



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
BACKWOODS
Sale FG-341-2022-W00858-01

District: Forest Grove

Date: March 28, 2022

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,873,267.66	\$16,031.82	\$1,889,299.48
		Project Work:	(\$157,833.00)
		Advertised Value:	\$1,731,466.48



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District: Forest Grove

Date: March 28, 2022

Timber Description

Location:

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	19	0	98
Alder (Red)	14	0	95

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	2,101	997	0	3,098
Alder (Red)	0	0	57	57
Total	2,101	997	57	3,155

Comments: LOCAL POND VALUES, FEBRUARY 2022

WESTERN REDCEDAR AND OTHER CEDARS:
STUMPAGE PRICE = POND VALUE - DOUG-FIR LOGGING COST
 $\$827.81 = \$1,192 - \$364.19$

WESTERN HEMLOCK AND OTHER CONIFERS:
STUMPAGE PRICE = POND VALUE - DOUG-FIR LOGGING COST
 $\$343.81 = \$708 - \$364.19$

BRANDING AND PAINTING ALLOWANCE = \$2.00/MBF

FUEL COST ALLOWANCE = \$5.00/GAL

HAULING COST ALLOWANCE = \$1,200/DAY

OTHER COSTS (WITH PROFIT & RISK ADDED): N/A

OTHER COSTS (NO PROFIT & RISK ADDED):

EQUIPMENT CLEANING: 3 PIECES @ \$1,000/PIECE = \$3,000

MACHINE TIME TO PILE LANDING SLASH:
 $20 \text{ HOURS} \times \$150/\text{HOUR} = \$3,000$

TOTAL OTHER COSTS (NO P&R) = \$6,000.00

SLASH TREATMENT: 13 ACRES X \$250/ACRE = \$3,250

ROAD MAINTENANCE (INCLUDES SPOT ROCKING, GRADING, & ROLLING):
MOVE IN: \$2,423.21

GENERAL ROAD MAINT: 6.31 MILES @ \$2,343.02/MILE = \$14,784.46

TOTAL ROAD MAINTENANCE: $\$17,207.67 / 3,155 \text{ MBF} = \$5.45/\text{MBF}$



"STEWARDSHIP IN FORESTRY"

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BACKWOODS
Sale FG-341-2022-W00858-01

District: Forest Grove

Date: March 28, 2022

Logging Conditions

Combination#: 1 Douglas - Fir 62.88%
 Alder (Red) 63.00%

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

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

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

loads / day: 6 **bd. ft / load:** 5000

cost / mbf: \$231.45

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

Combination#: 2 Douglas - Fir 37.12%
 Alder (Red) 37.00%

Logging System: Shovel **Process:** Feller Buncher

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

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

loads / day: 7 **bd. ft / load:** 5000

cost / mbf: \$101.08

machines: Feller Buncher w/ Delimber



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
BACKWOODS
Sale FG-341-2022-W00858-01

District: Forest Grove

Date: March 28, 2022

Logging Costs

Operating Seasons: 1.00	Profit Risk: 15%
Project Costs: \$157,833.00	Other Costs (P/R): \$0.00
Slash Disposal: \$3,250.00	Other Costs: \$6,000.00

Miles of Road

Road Maintenance: \$5.45

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	2.0	5.0
Alder (Red)	\$0.00	2.0	4.8



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal BACKWOODS Sale FG-341-2022-W00858-01

District: Forest Grove

Date: March 28, 2022

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$183.05	\$5.56	\$1.39	\$122.40	\$0.00	\$46.86	\$1.03	\$2.00	\$1.90	\$364.19
Alder (Red)									
\$183.21	\$5.72	\$1.39	\$131.25	\$0.00	\$48.24	\$1.03	\$2.00	\$1.90	\$374.74

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$968.86	\$604.67	\$0.00
Alder (Red)	\$0.00	\$656.00	\$281.26	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
BACKWOODS
Sale FG-341-2022-W00858-01

