



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Devil Ray
Sale FG-341-2021-W00244-01

District: Forest Grove

Date: November 24, 2020

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$3,208,173.34	\$23,845.26	\$3,232,018.60
		Project Work:	(\$73,510.62)
		Advertised Value:	\$3,158,507.98



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District: Forest Grove

Date: November 24, 2020

Timber Description

Location:

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	21	0	98
Western Hemlock / Fir	23	0	98
Alder (Red)	14	0	95

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	4,191	1,554	0	5,745
Western Hemlock / Fir	77	21	0	98
Alder (Red)	0	0	113	113
Total	4,268	1,575	113	5,956

Comments: Pond Values Used: Local Pond Values, September 2020.

Noble fir and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
 $\$280.73/\text{MBF} = \$562.29/\text{MBF} - \$281.56/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$921.48/\text{MBF} = \$1,125/\text{MBF} - \$203.52/\text{MBF}$

BRANDING AND PAINTING COST ALLOWANCE = $\$2.00/\text{MBF}$

FUEL COST ALLOWANCE = $\$3.00/\text{Gallon}$

HAULING COST ALLOWANCE

Hauling costs equivalent to $\$950$ daily truck cost.

Other Costs (with Profit & Risk to be added): None

Other Costs (No Profit & Risk added):

Machine Time to Block/Waterbar Roads, and Skid Trails:

10 hours x $\$150/\text{hour} = \$1,500$

Machine Time to Pile Landing Slash and Sort Firewood:

20 hours x $\$150/\text{hour} = \$3,000$

Equipment Cleaning: 3 pieces x $\$1,000/\text{Piece} = \$3,000$

Slash Disposal: 30 acres x $\$200/\text{acre} = \$6,000$

TOTAL Other Costs (No Profit & Risk added) = $\$13,500$

ROAD MAINTENANCE

Normal Road Maintenance (includes move-in, grading, rolling, and spot rocking):

General Road Maintenance: 3.02 Miles X $\$3,116.56 = \$9,412.01$

TOTAL Road Maintenance: $\$9,412.01/5,956\text{MBF} = \$1.57/\text{MBF}$



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Logging Conditions

Combination#: 1

Douglas - Fir	67.13%
Western Hemlock / Fir	88.00%
Alder (Red)	74.37%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber

yarding distance: Long (1,500 ft) **downhill yarding:** No

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

loads / day: 10 **bd. ft / load:** 4800

cost / mbf: \$125.00

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

Combination#: 2

Douglas - Fir	32.87%
Western Hemlock / Fir	12.00%
Alder (Red)	25.63%

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

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

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

loads / day: 12 **bd. ft / load:** 4800

cost / mbf: \$57.77

machines: Shovel Logger



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Logging Costs

Operating Seasons: 2.00	Profit Risk: 15%
Project Costs: \$73,510.62	Other Costs (P/R): \$0.00
Slash Disposal: \$0.00	Other Costs: \$13,500.00

Miles of Road

Road Maintenance: \$1.57

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.8
Western Hemlock / Fir	\$0.00	2.0	4.0
Alder (Red)	\$0.00	2.0	3.0



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Devil Ray Sale FG-341-2021-W00244-01

District: Forest Grove

Date: November 24, 2020

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$102.90	\$1.60	\$1.47	\$67.29	\$0.00	\$25.99	\$0.00	\$2.00	\$2.27	\$203.52
Western Hemlock / Fir									
\$116.93	\$1.60	\$1.47	\$121.12	\$0.00	\$36.17	\$0.00	\$2.00	\$2.27	\$281.56
Alder (Red)									
\$107.77	\$1.65	\$1.47	\$166.25	\$0.00	\$41.57	\$0.00	\$2.00	\$2.27	\$322.98

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$757.16	\$553.64	\$0.00
Western Hemlock / Fir	\$0.00	\$562.29	\$280.73	\$0.00
Alder (Red)	\$0.00	\$534.00	\$211.02	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Devil Ray
Sale FG-341-2021-W00244-01

District: Forest Grove

Date: November 24, 2020

Summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	5,745	\$553.64	\$3,180,661.80
Western Hemlock / Fir	98	\$280.73	\$27,511.54
Alder (Red)	113	\$211.02	\$23,845.26

Gross Timber Sale Value

Recovery: \$3,232,018.60

Prepared By: Kenton Burns

Phone: 503-359-7477

TIMBER SALE SUMMARY
Devil Ray
#FG-341-2021-W00244-01

1. **Location:** Portions of Sections 34 & 35, T2N, R6W, W.M., and portions of Section 3, T1N, R6W, W.M., Tillamook County, Oregon.
2. **Type of Sale:** This timber sale is 186 acres of Modified Clearcut in three units. Unit 1 is 109 acres, Unit 2 is 18 acres, and Unit 3 is 59 acres. The timber will be sold on a recovery basis at a sealed bid auction.
3. **Revenue Distribution:** 100% BOF, 100% Tillamook County, Tax Code 56.
4. **Sale Acreage:** Acres are net of stream buffers and road prisms. Acreage was determined using ESRI ArcMap GIS software.
5. **Cruise:** The Timber Sale was cruised by ODF Cruisers Kenton Burns and Mark Savage in October and November of 2020. For more information, see Cruise Report.
6. **Timber Description:** The Timber Sale Area consists of three units of 64-year-old Douglas-fir timber, with minor amounts of red alder, western hemlock, noble fir and western red cedar.

The following table summarizes the ODF cruise estimates for trees to be harvested.

Sale Unit	Net Acres	Average DBH	Trees/Acre	Net MBF/Acre
Unit 1	109	21	63	29
Unit 2	18	20	89	38
Unit 3	59	19	108	38

7. **Topography and Logging Method:** Slopes within the Timber Sale Area range from 5% to 70% and are variable in aspect. Elevations range from 1,300 to 2,320 feet. The following table summarizes the estimated maximum and average horizontal cable corridor length, the estimated maximum and average tractor skid trail length, and the percent harvest method for each Sale Unit.

Sale Unit	Tractor			Cable		
	Average	Maximum	%	Average	Maximum	%
Unit 1	150	350	12	700	2,000	88
Unit 2	200	500	100	NA	NA	0
Unit 3	150	350	40	450	1,000	60

8. **Access:** All access to the Timber Sale Area is on surfaced all-weather roads. From Forest Grove travel north on Highway 8 to its junction with Highway 6. Turn left and continue west approximately 10.5 miles to Rutherford Road. Turn left and proceed 0.1 mile to the bottom of Unit 3 of the Timber Sale Area.
9. **Projects:**

Project No. 1: New Construction	\$25,734.97
Project No. 2: Road Improvement	\$33,271.07
Project No. 3: Gate Installation	\$8,106.97
Project No. 4: Road Maintenance	\$6,397.61
Total Credits:	\$73,510.62

PROJECT COST SUMMARY SHEET

Timber Sale: Devil Ray
Sale Number: FG-341-2020-W00244-01

PROJECT NO. 1: ROCKED ROAD CONSTRUCTION

	Road Segment	Length	Cost
	A to B	4+40	\$3,595.33
	C to D	4+70	\$4,095.29
	E to F	4+15	\$3,729.30
	G to H	13+20	\$12,473.98
		26+45 stations	
		0.50 miles	
Total Rock =	264 cy	1½" - 0	
	2,432 cy	3" - 0	
		Move-in =	\$1,841.08
		TOTAL PROJECT COST =	\$25,734.97

PROJECT NO. 2: ROAD IMPROVEMENT

	Road Segment	Length	Cost
	I to J	102+80	\$18,040.37
	K to L	13+20	\$1,325.64
	M to N	31+05	\$3,220.80
	O to P	20+65	\$2,484.50
	Q to R	18+80	\$5,819.54
		186+50 stations	
		3.53 miles	
Total Rock =	1,123 cy	1½" - 0	
	84 cy	3" - 0	
		Move-in =	\$2,380.21
		TOTAL PROJECT COST =	\$33,271.07

PROJECT NO. 3: GATE INSTALLATION

	Location	Gate Size	Cost
	Point S	20'	\$6,397.61
Total Rock =	36 cy	1½" - 0	
	12 cy	Boulders	
		Move-in =	\$492.95
		TOTAL PROJECT COST =	\$6,397.61

PROJECT NO. 4: PROJECT ROAD MAINTENANCE

	Move-in =	\$624.66
	TOTAL PROJECT COST =	\$8,106.97
	TOTAL CREDITS =	\$73,510.62

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: A to B

Sale Number: FG-341-2020-W00244-01
 Construction: 4+40 stations
0.08 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	0.51	ac @	\$1,078.00	per ac =	\$549.78
Balanced road construction	4.40	sta @	\$110.00	per sta =	\$484.00
70' Landing	1	ea @	\$157.00	per ea =	\$157.00
Grade, ditch, & roll	4.40	sta @	\$36.00	per sta =	\$158.40

TOTAL CONSTRUCTION COSTS = \$1,349.18

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	3" -0	\$1.21	\$4.15	\$1.22	286	\$1,881.78
Junction	3" -0	\$1.21	\$4.15	\$1.22	36	\$236.87
Landing	3" -0	\$1.21	\$4.15	\$1.22	180	\$1,184.34
Subtotal =					502	\$2,118.65

Totals	All Rock =	502
	3" -0 =	502

TOTAL ROCK COSTS = \$2,118.65

EROSION CONTROL

Grass seed & fertilizer	0.26	ac @	\$500.00	per ac =	\$127.50
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TOTAL EROSION CONTROL COSTS = \$127.50

TOTAL PROJECT COST = \$3,595.33

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: C to D

Sale Number: FG-341-2020-W00244-01
Construction: 4+70 stations
0.09 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	0.54	ac @	\$862.40	per ac =	\$465.70
Balanced road construction	3.00	sta @	\$110.00	per sta =	\$330.00
Drift	1.70	sta @	\$180.00	per sta =	\$306.00
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	4.70	sta @	\$36.00	per sta =	\$169.20

TOTAL CONSTRUCTION COSTS = \$1,584.90

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	3" -0	\$1.21	\$4.29	\$1.22	306	\$2,052.85
Junction	3" -0	\$1.21	\$4.29	\$1.22	48	\$322.54
Landing	3" -0	\$1.21	\$4.29	\$1.22	180	\$1,209.54
				Subtotal =	534	\$2,375.40

Totals

All Rock =	534
3" -0 =	534

TOTAL ROCK COSTS = \$2,375.40

EROSION CONTROL

Grass seed & fertilizer	0.27	ac @	\$500.00	per ac =	\$135.00
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TOTAL EROSION CONTROL COSTS = \$135.00

