1B<br>Volume (CY)<br>per |    | 0+00 to 36+00<br>Number<br>of |       |                         |                        |          |
| Base Rock                    | 5'-0" crushed         | 0+00 to 36+00                                      | 8                            | station                        | 50 | stations                      | 36.00 | 1,800                   | \$7.95                 | \$14,310 |
| Traction Rock                | 1 1/2"-0" crushed     | 0+00 to 3+00, 10+00<br>to 13+50, 25+00 to<br>32+00 | 3                            | station                        | 19 | stations                      | 14    | 257                     | \$8.19                 | \$2,101  |
| Culvert Bedding/Backfill     | 1 1/2"-0" crushed     | 0+00, 13+20, 30+00                                 | N/A                          | Culvert                        | 33 | Culverts                      | 3     | 99                      | \$8.19                 | \$811    |
| Turnarounds                  | 5'-0" crushed         | 15+50                                              | 8                            | TA                             | 11 | TA's                          | 1     | 11                      | \$7.95                 | \$87     |
| Turnouts                     | 5'-0" crushed         | 19+00, 25+70, 32+00                                | 8                            | TO                             | 22 | TO's                          | 3     | 66                      | \$7.95                 | \$525    |
| Junctions                    | 5'-0" crushed         | 0+00                                               | N/A                          | junction                       | 22 | junctions                     | 1     | 22                      | \$7.95                 | \$175    |
| Landings                     | 6'-0" Pit Run         | 1B, 1G, 1H                                         | N/A                          | Landing                        | 70 | Landings                      | 3     | 210                     | \$10.88                | \$2,285  |
| Total Rock for Road Segment: |                       |                                                    |                              | 1A to 1B                       |    |                               |       | 2,465                   |                        | \$20,293 |

| ROAD SEGMENT 1C to 1D        |                       |              |                              | POINT TO POINT                 |    | Sta. to Sta.                 |      | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost  |
|------------------------------|-----------------------|--------------|------------------------------|--------------------------------|----|------------------------------|------|-------------------------|------------------------|-------|
| Application                  | Rock Size<br>and Type | Location     | Depth of<br>Rock<br>(inches) | 1C to 1D<br>Volume (CY)<br>per |    | 0+00 to 2+50<br>Number<br>of |      |                         |                        |       |
| Junction                     | 5'-0" crushed         | 0+00 to 0+50 | 8                            | station                        | 44 | stations                     | 0.50 | 22                      | \$7.95                 | \$175 |
| Total Rock for Road Segment: |                       |              |                              | 1C to 1D                       |    |                              |      | 22                      |                        | \$175 |

| ROAD SEGMENT 1E to 1F        |                       |              |                              | POINT TO POINT                 |    | Sta. to Sta.                 |      | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost  |
|------------------------------|-----------------------|--------------|------------------------------|--------------------------------|----|------------------------------|------|-------------------------|------------------------|-------|
| Application                  | Rock Size<br>and Type | Location     | Depth of<br>Rock<br>(inches) | 1E to 1F<br>Volume (CY)<br>per |    | 0+00 to 5+50<br>Number<br>of |      |                         |                        |       |
| Junction                     | 5'-0" crushed         | 0+00 to 0+50 | 8                            | station                        | 44 | stations                     | 0.50 | 22                      | \$7.95                 | \$175 |
| Total Rock for Road Segment: |                       |              |                              | 1E to 1F                       |    |                              |      | 22                      |                        | \$175 |

|             |  |  |  |                                         |        |          |         |
|-------------|--|--|--|-----------------------------------------|--------|----------|---------|
| Processing: |  |  |  | Description                             | No.sta | Rate/sta | Cost    |
|             |  |  |  | Water, Process & Compact Base Rock:     | 36.00  | \$56.48  | \$2,033 |
|             |  |  |  | Water, Process & Compact Traction Rock: | 14.00  | \$56.48  | \$791   |

|  |          |         |       |           |       |
|--|----------|---------|-------|-----------|-------|
|  | 24"-6"rr | 6"-0"pr | 5"-0" | 1 1/2"-0" | Total |
|  |          | 210     | 1,943 | 356       | 2,509 |

**SUB TOTAL FOR SURFACING** **\$25,249**

|                         |  |  |  |                                                         |       |
|-------------------------|--|--|--|---------------------------------------------------------|-------|
| <b>SPECIAL PROJECTS</b> |  |  |  | Description                                             | Cost  |
|                         |  |  |  | Pit-run development at Green Mt. #2. \$2.60/cy x 210 cy | \$546 |

**SUB TOTAL FOR SPECIAL PROJECTS** **\$546**

|  |  |  |  |                                     |          |
|--|--|--|--|-------------------------------------|----------|
|  |  |  |  | Subtotal of Surfacing & Spec. Proj. | \$25,795 |
|  |  |  |  | Subtotal of Cleaning, Exc., Culv.   | \$15,403 |

**GRAND TOTAL** **\$41,198**

Compiled By: N. Haile

Date: 02/23/2015

## SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Dragon Buster  
 ROAD: Road Improvement  
 POINTS: I1 to I2, I3 to I4, I5 to I6, I7 to I8

NEW CONSTRUCTION: \_\_\_\_\_ STATIONS \_\_\_\_\_ MILES  
 IMPROVEMENT: 186.30 STATIONS 3.53 MILES

## CLEARING &amp; GRUBBING

| Method | Acres/amount | x | Rate | = | Cost |
|--------|--------------|---|------|---|------|
|        |              | x |      | = |      |

SUB TOTAL FOR CLEARING &amp; GRUBBING

## EXCAVATION

| Material                                   | Hrs/amount     | x | Rate           | = | Cost       |
|--------------------------------------------|----------------|---|----------------|---|------------|
| I1 to I2 Excavator time for ditch work     | 1.00           | x | \$155.00       | = | \$155.00   |
| I1 to I2 Fill Reconstruction               | See Fill Sheet | x | See Fill Sheet | = | \$5,386.40 |
| I3 to I4 Excavator time for ditch work     | 1.00           | x | \$101.00       | = | \$101.00   |
| I5 to I6 Excavator time for ditch-out work | 2.00           | x | \$101.00       | = | \$202.00   |
| I7 to I8 Excavator time for ditch work     | 2.00           | x | \$101.00       | = | \$202.00   |

SUB TOTAL FOR EXCAVATION

\$6,046

## CULVERT MATERIALS AND INSTALLATION

| Location | Dia/type | Lineal ft. | Rate           | Cost       | Location | Dia/type | Lineal ft. | Rate | Cost |
|----------|----------|------------|----------------|------------|----------|----------|------------|------|------|
| I1 to I2 |          |            |                |            |          |          |            |      |      |
| 6+30     | 18"CPP   | 75         | See Fill Sheet | \$1,464.75 |          |          |            |      |      |
| I5 to I6 |          |            |                |            |          |          |            |      |      |
| 0+00     | 18"CPP   | 65         | \$19.53        | \$1,269.45 |          |          |            |      |      |
| 7+50     | 18"CPP   | 30         | \$19.53        | \$585.90   |          |          |            |      |      |
| I7 to I8 |          |            |                |            |          |          |            |      |      |
| 149+00   | 18"CPP   | 30         | \$19.53        | \$585.90   |          |          |            |      |      |
|          |          |            |                |            |          |          |            |      |      |
|          |          |            |                |            |          |          |            |      |      |
|          |          |            |                |            |          |          |            |      |      |

|                           | Description                                                                | Quantity | Rate    | Cost     |
|---------------------------|----------------------------------------------------------------------------|----------|---------|----------|
| Other/miscellaneous:      | Seeding and Mulching costs are included in the Fill Reconstruction Costing |          |         |          |
| Culvert stakes & markers: | Carsonite Culvert Markers                                                  | 10       | \$20.00 | \$200.00 |

SUB TOTAL FOR CULVERT MATERIALS &amp; INSTALLATION

\$4,106

Subtotal of Clearing, Exc., Culv.

\$10,152

| SURFACING      |                                              | Stations/<br>amount | x | Rate/<br>sta/amt | Cost       |
|----------------|----------------------------------------------|---------------------|---|------------------|------------|
| Subgrade prep: | Description                                  |                     |   |                  |            |
|                | Grade, Shape and Ditch 16' All Road Segments | 186.30              | x | \$24.83          | \$4,625.83 |
|                | Subgrade Compaction All Road Segments        | 186.30              | x | \$20.19          | \$3,761.40 |
|                |                                              |                     | x |                  |            |

| ROAD SEGMENT I1 to I2 |                       |               |                              | POINT TO POINT     |     | Sta. to Sta.  |              | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost    |
|-----------------------|-----------------------|---------------|------------------------------|--------------------|-----|---------------|--------------|-------------------------|------------------------|---------|
| Application           | Rock Size<br>and Type | Location      | Depth of<br>Rock<br>(Inches) | I1 to I2           |     | 0+00 to 14+00 |              |                         |                        |         |
|                       |                       |               |                              | Volume (CY)<br>per |     | Number<br>of  |              |                         |                        |         |
| Base Rock             | 5"-0" crushed         | 0+00 to 14+00 | 6                            | station            | 38  | stations      | 14.00        | 532                     | \$7.95                 | \$4,229 |
| Leveling Loads        | 5"-0" crushed         |               | N/A                          | loads              | 11  | loads         | 3            | 33                      | \$7.95                 | \$262   |
| Traction Rock         | 1 1/2"-0" crushed     | 0+00 to 3+00  | 3                            | station            | 19  | stations      | 3            | 57                      | \$8.19                 | \$467   |
| Bedding and Backfill  | 1 1/2"-0" crushed     | 6+30          | N/A                          | culvert            | 88  | culvert       | 1            | 88                      | \$8.19                 | \$721   |
| Subgrade Replacement  | 5"-0" crushed         | 6+30          | 6                            | station            | 33  | stations      | 5+80 to 6+80 | 33                      | \$7.95                 | \$262   |
| Fill Armor            | 24"-6" crushed        | 6+30          | N/A                          | fill               | 120 | fills         | 1            | 120                     | \$8.82                 | \$1,058 |
| Dissipator Rock       | 24"-6" crushed        | 6+30          | N/A                          | culvert            | 20  | culvert       | 1            | 20                      | \$8.82                 | \$176   |
| Landing               | 6"-0" crushed         | 14+00         | N/A                          | landing            | 70  | landings      | 1            | 70                      | \$10.88                | \$762   |
| Turnouts              | 5"-0" crushed         |               | 3                            | TO                 | 22  | TO's          | 1            | 22                      | \$7.95                 | \$175   |
| Junctions             | 5"-0" crushed         | 0+00          | N/A                          | junction           | 22  | junctions     | 1            | 22                      | \$7.95                 | \$175   |

Total Rock for Road Segment: I1 to I2 997 \$8,288

| Total Rock for Road Segment: 13 to 14 |                       |              |                              |                                |                              |           |              |     |                         |                        |      |
|---------------------------------------|-----------------------|--------------|------------------------------|--------------------------------|------------------------------|-----------|--------------|-----|-------------------------|------------------------|------|
| ROAD SEGMENT                          |                       |              | 13 to 14                     |                                | POINT TO POINT               |           | Sta. to Sta. |     | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost |
| Application                           | Rock Size<br>and Type | Location     | Depth of<br>Rock<br>(Inches) | 13 to 14<br>Volume (CY)<br>per | 0+00 to 9+30<br>Number<br>of |           |              |     |                         |                        |      |
| Base Rock                             | 5"-0" crushed         | 0+00 to 9+30 | 6                            | station                        | 38                           | stations  | 9.30         | 353 | \$7.95                  | \$2,810                |      |
| Leveling Loads                        | 5"-0" crushed         |              | N/A                          | loads                          | 11                           | loads     | 3            | 33  | \$7.95                  | \$262                  |      |
| Turnouts                              | 5"-0" crushed         |              | 3                            | TO                             | 22                           | TO's      | 1            | 22  | \$7.95                  | \$175                  |      |
| Junctions                             | 5"-0" crushed         | 0+00         | N/A                          | junction                       | 22                           | junctions | 2            | 44  | \$7.95                  | \$350                  |      |