District: Forest Grove

Date: March 28, 2022

Summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,098	\$604.67	\$1,873,267.66
Alder (Red)	57	\$281.26	\$16,031.82

Gross Timber Sale Value

Recovery: \$1,889,299.48

Prepared By: Nate Hunter

Phone: 503-359-7434

PROJECT COST SUMMARY SHEETTimber Sale: BackwoodsSale Number: FG-341-2022-W00858-01**PROJECT NO. 1: ROAD IMPROVEMENT**

Road Segment	Length	Cost	With Additional Fuel Allowance
A to B	143+25	\$33,919.45	\$37,311.39
C to D	25+15	\$25,315.67	\$27,847.23
E to F	60+30	\$57,520.21	\$63,272.24
G to H	7+55	\$6,203.00	\$6,823.30
I	----	\$1,023.17	\$1,125.49
J	----	\$1,023.17	\$1,125.49
K	----	\$1,345.12	\$1,479.63
L	----	\$5,951.57	\$6,546.73
	236+25 stations		
	4.47 miles		
Total Rock =			
624 cy	1½" - 0		
5,310 cy	4" - 0		
120 cy	Riprap		
	Move-in =	\$3,143.92	\$3,458.32
TOTAL PROJECT COST =		\$135,445.28	\$148,989.81

PROJECT NO. 2: ROAD BRUSHING

Length	Cost	With Additional Fuel Allowance
231+25	\$5,834.51	\$6,417.96
4.38 miles		
Move-in =	\$2,204.76	\$2,425.23
TOTAL PROJECT COST =		\$8,039.27

TOTAL CREDITS = \$143,484.55**10% FUEL ALLOWANCE ADJUSTMENT TOTAL = \$14,348.45****TOTAL CREDITS WITH ADDITIONAL FUEL ALLOWANCE = \$157,833.00**

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
 Road Segment: A to B

Sale Number: FG-341-2022-W00858-01
 Improvement: 143+25 stations
 2.71 miles

PROJECT NO. 1

IMPROVEMENT

Clearing & grubbing (scatter)	1.65	ac @	\$862.40	per acre =	\$1,422.96
Clean ditch & scatter waste material	19.75	sta @	\$60.00	per sta =	\$1,185.00
Clean culvert inlet & outlet, scatter waste	6	ea @	\$25.00	per ea =	\$150.00
Remove existing flume	0.5	ea @	\$150.00	per ea =	\$75.00
Cutslope layback					
Excavate & load	55	cy @	\$1.64	per cy =	\$90.20
Haul	72	cy @	\$0.83	per cy =	\$59.35
Shape and compact waste material	72	cy @	\$0.30	per cy =	\$21.45
Construct settling ponds	3	ea @	\$25.00	per ea =	\$75.00
Improve turnouts	11	ea @	\$33.00	per ea =	\$363.00
Construct turnarounds	1	ea @	\$82.50	per ea =	\$82.50
Approach to landing	1.70	sta @	\$690.00	per sta =	\$1,173.00
Improve landing	2	ea @	\$110.00	per ea =	\$220.00
Grade, ditch, & roll	143.25	sta @	\$36.00	per sta =	\$5,157.00

TOTAL IMPROVEMENT COSTS = \$10,074.46

CULVERTS

Culverts and Bands					
18" Diameter	60	LF @	\$20.00	per LF =	\$1,200.00
24" Diameter	30	LF @	\$29.00	per LF =	\$870.00
Markers & Stakes					
Culvert markers	8	ea @	\$10.00	per ea =	\$80.00