TOTAL PROJECT COST = \$4,095.29

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: E to F

Sale Number: FG-341-2020-W00244-01
Construction: 4+15 stations
0.08 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	0.48	ac @	\$1,078.00	per ac =	\$517.44
Balanced road construction	4.15	sta @	\$110.00	per sta =	\$456.50
Turnarounds	1	ea @	\$82.50	per ea =	\$82.50
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	4.15	sta @	\$36.00	per sta =	\$149.40

TOTAL CONSTRUCTION COSTS = \$1,519.84

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	3" -0	\$1.21	\$4.23	\$1.22	270	\$1,796.44
Junction	3" -0	\$1.21	\$4.23	\$1.22	24	\$159.83
Turnaround	3" -0	\$1.21	\$4.23	\$1.22	20	\$133.19
Landing	3" -0	\$1.21	\$4.23	\$1.22	180	\$1,198.74
				Subtotal =	494	\$2,089.46

Totals

All Rock =	494
3" -0 =	494

TOTAL ROCK COSTS = \$2,089.46

EROSION CONTROL

Grass seed & fertilizer	0.24	ac @	\$500.00	per ac =	\$120.00
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TOTAL EROSION CONTROL COSTS = \$120.00

TOTAL PROJECT COST = \$3,729.30

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: G to H

Sale Number: FG-341-2020-W00244-01
Construction: 13+20 stations
0.25 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	1.52	ac @	\$1,078.00	per ac =	\$1,638.56
Balanced road construction	4.30	sta @	\$110.00	per sta =	\$473.00
Drift	8.90	sta @	\$180.00	per sta =	\$1,602.00
Turnouts	1	ea @	\$66.00	per ea =	\$66.00
Turnarounds	1	ea @	\$82.50	per ea =	\$82.50
Roadside 50' landing	1	ea @	\$165.00	per ea =	\$165.00
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	13.20	sta @	\$36.00	per sta =	\$475.20

TOTAL CONSTRUCTION COSTS = \$4,816.26

CULVERTS

Culverts and Bands					
18" Diameter	30	LF @	\$20.00	per LF =	\$600.00
Markers & Stakes					
Culvert markers	1	ea @	\$10.00	per ea =	\$10.00

TOTAL CULVERT COSTS = \$610.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Base rock	3" -0	\$1.21	\$4.33	\$1.22	554	\$3,747.55
Traction rock	1½" - 0	\$1.21	\$4.33	\$1.22	264	\$1,784.55
Junction	3" -0	\$1.21	\$4.33	\$1.22	24	\$162.23
Turnout	3" -0	\$1.21	\$4.33	\$1.22	29	\$196.03
Turnaround	3" -0	\$1.21	\$4.33	\$1.22	20	\$135.19
Roadside landing	3" -0	\$1.21	\$4.33	\$1.22	95	\$642.17
Landing	3" -0	\$1.21	\$4.33	\$1.22	180	\$1,216.74
				Subtotal =	1,166	\$6,667.72

Totals

All Rock =	1,166
1½" - 0 =	264
3" - 0 =	902

TOTAL ROCK COSTS = \$6,667.72

EROSION CONTROL

Grass seed & fertilizer	0.76	ac @	\$500.00	per ac =	\$380.00
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TOTAL EROSION CONTROL COSTS = \$380.00

TOTAL PROJECT COST = \$12,473.98

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: I to J

Sale Number: FG-341-2020-W00244-01
Improvement: 102+80 stations
1.95 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	1.18	ac @	\$1,078.00	per acre =	\$1,272.04
Clean ditch & scatter waste material	102.80	sta @	\$60.00	per sta =	\$6,168.00
Clean culvert inlet & outlet, scatter waste	3	ea @	\$25.00	per ea =	\$75.00
Cutslope layback					
Excavate & load	200	cy @	\$1.90	per cy =	\$380.00
Haul	260	cy @	\$0.80	per cy =	\$208.00
Shape and compact waste material	260	cy @	\$0.30	per cy =	\$78.00
Construct Settling Ponds	2	ea @	\$25.00	per ea =	\$50.00
Improve Turnouts	14	ea @	\$33.00	per ea =	\$452.32
Grade, ditch, & roll	102.80	sta @	\$36.00	per sta =	\$3,700.80

TOTAL IMPROVEMENT COSTS = \$12,384.16

CULVERTS

Culverts and Bands					
18" Diameter	40	LF @	\$20.00	per LF =	\$800.00
Markers & Stakes					
Culvert Markers	5	ea @	\$10.00	per ea =	\$50.00

TOTAL CULVERT COSTS = \$850.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$1.21	\$4.50	\$0.50	24	\$149.03
				Subtotal =	24	\$149.03
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.89	\$1.22	500	\$3,659.82
Base Rock	3" - 0	\$1.21	\$4.89	\$1.22	42	\$307.43
Surfacing Rock	1½" - 0	\$1.21	\$4.89	\$1.22	60	\$439.18
				Subtotal =	602	\$4,406.43

Totals	All Rock =	626
	1½" - 0 =	584
	3" - 0 =	42

TOTAL ROCK COSTS = \$4,555.46

EROSION CONTROL

Grass seed & fertilizer	0.59	ac @	\$425.00	per ac =	\$250.75
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TOTAL EROSION CONTROL COSTS = \$250.75

TOTAL PROJECT COST = \$18,040.37

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: K to L

Sale Number: FG-341-2020-W00244-01
Improvement: 13+20 stations
0.25 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.16	ac @	\$1,078.00	per acre =	\$172.48
Grade, ditch, & roll	13.20	sta @	\$36.00	per sta =	\$475.20

TOTAL IMPROVEMENT COSTS = \$647.68

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.01	\$1.22	100	\$643.96
Subtotal =					100	\$643.96

Totals

All Rock =	100
1½" - 0 =	100

TOTAL ROCK COSTS = \$643.96

EROSION CONTROL

Grass seed & fertilizer	0.08	ac @	\$425.00	per ac =	\$34.00
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TOTAL EROSION CONTROL COSTS = \$34.00

TOTAL PROJECT COST = \$1,325.64

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: M to N

Sale Number: FG-341-2020-W00244-01
 Improvement: 31+05 stations
0.59 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.36	ac @	\$1,078.00	per acre =	\$388.08
Roadside brushing (light)	0.59	mi @	\$850.00	per mi =	\$499.86
Improve Turnouts	4	ea @	\$33.00	per ea =	\$136.62
Grade, ditch, & roll	31.05	sta @	\$36.00	per sta =	\$1,117.80

TOTAL IMPROVEMENT COSTS = \$2,142.36

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.25	\$1.22	150	\$1,001.95
				Subtotal =	150	\$1,001.95

Totals

All Rock =	150
1½" - 0 =	150

TOTAL ROCK COSTS = \$1,001.95

EROSION CONTROL

Grass seed & fertilizer	0.18	ac @	\$425.00	per ac =	\$76.50
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TOTAL EROSION CONTROL COSTS = \$76.50

TOTAL PROJECT COST = \$3,220.80

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: O to P

Sale Number: FG-341-2020-W00244-01
 Improvement: 20+65 stations
0.39 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.24	ac @	\$1,078.00	per acre =	\$258.72
Roadside brushing (light)	0.39	mi @	\$850.00	per mi =	\$332.43
Improve Turnouts	3	ea @	\$33.00	per ea =	\$99.00
Grade, ditch, & roll	20.65	sta @	\$36.00	per sta =	\$743.40

TOTAL IMPROVEMENT COSTS = \$1,433.55

CULVERTS

Markers & Stakes
 Culvert Markers 1 ea @ \$10.00 per ea = \$10.00

TOTAL CULVERT COSTS = \$10.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.17	\$1.22	150	\$989.95
				Subtotal =	150	\$989.95

Totals	All Rock =	150
	1½" - 0 =	150

TOTAL ROCK COSTS = \$989.95

EROSION CONTROL

Grass seed & fertilizer 0.12 ac @ \$425.00 per ac = \$51.00

TOTAL EROSION CONTROL COSTS = \$51.00

TOTAL PROJECT COST = \$2,484.50

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: Q to R

Sale Number: FG-341-2020-W00244-01
Improvement: 18+80 stations
0.36 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.22	ac @	\$1,078.00	per acre =	\$237.16
Roadside brushing (light)	0.34	mi @	\$850.00	per mi =	\$287.36
Cutslope layback					
Excavate & load	739	cy @	\$1.60	per cy =	\$1,182.22
Haul	961	cy @	\$1.10	per cy =	\$1,056.61
Shape and compact waste material	961	cy @	\$0.30	per cy =	\$288.17
Improve Turnouts	2	ea @	\$33.00	per ea =	\$66.00
Grade, ditch, & roll	18.80	sta @	\$36.00	per sta =	\$676.80

TOTAL IMPROVEMENT COSTS = \$3,794.32

CULVERTS

Culverts and Bands					
18" Diameter	40	LF @	\$20.00	per LF =	\$800.00
Markers & Stakes					
Culvert Markers	2	ea @	\$10.00	per ea =	\$20.00

TOTAL CULVERT COSTS = \$820.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$1.21	\$3.79	\$0.50	24	\$131.99
				Subtotal =	24	\$131.99
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$3.79	\$1.22	100	\$621.96
Base rock	3" - 0	\$1.21	\$3.79	\$1.22	42	\$261.23
Surfacing rock	1½" - 0	\$1.21	\$3.79	\$1.22	15	\$93.29
				Subtotal =	157	\$976.48

Totals

All Rock =	181
1½" - 0 =	139
3" - 0 =	42

TOTAL ROCK COSTS = \$1,108.48

EROSION CONTROL

Grass seed & fertilizer	0.11	ac @	\$425.00	per ac =	\$46.75
Straw Mulch Bale	5	ea @	\$10.00	per ea =	\$50.00

TOTAL EROSION CONTROL COSTS = \$96.75

TOTAL PROJECT COST = \$5,819.54

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: Point S

Sale Number: FG-341-2020-W00244-01

PROJECT NO. 3

GATE CONSTRUCTION

20' Gate, Metal, Paint and Shop Supplies	1	ea @	\$1,960.00	per ea =	\$1,960.00
Cutting, Welding and Painting	16.00	hr @	\$75.00	per hr =	\$1,200.00

GATE INSTALLATION

Equipment time, Labor & Welding	1	ea @	\$1,200.00	per ea =	\$1,200.00
Painting and Concrete	1	ea @	\$1,725.00	per ea =	\$1,725.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Blocking Boulders	36"-24"	\$2.01	\$3.78	\$1.60	12	\$88.71
Surfacing rock	1½" - 0	\$1.21	\$3.79	\$1.22	36	\$223.91
Subtotal =					48	\$312.61