Total Rock for Road Segment: I3 to I4 452 \$3,597

| ROAD SEGMENT             |                          |              |                              | POINT TO POINT                 |                               | Sta. to Sta. |       | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost    |
|--------------------------|--------------------------|--------------|------------------------------|--------------------------------|-------------------------------|--------------|-------|-------------------------|------------------------|---------|
| Application              | Rock Size<br>and<br>Type | Location     | Depth of<br>Rock<br>(inches) | I5 to I6<br>Volume (CY)<br>per | 0+00 to 14+00<br>Number<br>of |              |       |                         |                        |         |
| Base Rock                | 5"-0" crushed            | 0+0 to 14+00 | 8                            | station                        | 50                            | stations     | 14.00 | 700                     | \$7.95                 | \$5,565 |
| Culvert Bedding/Backfill | 1 1/2"-0" crushed        | 0+00, 7+50   | N/A                          | Culvert                        | 33                            | Culverts     | 2     | 66                      | \$8.19                 | \$541   |
| Turnarounds              | 5"-0" crushed            |              | 3                            | TA                             | 11                            | TA's         | 1     | 11                      | \$7.95                 | \$87    |
| Turnouts                 | 5"-0" crushed            |              | 3                            | TO                             | 22                            | TO's         | 3     | 66                      | \$7.95                 | \$525   |
| Junctions                | 5"-0" crushed            | 0+00         | N/A                          | junction                       | 22                            | junctions    | 1     | 22                      | \$7.95                 | \$175   |

Total Rock for Road Segment: I5 to I6 865 \$6,893

| ROAD SEGMENT             |                          |                              | POINT TO POINT                 |          | Sta. to Sta.                   |           | TOTAL<br>VOLUME<br>(CY) | Rate/<br>Sta./<br>amt. | Cost   |          |
|--------------------------|--------------------------|------------------------------|--------------------------------|----------|--------------------------------|-----------|-------------------------|------------------------|--------|----------|
| I7 to I8                 |                          | Depth of<br>Rock<br>(Inches) | I7 to I8<br>Volume (CY)<br>per |          | 0+00 to 149+00<br>Number<br>of |           |                         |                        |        |          |
| Application              | Rock Size<br>and<br>Type | Location                     |                                |          |                                |           |                         |                        |        |          |
| Base Rock                | 5"-0" crushed            | 0+00 to 97+50                | 6                              | station  | 38                             | stations  | 97.50                   | 3,705                  | \$7.95 | \$29,455 |
| Traction Rock            | 1 1/2"-0" crushed        | 97+50 to 149+00              | N/A                            | loads    | 11                             | loads     | 16                      | 176                    | \$8.19 | \$1,441  |
| Culvert Bedding/Backfill | 1 1/2"-0" crushed        | 149+00                       | N/A                            | Culvert  | 33                             | Culverts  | 1                       | 33                     | \$8.19 | \$270    |
| Dissipator Rock          | 24"-6" crushed           | 18+00                        | N/A                            | Culvert  | 20                             | Culverts  | 1                       | 20                     | \$8.82 | \$176    |
| Turnarounds              | 5"-0" crushed            |                              | 3                              | TA       | 11                             | TA's      | 5                       | 55                     | \$7.95 | \$437    |
| Turnouts                 | 5"-0" crushed            |                              | 3                              | TO       | 22                             | TO's      | 13                      | 286                    | \$7.95 | \$2,274  |
| Junctions                | 5"-0" crushed            |                              | N/A                            | junction | 22                             | junctions | 4                       | 88                     | \$7.95 | \$700    |

Total Rock for Road Segment: I7 to I8 4,363 \$34,753

| Processing: |  | Description                               | No.sta | Rate/sta | Cost     |
|-------------|--|-------------------------------------------|--------|----------|----------|
|             |  | Water, Process & Compact (Base Rock):     | 186.30 | \$56.48  | \$10,522 |
|             |  | Water, Process & Compact (Traction Rock): | 8.00   | \$56.48  | \$452    |

| 24"-6"rr | 6"-0"pr | 5"-0" | 1 1/2"-0" | Total |
|----------|---------|-------|-----------|-------|
| 160      | 70      | 6,027 | 420       | 6,677 |

SUB TOTAL FOR SURFACING

\$72,892

| SPECIAL PROJECTS |  | Description                                             | Cost  |
|------------------|--|---------------------------------------------------------|-------|
|                  |  | Rip-rap development at Green Mt. #2. \$4.30/cy x 160 cy | \$688 |
|                  |  | Pitrun development at Green Mt. #2. \$2.60/cy x 70 cy   | \$182 |
|                  |  | Erosion Control (Fill Reconstruction)                   | \$72  |

SUB TOTAL FOR SPECIAL PROJECTS

\$942

Subtotal of Surfacing & Spec. Proj. \$73,834

Subtotal of Clearing, Exc., Culv. \$10,152

GRAND TOTAL

\$83,986

Compiled By: N. Haile

Date: 02/25/2015

# **Fill Reconstruction Cost Estimate**

N.Haile  
02/25/2015

Segment: I1 to I2 Station: 6+30  
Fill: 1 Height: 12

| Materials                          | Quantity |    | \$         | Total      |
|------------------------------------|----------|----|------------|------------|
| 18"x75', CPP                       | 75       |    | \$19.53    | \$1,464.75 |
| 5"-0" subgrade replacement         | 33       | cy | \$7.95     | \$262.35   |
| 24"-6" Riprap Armor                | 120      | cy | \$8.82     | \$1,058.40 |
| 24"-6" Dissipator                  | 20       | cy | \$8.82     | \$176.40   |
| Screened Rock for Bedding/Backfill | 88       | cy | \$8.19     | \$720.72   |
| Erosion Control                    | 0.05     | ac | \$1,433.00 | \$71.65    |
| Mulch and seed                     |          |    |            |            |

**\$3,754.27**

| Equipment/Labor Costs    | Quantity |  | \$/Hr.   | Hours | Total      |
|--------------------------|----------|--|----------|-------|------------|
| Excavator, Large         |          |  |          |       |            |
| Operating                | 1        |  | \$155.00 | 16    | \$2,480.00 |
| Stand-By                 | 1        |  | \$93.00  | 2     | \$186.00   |
| Dump Truck               |          |  |          |       |            |
| Operating                | 2        |  | \$79.00  | 8     | \$1,264.00 |
| Stand-By                 | 2        |  | \$47.40  | 2     | \$189.60   |
| Rubber Tire Skidder      |          |  |          |       |            |
| Operating                | 1        |  | \$92.00  | 4     | \$368.00   |
| Stand-By                 | 1        |  | \$55.20  | 2     | \$110.40   |
| Front-End Loader, Medium |          |  |          |       |            |
| Operating                | 1        |  | \$83.00  | 2     | \$166.00   |
| Stand-By                 | 1        |  | \$49.80  | 8     | \$398.40   |
| Hand Held Tamper         |          |  |          |       |            |
| Operating                | 1        |  | \$10.00  | 4     | \$40.00    |
| Stand-By                 | 1        |  | \$6.00   | 4     | \$24.00    |
| Laborer                  | 1        |  | \$40.00  | 4     | \$160.00   |

**\$5,386.40**

**Project Total \$9,141**

CRUSHED ROCK COST

|            |                    |
|------------|--------------------|
| SALE NAME: | Dragon Buster      |
| PROJECT:   | Projects 1 & 2     |
| QUARRY:    | Military Stockpile |

MATERIAL: Crushed  
1 1/2"-0"

DATE: 02/25/2015  
BY: N. Haile

[illegible]

ROCK HAUL:

|             |            |             |            |
|-------------|------------|-------------|------------|
| Truck type: | <u>D20</u> | No. trucks: | <u>2</u>   |
| Delay min.: | <u>8</u>   | Efficiency: | <u>85%</u> |

|           |        |     |
|-----------|--------|-----|
| Ave haul: | \$6.68 | /cy |
| Load:     | \$0.54 | /cy |
| Spread:   | \$0.96 | /cy |

|             |            |             |            |
|-------------|------------|-------------|------------|
| Truck type: | <u>D12</u> | No. trucks: | <u>6</u>   |
| Delay min.: | <u>6</u>   | Efficiency: | <u>85%</u> |

Truck type: D10 No. trucks:             
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 806

CRUSHED ROCK HAUL COSTS                      776 cy @        \$8.19 /cy

### CRUSHED ROCK COST

|            |                          |
|------------|--------------------------|
| SALE NAME: | Dragon Buster            |
| PROJECT:   | Projects 1 & 2           |
| QUARRY:    | Green Mountain Stockpile |

MATERIAL: Crushed  
5"-0"

DATE: 02/23/2015  
BY: N. Haile

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2  
 Delay min.: 8 Efficiency: 85%

|           |        |     |
|-----------|--------|-----|
| Ave haul: | \$6.45 | /cy |
| Load:     | \$0.54 | /cy |
| Spread:   | \$0.96 | /cy |

Truck type: D12      No. trucks: 6  
 Delay min.: 6      Efficiency: 85%

Truck type: D10 No. trucks:             
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 836

CRUSHED ROCK HAUL COSTS      7,970 cy @      \$7.95 /cy



## PIT RUN ROCK COST

|            |                         |
|------------|-------------------------|
| SALE NAME: | Dragon Buster           |
| PROJECT:   | Project 1 and 2         |
| QUARRY:    | Green Mountain Quarries |

MATERIAL: Pit Run  
6"-0"

DATE: 02/23/2015  
BY: N. Haile

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:             
 Delay min.: 8 Efficiency: 85%

|           |        |     |
|-----------|--------|-----|
| Ave haul: | \$7.51 | /cy |
| Load:     | \$1.44 | /cy |
| Spread:   | \$1.92 | /cy |

Truck type: D12 No. trucks: 4  
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:             
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 336

### PIT RUN ROCK HAUL COSTS

280 cy @ \$10.88 /cy

RIP RAP ROCK COST

|            |                         |
|------------|-------------------------|
| SALE NAME: | Dragon Buster           |
| PROJECT:   | Project 1 and 2         |
| QUARRY:    | Green Mountain Quarries |

MATERIAL: Rip Rap  
24"-6"

DATE: \_\_\_\_\_  
BY: N. Haile

[illegible]

ROCK HAUL:

|             |     |             |     |
|-------------|-----|-------------|-----|
| Truck type: | D12 | No. trucks: | 4   |
| Delay min.: | 6   | Efficiency: | 85% |
| Truck type: | D10 | No. trucks: | 4   |
| Delay min.: | 5   | Efficiency: | 85% |

|           |        |     |
|-----------|--------|-----|
| Ave haul: | \$7.02 | /cy |
| Load:     | \$1.80 | /cy |
| Develop:  |        | /cy |

Production: cy/day = 360

### RIP RAP ROCK HAUL COSTS

160 cy @ \$8.82 /cy

Projects Road Maintenance Cost Summary

Sale: Dragon Buster  
Date: 24-Feb-15  
By: N. Haile

| Type                            | Equipment/Rationale      | Hours | Rate  | Cost     |
|---------------------------------|--------------------------|-------|-------|----------|
| Projects<br>Road<br>Maintenance | Grader 14G               | 45    | \$100 | \$4,500  |
|                                 | Dump Truck 12CY          | 25    | \$79  | \$1,975  |
|                                 | FE Loader C966           | 12    | \$83  | \$996    |
|                                 | Vibratory Roller         | 45    | \$77  | \$3,465  |
|                                 | Water Truck 2,500 gallon | 45    | \$89  | \$4,005  |
| Total                           |                          |       |       | \$14,941 |

| Miles/day | Distance(miles) | Days |
|-----------|-----------------|------|
| 1.5       | 6.7             | 4.5  |
| 1.5       | 6.7             | 4.5  |

Production Rates  
Grader  
Vibratory Roller  
Green Mountain, Stanley Creek, Buster Creek Mainline, Sager Creek

# Dragon Buster TIMBER CRUISE REPORT FY 2015

1. **Sale Area Location:** Area 1 are located in portions of Sections 14, 15, 22, & 23 T5N, R6W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 100%  
Tax Code 8-01 (100%)

3. **Sale Acreage by Area:**

| Area          | Treatment         | Gross Acres | Existing R/W | New R/W* | Stream Buffer | Net Acres | Survey Method |
|---------------|-------------------|-------------|--------------|----------|---------------|-----------|---------------|
| 1             | Modified Clearcut | 82          | 3            | 2        | 8             | 69        | GIS           |
| 2             | Right-of-Way      | 4           | 0            | 0        | 0             | 4         | GIS           |
| <b>TOTALS</b> |                   | <b>86</b>   | <b>3</b>     | <b>2</b> | <b>8</b>      | <b>73</b> |               |

4. **Cruisers and Cruise Dates:** Area 1 was cruised by Nick Haile, David Rygell, and Kevin Berry, on January 29<sup>th</sup>, 2015.