TOTAL CULVERT COSTS = \$2,150.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$0.80	\$14.58	\$0.50	72	\$1,143.37
Energy dissipator	24" - 12"	\$6.79	\$2.84	\$1.60	12	\$134.70
Spot Rock	1½" - 0	\$0.80	\$14.11	\$1.22	204	\$3,290.52
				Subtotal =	288	\$4,568.59
Surfacing rock						
Surfacing rock	4" - 0	\$11.18	\$3.56	\$1.22	830	\$13,244.87
Junction	4" - 0	\$11.18	\$3.56	\$1.22	12	\$191.49
Turnaround	4" - 0	\$11.18	\$3.56	\$1.22	14	\$223.41
Approach to landing	4" - 0	\$11.18	\$3.56	\$1.22	72	\$1,148.95
Landing	4" - 0	\$11.18	\$3.56	\$1.22	120	\$1,914.92
				Subtotal =	1,048	\$16,723.65

Totals		All Rock =	1,336
		1½" - 0 =	276
		4" - 0 =	1,048
		Riprap =	12

TOTAL ROCK COSTS = \$21,292.24

EROSION CONTROL

Grass seed & fertilizer	0.83	ac @	\$425.00	per ac =	\$352.75
Straw mulch (bale)	5	ea @	\$10.00	per ea =	\$50.00

TOTAL EROSION CONTROL COSTS = \$402.75

TOTAL PROJECT COST = \$33,919.45

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
Road Segment: C to D

Sale Number: FG-341-2022-W00858-01
Improvement: 25+15 stations
0.48 miles

PROJECT NO. 1

IMPROVEMENT

Clearing & grubbing (scatter)	0.29	ac @	\$862.40	per acre =	\$250.10
Clean ditch & scatter waste material	25.15	sta @	\$60.00	per sta =	\$1,509.00
Clean culvert inlet & outlet, scatter waste	1	ea @	\$25.00	per ea =	\$25.00
Construct settling ponds	12	ea @	\$25.00	per ea =	\$300.00
Improve turnouts	1	ea @	\$33.00	per ea =	\$33.00
Improve roadside landing	1	ea @	\$82.50	per ea =	\$82.50
Improve Landing	1	ea @	\$157.00	per ea =	\$157.00
Grade, ditch, & roll	25.15	sta @	\$36.00	per sta =	\$905.40

TOTAL IMPROVEMENT COSTS = \$3,262.00

CULVERTS

Culverts and Bands					
24" Diameter	30	LF @	\$29.00	per LF =	\$870.00
Markers & Stakes					
Culvert markers	1	ea @	\$10.00	per ea =	\$10.00

TOTAL CULVERT COSTS = \$880.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$0.80	\$14.45	\$0.50	24	\$378.00
Subtotal =					24	\$378.00
Surfacing rock						
Surfacing rock	4" - 0	\$11.18	\$3.61	\$1.22	1,057	\$16,920.12
Junction	4" - 0	\$11.18	\$3.61	\$1.22	24	\$384.18
Turnout	4" - 0	\$11.18	\$3.61	\$1.22	31	\$496.24
Roadside landing	4" - 0	\$11.18	\$3.61	\$1.22	60	\$960.46
Landing	4" - 0	\$11.18	\$3.61	\$1.22	120	\$1,920.92
Subtotal =					1,292	\$20,681.92

Totals

All Rock =	1,316
1½" - 0 =	24
4" - 0 =	1,292

TOTAL ROCK COSTS = \$21,059.92

EROSION CONTROL

Grass seed & fertilizer	0.15	ac @	\$425.00	per ac =	\$63.75
Straw mulch (bale)	5	ea @	\$10.00	per ea =	\$50.00

TOTAL EROSION CONTROL COSTS = \$113.75

TOTAL PROJECT COST = \$25,315.67

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
Road Segment: E to F

Sale Number: FG-341-2022-W00858-01
Improvement: 60+30 stations
1.14 miles

PROJECT NO. 1

IMPROVEMENT

Clearing & grubbing (scatter)	0.70	ac @	\$862.40	per acre =	\$603.68
Clean ditch & scatter waste material	60.30	sta @	\$60.00	per sta =	\$3,618.00
Clean culvert inlet & outlet, scatter waste	5	ea @	\$25.00	per ea =	\$125.00
Remove existing culverts	1	ea @	\$150.00	per ea =	\$150.00
Improve turnouts	5	ea @	\$33.00	per ea =	\$165.00
Grade, ditch, & roll	60.30	sta @	\$36.00	per sta =	\$2,170.80