Totals

All Rock =	48
Blocking Boulders =	12
1½" - 0 =	36

TOTAL ROCK COSTS = \$312.61

TOTAL PROJECT COST = \$6,397.61

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray

Sale Number: FG-341-2020-W00244-01

Maintenance 194+14 stations
3.68 miles

PROJECT NO. 4

ROAD MAINTENANCE

Grade, ditch, & roll 194.14 sta @ \$36.00 per sta = \$6,989.04

TOTAL IMPROVEMENT COSTS = \$6,989.04

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$3.16	\$1.22	200	\$1,117.93
				Subtotal =	200	\$1,117.93

Totals

All Rock =	200
1½" - 0 =	200

TOTAL ROCK COSTS = \$1,117.93

TOTAL PROJECT COST = \$8,106.97

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray

Sale Number: FG-341-2020-W00244-01

PROJECT No. 1, 2, 3 & 4 MOVE-IN & CLEANING COSTS

<u>Equipment</u>	<u>Total</u>
Brush Cutter	\$453.26
Grader	\$747.62
Roller (smooth/grid) & Compactor	\$453.26
Excavator (Large) - Equipment Cleaning	\$1,747.62
Dozer (Large) - Equipment Cleaning	\$1,792.20
Dump Truck (10cy +)	\$144.93
<u>TOTAL MOVE-IN COSTS =</u>	<u>\$5,338.89</u>

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Devil Ray
Sale Number: FG-341-2020-W00244-01
Stockpile Name: Beaverdam Stockpile & Quarry
1 1/2" - 0: 1,423 cy (truck measure)
3" - 0: 2,432 cy (truck measure)
Boulders: 12 Each
Total truck yardage: 3,867 cy

Move-in

Move in excavator					\$686.11
Move in loader					\$618.88
Move in Dump Trucks					\$288.57
				Subtotal =	\$1,593.56
				Per CY =	\$0.41/cy

Base Cost

Load dump truck	<u>\$0.80</u>	/ cy x	<u>3,855</u>	cy =	<u>\$3,083.72</u>
				Subtotal =	<u>\$3,083.72</u>
				Per CY =	<u>\$0.80</u>

Boulder Base Cost

Load dump truck	<u>\$1.60</u>	/ cy x	<u>12</u>	cy =	<u>\$19.20</u>
				Subtotal =	<u>\$19.20</u>
				Per CY =	<u>\$1.60</u>
				Total =	<u>\$4,677.28</u>

1 1/2"-0 Cost = \$1.21/cy
3"-0 Cost = \$1.21/cy
Boulder Cost = \$2.01/cy

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: A to B

Sale Number: FG-341-2020-W00244-01
Construction: 4+40 stations
0.08 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	0.51	ac @	\$1,078.00	per ac =	\$549.78
Balanced road construction	4.40	sta @	\$110.00	per sta =	\$484.00
70' Landing	1	ea @	\$157.00	per ea =	\$157.00
Grade, ditch, & roll	4.40	sta @	\$36.00	per sta =	\$158.40

TOTAL CONSTRUCTION COSTS = \$1,349.18

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	3" -0	\$1.21	\$4.15	\$1.22	286	\$1,881.78
Junction	3" -0	\$1.21	\$4.15	\$1.22	36	\$236.87
Landing	3" -0	\$1.21	\$4.15	\$1.22	180	\$1,184.34
Subtotal =					502	\$2,118.65

Totals	All Rock =	502
	3" -0 =	502

TOTAL ROCK COSTS = \$2,118.65

EROSION CONTROL

Grass seed & fertilizer	0.26	ac @	\$500.00	per ac =	\$127.50
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TOTAL EROSION CONTROL COSTS = \$127.50

TOTAL PROJECT COST = \$3,595.33

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: C to D

Sale Number: FG-341-2020-W00244-01
Construction: 4+70 stations
0.09 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	0.54	ac @	\$862.40	per ac =	\$465.70
Balanced road construction	3.00	sta @	\$110.00	per sta =	\$330.00
Drift	1.70	sta @	\$180.00	per sta =	\$306.00
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	4.70	sta @	\$36.00	per sta =	\$169.20

TOTAL CONSTRUCTION COSTS = \$1,584.90

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	3" -0	\$1.21	\$4.29	\$1.22	306	\$2,052.85
Junction	3" -0	\$1.21	\$4.29	\$1.22	48	\$322.54
Landing	3" -0	\$1.21	\$4.29	\$1.22	180	\$1,209.54
				Subtotal =	534	\$2,375.40

Totals

All Rock =	534
3" -0 =	534

TOTAL ROCK COSTS = \$2,375.40

EROSION CONTROL

Grass seed & fertilizer	0.27	ac @	\$500.00	per ac =	\$135.00
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TOTAL EROSION CONTROL COSTS = \$135.00

TOTAL PROJECT COST = \$4,095.29

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: E to F

Sale Number: FG-341-2020-W00244-01
Construction: 4+15 stations
0.08 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	0.48	ac @	\$1,078.00	per ac =	\$517.44
Balanced road construction	4.15	sta @	\$110.00	per sta =	\$456.50
Turnarounds	1	ea @	\$82.50	per ea =	\$82.50
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	4.15	sta @	\$36.00	per sta =	\$149.40

TOTAL CONSTRUCTION COSTS = \$1,519.84

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	3" -0	\$1.21	\$4.23	\$1.22	270	\$1,796.44
Junction	3" -0	\$1.21	\$4.23	\$1.22	24	\$159.83
Turnaround	3" -0	\$1.21	\$4.23	\$1.22	20	\$133.19
Landing	3" -0	\$1.21	\$4.23	\$1.22	180	\$1,198.74
Subtotal =					494	\$2,089.46

Totals

All Rock =	494
3" -0 =	494

TOTAL ROCK COSTS = \$2,089.46

EROSION CONTROL

Grass seed & fertilizer	0.24	ac @	\$500.00	per ac =	\$120.00
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TOTAL EROSION CONTROL COSTS = \$120.00

TOTAL PROJECT COST = \$3,729.30

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: G to H

Sale Number: FG-341-2020-W00244-01
Construction: 13+20 stations
0.25 miles

PROJECT NO. 1

CONSTRUCTION

Clearing & grubbing (scatter)	1.52	ac @	\$1,078.00	per ac =	\$1,638.56
Balanced road construction	4.30	sta @	\$110.00	per sta =	\$473.00
Drift	8.90	sta @	\$180.00	per sta =	\$1,602.00
Turnouts	1	ea @	\$66.00	per ea =	\$66.00
Turnarounds	1	ea @	\$82.50	per ea =	\$82.50
Roadside 50' landing	1	ea @	\$165.00	per ea =	\$165.00
70' Landing	1	ea @	\$314.00	per ea =	\$314.00
Grade, ditch, & roll	13.20	sta @	\$36.00	per sta =	\$475.20

TOTAL CONSTRUCTION COSTS = \$4,816.26

CULVERTS

Culverts and Bands					
18" Diameter	30	LF @	\$20.00	per LF =	\$600.00
Markers & Stakes					
Culvert markers	1	ea @	\$10.00	per ea =	\$10.00

TOTAL CULVERT COSTS = \$610.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Base rock	3" -0	\$1.21	\$4.33	\$1.22	554	\$3,747.55
Traction rock	1½" - 0	\$1.21	\$4.33	\$1.22	264	\$1,784.55
Junction	3" -0	\$1.21	\$4.33	\$1.22	24	\$162.23
Turnout	3" -0	\$1.21	\$4.33	\$1.22	29	\$196.03
Turnaround	3" -0	\$1.21	\$4.33	\$1.22	20	\$135.19
Roadside landing	3" -0	\$1.21	\$4.33	\$1.22	95	\$642.17
Landing	3" -0	\$1.21	\$4.33	\$1.22	180	\$1,216.74
				Subtotal =	1,166	\$6,667.72

Totals

All Rock =	1,166
1½" - 0 =	264
3" - 0 =	902

TOTAL ROCK COSTS = \$6,667.72

EROSION CONTROL

Grass seed & fertilizer	0.76	ac @	\$500.00	per ac =	\$380.00
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TOTAL EROSION CONTROL COSTS = \$380.00

TOTAL PROJECT COST = \$12,473.98

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: I to J

Sale Number: FG-341-2020-W00244-01
Improvement: 102+80 stations
1.95 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	1.18	ac @	\$1,078.00	per acre =	\$1,272.04
Clean ditch & scatter waste material	102.80	sta @	\$60.00	per sta =	\$6,168.00
Clean culvert inlet & outlet, scatter waste	3	ea @	\$25.00	per ea =	\$75.00
Cutslope layback					
Excavate & load	200	cy @	\$1.90	per cy =	\$380.00
Haul	260	cy @	\$0.80	per cy =	\$208.00
Shape and compact waste material	260	cy @	\$0.30	per cy =	\$78.00
Construct Settling Ponds	2	ea @	\$25.00	per ea =	\$50.00
Improve Turnouts	14	ea @	\$33.00	per ea =	\$452.32
Grade, ditch, & roll	102.80	sta @	\$36.00	per sta =	\$3,700.80

TOTAL IMPROVEMENT COSTS = \$12,384.16

CULVERTS

Culverts and Bands					
18" Diameter	40	LF @	\$20.00	per LF =	\$800.00
Markers & Stakes					
Culvert Markers	5	ea @	\$10.00	per ea =	\$50.00

TOTAL CULVERT COSTS = \$850.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$1.21	\$4.50	\$0.50	24	\$149.03
				Subtotal =	24	\$149.03
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.89	\$1.22	500	\$3,659.82
Base Rock	3" - 0	\$1.21	\$4.89	\$1.22	42	\$307.43
Surfacing Rock	1½" - 0	\$1.21	\$4.89	\$1.22	60	\$439.18
				Subtotal =	602	\$4,406.43

Totals	All Rock =	626
	1½" - 0 =	584
	3" - 0 =	42

TOTAL ROCK COSTS = \$4,555.46

EROSION CONTROL

Grass seed & fertilizer	0.59	ac @	\$425.00	per ac =	\$250.75
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TOTAL EROSION CONTROL COSTS = \$250.75

TOTAL PROJECT COST = \$18,040.37

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: K to L

Sale Number: FG-341-2020-W00244-01
 Improvement: 13+20 stations
0.25 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter) 0.16 ac @ \$1,078.00 per acre = \$172.48
 Grade, ditch, & roll 13.20 sta @ \$36.00 per sta = \$475.20