## 5. Cruise Method and Computation:

Area 1 is a Modified Clearcut unit and was variable plot cruised using a 40 BAF. The plots are located on a 6 chain by 3 chain grid, with every third plot measured and graded. A total of 42 plots were sampled, with 14 measured and graded plots, and 28 count plots.

All cruisers used Corvallis MicroTechnology (CMT) and/or Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

| AREA | CRUISE   | TRACT | TYPE | ACRES |
|------|----------|-------|------|-------|
| 1    | T5NR6W14 | Area1 | TAKE | 70    |
| 2    | T5NR6W14 | Area1 | RW   | 3     |

## 6. Timber Description:

Area 1 is a modified clearcut unit, approximately 75 year-old, consisting of Douglas-fir, with minor amounts of western hemlock and maple. The average Douglas-fir tree size to be harvested is 19.2 inches DBH, with an average height of 69 feet to a merchantable top (40% of DBH). The average volume (net) is approximately 35 MBF/acre.

Area 2 R/W is similar to the timber description mentioned above for Area 1. The average volume (net) is approximately 36.5 MBF/acre.

**7. Statistical Analysis and Stand Summary:** (See "Statistics" - Type Reports, attached)  
Statistics for Stand B.F. volumes

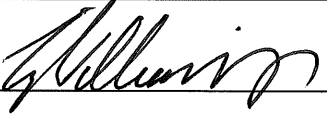
| Area | Estimated CV | Target SE% | Actual CV | Actual SE% |
|------|--------------|------------|-----------|------------|
| 1    | 55%          | 11%        | 38%       | 6%         |

**8. Volumes by Species and Log Grade:** (See "Species, Sort, Grade" - Project Report, attached).  
Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

| Species          | DBH   | Net Vol.<br>MBF | 2 Saw | 3 Saw | 4 Saw | Camp Run | % D & B | %<br>Sale |
|------------------|-------|-----------------|-------|-------|-------|----------|---------|-----------|
| Douglas-fir      | 19.2" | 2,533           | 1,879 | 568   | 86    | 0        | 3.6%    | 99%       |
| Hemlock/True-fir | 18.9" | 18              | 14    | 4     | 0     | 0        | 21.5%   | <1%       |
| Maple            | 13.7" | 7               | 0     | 0     | 0     | 7        | 32.7%   | <1%       |
| <b>TOTALS</b>    |       | <b>2,558</b>    |       |       |       |          |         |           |

**9. Approvals:**

Prepared by: Nick Haile Date: 2/10/15

Unit Forester Approval:  Date: 2/11/15

**10. Attachments:**

Cruise Designs and Maps – 4 pages  
Volume Report - 3 pages  
Statistics Reports - 3 pages  
Stand Table Summary – 2 pages  
Log Stock Tables - 2 pages

X:\Jewell\_Unit\Timber Sales\2015\Dragon Buster\Sale Prep\DB\_CruiseReport.docx

**CRUISE DESIGN  
ASTORIA DISTRICT**

**Sale Name:** Dragon Buster **Area(s)** 1

**Harvest Type:** Modified Clearcut

**Approx. Cruise Acres:** 73 **Estimated CV%** 55% Net BF or BA/Acre **SE% Objective** 11%

**Planned Sale Volume:** 2442 MBF **Estimated Sale Area Value/Acre:** \$10,725 /ac

**A. Cruise Goals:** (a) Grade minimum 100 conifer trees:  
Determine log grades for sale value; Determine snag and leave tree species and sizes;  
Determine "diameter limit" harvest parameters;

**B. Cruise Design:**

**1. Plot Cruises:** BAF 40 (Full point; Half point) (circle one)  
Cruise Line Direction(s) Area 1 @ 0 degrees (N/S)  
Cruise Line Spacing 6 chains  
Cruise Plot Spacing 3 chains  
Grade/Count Ratio 1:2

Record all hardwood as camp run and all cedar as leave. Record all snags as SN and record diameter & total height on grade plots only. If the plot lands in a buffer then offset at least 1/2 chain outside the buffer. Cruise map is in the 1" = 500' scale.

**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 is 7 " 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. 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 D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple); DL (Douglas-fir over 30" dbh); HL (Western hemlock over 30" dbh); SL (Sitka spruce over 30" dbh); CL (Western red cedar over 30" dbh); NFL (Noble fir over 30" dbh); SFL (Silver fir over 30" dbh)  
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; R = Camp Run; 0 = Cull
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 and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.  
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, Logger's Tape (with dbh on back), Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

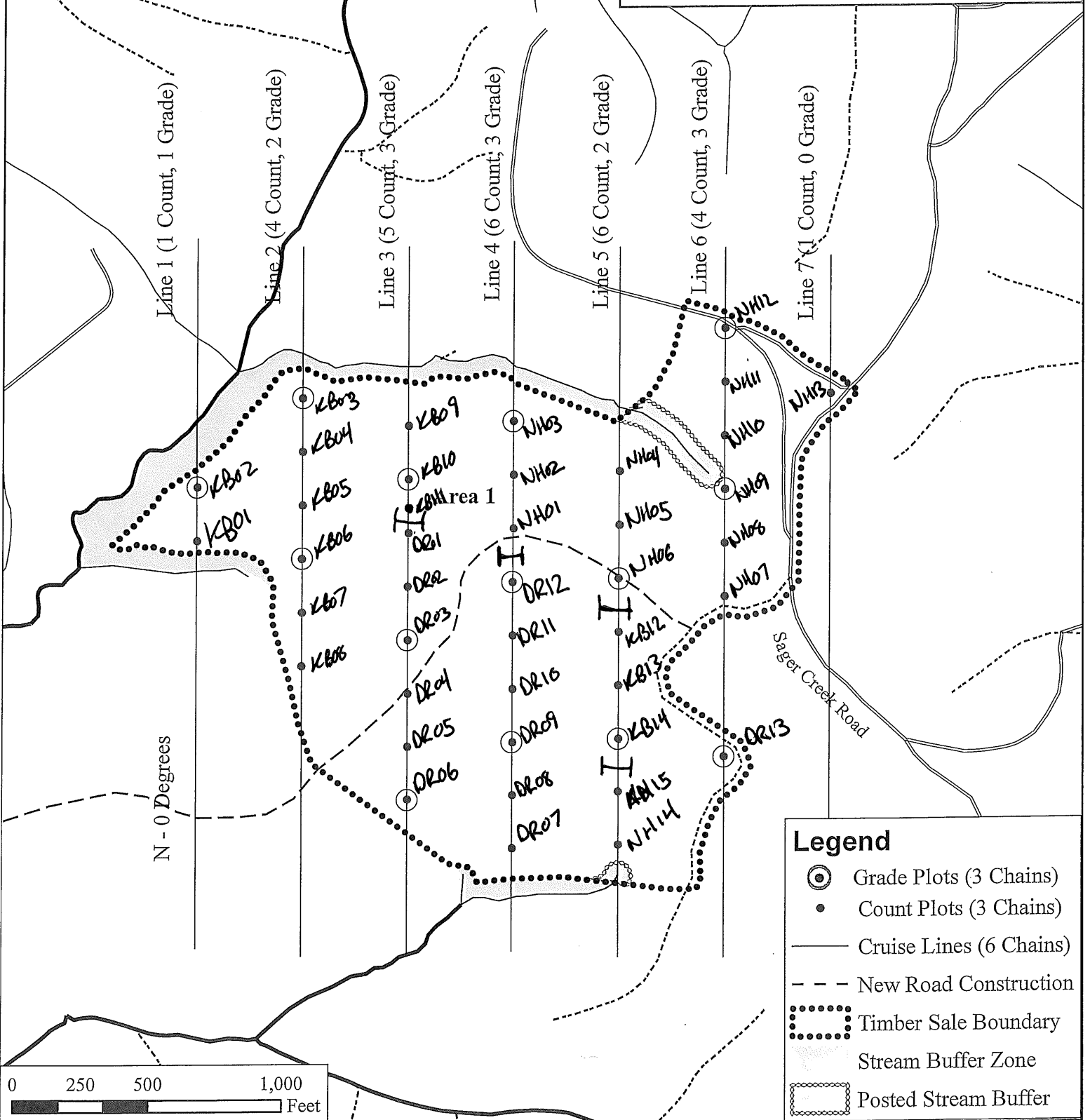
Cruise Design by: Nick Haile  
Approved by: [Signature]  
Date: 01/16/15

# CRUISE MAP

OF TIMBER SALE CONTRACT NO. 341-15-07  
 DRAGON BUSTER  
 PORTIONS OF SECTIONS 14, 15, 22, & 23  
 T5N, R6W, W.M., CLATSOP COUNTY, OREGON

| Approximate Net Acres | MC Acres |
|-----------------------|----------|
| Area 1 (MC)           | 70       |
| Area 2 (R/W)          | 3        |
| Total Sale Acreage    | 73       |

Approximate Scale: 1" = 500'