TOTAL IMPROVEMENT COSTS = \$647.68

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.01	\$1.22	100	\$643.96
				Subtotal =	100	\$643.96

Totals

All Rock =	100
1½" - 0 =	100

TOTAL ROCK COSTS = \$643.96

EROSION CONTROL

Grass seed & fertilizer 0.08 ac @ \$425.00 per ac = \$34.00

TOTAL EROSION CONTROL COSTS = \$34.00

TOTAL PROJECT COST = \$1,325.64

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: M to N

Sale Number: FG-341-2020-W00244-01
 Improvement: 31+05 stations
0.59 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.36	ac @	\$1,078.00	per acre =	\$388.08
Roadside brushing (light)	0.59	mi @	\$850.00	per mi =	\$499.86
Improve Turnouts	4	ea @	\$33.00	per ea =	\$136.62
Grade, ditch, & roll	31.05	sta @	\$36.00	per sta =	\$1,117.80

TOTAL IMPROVEMENT COSTS = \$2,142.36

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.25	\$1.22	150	\$1,001.95
Subtotal =					150	\$1,001.95

Totals

All Rock =	150
1½" - 0 =	150

TOTAL ROCK COSTS = \$1,001.95

EROSION CONTROL

Grass seed & fertilizer	0.18	ac @	\$425.00	per ac =	\$76.50
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TOTAL EROSION CONTROL COSTS = \$76.50

TOTAL PROJECT COST = \$3,220.80

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: O to P

Sale Number: FG-341-2020-W00244-01
Improvement: 20+65 stations
0.39 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.24	ac @	\$1,078.00	per acre =	\$258.72
Roadside brushing (light)	0.39	mi @	\$850.00	per mi =	\$332.43
Improve Turnouts	3	ea @	\$33.00	per ea =	\$99.00
Grade, ditch, & roll	20.65	sta @	\$36.00	per sta =	\$743.40

TOTAL IMPROVEMENT COSTS = \$1,433.55

CULVERTS

Markers & Stakes
Culvert Markers 1 ea @ \$10.00 per ea = \$10.00

TOTAL CULVERT COSTS = \$10.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$4.17	\$1.22	150	\$989.95
				Subtotal =	150	\$989.95

Totals	All Rock =	150
	1½" - 0 =	150

TOTAL ROCK COSTS = \$989.95

EROSION CONTROL

Grass seed & fertilizer 0.12 ac @ \$425.00 per ac = \$51.00

TOTAL EROSION CONTROL COSTS = \$51.00

TOTAL PROJECT COST = \$2,484.50

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
Road Segment: Q to R

Sale Number: FG-341-2020-W00244-01
Improvement: 18+80 stations
0.36 miles

PROJECT NO. 2

IMPROVEMENT

Clearing & grubbing (scatter)	0.22	ac @	\$1,078.00	per acre =	\$237.16
Roadside brushing (light)	0.34	mi @	\$850.00	per mi =	\$287.36
Cutslope layback					
Excavate & load	739	cy @	\$1.60	per cy =	\$1,182.22
Haul	961	cy @	\$1.10	per cy =	\$1,056.61
Shape and compact waste material	961	cy @	\$0.30	per cy =	\$288.17
Improve Turnouts	2	ea @	\$33.00	per ea =	\$66.00
Grade, ditch, & roll	18.80	sta @	\$36.00	per sta =	\$676.80

TOTAL IMPROVEMENT COSTS = \$3,794.32

CULVERTS

Culverts and Bands					
18" Diameter	40	LF @	\$20.00	per LF =	\$800.00
Markers & Stakes					
Culvert Markers	2	ea @	\$10.00	per ea =	\$20.00

TOTAL CULVERT COSTS = \$820.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$1.21	\$3.79	\$0.50	24	\$131.99
				Subtotal =	24	\$131.99
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$3.79	\$1.22	100	\$621.96
Base rock	3" - 0	\$1.21	\$3.79	\$1.22	42	\$261.23
Surfacing rock	1½" - 0	\$1.21	\$3.79	\$1.22	15	\$93.29
				Subtotal =	157	\$976.48

Totals

All Rock =	181
1½" - 0 =	139
3" - 0 =	42

TOTAL ROCK COSTS = \$1,108.48

EROSION CONTROL

Grass seed & fertilizer	0.11	ac @	\$425.00	per ac =	\$46.75
Straw Mulch Bale	5	ea @	\$10.00	per ea =	\$50.00

TOTAL EROSION CONTROL COSTS = \$96.75

TOTAL PROJECT COST = \$5,819.54

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray
 Road Segment: Point S

Sale Number: FG-341-2020-W00244-01

PROJECT NO. 3

GATE CONSTRUCTION

20' Gate, Metal, Paint and Shop Supplies	1	ea @	\$1,960.00	per ea =	\$1,960.00
Cutting, Welding and Painting	16.00	hr @	\$75.00	per hr =	\$1,200.00

GATE INSTALLATION

Equipment time, Labor & Welding	1	ea @	\$1,200.00	per ea =	\$1,200.00
Painting and Concrete	1	ea @	\$1,725.00	per ea =	\$1,725.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Blocking Boulders	36"-24"	\$2.01	\$3.78	\$1.60	12	\$88.71
Surfacing rock	1½" - 0	\$1.21	\$3.79	\$1.22	36	\$223.91
Subtotal =					48	\$312.61

Totals

All Rock =	48
Blocking Boulders =	12
1½" - 0 =	36

TOTAL ROCK COSTS = \$312.61

TOTAL PROJECT COST = **\$6,397.61**

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray

Sale Number: FG-341-2020-W00244-01

Maintenance 194+14 stations
3.68 miles

PROJECT NO. 4

ROAD MAINTENANCE

Grade, ditch, & roll 194.14 sta @ \$36.00 per sta = \$6,989.04

TOTAL IMPROVEMENT COSTS = \$6,989.04

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	1½" - 0	\$1.21	\$3.16	\$1.22	200	\$1,117.93
				Subtotal =	200	\$1,117.93

Totals

All Rock =	200
1½" - 0 =	200

TOTAL ROCK COSTS = \$1,117.93

TOTAL PROJECT COST = \$8,106.97

SUMMARY OF CONSTRUCTION COST

Timber Sale: Devil Ray

Sale Number: FG-341-2020-W00244-01

PROJECT No. 1, 2, 3 & 4 MOVE-IN & CLEANING COSTS

<u>Equipment</u>	<u>Total</u>
Brush Cutter	\$453.26
Grader	\$747.62
Roller (smooth/grid) & Compactor	\$453.26
Excavator (Large) - Equipment Cleaning	\$1,747.62
Dozer (Large) - Equipment Cleaning	\$1,792.20
Dump Truck (10cy +)	\$144.93
<u>TOTAL MOVE-IN COSTS =</u>	<u>\$5,338.89</u>

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Devil Ray
Sale Number: FG-341-2020-W00244-01
Stockpile Name: Beaverdam Stockpile & Quarry
1 1/2" - 0: 1,423 cy (truck measure)
3" - 0: 2,432 cy (truck measure)
Boulders: 12 Each
Total truck yardage: 3,867 cy

Move-in

Move in excavator					\$686.11
Move in loader					\$618.88
Move in Dump Trucks					\$288.57
				Subtotal =	\$1,593.56
				Per CY =	\$0.41/cy

Base Cost

Load dump truck	\$0.80	/ cy x	3,855	cy =	\$3,083.72
				Subtotal =	\$3,083.72
				Per CY =	\$0.80

Boulder Base Cost

Load dump truck	\$1.60	/ cy x	12	cy =	\$19.20
				Subtotal =	\$19.20
				Per CY =	\$1.60
				Total =	\$4,677.28

1 1/2"-0 Cost = \$1.21/cy
3"-0 Cost = \$1.21/cy
Boulder Cost = \$2.01/cy

CRUISE REPORT
Devil Ray
#FG-341-2021-W00244-01

1. LOCATION: Portions of Sections 34 & 35, T2N, R6W, W.M., and portions of Section 3, T1N, R6W, W.M., Tillamook County, Oregon.

2. CRUISE DESIGN: Pre-cruise evaluation indicated that the stand's average DBH is approximately 17 inches with a Coefficient of Variation of about 57%. For sales of this size and approximate value, ODF cruise standards require a Sampling Error of 9% at a 68% confidence level, and a minimum sample size of 100 graded trees. Statistical analysis indicated that 40 variable radius plots utilizing a 40 BAF prism would produce an adequate sample size.

3. SAMPLING METHOD: The Timber Sale Area was cruised in October and November of 2020. Unit 1 had 22 plots laid out on a 7 chain X 5 chain grid. Unit 2 had 5 plots laid out on a 5 chain x 5 chain grid. Unit 3 had 13 plots laid out on a 5 chain x 7 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

4. CRUISE RESULTS: 179 trees were measured and graded producing a cumulative Sampling Error of 7.1% on the Basal Area and 7.7% on the Board Foot Volume.

5. TREE MEASUREMENT AND GRADING: All sample trees were measured and graded following Columbia River Log Scale grade rules and favored 40 foot segments.

- a) **Height Standards:** Total tree heights were measured to the nearest foot. For conifers, bole heights were calculated to a six inch top. For hardwoods, bole heights were calculated to a seven inch top.
- b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.
- c) **Form Factors:** Measured for each grade tree using a form point of 16 feet.

6. DATA PROCESSING:

- a) **Volumes and Statistics:** Cruise estimates and sampling statistics, were derived from Super Ace 2008 cruise software.
- b) **Deductions:** For conifers, two percent of the volume was subtracted from the computed volumes to account for hidden defect and breakage. For hardwoods, five percent of the volume was subtracted from the computed volumes to account for hidden defect and breakage.

7. CRUISERS: The sale was cruised by ODF cruisers Kenton Burns and Mark Savage.

Prepared by:	<u>Kenton Burns</u>	<u>11-16-2020</u>
	Name	Date

Reviewed by:	<u>Mark Savage</u>	<u>11-24-2020</u>
	Name	Date

TC PSTATS			PROJECT STATISTICS					PAGE	1			
			PROJECT		DEVRAV			DATE	11/10/2020			
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
T1N	R6	03	00U1	00MC		186.00	40	179	S	W		
T1N	R6W	03	00U2	00MC								
T1N	R6W	03	00U3	00MC								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			40	179	4.5							
CRUISE			40	179	4.5	14,872	1.2					
DBH COUNT												
REFOREST												
COUNT												
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			165	69.2	20.8	119	35.7	162.8	31,667	31,508	7,026	7,026
R ALDER			9	9.1	13.5	75	2.5	9.1	640	640	195	195
WHEMLOCK			3	1.1	22.6	98	0.7	3.2	541	541	128	128
WR CEDAR			1	.4	22.0	80	0.2	1.1	93	93	34	34
NOB FIR			1	.2	35.0	131	0.2	1.1	231	231	47	47
TOTAL			179	80.0	20.2	113	39.5	177.2	33,173	33,013	7,432	7,432
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			62.1	4.8	605	636	667					
R ALDER			69.0	24.4	61	81	101					
WHEMLOCK			52.5	36.3	365	573	781					
WR CEDAR												
NOB FIR												
TOTAL			66.5	5.0	579	609	640	177	44	20		
CL	68.1	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
DOUG FIR			55.8	4.3	133	139	145					
R ALDER			57.3	20.2	19	24	29					
WHEMLOCK			50.0	34.6	88	135	181					
WR CEDAR												
NOB FIR												
TOTAL			59.8	4.5	127	133	139	143	36	16		
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			59.3	9.4	63	69	76					
R ALDER			457.3	72.2	3	9	16					
WHEMLOCK			387.5	61.2	0	1	2					
WR CEDAR			632.5	99.9	0	0	1					
NOB FIR			632.5	99.9	0	0	0					
TOTAL			63.9	10.1	72	80	88	163	41	18		
CL	68.1	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
DOUG FIR			50.2	7.9	150	163	176					
R ALDER			422.5	66.7	3	9	15					
WHEMLOCK			355.7	56.2	1	3	5					
WR CEDAR			632.5	99.9	0	1	2					
NOB FIR			632.5	99.9	0	1	2					
TOTAL			44.9	7.1	165	177	190	81	20	9		

PROJECT STATISTICS

PROJECT DEVRAY

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
TIN	R6	03	00U1	00MC	186.00	40	179	S	W
TIN	R6W	03	00U2	00MC					
TIN	R6W	03	00U3	00MC					

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		53.1	8.4	28,866	31,508	34,150			
R ALDER		350.9	55.4	285	640	995			
WHEMLOCK		362.0	57.2	232	541	850			
WR CEDAR		632.5	99.9	0	93	186			
NOB FIR		632.5	99.9	0	231	462			
TOTAL		49.0	7.7	30,460	33,013	35,567	96	24	11

CL	68.1	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		52.2	8.2	6,447	7,026	7,605			
R ALDER		387.1	61.2	76	195	315			
WHEMLOCK		357.6	56.5	56	128	201			
WR CEDAR		632.5	99.9	0	34	69			
NOB FIR		632.5	99.9	0	47	94			
TOTAL		47.0	7.4	6,881	7,432	7,983	88	22	10

TC PSCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
<div>TT1N RR6W S03 Ty00MC109.00</div> <div>TT1N RR6W S03 Ty00MC18.00</div> <div>TT1N RR6W S03 Ty00MC59.00</div>						Project: DEVRAY						Page 1									
						Acres 186.00						Date 11/10/2020									
												Time 1:14:02PM									
Spp	So Gr	%	Bd. Ft. per Acre			Total	Percent of Net Board Foot Volume								Average Log				Logs		
							Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/			
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						Ft	In
DF	CU																12	14		0.00	5.1
DF	2M	72	.5	23,108	22,985	4,275			50	50	0	0	1	98	40	15	380	1.97		60.6	
DF	3M	25	.5	7,713	7,677	1,428		100			0	1	4	95	39	8	100	0.69		76.5	
DF	4M	3		846	846	157		100			39	61			19	6	23	0.35		36.4	
DF	Totals	95	.5	31,667	31,508	5,860		27	36	37	1	2	2	95	34	10	176	1.14		178.6	
WH	2M	78		426	426	79			28	72				100	40	15	371	1.98		1.1	
WH	3M	16		86	86	16		100						100	39	10	159	1.22		.5	
WH	4M	6		29	29	5		100			38	62			21	6	25	0.47		1.1	
WH	Totals	2		541	541	101		21	22	56	2	3		95	32	11	190	1.41		2.8	
RC	2M	86		81	81	15			100					100	40	12	200	1.84		.4	
RC	4M	14		12	12	2		100				100			24	6	30	0.49		.4	
RC	Totals	0		93	93	17		13	87			13		87	32	9	115	1.33		.8	
RA	CU														17	8		0.00		2.1	
RA	R	100		640	640	119		81	19		6		21	73	27	8	58	0.64		11.1	
RA	Totals	2		640	640	119		81	19		6		21	73	26	8	49	0.57		13.2	
NF	CU														6	18		0.00		.2	
NF	2M	94		218	218	41			100			26		74	32	22	685	4.03		.3	
NF	3M	6		13	13	2		100						100	36	8	80	1.06		.2	
NF	Totals	1		231	231	43		6		94		25		75	27	17	362	2.79		.6	
Totals			0.5	33,173	33,013	6,140		28	36	37	1	2	2	94	34	10	168	1.12		196.1	

TC		PSTNDSUM										Stand Table Summary										Page Date:		1 11/10/2020									
TT1N RR6W S03 Ty00MC					109.00					Project										DEVRAY										Time:		1:14:03PM	
TT1N RR6W S03 Ty00MC					18.00					Acres										186.00										Grown Year:			
TT1N RR6W S03 Ty00MC					59.00																												
S Spc	T	Sample		Tot					Average Log		Net		Net		T o t a l s																		
		DBH	Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF																	
DF	11	1	85	63	1.615	1.07	1.61	13.4	60.0	.61	22	97	114	40	18																		
DF	12	1	82	89	1.357	1.07	2.71	11.4	40.0	.88	31	109	164	57	20																		
DF	13	6	85	90	6.231	5.74	11.62	14.2	55.9	4.71	165	650	877	308	121																		
DF	14	6	87	101	5.268	5.63	10.54	17.8	76.1	5.34	187	802	994	349	149																		
DF	15	2	87	92	1.499	1.84	2.13	17.4	74.4	1.06	37	159	197	69	29																		
DF	16	8	87	112	5.512	7.70	11.02	25.3	107.4	7.96	279	1,183	1,481	520	220																		
DF	17	8	88	118	5.053	7.96	12.02	26.5	110.7	9.09	319	1,331	1,690	593	247																		
DF	18	10	88	121	5.561	9.83	13.93	28.9	118.6	11.47	403	1,653	2,134	749	307																		
DF	19	7	87	121	3.652	7.19	9.92	30.0	123.4	8.48	298	1,224	1,578	554	228																		
DF	20	5	88	119	2.267	4.95	5.87	35.1	148.5	5.87	206	871	1,091	383	162																		
DF	21	9	88	121	3.754	9.03	10.86	35.0	149.2	10.84	380	1,620	2,016	707	301																		
DF	22	11	88	127	4.084	10.78	12.25	39.4	179.5	13.76	483	2,199	2,560	898	409																		
DF	23	14	89	131	4.572	13.19	12.61	46.6	213.8	16.75	588	2,696	3,116	1,093	501																		
DF	24	6	88	129	1.793	5.63	5.38	48.0	213.8	7.35	258	1,150	1,367	480	214																		
DF	25	17	87	137	5.156	17.58	15.16	54.6	248.9	23.60	828	3,773	4,390	1,540	702																		
DF	26	9	88	141	2.528	9.32	7.58	57.7	271.9	12.48	438	2,062	2,322	815	384																		
DF	27	9	87	141	2.249	8.94	6.75	64.4	295.0	12.38	434	1,990	2,303	808	370																		
DF	28	8	85	140	1.821	7.79	5.46	68.5	312.4	10.67	374	1,706	1,984	696	317																		
DF	29	8	85	135	1.780	8.17	5.34	68.9	315.4	10.49	368	1,685	1,950	684	313																		
DF	30	5	86	147	.948	4.66	3.06	76.2	370.6	6.65	233	1,135	1,237	434	211																		
DF	31	4	87	135	.740	3.88	2.22	81.7	390.4	5.17	181	867	962	337	161																		
DF	32	3	85	134	.572	3.20	1.72	84.2	397.8	4.12	145	683	767	269	127																		
DF	33	3	86	143	.440	2.61	1.45	87.2	445.7	3.60	126	647	670	235	120																		
DF	34	2	84	145	.338	2.13	1.01	103.2	495.0	2.98	105	502	555	195	93																		
DF	35	1	85	152	.146	.98	.44	112.9	553.3	1.41	49	242	262	92	45																		
DF	38	1	83	151	.124	.98	.50	85.5	490.0	1.21	42	243	225	79	45																		
DF	41	1	83	136	.106	.98	.32	143.8	723.3	1.31	46	231	244	85	43																		
DF	Totals	165	87	119	69.166	162.80	173.48	40.5	181.6	200.25	7,026	31,508	37,247	13,069	5,860																		
RA	11	1	74	72	1.479	.98	1.48	19.0	60.0	.65	24	75	121	44	14																		
RA	12	1	74	75	1.243	.98	1.24	18.1	54.6	2.20	80	242	409	149	45																		
RA	13	3	80	77	3.274	3.02	4.43	13.4	40.0	.34	12	37	62	23	7																		
RA	14	1	74	56	.913	.98	.91	15.1	60.0	.72	26	104	134	49	19																		
RA	15	1	91	76	.868	1.07	1.74	32.3	90.0	.62	23	63	115	42	12																		
RA	16	1	73	76	.699	.98	.70	51.1	200.0	.85	31	121	157	57	22																		
RA	18	1	89	103	.603	1.07	.60																										
RA	Totals	9	79	75	9.079	9.05	11.10	17.6	57.7	5.37	195	640	1,000	363	119																		
WH	18	1	89	87	.603	1.07	1.21	30.5	115.0	1.18	37	139	219	68	26																		
WH	25	1	92	111	.313	1.07	.94	49.9	233.3	1.50	47	219	278	87	41																		
WH	29	1	82	110	.232	1.07	.70	64.4	263.3	1.44	45	184	267	83	34																		
WH	Totals	3	88	98	1.148	3.20	2.84	45.2	190.5	4.11	128	541	764	239	101																		
NF	35	1	85	131	.159	1.07	.48	98.6	483.3	1.13	47	231	211	88	43																		
NF	Totals	1	85	131	.159	1.07	.48	98.6	483.3	1.13	47	231	211	88	43																		
RC	22	1	81	80	.404	1.07	.81	42.6	115.0	.81	34	93	150	64	17																		
RC	Totals	1	81	80	.404	1.07	.81	42.6	115.0	.81	34	93	150	64	17																		
Totals		179	86	113	79.955	177.18	188.71	39.4	174.9	211.68	7,432	33,013	39,372	13,823	6,140																		

[illegible]