## Legend

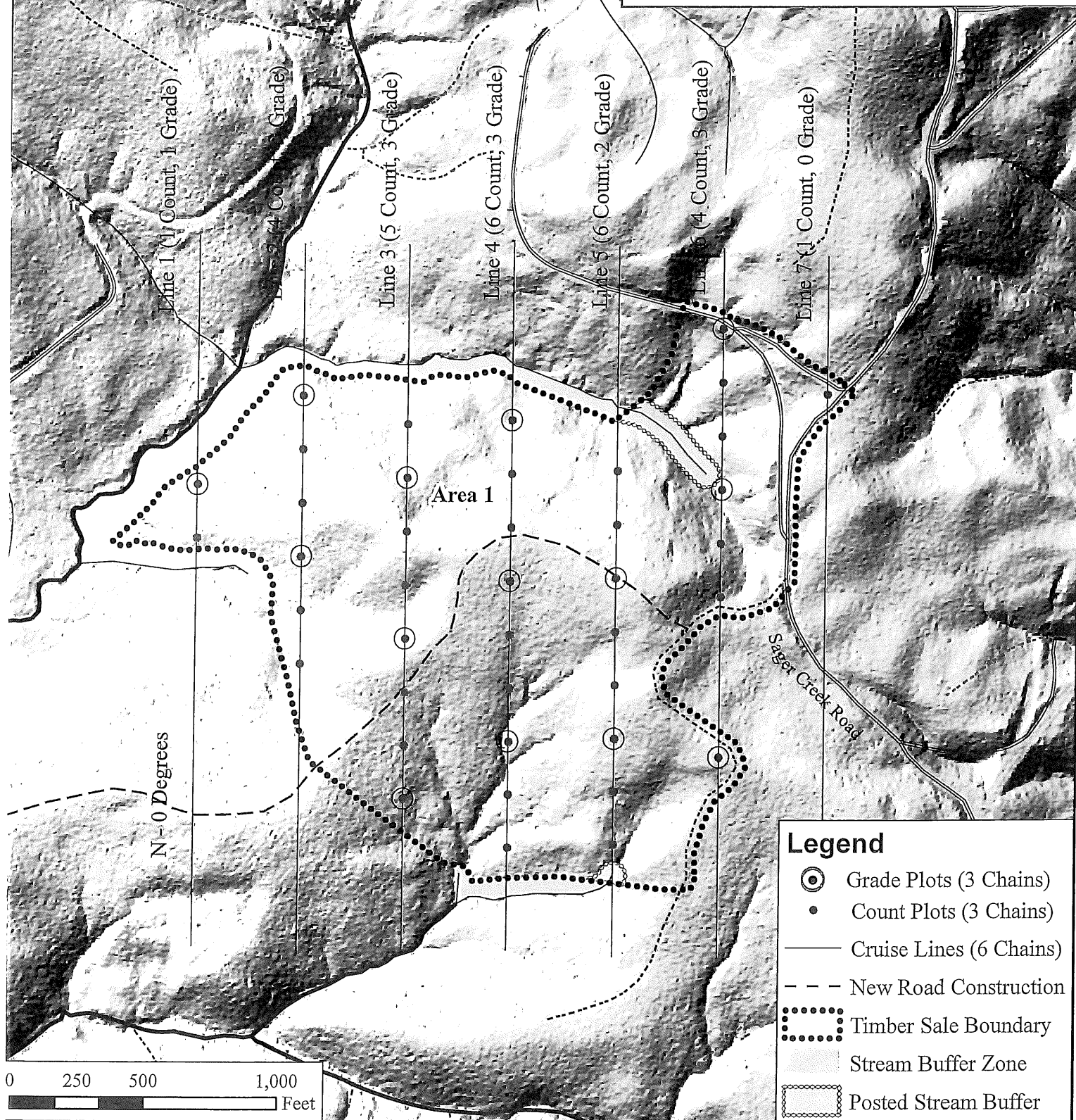
- ⊙ Grade Plots (3 Chains)
- Count Plots (3 Chains)
- Cruise Lines (6 Chains)
- - - New Road Construction
- ⋯ Timber Sale Boundary
- ▨ Stream Buffer Zone
- ▤ Posted Stream Buffer



**CRUISE MAP**  
 OF TIMBER SALE CONTRACT NO. 341-15-07  
 DRAGON BUSTER  
 PORTIONS OF SECTIONS 14, 15, 22, & 23  
 T5N, R6W, W.M., CLATSOP COUNTY, OREGON

| Approximate Net Acres | MC Acres |
|-----------------------|----------|
| Area 1 (MC)           | 70       |
| Area 2 (R/W)          | 3        |
| Total Sale Acreage    | 73       |

Approximate Scale: 1" = 500'



| TC                                                              |                  | PSPCSTGR         |                                  | Species, Sort Grade - Board Foot Volumes (Project) |        |                  |                                  |       |       |       |            |    |    |    |             |          |           |              |      |
|-----------------------------------------------------------------|------------------|------------------|----------------------------------|----------------------------------------------------|--------|------------------|----------------------------------|-------|-------|-------|------------|----|----|----|-------------|----------|-----------|--------------|------|
| <div>T05N R06W S14 TyRW4.00<br/>T05N R06W S14 TyTAKE69.00</div> |                  |                  |                                  | Project:                                           |        | DRAGBUST         |                                  |       |       |       |            |    |    |    |             | Page     |           | 1            |      |
|                                                                 |                  |                  |                                  | Acres                                              |        | 73.00            |                                  |       |       |       |            |    |    |    |             | Date     |           | 2/10/2015    |      |
|                                                                 |                  |                  |                                  |                                                    |        |                  |                                  |       |       |       |            |    |    |    |             | Time     |           | 9:06:43AM    |      |
| S<br>Spp                                                        | So Gr<br>T rt ad | %<br>Net<br>BdFt | Bd. Ft. per Acre<br>Def%GrossNet |                                                    |        | Total<br>Net MBF | Percent of Net Board Foot Volume |       |       |       |            |    |    |    | Average Log |          |           | Logs         |      |
|                                                                 |                  |                  |                                  |                                                    |        |                  | Log Scale Dia.                   |       |       |       | Log Length |    |    |    | Ln<br>Ft    | Bd<br>Ft | CF/<br>Lf | Per<br>/Acre |      |
|                                                                 |                  |                  | 4-5                              | 6-11                                               | 12-16  |                  | 17+                              | 12-20 | 21-30 | 31-35 | 36-99      |    |    |    |             |          |           |              |      |
| M                                                               | DOCU             |                  | 100.0                            | 24                                                 |        |                  |                                  |       |       |       |            |    |    |    | 35          |          | 0.00      | .5           |      |
| M                                                               | DOCR             | 100              | 19.7                             | 126                                                | 101    | 7                |                                  | 100   |       |       | 29         | 31 | 41 |    | 21          | 31       | 0.60      | 3.3          |      |
| M Totals                                                        |                  | 0                | 32.6                             | 150                                                | 101    | 7                |                                  | 100   |       |       | 29         | 31 | 41 |    | 23          | 27       | 0.48      | 3.7          |      |
| D                                                               | DOCU             |                  | 100.0                            | 726                                                |        |                  |                                  |       |       |       |            |    |    |    | 8           |          | 0.00      | 3.5          |      |
| D                                                               | DO2S             | 74               | 1.6                              | 26,163                                             | 25,746 | 1,879            |                                  |       | 1     | 34    | 64         | 1  | 1  | 20 | 77          | 37       | 444       | 2.58         | 58.0 |
| D                                                               | DO3S             | 22               | 1.8                              | 7,921                                              | 7,781  | 568              |                                  |       | 89    | 6     | 5          | 0  | 18 | 37 | 45          | 33       | 85        | 0.73         | 91.9 |
| D                                                               | DO4S             | 4                |                                  | 1,168                                              | 1,168  | 86               | 0                                | 100   |       |       |            | 21 | 73 | 5  |             | 23       | 28        | 0.38         | 41.1 |
| D Totals                                                        |                  | 99               | 3.6                              | 35,977                                             | 34,696 | 2,533            | 0                                | 24    | 27    | 49    | 2          | 7  | 23 | 67 | 32          | 178      | 1.32      | 194.4        |      |
| H                                                               | DOCU             |                  | 100.0                            | 67                                                 |        |                  |                                  |       |       |       |            |    |    |    | 6           |          | 0.00      | 1.0          |      |
| H                                                               | DO2S             | 78               |                                  | 191                                                | 191    | 14               |                                  |       |       | 100   |            |    |    | 45 | 55          | 36       | 196       | 1.35         | 1.0  |
| H                                                               | DO3S             | 22               |                                  | 53                                                 | 53     | 4                |                                  |       | 100   |       |            |    |    | 51 | 49          | 35       | 54        | 0.57         | 1.0  |
| H Totals                                                        |                  | 1                | 21.6                             | 311                                                | 244    | 18               |                                  | 22    | 78    |       |            |    |    | 46 | 54          | 26       | 83        | 0.89         | 2.9  |
| Totals                                                          |                  |                  | 3.8                              | 36,439                                             | 35,041 | 2,558            | 0                                | 24    | 27    | 49    | 2          | 7  | 24 | 67 | 32          | 174      | 1.30      | 201.1        |      |

| T                      |     | Species, Sort Grade - Board Foot Volumes (Type) |             |                                    |        |        |                  |                               |      |                     |    | Page       |    | 1         |      |             |          |           |                      |
|------------------------|-----|-------------------------------------------------|-------------|------------------------------------|--------|--------|------------------|-------------------------------|------|---------------------|----|------------|----|-----------|------|-------------|----------|-----------|----------------------|
| TSPCSTGR               |     | Project: DRAGBUST                               |             |                                    |        |        |                  |                               |      |                     |    | Date       |    | 2/10/2015 |      |             |          |           |                      |
|                        |     |                                                 |             |                                    |        |        |                  |                               |      |                     |    | Time       |    | 9:07:11AM |      |             |          |           |                      |
| T05N R06W S14 TTAKE    |     |                                                 |             |                                    |        |        |                  |                               |      | T05N R06W S14 TTAKE |    |            |    |           |      |             |          |           |                      |
| Twp                    | Rge | Sec                                             | Tract       | Type                               | Acres  | Plots  | Sample Trees     | CuFt                          | BdFt |                     |    |            |    |           |      |             |          |           |                      |
| 05N                    | 06W | 14                                              | AREA1       | TAKE                               | 69.00  | 42     | 69               | 1                             | W    |                     |    |            |    |           |      |             |          |           |                      |
| S So Gr<br>Spp T rt ad |     |                                                 | %           | Bd. Ft. per Acre<br>Def% Gross Net |        |        | Total<br>Net MBF | Percent Net Board Foot Volume |      |                     |    |            |    |           |      | Average Log |          |           | Logs<br>Per<br>/Acre |
|                        |     |                                                 | Net<br>BdFt |                                    |        |        |                  | Log Scale Dia.                |      |                     |    | Log Length |    |           |      | Ln<br>Ft    | Bd<br>Ft | CF/<br>Lf |                      |
|                        |     |                                                 |             |                                    |        |        |                  |                               |      |                     |    |            |    |           |      |             |          |           |                      |
| D DO CU                |     |                                                 |             | 00.0                               | 719    |        |                  |                               |      |                     |    |            |    | 8         | 0.00 |             | 3.5      |           |                      |
| D DO 2S                |     |                                                 | 74          | 1.6                                | 26,097 | 25,684 | 1,772            | 1                             | 34   | 64                  | 1  | 1          | 20 | 77        | 37   | 444         | 2.58     | 57.8      |                      |
| D DO 3S                |     |                                                 | 22          | 1.7                                | 7,892  | 7,758  | 535              | 89                            | 6    | 5                   |    | 18         | 37 | 45        | 33   | 85          | 0.73     | 91.8      |                      |
| D DO 4S                |     |                                                 | 4           |                                    | 1,166  | 1,166  | 80               | 100                           |      |                     | 21 | 73         | 5  |           | 23   | 28          | 0.38     | 41.0      |                      |
| D Totals               |     |                                                 | 99          | 3.5                                | 35,874 | 34,608 | 2,388            | 24                            | 27   | 49                  | 2  | 7          | 24 | 67        | 32   | 178         | 1.32     | 194.1     |                      |
| M DO CU                |     |                                                 |             | 00.0                               | 24     |        |                  |                               |      |                     |    |            |    | 35        | 0.00 |             | .5       |           |                      |
| M DO CR                |     |                                                 | 100         | 19.7                               | 126    | 101    | 7                | 100                           |      |                     | 29 | 31         | 41 |           | 21   | 31          | 0.60     | 3.3       |                      |
| M Totals               |     |                                                 | 0           | 32.6                               | 150    | 101    | 7                | 100                           |      |                     | 29 | 31         | 41 |           | 23   | 27          | 0.48     | 3.7       |                      |
| H DO CU                |     |                                                 |             | 00.0                               | 67     |        |                  |                               |      |                     |    |            |    | 6         | 0.00 |             | 1.0      |           |                      |
| H DO 2S                |     |                                                 | 78          |                                    | 191    | 191    | 13               |                               | 100  |                     |    |            | 45 | 55        | 36   | 196         | 1.35     | 1.0       |                      |
| H DO 3S                |     |                                                 | 22          |                                    | 53     | 53     | 4                | 100                           |      |                     |    |            | 51 | 49        | 35   | 54          | 0.57     | 1.0       |                      |
| H Totals               |     |                                                 | 1           | 21.6                               | 311    | 244    | 17               | 22                            | 78   |                     |    |            | 46 | 54        | 26   | 83          | 0.89     | 2.9       |                      |
| Type Totals            |     |                                                 |             | 3.8                                | 36,336 | 34,954 | 2,412            | 24                            | 27   | 48                  | 2  | 7          | 24 | 67        | 32   | 174         | 1.30     | 200.8     |                      |