TC PLOGSTVB		Log Stock Table - MBF																	
<div>TT1N RR6W S03 Ty00MC 109.00</div> <div>TT1N RR6W S03 Ty00MC 18.00</div> <div>TT1N RR6W S03 Ty00MC 59.00</div>						<div>Project: DEVRAY</div> <div>Acres 186.00</div>										<div>Page 2</div> <div>Date 11/10/2020</div> <div>Time 1:14:02PM</div>			
S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		R	16	7		7	5.7				7								
RA		R	32	26		26	21.5				14	12							
RA		R	36	12		12	9.9				12								
RA		R	40	75		75	62.9				14	39	22						
RA		Totals		119		119	1.9			39	57	22							
NF		2M	24	11		11	24.8							11					
NF		2M	40	30		30	69.7									30			
NF		3M	36	2		2	5.5				2								
NF		Totals		43		43	.7				2			11		30			
Total		All Species		6,170		6,140	100.0			541	585	583	880	955	1859	607	132		

TC PSTATS			PROJECT STATISTICS							PAGE	1	
			PROJECT		DEV			RAY		DATE	11/10/2020	
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
T1N	R6	03	00U1	00MC		109.00		22	84	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL			22	84	3.8							
CRUISE			22	84	3.8	6,875		1.2				
DBH COUNT												
REFOREST												
COUNT												
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			76	55.7	21.3	118	29.9	138.2	27,384	27,202	5,991	5,991
WHEMLOCK			3	2.0	22.6	98	1.1	5.5	923	923	219	219
R ALDER			3	4.5	14.9	85	1.4	5.5	561	561	142	142
WR CEDAR			1	.7	22.0	80	0.4	1.8	158	158	59	59
NOB FIR			1	.3	35.0	131	0.3	1.8	395	395	81	81
TOTAL			84	63.1	21.1	114	33.3	152.7	29,421	29,240	6,492	6,492
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			56.0	6.4	620	663	706					
WHEMLOCK			52.5	36.3	365	573	781					
R ALDER			41.6	28.8	97	137	176					
WR CEDAR												
NOB FIR												
TOTAL			59.3	6.5	604	645	687	140	35	16		
CL	68.1	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
DOUG FIR			51.1	5.9	135	143	152					
WHEMLOCK			50.0	34.6	88	135	181					
R ALDER			42.4	29.3	24	35	45					
WR CEDAR												
NOB FIR												
TOTAL			53.8	5.9	132	140	149	116	29	13		
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			58.9	12.8	49	56	63					
WHEMLOCK			282.2	61.5	1	2	3					
R ALDER			267.3	58.3	2	4	7					
WR CEDAR			469.0	102.2		1	1					
NOB FIR			469.0	102.2		0	1					
TOTAL			63.0	13.7	54	63	72	166	42	18		
CL	68.1	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
DOUG FIR			49.5	10.8	123	138	153					
WHEMLOCK			257.6	56.1	2	5	9					
R ALDER			257.6	56.1	2	5	9					
WR CEDAR			469.0	102.2		2	4					
NOB FIR			469.0	102.2		2	4					
TOTAL			48.9	10.7	136	153	169	100	25	11		

PROJECT STATISTICS

PROJECT DEVRAY

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
T1N	R6	03	00U1	00MC	109.00	22	84	S	W

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		56.7	12.4	23,842	27,202	30,562			
WHEMLOCK		262.5	57.2	395	923	1,451			
R ALDER		258.3	56.3	245	561	877			
WR CEDAR		469.0	102.2		158	320			
NOB FIR		469.0	102.2		395	798			
TOTAL		53.4	11.6	25,839	29,240	32,640	119	30	13

CL	68.1	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR		54.0	11.8	5,286	5,991	6,697			
WHEMLOCK		259.1	56.5	95	219	343			
R ALDER		258.5	56.3	62	142	222			
WR CEDAR		469.0	102.2		59	119			
NOB FIR		469.0	102.2		81	163			
TOTAL		50.8	11.1	5,773	6,492	7,210	108	27	12

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>TT1N RR6W S03 Ty00MC109.00</div>				Project: DEVRAY										Page 1							
				Acres 109.00										Date 11/10/2020 Time 1:07:50PM							
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
					Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF			CU														24	15		0.00	2.9
DF			2M	76	.8	20,992	20,824	2,270			46	54			1	99	40	16	392	1.99	53.1
DF			3M	21	.2	5,770	5,757	628		100				1	5	95	39	8	99	0.71	57.9
DF			4M	3		621	621	68		100			48	52			18	6	21	0.36	29.2
DF Totals				93	.7	27,384	27,202	2,965		23	35	41	1	1	2	96	35	11	190	1.21	143.1
WH			2M	78		726	726	79			28	72				100	40	15	371	1.98	2.0
WH			3M	16		147	147	16		100						100	39	10	159	1.22	.9
WH			4M	6		49	49	5		100			38	62			21	6	25	0.47	2.0
WH Totals				3		923	923	101		21	22	56	2	3		95	32	11	190	1.41	4.8
RC			2M	86		138	138	15			100					100	40	12	200	1.84	.7
RC			4M	14		21	21	2		100				100			24	6	30	0.49	.7
RC Totals				1		158	158	17		13	87			13		87	32	9	115	1.33	1.4
RA			CU														37	7		0.00	1.0
RA			R	100		561	561	61		63	37					100	28	8	71	0.64	7.9
RA Totals				2		561	561	61		63	37					100	29	8	63	0.55	9.0
NF			CU														6	18		0.00	.3
NF			2M	94		373	373	41				100		26		74	32	22	685	4.03	.5
NF			3M	6		22	22	2		100						100	36	8	80	1.06	.3
NF Totals				1		395	395	43		6		94		25		75	27	17	362	2.79	1.1
Totals					0.6	29,421	29,240	3,187		24	35	41	1	2	2	96	34	10	183	1.19	159.4

TC		PSTNDSUM		Stand Table Summary									Page Date:		1 11/10/2020		
<div>TT1N RR6W S03 Ty00MC109.00</div>					Project DEV RAY					Time: 1:07:51PM							
					Acres 109.00					Grown Year:							
S Sp	T	Sample		Tot					Average Log		Net		Net		T o t a l s		
		DBH	Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF	
DF		11	1	85	63	2.755	1.82	2.76	13.4	60.0	1.05	37	165	114	40	18	
DF		12	1	82	89	2.315	1.82	4.63	11.4	40.0	1.50	53	185	164	57	20	
DF		13	1	86	74	1.973	1.82	3.95	11.8	45.0	1.33	47	178	145	51	19	
DF		14	2	87	106	3.402	3.64	6.80	18.6	82.5	3.60	126	561	393	138	61	
DF		15	1	86	81	1.482	1.82	1.48	9.6	30.0	.41	14	44	44	16	5	
DF		16	1	88	96	1.302	1.82	2.60	23.3	90.0	1.73	61	234	188	66	26	
DF		17	4	88	111	4.614	7.27	10.38	26.8	112.2	7.92	278	1,165	863	303	127	
DF		18	3	89	119	3.087	5.45	7.20	30.2	122.9	6.20	218	885	676	237	96	
DF		19	4	89	123	3.694	7.27	10.16	30.1	127.3	8.71	305	1,293	949	333	141	
DF		20	3	89	116	2.500	5.45	6.67	33.9	142.5	6.44	226	950	702	246	104	
DF		21	5	89	123	3.780	9.09	11.34	34.8	156.0	11.25	395	1,769	1,226	430	193	
DF		22	5	89	123	3.444	9.09	10.33	38.5	176.0	11.35	398	1,818	1,237	434	198	
DF		23	6	89	128	3.781	10.91	9.45	49.7	225.3	13.40	470	2,130	1,461	513	232	
DF		24	2	89	125	1.157	3.64	3.47	47.2	211.7	4.67	164	735	510	179	80	
DF		25	11	88	138	5.867	20.00	17.07	56.0	258.1	27.22	955	4,406	2,967	1,041	480	
DF		26	6	88	141	2.959	10.91	8.88	56.1	266.7	14.20	498	2,367	1,548	543	258	
DF		27	4	88	145	1.829	7.27	5.49	65.9	311.7	10.31	362	1,710	1,123	394	186	
DF		28	2	86	134	.850	3.64	2.55	66.5	315.0	4.84	170	804	527	185	88	
DF		29	4	86	135	1.586	7.27	4.76	72.1	333.3	9.78	343	1,586	1,066	374	173	
DF		30	2	86	152	.741	3.64	2.59	71.2	345.7	5.26	185	896	574	201	98	
DF		31	2	87	136	.694	3.64	2.08	82.3	405.0	4.88	171	843	532	187	92	
DF		32	3	85	134	.977	5.45	2.93	84.2	397.8	7.03	247	1,165	767	269	127	
DF		33	1	87	148	.306	1.82	.92	99.0	496.7	2.59	91	456	283	99	50	
DF		34	2	84	145	.577	3.64	1.73	103.2	495.0	5.09	179	856	555	195	93	
DF		Totals	76	88	118	55.669	138.18	140.21	42.7	194.0	170.75	5,991	27,202	18,612	6,531	2,965	
WH		18	1	89	87	1.029	1.82	2.06	30.5	115.0	2.01	63	237	219	68	26	
WH		25	1	92	111	.533	1.82	1.60	49.9	233.3	2.55	80	373	278	87	41	
WH		29	1	82	110	.396	1.82	1.19	64.4	263.3	2.45	77	313	267	83	34	
WH		Totals	3	88	98	1.959	5.45	4.85	45.2	190.5	7.01	219	923	764	239	101	
RA		13	1	92	82	1.973	1.82	3.95	11.3	45.0	1.23	45	178	134	49	19	
RA		15	1	91	76	1.482	1.82	2.96	15.1	60.0	1.23	45	178	134	49	19	
RA		18	1	89	103	1.029	1.82	1.03	51.1	200.0	1.44	53	206	157	57	22	
RA		Totals	3	91	85	4.483	5.45	7.94	17.9	70.7	3.91	142	561	426	155	61	
NF		35	1	85	131	.272	1.82	.82	98.6	483.3	1.93	81	395	211	88	43	
NF		Totals	1	85	131	.272	1.82	.82	98.6	483.3	1.93	81	395	211	88	43	
RC		22	1	81	80	.689	1.82	1.38	42.6	115.0	1.38	59	158	150	64	17	
RC		Totals	1	81	80	.689	1.82	1.38	42.6	115.0	1.38	59	158	150	64	17	
Totals		84	88	114		63.072	152.73	155.19	41.8	188.4	184.98	6,492	29,240	20,163	7,076	3,187	