| T                         | Species, Sort Grade - Board Foot Volumes (Type) |     |                  |                                    |        |        |                  |                               |      |                   |      |          |          |           | Page 1 |             |           |    |                      |      |       |
|---------------------------|-------------------------------------------------|-----|------------------|------------------------------------|--------|--------|------------------|-------------------------------|------|-------------------|------|----------|----------|-----------|--------|-------------|-----------|----|----------------------|------|-------|
| Project: DRAGBUST         |                                                 |     |                  |                                    |        |        |                  |                               |      |                   |      |          |          |           |        | Date        | 2/10/2015 |    |                      |      |       |
|                           |                                                 |     |                  |                                    |        |        |                  |                               |      |                   |      |          |          |           |        | Time        | 9:07:39AM |    |                      |      |       |
| T05N R06W S14 TRW         |                                                 |     |                  |                                    |        |        |                  |                               |      | T05N R06W S14 TRW |      |          |          |           |        |             |           |    |                      |      |       |
| Twp                       | Rge                                             | Sec | Tract            | Type                               | Acres  | Plots  | Sample Trees     | CuFt                          | BdFt |                   |      |          |          |           |        |             |           |    |                      |      |       |
| 05N                       | 06W                                             | 14  | AREA1            | RW                                 | 4.00   | 42     | 73               | 1                             | W    |                   |      |          |          |           |        |             |           |    |                      |      |       |
| S So Gr<br>T rt ad<br>Spp |                                                 |     | %<br>Net<br>BdFt | Bd. Ft. per Acre<br>Def% Gross Net |        |        | Total<br>Net MBF | Percent Net Board Foot Volume |      |                   |      |          |          |           |        | Average Log |           |    | Logs<br>Per<br>/Acre |      |       |
|                           |                                                 |     | Log Scale Dia.   |                                    |        |        |                  | Log Length                    |      |                   |      | Ln<br>Ft | Bd<br>Ft | CF/<br>Lf |        |             |           |    |                      |      |       |
|                           |                                                 |     |                  |                                    |        |        |                  |                               |      | 4-5               | 6-11 | 12-16    | 17+      | 12-20     | 21-30  | 31-35       | 36-99     |    |                      |      |       |
| D                         | DO                                              | CU  |                  | 00.0                               | 852    |        |                  |                               |      |                   |      |          |          |           |        |             |           | 8  | 0.00                 | 3.9  |       |
| D                         | DO                                              | 2S  | 74               | 1.7                                | 27,296 | 26,822 | 107              |                               |      | 2                 | 33   | 65       |          | 1         | 1      | 19          | 78        | 37 | 442                  | 2.57 | 60.8  |
| D                         | DO                                              | 3S  | 22               | 2.7                                | 8,410  | 8,186  | 33               |                               |      | 84                | 7    | 9        |          | 1         | 17     | 35          | 46        | 33 | 88                   | 0.76 | 92.9  |
| D                         | DO                                              | 4S  | 4                |                                    | 1,198  | 1,198  | 5                |                               |      | 3                 | 97   |          |          | 22        | 73     | 5           |           | 23 | 28                   | 0.38 | 42.6  |
| D Totals                  |                                                 |     | 99               | 4.1                                | 37,756 | 36,206 | 145              |                               |      | 0                 | 24   | 26       | 50       | 2         | 7      | 22          | 69        | 32 | 181                  | 1.34 | 200.2 |
|                           |                                                 |     |                  |                                    |        |        |                  |                               |      |                   |      |          |          |           |        |             |           |    |                      |      |       |
| M                         | DO                                              | CU  |                  | 00.0                               | 24     |        |                  |                               |      |                   |      |          |          |           |        |             |           | 35 | 0.00                 | .5   |       |
| M                         | DO                                              | CR  | 100              | 19.7                               | 126    | 101    | 0                |                               |      | 100               |      |          |          | 29        | 31     | 41          |           | 21 | 31                   | 0.60 | 3.3   |
| M Totals                  |                                                 |     | 0                | 32.6                               | 150    | 101    | 0                |                               |      | 100               |      |          |          | 29        | 31     | 41          |           | 23 | 27                   | 0.48 | 3.7   |
|                           |                                                 |     |                  |                                    |        |        |                  |                               |      |                   |      |          |          |           |        |             |           |    |                      |      |       |
| H                         | DO                                              | CU  |                  | 00.0                               | 67     |        |                  |                               |      |                   |      |          |          |           |        |             |           | 6  | 0.00                 | 1.0  |       |
| H                         | DO                                              | 2S  | 78               |                                    | 191    | 191    | 1                |                               |      | 100               |      |          |          |           |        | 45          | 55        | 36 | 196                  | 1.35 | 1.0   |
| H                         | DO                                              | 3S  | 22               |                                    | 53     | 53     | 0                |                               |      | 100               |      |          |          |           |        | 51          | 49        | 35 | 54                   | 0.57 | 1.0   |
| H Totals                  |                                                 |     | 1                | 21.6                               | 311    | 244    | 1                |                               |      | 22                | 78   |          |          |           |        | 46          | 54        | 26 | 83                   | 0.89 | 2.9   |
|                           |                                                 |     |                  |                                    |        |        |                  |                               |      |                   |      |          |          |           |        |             |           |    |                      |      |       |
| Type Totals               |                                                 |     |                  | 4.4                                | 38,218 | 36,552 | 146              |                               |      | 0                 | 24   | 26       | 50       | 2         | 7      | 23          | 68        | 31 | 177                  | 1.33 | 206.9 |

|                                                                  |              |                          |               |                         |               |                 |               |               |              |
|------------------------------------------------------------------|--------------|--------------------------|---------------|-------------------------|---------------|-----------------|---------------|---------------|--------------|
| TC TSTATS                                                        |              |                          |               | <b>STATISTICS</b>       |               |                 |               | PAGE          | 1            |
|                                                                  |              |                          |               | <b>PROJECT DRAGBUST</b> |               | DATE 2/10/2015  |               |               |              |
| <b>TWP</b>                                                       | <b>RGE</b>   | <b>SECT</b>              | <b>TRACT</b>  | <b>TYPE</b>             | <b>ACRES</b>  | <b>PLOTS</b>    | <b>TREES</b>  | <b>CuFt</b>   | <b>BdFt</b>  |
| <b>05N</b>                                                       | <b>06W</b>   | <b>14</b>                | <b>AREA1</b>  | <b>00MC</b>             | 69.00         | 42              | 217           | 1             | W            |
|                                                                  |              |                          |               | TREES                   | ESTIMATED     | PERCENT         |               |               |              |
|                                                                  |              |                          |               | PER PLOT                | TOTAL         | SAMPLE          |               |               |              |
|                                                                  |              |                          |               |                         | TREES         | TREES           |               |               |              |
| TOTAL                                                            |              | 42                       | 217           | 5.2                     |               |                 |               |               |              |
| CRUISE                                                           |              | 14                       | 75            | 5.4                     | 7,196         |                 | 1.0           |               |              |
| DBH COUNT                                                        |              |                          |               |                         |               |                 |               |               |              |
| REFOREST                                                         |              |                          |               |                         |               |                 |               |               |              |
| COUNT                                                            |              | 28                       | 141           | 5.0                     |               |                 |               |               |              |
| BLANKS                                                           |              |                          |               |                         |               |                 |               |               |              |
| 100 %                                                            |              |                          |               |                         |               |                 |               |               |              |
| <b>STAND SUMMARY</b>                                             |              |                          |               |                         |               |                 |               |               |              |
|                                                                  | SAMPLE       | TREES                    | AVG           | BOLE                    | REL           | BASAL           | GROSS         | NET           | GROSS        |
|                                                                  | TREES        | /ACRE                    | DBH           | LEN                     | DEN           | AREA            | BF/AC         | BF/AC         | CF/AC        |
| DOUG FIR                                                         | 62           | 93.7                     | 19.2          | 68                      |               | 188.6           | 35,874        | 34,608        | 8,250        |
| DOUGLEAV                                                         | 4            | 2.2                      | 26.9          | 94                      |               | 8.6             | 1,811         | 1,591         | 399          |
| SNAG                                                             | 3            | 3.7                      | 13.7          | 70                      |               | 3.8             |               |               |              |
| BL MAPLE                                                         | 4            | 3.7                      | 13.7          | 23                      |               | 3.8             | 150           | 101           | 60           |
| WHEMLOCK                                                         | 2            | 1.0                      | 18.9          | 79                      |               | 1.9             | 311           | 244           | 79           |
| <b>TOTAL</b>                                                     | <b>75</b>    | <b>104.3</b>             | <b>19.1</b>   | <b>68</b>               |               | <b>206.7</b>    | <b>38,147</b> | <b>36,545</b> | <b>8,787</b> |
| CONFIDENCE LIMITS OF THE SAMPLE                                  |              |                          |               |                         |               |                 |               |               |              |
| 68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR |              |                          |               |                         |               |                 |               |               |              |
| CL: 68.1 %                                                       | COEFF        | <b>SAMPLE TREES - BF</b> |               |                         |               | # OF TREES REQ. |               | INF. POP.     |              |
| SD: 1.0                                                          | VAR.%        | S.E.%                    | LOW           | AVG                     | HIGH          | 5               | 10            | 15            |              |
| DOUG FIR                                                         | 93.6         | 11.9                     | 787           | 893                     | 999           |                 |               |               |              |
| DOUGLEAV                                                         | 74.6         | 42.6                     | 762           | 1,328                   | 1,893         |                 |               |               |              |
| SNAG                                                             |              |                          |               |                         |               |                 |               |               |              |
| BL MAPLE                                                         | 76.6         | 43.8                     | 14            | 25                      | 36            |                 |               |               |              |
| WHEMLOCK                                                         | 25.0         | 23.4                     | 195           | 255                     | 315           |                 |               |               |              |
| <b>TOTAL</b>                                                     | <b>102.7</b> | <b>11.8</b>              | <b>720</b>    | <b>817</b>              | <b>914</b>    | <b>421</b>      | <b>105</b>    | <b>47</b>     |              |
| CL: 68.1 %                                                       | COEFF        | <b>TREES/ACRE</b>        |               |                         |               | # OF PLOTS REQ. |               | INF. POP.     |              |
| SD: 1.0                                                          | VAR.%        | S.E.%                    | LOW           | AVG                     | HIGH          | 5               | 10            | 15            |              |
| DOUG FIR                                                         | 58.8         | 9.1                      | 85            | 94                      | 102           |                 |               |               |              |
| DOUGLEAV                                                         | 231.6        | 35.7                     | 1             | 2                       | 3             |                 |               |               |              |
| SNAG                                                             | 480.7        | 74.1                     | 1             | 4                       | 7             |                 |               |               |              |
| BL MAPLE                                                         | 568.3        | 87.6                     | 0             | 4                       | 7             |                 |               |               |              |
| WHEMLOCK                                                         | 648.1        | 99.9                     | 0             | 1                       | 2             |                 |               |               |              |
| <b>TOTAL</b>                                                     | <b>56.2</b>  | <b>8.7</b>               | <b>95</b>     | <b>104</b>              | <b>113</b>    | <b>126</b>      | <b>32</b>     | <b>14</b>     |              |
| CL: 68.1 %                                                       | COEFF        | <b>BASAL AREA/ACRE</b>   |               |                         |               | # OF PLOTS REQ. |               | INF. POP.     |              |
| SD: 1.0                                                          | VAR.%        | S.E.%                    | LOW           | AVG                     | HIGH          | 5               | 10            | 15            |              |
| DOUG FIR                                                         | 38.4         | 5.9                      | 177           | 189                     | 200           |                 |               |               |              |
| DOUGLEAV                                                         | 193.8        | 29.9                     | 6             | 9                       | 11            |                 |               |               |              |
| SNAG                                                             | 388.7        | 59.9                     | 2             | 4                       | 6             |                 |               |               |              |
| BL MAPLE                                                         | 508.6        | 78.4                     | 1             | 4                       | 7             |                 |               |               |              |
| WHEMLOCK                                                         | 648.1        | 99.9                     | 0             | 2                       | 4             |                 |               |               |              |
| <b>TOTAL</b>                                                     | <b>35.2</b>  | <b>5.4</b>               | <b>195</b>    | <b>207</b>              | <b>218</b>    | <b>50</b>       | <b>12</b>     | <b>6</b>      |              |
| CL: 68.1 %                                                       | COEFF        | <b>NET BF/ACRE</b>       |               |                         |               | # OF PLOTS REQ. |               | INF. POP.     |              |
| SD: 1.0                                                          | VAR.%        | S.E.%                    | LOW           | AVG                     | HIGH          | 5               | 10            | 15            |              |
| DOUG FIR                                                         | 39.8         | 6.1                      | 32,486        | 34,608                  | 36,730        |                 |               |               |              |
| DOUGLEAV                                                         | 197.0        | 30.4                     | 1,108         | 1,591                   | 2,074         |                 |               |               |              |
| SNAG                                                             |              |                          |               |                         |               |                 |               |               |              |
| BL MAPLE                                                         | 648.1        | 99.9                     | 0             | 101                     | 202           |                 |               |               |              |
| WHEMLOCK                                                         | 648.1        | 99.9                     | 0             | 244                     | 488           |                 |               |               |              |
| <b>TOTAL</b>                                                     | <b>37.5</b>  | <b>5.8</b>               | <b>34,432</b> | <b>36,545</b>           | <b>38,657</b> | <b>56</b>       | <b>14</b>     | <b>6</b>      |              |

| TC PSTATS                                                        |           |          |                | PROJECT STATISTICS |           |                |        | PAGE            | 1      |           |       |
|------------------------------------------------------------------|-----------|----------|----------------|--------------------|-----------|----------------|--------|-----------------|--------|-----------|-------|
|                                                                  |           |          |                | PROJECT            | DRAGBUST  | DATE 2/10/2015 |        |                 |        |           |       |
| TWP                                                              | RGE       | SC       | TRACT          | TYPE               | ACRES     | PLOTS          | TREES  | CuFt            | BdFt   |           |       |
| 05N<br>05N                                                       | 06<br>06W | 14<br>14 | AREA1<br>AREA1 | RW<br>TAKE         | 73.00     | 84             | 417    | 1               | W      |           |       |
|                                                                  |           |          |                |                    |           |                |        |                 |        |           |       |
|                                                                  |           |          |                | TREES              | ESTIMATED | PERCENT        |        |                 |        |           |       |
| PLOTS                                                            |           |          |                | TREES              | PER PLOT  | TREES          | SAMPLE |                 |        |           |       |
|                                                                  |           |          |                |                    |           |                | TREES  |                 |        |           |       |
| TOTAL                                                            |           |          | 84             | 417                | 5.0       |                |        |                 |        |           |       |
| CRUISE                                                           |           |          | 28             | 140                | 5.0       | 7,187          | 1.9    |                 |        |           |       |
| DBH COUNT                                                        |           |          |                |                    |           |                |        |                 |        |           |       |
| REFOREST                                                         |           |          |                |                    |           |                |        |                 |        |           |       |
| COUNT                                                            |           |          | 56             | 275                | 4.9       |                |        |                 |        |           |       |
| 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 |
| DOUG FIR                                                         |           |          | 128            | 93.7               | 19.2      | 69             | 189.0  | 35,977          | 34,696 | 8,272     | 8,156 |
| BL MAPLE                                                         |           |          | 8              | 3.7                | 13.7      | 23             | 3.8    | 150             | 101    | 60        | 42    |
| WHEMLOCK                                                         |           |          | 4              | 1.0                | 18.9      | 79             | 1.9    | 311             | 244    | 79        | 67    |
| TOTAL                                                            |           |          | 140            | 98.4               | 19.0      | 67             | 194.8  | 36,439          | 35,041 | 8,410     | 8,264 |
|                                                                  |           |          |                |                    |           |                |        |                 |        |           |       |
| 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                                                         |           | 92.3     | 8.2            | 833                | 907       | 981            |        |                 |        |           |       |
| BL MAPLE                                                         |           | 70.9     | 26.7           | 18                 | 25        | 32             |        |                 |        |           |       |
| WHEMLOCK                                                         |           | 20.4     | 11.6           | 225                | 255       | 285            |        |                 |        |           |       |
| TOTAL                                                            |           | 99.3     | 8.4            | 767                | 838       | 908            | 394    | 98              | 44     |           |       |
|                                                                  |           |          |                |                    |           |                |        |                 |        |           |       |
| 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                                                         |           | 118.8    | 12.9           | 82                 | 94        | 106            |        |                 |        |           |       |
| BL MAPLE                                                         |           | 761.7    | 83.0           | 1                  | 4         | 7              |        |                 |        |           |       |
| WHEMLOCK                                                         |           | 867.1    | 94.5           | 0                  | 1         | 2              |        |                 |        |           |       |
| TOTAL                                                            |           | 116.0    | 12.6           | 86                 | 98        | 111            | 537    | 134             | 60     |           |       |
|                                                                  |           |          |                |                    |           |                |        |                 |        |           |       |
| 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                                                         |           | 102.7    | 11.2           | 168                | 189       | 210            |        |                 |        |           |       |
| BL MAPLE                                                         |           | 682.8    | 74.4           | 1                  | 4         | 7              |        |                 |        |           |       |
| WHEMLOCK                                                         |           | 867.1    | 94.5           | 0                  | 2         | 4              |        |                 |        |           |       |
| TOTAL                                                            |           | 100.9    | 11.0           | 173                | 195       | 216            | 407    | 102             | 45     |           |       |
|                                                                  |           |          |                |                    |           |                |        |                 |        |           |       |
| 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                                                         |           | 103.6    | 11.3           | 30,779             | 34,696    | 38,613         |        |                 |        |           |       |
| BL MAPLE                                                         |           | 867.1    | 94.5           | 6                  | 101       | 197            |        |                 |        |           |       |
| WHEMLOCK                                                         |           | 867.1    | 94.5           | 13                 | 244       | 475            |        |                 |        |           |       |
| TOTAL                                                            |           | 103.0    | 11.2           | 31,107             | 35,041    | 38,976         | 424    | 106             | 47     |           |       |

| TC TSTATS                                                        |       |                   |       | STATISTICS |           |                |                 | PAGE  | 1         |       |
|------------------------------------------------------------------|-------|-------------------|-------|------------|-----------|----------------|-----------------|-------|-----------|-------|
|                                                                  |       |                   |       | PROJECT    | DRAGBUST  | DATE 2/10/2015 |                 |       |           |       |
| TWP                                                              | RGE   | SECT              | TRACT | TYPE       | ACRES     | PLOTS          | TREES           | CuFt  | BdFt      |       |
| 05N                                                              | 06W   | 14                | AREA1 | LEAV       | 69.00     | 42             | 13              | 1     | W         |       |
|                                                                  |       |                   |       |            |           |                |                 |       |           |       |
|                                                                  |       |                   |       | TREES      | ESTIMATED | PERCENT        |                 |       |           |       |
|                                                                  |       |                   |       | PER PLOT   | TOTAL     | SAMPLE         |                 |       |           |       |
|                                                                  |       |                   |       |            | TREES     | TREES          |                 |       |           |       |
| PLOTS                                                            |       | TREES             |       |            |           |                |                 |       |           |       |
| TOTAL                                                            |       | 42                | 13    | .3         |           |                |                 |       |           |       |
| CRUISE                                                           |       | 6                 | 7     | 1.2        |           | 409            | 1.7             |       |           |       |
| DBH COUNT                                                        |       |                   |       |            |           |                |                 |       |           |       |
| REFOREST                                                         |       |                   |       |            |           |                |                 |       |           |       |
| COUNT                                                            |       | 6                 | 6     | 1.0        |           |                |                 |       |           |       |
| BLANKS                                                           |       | 30                |       |            |           |                |                 |       |           |       |
| 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 |
| DOUGLEAV                                                         |       | 4                 | 2.2   | 26.9       | 94        | 8.6            | 1,811           | 1,591 | 399       | 379   |
| SNAG                                                             |       | 3                 | 3.7   | 13.7       | 70        | 3.8            |                 |       |           |       |
| TOTAL                                                            |       | 7                 | 5.9   | 19.6       | 79        | 12.4           | 1,811           | 1,591 | 399       | 379   |
| 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    |           |       |
| DOUGLEAV                                                         |       | 74.6              | 42.6  | 762        | 1,328     | 1,893          |                 |       |           |       |
| SNAG                                                             |       |                   |       |            |           |                |                 |       |           |       |
| TOTAL                                                            |       | 131.4             | 53.5  | 353        | 759       | 1,164          | 801             | 200   | 89        |       |
| CL: 68.1 %                                                       | COEFF | TREES/ACRE        |       |            |           |                | # OF PLOTS REQ. |       | INF. POP. |       |
| SD: 1.0                                                          | VAR.% | S.E.%             | LOW   | AVG        | HIGH      | 5 10           |                 | 15    |           |       |
| DOUGLEAV                                                         |       | 231.6             | 35.7  | 1          | 2         | 3              |                 |       |           |       |
| SNAG                                                             |       | 480.7             | 74.1  | 1          | 4         | 7              |                 |       |           |       |
| TOTAL                                                            |       | 307.9             | 47.5  | 3          | 6         | 9              | 3,786           | 947   | 421       |       |
| CL: 68.1 %                                                       | COEFF | BASAL AREA/ACRE   |       |            |           |                | # OF PLOTS REQ. |       | INF. POP. |       |
| SD: 1.0                                                          | VAR.% | S.E.%             | LOW   | AVG        | HIGH      | 5 10           |                 | 15    |           |       |
| DOUGLEAV                                                         |       | 193.8             | 29.9  | 6          | 9         | 11             |                 |       |           |       |
| SNAG                                                             |       | 388.7             | 59.9  | 2          | 4         | 6              |                 |       |           |       |
| TOTAL                                                            |       | 167.2             | 25.8  | 9          | 12        | 16             | 1,116           | 279   | 124       |       |
| CL: 68.1 %                                                       | COEFF | NET BF/ACRE       |       |            |           |                | # OF PLOTS REQ. |       | INF. POP. |       |
| SD: 1.0                                                          | VAR.% | S.E.%             | LOW   | AVG        | HIGH      | 5 10           |                 | 15    |           |       |
| DOUGLEAV                                                         |       | 197.0             | 30.4  | 1,108      | 1,591     | 2,074          |                 |       |           |       |
| SNAG                                                             |       |                   |       |            |           |                |                 |       |           |       |
| TOTAL                                                            |       | 197.0             | 30.4  | 1,108      | 1,591     | 2,074          | 1,549           | 387   | 172       |       |