TC PLOGSTVB				Log Stock Table - MBF															
<div>TT1N RR6W S03 Ty00MC109.00</div>				Project: DEVRAY Acres109.00										Page 2 Date 11/10/2020 Time 1:07:49PM					
S T Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
NF		3M	36	2		2	5.5			2									
NF		Totals		43		43	1.3			2			11		30				
Total		All Species		3,207		3,187	100.0			231	290	238	412	588	984	382	62		

TC PSTATS			PROJECT STATISTICS							PAGE	1	
			PROJECT			DEV		RAY	DATE	11/10/2020		
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
T1N	R6	03	00U2	00MC		18.00		5	25	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL			5	25	5.0							
CRUISE			5	25	5.0	1,600		1.6				
DBH COUNT												
REFOREST												
COUNT												
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			25	88.9	20.3	113	44.4	200.0	38,298	38,191	8,451	8,451
TOTAL			25	88.9	20.3	113	44.4	200.0	38,298	38,191	8,451	8,451
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			63.4	12.9	535	615	694					
TOTAL			63.4	12.9	535	615	694	167	42	19		
CL	68.1	COEFF		SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH			5	10	15	
DOUG FIR			57.2	11.7	117	133	148					
TOTAL			57.2	11.7	117	133	148	136	34	15		
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			45.2	22.5	69	89	109					
TOTAL			45.2	22.5	69	89	109	101	25	11		
CL	68.1	COEFF		BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH			5	10	15	
DOUG FIR			24.5	12.2	176	200	224					
TOTAL			24.5	12.2	176	200	224	30	7	3		
CL	68.1	COEFF		NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH			5	10	15	
DOUG FIR			16.6	8.2	35,045	38,191	41,338					
TOTAL			16.6	8.2	35,045	38,191	41,338	14	3	2		
CL	68.1	COEFF		NET CUFT FT/ACRE					# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH			5	10	15	
DOUG FIR			19.5	9.7	7,630	8,451	9,271					
TOTAL			19.5	9.7	7,630	8,451	9,271	19	5	2		

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>TT1N RR6W S03 Ty00MC18.00</div>						Project: DEVRAY										Page 1					
						Acres 18.00										Date 11/10/2020					
																Time 1:10:08PM					
S Spp	So T	Gr rt	Ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
							4-5		6-11	12-16	17+	12-20	21-30	31-35					36-99		
DF		CU															4	19		0.00	1.3
DF		2M		68	.4	26,198	26,091	470			57	43		2		98	40	16	389	2.01	67.1
DF		3M		28		10,699	10,699	193		100				1	2	98	39	9	112	0.72	95.7
DF		4M		4		1,402	1,402	25		100			16	84			22	6	28	0.38	51.0
DF	Totals			100	.3	38,298	38,191	687		32	39	30	1	5	1	94	35	10	178	1.13	215.1
Totals					0.3	38,298	38,191	687		32	39	30	1	5	1	94	35	10	178	1.13	215.1

TC		PSTNDSUM										Stand Table Summary										Page		1	
																						Date:		11/10/2020	
TT1N RR6W S03 Ty00MC					18.00					Project					DEVRAY					Time:		1:10:09PM			
										Acres					18.00					Grown Year:					
S Spec	T	Sample			Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net		Net	T o t a l s										
		DBH	Trees	FF	Av Ht	Net Cu.Ft.				Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre		Tons	Cunits	MBF								
DF		13	1	86	72	8.679	8.00	8.68	21.1	70.0	5.21	183	608		94	33	11								
DF		14	2	88	97	14.967	16.00	29.93	17.6	75.0	15.04	528	2,245		271	95	40								
DF		15	1	89	108	6.519	8.00	13.04	22.8	105.0	8.48	298	1,369		153	54	25								
DF		16	1	89	105	5.730	8.00	11.46	24.4	105.0	7.97	280	1,203		143	50	22								
DF		17	1	90	119	5.075	8.00	10.15	32.3	130.0	9.36	328	1,320		168	59	24								
DF		18	1	89	113	4.527	8.00	9.05	34.1	135.0	8.81	309	1,222		159	56	22								
DF		20	1	89	133	3.667	8.00	11.00	34.0	156.7	10.65	374	1,723		192	67	31								
DF		21	1	88	112	3.326	8.00	9.98	32.0	133.3	9.10	319	1,330		164	57	24								
DF		22	2	89	129	6.061	16.00	18.18	38.9	180.0	20.15	707	3,273		363	127	59								
DF		23	5	89	129	13.864	40.00	41.59	44.2	203.3	52.39	1,838	8,457		943	331	152								
DF		24	2	88	121	5.093	16.00	15.28	45.5	206.7	19.82	695	3,158		357	125	57								
DF		27	1	84	128	2.012	8.00	6.04	59.2	253.3	10.19	358	1,529		183	64	28								
DF		28	1	86	127	1.871	8.00	5.61	64.2	270.0	10.27	360	1,515		185	65	27								
DF		30	2	87	139	3.259	16.00	9.78	78.1	381.7	21.77	764	3,732		392	137	67								
DF		31	1	86	125	1.526	8.00	4.58	77.5	346.7	10.12	355	1,587		182	64	29								
DF		33	2	86	140	2.694	16.00	9.43	80.1	415.7	21.53	756	3,919		388	136	71								
DF		Totals	25	88	113	88.870	200.00	213.78	39.5	178.6	240.85	8,451	38,191		4,335	1,521	687								
Totals			25	88	113	88.870	200.00	213.78	39.5	178.6	240.85	8,451	38,191		4,335	1,521	687								

TC PLOGSTVB		Log Stock Table - MBF																
TT1N RR6W S03 Ty00MC 18.00				Project: DEVRAY Acres 18.00												Page 1 Date 11/10/2020 Time 1:10:08PM		
S T	S pp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches									
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29
DF		2M	24		10		10	1.5									10	
DF		2M	40		461		459	66.8					64	104	181		111	
DF		3M	26		1		1	.2				1						
DF		3M	32		2		2	.3			2							
DF		3M	34		2		2	.3			2							
DF		3M	36		22		22	3.2			16	6						
DF		3M	40		166		166	24.1			23	38	104					
DF		4M	12		1		1	.2			1	0						
DF		4M	14		1		1	.1			1							
DF		4M	16		1		1	.1			1							
DF		4M	20		1		1	.1			1							
DF		4M	22		6		6	.8			6							
DF		4M	24		10		10	1.5			10							
DF		4M	26		6		6	.8			6							
DF		Totals			689		687	100.0			68	46	104	64	104	181	121	
Total		All Species			689		687	100.0			68	46	104	64	104	181	121	

TC PSTATS			PROJECT STATISTICS							PAGE	1	
			PROJECT		DEV			RAY	DATE	11/10/2020		
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
T1N	R6	03	00U3	00MC		59.00		13	70	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES				
TOTAL			13	70	5.4							
CRUISE			13	70	5.4	6,397		1.1				
DBH COUNT												
REFOREST												
COUNT												
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			64	88.1	20.2	122	43.8	196.9	37,557	37,423	8,504	8,504
R ALDER			6	20.3	12.9	71	5.1	18.5	982	982	354	354
TOTAL			70	108.4	19.1	113	49.3	215.4	38,539	38,406	8,858	8,858
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			69.7	8.7	559	613	666					
R ALDER			57.7	25.7	40	53	67					
TOTAL			77.5	9.3	512	565	617	240	60	27		
CL	68.1	COEFF		SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15		
DOUG FIR			61.7	7.7	125	135	146					
R ALDER			59.5	26.5	14	19	24					
TOTAL			68.8	8.2	115	125	136	189	47	21		
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			58.5	16.9	73	88	103					
R ALDER			360.6	103.9		20	41					
TOTAL			59.4	17.1	90	108	127	153	38	17		
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			53.4	15.4	167	197	227					
R ALDER			360.6	103.9		18	38					
TOTAL			40.5	11.7	190	215	241	71	18	8		
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			54.0	15.6	31,603	37,423	43,243					
R ALDER			360.6	103.9		982	2,004					
TOTAL			48.0	13.8	33,086	38,406	43,725	100	25	11		
CL	68.1	COEFF		NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15		
DOUG FIR			53.5	15.4	7,194	8,504	9,814					
R ALDER			360.6	103.9		354	721					
TOTAL			44.8	12.9	7,713	8,858	10,003	87	22	10		

TC PSCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
TT1N RR6W S03 Ty00MC 59.00				Project: DEVRAY										Page 1					
				Acres 59.00										Date 11/10/2020					
														Time 1:11:59PM					
S Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
							Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	CU														6	13		0.00	10.3
DF	2M	69	.2	26,075	26,030	1,536			53	47	1		1	98	40	15	360	1.92	72.4
DF	3M	28	.8	10,390	10,302	608		100			0	1	5	94	39	8	98	0.66	105.0
DF	4M	3		1,092	1,092	64		100			38	62			20	6	24	0.32	45.3
DF Totals		97	.4	37,557	37,423	2,208		30	37	33	2	2	2	94	34	10	161	1.07	232.9
RA		CU													9	8		0.00	4.7
RA		R	100		982	982	58		100		12		44	44	27	7	48	0.64	20.3
RA Totals		3		982	982	58		100			12		44	44	24	8	39	0.60	25.0
Totals			0.3	38,539	38,406	2,266		32	36	32	2	2	3	93	33	10	149	1.04	257.9