| TC                                                    |   | PSTNDSUM |                 |           |                  |                |             |              |               |               |               | Stand Table Summary   |                       |        |             |       |           |  |  |  |  | Page<br>Date: |  | 1<br>2/10/2015 |  |
|-------------------------------------------------------|---|----------|-----------------|-----------|------------------|----------------|-------------|--------------|---------------|---------------|---------------|-----------------------|-----------------------|--------|-------------|-------|-----------|--|--|--|--|---------------|--|----------------|--|
| T05N R06W S14 TyRW 4.00<br>T05N R06W S14 TyTAKE 69.00 |   |          |                 |           | Project DRAGBUST |                |             |              |               |               |               |                       |                       |        | Time:       |       | 9:10:27AM |  |  |  |  |               |  |                |  |
|                                                       |   |          |                 |           | Acres 73.00      |                |             |              |               |               |               |                       |                       |        | Grown Year: |       |           |  |  |  |  |               |  |                |  |
| S<br>Spec                                             | T | DBH      | Sample<br>Trees | Tot       |                  | Trees/<br>Acre | BA/<br>Acre | Logs<br>Acre | Average Log   |               | Tons/<br>Acre | Net<br>Cu.Ft.<br>Acre | Net<br>Bd.Ft.<br>Acre | Totals |             |       |           |  |  |  |  |               |  |                |  |
|                                                       |   |          |                 | FF<br>16' | Av<br>Ht         |                |             |              | Net<br>Cu.Ft. | Net<br>Bd.Ft. |               |                       |                       | Tons   | Cunits      | MBF   |           |  |  |  |  |               |  |                |  |
| D                                                     |   | 9        | 2               | 86        | 54               | 6.878          | 3.04        | 6.88         | 9.0           | 30.0          |               | 62                    | 206                   |        |             | 45    | 15        |  |  |  |  |               |  |                |  |
| D                                                     |   | 10       | 6               | 88        | 75               | 16.713         | 9.12        | 22.28        | 10.3          | 37.5          |               | 228                   | 836                   |        |             | 167   | 61        |  |  |  |  |               |  |                |  |
| D                                                     |   | 11       | 6               | 87        | 90               | 13.812         | 9.12        | 18.42        | 14.5          | 52.5          |               | 267                   | 967                   |        |             | 195   | 71        |  |  |  |  |               |  |                |  |
| D                                                     |   | 13       | 2               | 85        | 113              | 3.296          | 3.04        | 6.59         | 17.5          | 60.0          |               | 115                   | 396                   |        |             | 84    | 29        |  |  |  |  |               |  |                |  |
| D                                                     |   | 14       | 2               | 87        | 80               | 2.842          | 3.04        | 5.68         | 16.5          | 50.0          |               | 94                    | 284                   |        |             | 68    | 21        |  |  |  |  |               |  |                |  |
| D                                                     |   | 15       | 2               | 86        | 116              | 2.476          | 3.04        | 4.95         | 26.0          | 105.0         |               | 129                   | 520                   |        |             | 94    | 38        |  |  |  |  |               |  |                |  |
| D                                                     |   | 16       | 2               | 86        | 96               | 2.176          | 3.04        | 4.35         | 26.0          | 95.0          |               | 113                   | 413                   |        |             | 83    | 30        |  |  |  |  |               |  |                |  |
| D                                                     |   | 17       | 5               | 83        | 127              | 3.959          | 6.24        | 11.88        | 24.6          | 89.8          |               | 292                   | 1,067                 |        |             | 213   | 78        |  |  |  |  |               |  |                |  |
| D                                                     |   | 18       | 8               | 86        | 101              | 6.878          | 12.15       | 15.47        | 30.8          | 107.8         |               | 476                   | 1,668                 |        |             | 348   | 122       |  |  |  |  |               |  |                |  |
| D                                                     |   | 19       | 8               | 87        | 92               | 6.173          | 12.15       | 13.89        | 32.2          | 114.4         |               | 448                   | 1,590                 |        |             | 327   | 116       |  |  |  |  |               |  |                |  |
| D                                                     |   | 20       | 2               | 85        | 113              | 1.393          | 3.04        | 4.18         | 31.3          | 113.3         |               | 131                   | 474                   |        |             | 96    | 35        |  |  |  |  |               |  |                |  |
| D                                                     |   | 21       | 8               | 88        | 113              | 5.053          | 12.15       | 13.90        | 39.1          | 157.3         |               | 543                   | 2,185                 |        |             | 397   | 160       |  |  |  |  |               |  |                |  |
| D                                                     |   | 22       | 2               | 83        | 113              | 1.151          | 3.04        | 3.45         | 37.3          | 133.3         |               | 129                   | 460                   |        |             | 94    | 34        |  |  |  |  |               |  |                |  |
| D                                                     |   | 23       | 6               | 87        | 111              | 3.159          | 9.12        | 7.37         | 47.7          | 195.7         |               | 352                   | 1,443                 |        |             | 257   | 105       |  |  |  |  |               |  |                |  |
| D                                                     |   | 24       | 2               | 85        | 140              | .967           | 3.04        | 2.90         | 54.0          | 210.0         |               | 157                   | 609                   |        |             | 114   | 44        |  |  |  |  |               |  |                |  |
| D                                                     |   | 25       | 2               | 86        | 105              | .891           | 3.04        | 1.78         | 67.0          | 240.0         |               | 119                   | 428                   |        |             | 87    | 31        |  |  |  |  |               |  |                |  |
| D                                                     |   | 26       | 8               | 86        | 119              | 3.296          | 12.15       | 9.07         | 61.3          | 254.5         |               | 555                   | 2,308                 |        |             | 405   | 168       |  |  |  |  |               |  |                |  |
| D                                                     |   | 27       | 6               | 87        | 128              | 2.293          | 9.12        | 6.88         | 65.2          | 274.4         |               | 449                   | 1,888                 |        |             | 327   | 138       |  |  |  |  |               |  |                |  |
| D                                                     |   | 28       | 2               | 86        | 140              | .711           | 3.04        | 2.13         | 74.0          | 320.0         |               | 158                   | 682                   |        |             | 115   | 50        |  |  |  |  |               |  |                |  |
| D                                                     |   | 29       | 2               | 86        | 140              | .662           | 3.04        | 1.99         | 79.3          | 340.0         |               | 158                   | 676                   |        |             | 115   | 49        |  |  |  |  |               |  |                |  |
| D                                                     |   | 30       | 2               | 86        | 146              | .619           | 3.04        | 1.86         | 90.0          | 416.7         |               | 167                   | 774                   |        |             | 122   | 56        |  |  |  |  |               |  |                |  |
| D                                                     |   | 31       | 2               | 88        | 133              | .580           | 3.04        | 1.74         | 88.7          | 403.3         |               | 154                   | 701                   |        |             | 113   | 51        |  |  |  |  |               |  |                |  |
| D                                                     |   | 32       | 6               | 84        | 139              | 1.632          | 9.12        | 4.90         | 94.8          | 445.6         |               | 464                   | 2,182                 |        |             | 339   | 159       |  |  |  |  |               |  |                |  |
| D                                                     |   | 33       | 5               | 87        | 149              | 1.051          | 6.24        | 3.15         | 106.3         | 508.0         |               | 335                   | 1,601                 |        |             | 245   | 117       |  |  |  |  |               |  |                |  |
| D                                                     |   | 34       | 2               | 88        | 113              | .482           | 3.04        | 1.45         | 93.3          | 483.3         |               | 135                   | 699                   |        |             | 99    | 51        |  |  |  |  |               |  |                |  |
| D                                                     |   | 36       | 8               | 84        | 138              | 1.719          | 12.15       | 5.16         | 111.2         | 540.8         |               | 573                   | 2,790                 |        |             | 419   | 204       |  |  |  |  |               |  |                |  |
| D                                                     |   | 38       | 2               | 88        | 146              | .386           | 3.04        | 1.16         | 144.0         | 763.3         |               | 167                   | 883                   |        |             | 122   | 64        |  |  |  |  |               |  |                |  |
| D                                                     |   | 39       | 4               | 87        | 119              | .733           | 6.08        | 2.20         | 128.2         | 650.0         |               | 282                   | 1,428                 |        |             | 206   | 104       |  |  |  |  |               |  |                |  |
| D                                                     |   | 40       | 3               | 85        | 146              | .367           | 3.20        | 1.10         | 157.1         | 726.1         |               | 173                   | 799                   |        |             | 126   | 58        |  |  |  |  |               |  |                |  |
| D                                                     |   | 41       | 2               | 87        | 148              | .331           | 3.04        | .99          | 165.3         | 853.3         |               | 164                   | 848                   |        |             | 120   | 62        |  |  |  |  |               |  |                |  |
| D                                                     |   | 42       | 2               | 86        | 117              | .316           | 3.04        | .95          | 145.0         | 716.7         |               | 137                   | 679                   |        |             | 100   | 50        |  |  |  |  |               |  |                |  |
| D                                                     |   | 43       | 1               | 82        | 153              | .016           | .16         | .05          | 179.3         | 783.3         |               | 9                     | 38                    |        |             | 6     | 3         |  |  |  |  |               |  |                |  |
| D                                                     |   | 47       | 2               | 86        | 153              | .252           | 3.04        | .76          | 155.0         | 813.3         |               | 117                   | 615                   |        |             | 86    | 45        |  |  |  |  |               |  |                |  |
| D                                                     |   | 48       | 2               | 85        | 126              | .242           | 3.04        | .73          | 202.0         | 1000.0        |               | 147                   | 725                   |        |             | 107   | 53        |  |  |  |  |               |  |                |  |
| D                                                     |   | 49       | 2               | 86        | 146              | .232           | 3.04        | .70          | 225.3         | 1196.7        |               | 157                   | 833                   |        |             | 115   | 61        |  |  |  |  |               |  |                |  |
| D                                                     |   | Totals   | 128             | 87        | 99               | 93.738         | 189.04      | 190.92       | 42.7          | 181.7         |               | 8,156                 | 34,696                |        |             | 5,954 | 2,533     |  |  |  |  |               |  |                |  |
| H                                                     |   | 18       | 2               | 86        | 94               | .539           | .95         | 1.08         | 29.0          | 105.0         |               | 31                    | 113                   |        |             | 23    | 8         |  |  |  |  |               |  |                |  |
| H                                                     |   | 20       | 2               | 85        | 102              | .437           | .95         | .87          | 40.5          | 150.0         |               | 35                    | 131                   |        |             | 26    | 10        |  |  |  |  |               |  |                |  |
| H                                                     |   | Totals   | 4               | 86        | 98               | .975           | 1.90        | 1.95         | 34.1          | 125.1         |               | 67                    | 244                   |        |             | 49    | 18        |  |  |  |  |               |  |                |  |
| M                                                     |   | 11       | 2               | 86        | 17               | 1.443          | .95         | 1.44         | 7.0           | 20.0          |               | 10                    | 29                    |        |             | 7     | 2         |  |  |  |  |               |  |                |  |
| M                                                     |   | 13       | 2               | 86        | 44               | 1.033          | .95         | 1.03         | 17.0          | 40.0          |               | 18                    | 41                    |        |             | 13    | 3         |  |  |  |  |               |  |                |  |
| M                                                     |   | 15       | 2               | 87        | 29               | .776           | .95         | .78          | 18.0          | 40.0          |               | 14                    | 31                    |        |             | 10    | 2         |  |  |  |  |               |  |                |  |
| M                                                     |   | 19       | 2               | 83        | 41               | .484           | .95         |              |               |               |               |                       |                       |        |             |       |           |  |  |  |  |               |  |                |  |
| M                                                     |   | Totals   | 8               | 86        | 30               | 3.736          | 3.81        | 3.25         | 12.8          | 31.1          |               | 42                    | 101                   |        |             | 30    | 7         |  |  |  |  |               |  |                |  |
| Totals                                                |   |          | 140             | 86        | 96               | 98.450         | 194.76      | 196.12       | 42.1          | 178.7         |               | 8,264                 | 35,041                |        |             | 6,033 | 2,558     |  |  |  |  |               |  |                |  |