TC		PSTNDSUM		Stand Table Summary										Page		1		
														Date:		11/10/2020		
TT1N RR6W S03 Ty00MC 59.00					Project					DEVRAY					Time:		1:12:00PM	
					Acres					59.00					Grown Year:			
S Spec T	Tot							Average Log		Net			Totals					
	DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF			
DF	13	4	85	97	13.353	12.31	26.71	14.2	57.5	10.81	379	1,536	638	224	91			
DF	14	2	85	100	5.757	6.15	11.51	17.1	70.0	5.60	196	806	330	116	48			
DF	16	6	86	116	13.222	18.46	26.44	25.8	110.8	19.47	683	2,931	1,149	403	173			
DF	17	3	88	127	5.856	9.23	15.62	25.1	105.0	11.15	391	1,640	658	231	97			
DF	18	6	87	124	10.447	18.46	27.86	27.7	115.0	22.03	773	3,204	1,300	456	189			
DF	19	3	85	119	4.688	9.23	12.50	29.9	117.5	10.66	374	1,469	629	221	87			
DF	20	1	86	118	1.410	3.08	2.82	41.6	165.0	3.35	117	465	197	69	27			
DF	21	3	85	121	3.838	9.23	10.23	36.4	140.0	10.62	373	1,433	626	220	85			
DF	22	4	86	132	4.662	12.31	13.99	40.8	184.2	16.28	571	2,576	960	337	152			
DF	23	3	87	143	3.199	9.23	9.60	44.1	206.7	12.07	424	1,984	712	250	117			
DF	24	2	86	141	1.959	6.15	5.88	50.7	221.7	8.49	298	1,303	501	176	77			
DF	25	6	85	137	5.416	18.46	16.25	52.1	231.1	24.11	846	3,755	1,422	499	222			
DF	26	3	87	141	2.504	9.23	7.51	61.3	283.3	13.12	460	2,128	774	272	126			
DF	27	4	86	140	3.095	12.31	9.29	63.8	285.0	16.88	592	2,647	996	350	156			
DF	28	5	85	145	3.598	15.38	10.79	70.1	318.0	21.55	756	3,432	1,272	446	203			
DF	29	4	83	134	2.683	12.31	8.05	65.4	295.8	15.00	526	2,381	885	310	140			
DF	30	1	85	152	.627	3.08	1.88	85.7	416.7	4.60	161	784	271	95	46			
DF	31	1	86	139	.587	3.08	1.76	83.7	393.3	4.20	147	693	248	87	41			
DF	35	1	85	152	.461	3.08	1.38	112.9	553.3	4.45	156	764	262	92	45			
DF	38	1	83	151	.391	3.08	1.56	85.5	490.0	3.81	134	766	225	79	45			
DF	41	1	83	136	.336	3.08	1.01	143.8	723.3	4.13	145	728	244	85	43			
DF	Totals	64	86	122	88.088	196.92	222.64	38.2	168.1	242.37	8,504	37,423	14,300	5,017	2,208			
RA	11	1	74	72	4.662	3.08	4.66											
RA	12	1	74	75	3.918	3.08	3.92	19.0	60.0	2.05	75	235	121	44	14			
RA	13	2	74	74	6.676	6.15	6.68	25.4	65.0	4.66	170	434	275	100	26			
RA	14	1	74	56	2.878	3.08	2.88	13.4	40.0	1.06	38	115	62	23	7			
RA	16	1	73	76	2.204	3.08	2.20	32.3	90.0	1.96	71	198	115	42	12			
RA	Totals	6	74	71	20.338	18.46	20.34	17.4	48.3	9.72	354	982	574	209	58			
Totals		70	84	112	108.426	215.38	242.97	36.5	158.1	252.09	8,858	38,406	14,873	5,226	2,266			

Log Stock Table - MBF

TT1N RR6W S03 Ty00MC 59.00

Project: DEVRAY
Acres 59.00Page 1
Date 11/10/2020
Time 1:11:58PM

Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		2M	16	14		14	.6										14		
DF		2M	32	18		18	.8					18							
DF		2M	40	1,507		1,504	68.1					386	263	695	104	56			
DF		3M	20	1		1	.1				1								
DF		3M	30	4		4	.2			2		2							
DF		3M	32	20		20	.9			20									
DF		3M	34	10		10	.5			10									
DF		3M	36	13		13	.6			9	4								
DF		3M	38	22		22	1.0			22									
DF		3M	40	542		537	24.3			74	225	238							
DF		4M	12	4		4	.2			4									
DF		4M	14	7		7	.3			7									
DF		4M	16	5		5	.2			5									
DF		4M	18	8		8	.4			8									
DF		4M	22	14		14	.6			14									
DF		4M	24	7		7	.3			7									
DF		4M	28	10		10	.4			10									
DF		4M	30	9		9	.4			9									
DF		Totals		2,216		2,208	97.4			202	230	240	404	263	695	104	70		
RA		R	16	7		7	11.7			7									
RA		R	32	26		26	44.1			14	12								
RA		R	36	12		12	20.4			12									
RA		R	40	14		14	23.8			14									
RA		Totals		58		58	2.6			39	18								
Total		All Species		2,274		2,266	100.0			242	249	240	404	263	695	104	70		

VOLUME SUMMARY

(Volumes in MBF)

Devil Ray**FG-341-2021-W00244-01****November 2020****UNIT 1: MC (109 ACRES)**

SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	2,270	628	68	0	2,966
	Hidden D&B (2%)	(45)	(13)	(1)	(0)	(59)
	NET TOTAL	2,225	615	67	0	2,907
	% of Total	77	21	2	0	
Western hemlock	Cruise Volume	79	16	5	0	100
	Hidden D&B (2%)	(2)	(0)	(0)	(0)	(2)
	NET TOTAL	77	16	5	0	98
	% of Total	79	16	5	0	
Red alder	Cruise Volume	0	0	0	61	61
	Hidden D&B (5%)	(0)	(0)	(0)	(3)	(3)
	NET TOTAL	0	0	0	58	58
	% of Total	0	0	0	100	

UNIT 2: MC (18 ACRES)

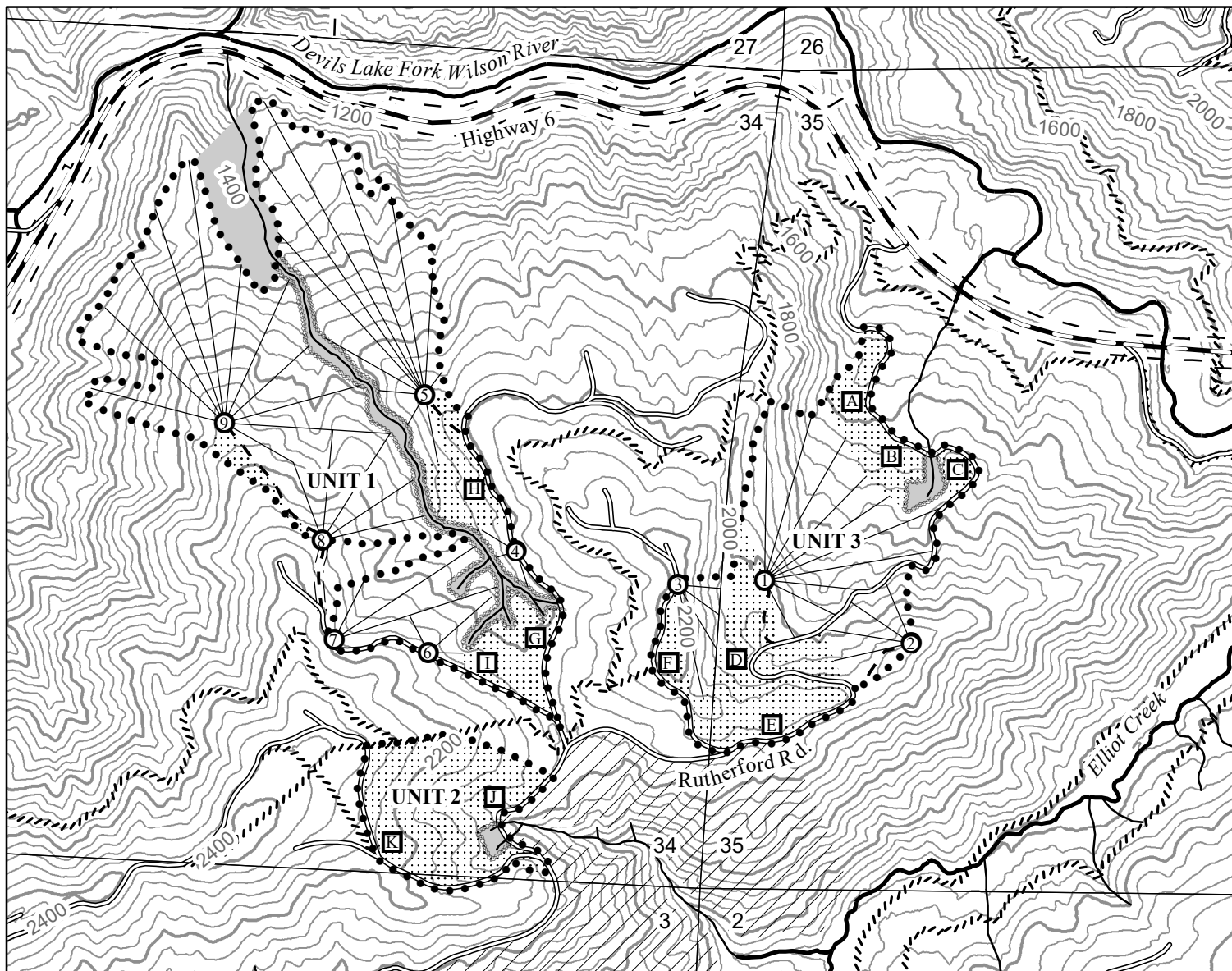
SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	470	193	25	0	688
	Hidden D&B (2%)	(9)	(4)	(1)	(0)	(14)
	NET TOTAL	461	189	24	0	674
	% of Total	68	28	4	0	

UNIT 3: MC (59 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	1,536	608	64	0	2,208
	Hidden D&B (2%)	(31)	(12)	(1)	(0)	(44)
	NET TOTAL	1,505	596	63	0	2,164
	% of Total	70	27	3	0	
Red alder	Cruise Volume	0	0	0	58	58
	Hidden D&B (5%)	(0)	(0)	(0)	(3)	(3)
	NET TOTAL	0	0	0	55	55
	% of Total	0	0	0	100	

SALE TOTAL

SPECIES	2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	4,191	1,400	154	0	5,745
Western hemlock	77	16	5	0	98
Red alder	0	0	0	113	113
Total	4,268	1,416	159	113	5,956



Legend

- Timber Sale Boundary
- - - - - Stream Buffer Boundary
- == Right of Way Boundary
- ODF Ownership Boundary
- Highways
- Surfaced Roads
- - - New Road Construction
- //// Recreation Trails
- Type F-Stream
- Type N-Stream
- Stream Buffer
- Cable Yarding Area
- Tractor Yarding Area
- Cable Landing
- Tractor Landing
- /// Reforestation Area
- Section Lines
- 40 Foot Contour Band
- 200 Foot Contour Band

LOGGING PLAN

FOR TIMBER SALE CONTRACT #FG-341-2021-W00244-01

DEVIL RAY

PORTIONS OF SECTIONS 34 & 35, T2N, R6W, W.M.,

AND PORTIONS OF SECTION 3, T1N, R6W, W.M.,

TILLAMOOK COUNTY, OREGON

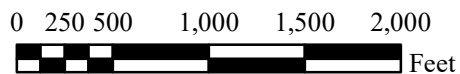
Forest Grove District GIS

November, 2020

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

1:12,000

1 inch = 1,000 feet



APPROXIMATE NET ACRES

	TRACTOR	CABLE
UNIT 1	13	96
UNIT 2	18	0
UNIT 3	24	35
TOTAL	55	131