| TC TSTNDSUM         |     |        |       | Stand Table Summary |                |             |              |             |               |                    |               |                |             |     |                |
|---------------------|-----|--------|-------|---------------------|----------------|-------------|--------------|-------------|---------------|--------------------|---------------|----------------|-------------|-----|----------------|
|                     |     |        |       | Project             |                | DRAGBUST    |              |             |               |                    |               |                |             |     |                |
| T05N R06W S14 TLEAV |     |        |       |                     |                |             |              |             |               | T05N R06W S14 TLEA |               |                |             |     |                |
| Twp                 | Rge | Sec    | Tract | Type                |                |             |              | Acres       | Plots         | Sample Trees       |               | Page:          | 1           |     |                |
| 05N                 | 06W | 14     | AREA1 | LEAV                |                |             |              | 69.00       | 42            | 7                  |               | Date:          | 02/10/20    |     |                |
|                     |     |        |       |                     |                |             |              |             |               |                    |               | Time:          | 9:09:54AM   |     |                |
| S<br>Spc            | T   | Sample |       | Av                  | Trees/<br>Acre | BA/<br>Acre | Logs<br>Acre | Average Log |               | Tons/<br>Acre      | Net           | Net            | T o t a l s |     |                |
|                     |     | DBH    | Trees | FF<br>16'           |                |             |              | Ht<br>Tot   | Net<br>Cu.Ft. |                    | Net<br>Bd.Ft. | Cu.Ft.<br>Acre |             |     | Bd.Ft.<br>Acre |
| DL                  |     | 17     | 1     | 89                  | 107            | 1.359       | 2.14         | 4.08        | 22.3          | 83.3               |               | 91             | 340         | 63  | 23             |
| DL                  |     | 33     | 1     | 76                  | 126            | .361        | 2.14         | 1.08        | 57.0          | 250.0              |               | 62             | 271         | 43  | 19             |
| DL                  |     | 40     | 1     | 83                  | 146            | .246        | 2.14         | .74         | 152.0         | 653.3              |               | 112            | 481         | 77  | 33             |
| DL                  |     | 43     | 1     | 83                  | 153            | .212        | 2.14         | .64         | 179.3         | 783.3              |               | 114            | 499         | 79  | 34             |
| DL                  |     | Totals | 4     | 86                  | 119            | 2.178       | 8.57         | 6.53        | 58.0          | 243.5              |               | 379            | 1,591       | 262 | 110            |
| SN                  |     | 10     | 1     | 85                  | 80             | 2.328       | 1.27         |             |               |                    |               |                |             |     |                |
| SN                  |     | 14     | 1     | 85                  | 60             | 1.188       | 1.27         |             |               |                    |               |                |             |     |                |
| SN                  |     | 32     | 1     | 86                  | 20             | .227        | 1.27         |             |               |                    |               |                |             |     |                |
| SN                  |     | Totals | 3     | 85                  | 70             | 3.743       | 3.81         |             |               |                    |               |                |             |     |                |
| Totals              |     |        | 7     | 85                  | 88             | 5.922       | 12.38        | 6.53        | 58.0          | 243.5              |               | 379            | 1,591       | 262 | 110            |

## Log Stock Table - MBF

T05N R06W S14 TyRW 4.00  
T05N R06W S14 TyTAKE 69.00

Project: DRAGBUST  
Acres 73.00

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| S<br>T<br>Spp | So<br>rt | Gr<br>de | Log<br>Len | Gross<br>MBF | Def<br>% | Net<br>MBF | %<br>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+ |
| M             | DO       | CU       | 35         | 2            | 100.0    |            |          |                                          |     |     |     |       |       |       |       |       |       |       |     |
| M             | DO       | CR       | 12         | 3            | 33.3     | 2          | 28.5     |                                          |     |     | 2   |       |       |       |       |       |       |       |     |
| M             | DO       | CR       | 24         | 2            |          | 2          | 30.7     |                                          |     |     | 2   |       |       |       |       |       |       |       |     |
| M             | DO       | CR       | 32         | 4            | 20.0     | 3          | 40.8     |                                          |     |     | 3   |       |       |       |       |       |       |       |     |
| M             | Totals   |          |            | 11           | 32.6     | 7          | .3       |                                          |     | 5   | 2   |       |       |       |       |       |       |       |     |
| D             | DO       | CU       | 6          | 12           | 100.0    |            |          |                                          |     |     |     |       |       |       |       |       |       |       |     |
| D             | DO       | CU       | 8          | 20           | 100.0    |            |          |                                          |     |     |     |       |       |       |       |       |       |       |     |
| D             | DO       | CU       | 10         | 1            | 100.0    |            |          |                                          |     |     |     |       |       |       |       |       |       |       |     |
| D             | DO       | CU       | 25         | 21           | 100.0    |            |          |                                          |     |     |     |       |       |       |       |       |       |       |     |
| D             | DO       | 2S       | 15         | 2            | 11.1     | 2          | .1       |                                          |     |     |     |       | 2     |       |       |       |       |       |     |
| D             | DO       | 2S       | 18         | 3            |          | 3          | .1       |                                          |     |     |     |       | 3     |       |       |       |       |       |     |
| D             | DO       | 2S       | 20         | 21           |          | 21         | .8       |                                          |     |     |     |       |       |       |       |       |       | 21    |     |
| D             | DO       | 2S       | 24         | 3            |          | 3          | .1       |                                          |     |     |     |       | 3     |       |       |       |       |       |     |
| D             | DO       | 2S       | 25         | 4            |          | 4          | .2       |                                          |     |     |     |       |       | 4     |       |       |       |       |     |
| D             | DO       | 2S       | 28         | 12           |          | 12         | .5       |                                          |     |     |     |       |       | 12    |       |       |       |       |     |
| D             | DO       | 2S       | 32         | 379          |          | 376        | 14.9     |                                          |     |     |     |       | 89    | 60    | 121   | 57    | 49    |       |     |
| D             | DO       | 2S       | 33         | 5            |          | 5          | .2       |                                          |     |     |     |       | 5     |       |       |       |       |       |     |
| D             | DO       | 2S       | 37         | 0            |          | 0          | .0       |                                          |     |     |     |       | 0     |       |       |       |       |       |     |
| D             | DO       | 2S       | 40         | 1,480        | 1.8      | 1,453      | 57.4     |                                          |     |     |     | 24    | 143   | 194   | 372   | 287   | 400   | 33    |     |
| D             | DO       | 3S       | 20         | 0            |          | 0          | .0       |                                          |     |     | 0   |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 21         | 3            |          | 3          | .1       |                                          |     |     |     | 3     |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 22         | 9            |          | 9          | .4       |                                          |     |     |     | 9     |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 23         | 4            |          | 4          | .1       |                                          |     |     |     | 4     |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 26         | 31           |          | 31         | 1.2      |                                          |     | 31  |     |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 27         | 10           |          | 10         | .4       |                                          |     |     | 10  |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 28         | 3            |          | 3          | .1       |                                          |     |     | 3   |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 29         | 7            |          | 7          | .3       |                                          |     |     | 3   | 4     |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 30         | 38           |          | 38         | 1.5      |                                          |     | 5   | 4   |       |       |       |       |       |       | 29    |     |
| D             | DO       | 3S       | 32         | 195          | 5.0      | 186        | 7.3      |                                          |     | 47  | 82  | 47    | 9     |       |       |       |       |       |     |
| D             | DO       | 3S       | 33         | 17           |          | 17         | .7       |                                          |     | 12  |     | 5     |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 35         | 6            |          | 6          | .2       |                                          |     | 6   |     |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 36         | 10           |          | 10         | .4       |                                          |     | 10  |     |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 37         | 5            |          | 5          | .2       |                                          |     |     | 5   |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 38         | 11           |          | 11         | .4       |                                          |     | 11  |     |       |       |       |       |       |       |       |     |
| D             | DO       | 3S       | 40         | 230          |          | 230        | 9.1      |                                          |     | 44  | 53  | 107   |       | 24    |       |       | 2     |       |     |
| D             | DO       | 4S       | 15         | 13           |          | 13         | .5       |                                          |     | 13  | 0   |       |       |       |       |       |       |       |     |

## Log Stock Table - MBF

T05N R06W S14 TyRW 4.00  
T05N R06W S14 TyTAKE 69.00

Project: DRAGBUST  
Acres 73.00

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| Spp   | S<br>T | So<br>rt    | Gr<br>de | Log<br>Len | Gross<br>MBF | Def<br>% | Net<br>MBF | %<br>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+ |
| D     |        | DO          | 4S       | 17         | 1            |          | 1          | .0       |                                          |     | 1   |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 20         | 4            |          | 4          | .2       |                                          |     | 4   |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 21         | 6            |          | 6          | .2       |                                          |     | 6   |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 22         | 0            |          | 0          | .0       |                                          | 0   |     |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 25         | 16           |          | 16         | .6       |                                          |     | 16  |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 27         | 3            |          | 3          | .1       |                                          |     | 3   |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 28         | 21           |          | 21         | .8       |                                          |     | 21  |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 30         | 16           |          | 16         | .6       |                                          |     | 16  |     |       |       |       |       |       |       |       |     |
| D     |        | DO          | 4S       | 31         | 5            |          | 5          | .2       |                                          |     | 5   |     |       |       |       |       |       |       |       |     |
| D     |        | Totals      |          |            | 2,626        | 3.6      | 2,533      | 99.0     |                                          | 0   | 250 | 160 | 203   | 254   | 294   | 494   | 345   | 450   | 83    |     |
| H     |        | DO          | CU       | 6          | 5            | 100.0    |            |          |                                          |     |     |     |       |       |       |       |       |       |       |     |
| H     |        | DO          | 2S       | 32         | 6            |          | 6          | 35.3     |                                          |     |     |     | 6     |       |       |       |       |       |       |     |
| H     |        | DO          | 2S       | 40         | 8            |          | 8          | 42.9     |                                          |     |     |     | 8     |       |       |       |       |       |       |     |
| H     |        | DO          | 3S       | 35         | 2            |          | 2          | 11.0     |                                          |     | 2   |     |       |       |       |       |       |       |       |     |
| H     |        | DO          | 3S       | 36         | 2            |          | 2          | 10.7     |                                          |     | 2   |     |       |       |       |       |       |       |       |     |
| H     |        | Totals      |          |            | 23           | 21.6     | 18         | .7       |                                          |     | 4   |     | 14    |       |       |       |       |       |       |     |
| Total |        | All Species |          |            | 2,660        | 3.8      | 2,558      | 100.0    |                                          | 0   | 259 | 162 | 203   | 268   | 294   | 494   | 345   | 450   | 83    |     |

## LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-15-07  
DRAGON BUSTER  
PORTIONS OF SECTIONS 14, 15, 22, & 23  
T5N, R6W, W.M., CLATSOP COUNTY, OREGON

| Approximate Net Acres | MC Acres |
|-----------------------|----------|
| Area 1 (MC)           | 69       |
| Area 2 (R/W)          | 4        |
| Total Sale Acreage    | 73       |

Approximate Scale: 1" = 1000'