TOTAL IMPROVEMENT COSTS = \$6,832.48

CULVERTS

Culverts and Bands					
18" Diameter	180	LF @	\$20.00	per LF =	\$3,600.00
24" Diameter	90	LF @	\$29.00	per LF =	\$2,610.00
Markers & Stakes					
Culvert markers	15	ea @	\$10.00	per ea =	\$150.00
Additional Installation Cost					
Detail: Culvert No.9 Ditch out	1	hrs @	\$175.00	per hr =	\$175.00

TOTAL CULVERT COSTS = \$6,535.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$0.80	\$15.69	\$0.50	216	\$3,669.84
Energy dissipator	24" - 12"	\$6.79	\$2.59	\$1.60	48	\$526.82
				Subtotal =	264	\$4,196.66
Surfacing rock						
Surfacing rock	4" - 0	\$11.18	\$2.59	\$1.22	2,533	\$37,963.79
Junction	4" - 0	\$11.18	\$2.59	\$1.22	24	\$359.70
Turnout	4" - 0	\$11.18	\$2.59	\$1.22	95	\$1,423.83
				Subtotal =	2,652	\$39,747.33

Totals

All Rock =	2,916
1½" - 0 =	216
4" - 0 =	2,652
Riprap =	48

TOTAL ROCK COSTS = \$43,943.98

EROSION CONTROL

Grass seed & fertilizer	0.35	ac @	\$425.00	per ac =	\$148.75
Straw mulch (bale)	6	ea @	\$10.00	per ea =	\$60.00

TOTAL EROSION CONTROL COSTS = \$208.75

TOTAL PROJECT COST = \$57,520.21

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
Road Segment: G to H

Sale Number: FG-341-2022-W00858-01
Improvement: 7+55 stations
0.14 miles

PROJECT NO. 1

IMPROVEMENT

Clearing & grubbing (scatter)	0.09	ac @	\$862.40	per acre =	\$77.62
Clean ditch & scatter waste material	7.55	sta @	\$60.00	per sta =	\$453.00
Clean culvert inlet & outlet, scatter waste	2	ea @	\$25.00	per ea =	\$50.00
Cutslope layback					
Excavate & load	62	cy @	\$1.64	per cy =	\$101.68
Haul	81	cy @	\$0.85	per cy =	\$68.51
Shape and compact waste material	81	cy @	\$0.30	per cy =	\$24.18
Grade, ditch, & roll	7.55	sta @	\$36.00	per sta =	\$271.80

TOTAL IMPROVEMENT COSTS = \$1,046.79

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	4" - 0	\$11.18	\$3.75	\$1.22	318	\$5,134.96
				Subtotal =	318	\$5,134.96

Totals	All Rock =	318
	4" - 0 =	318

TOTAL ROCK COSTS = \$5,134.96

EROSION CONTROL

Grass seed & fertilizer	0.05	ac @	\$425.00	per ac =	\$21.25
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TOTAL EROSION CONTROL COSTS = \$21.25

TOTAL PROJECT COST = \$6,203.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
 Road Segment: I

Sale Number: FG-341-2022-W00858-01

PROJECT NO. 1

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
Subgrade rock						
Bedding and backfill	1½" - 0	\$0.80	\$15.03	\$0.50	24	\$391.92
				Subtotal =	24	\$391.92

Totals	All Rock =	24
	1½" - 0 =	24

TOTAL ROCK COSTS = \$391.92

EROSION CONTROL

Grass seed & fertilizer	0.05	ac @	\$425.00	per ac =	\$21.25
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TOTAL EROSION CONTROL COSTS = \$21.25

TOTAL PROJECT COST = \$1,023.17

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
 Road Segment: J

Sale Number: FG-341-2022-W00858-01

PROJECT NO. 1

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
Subgrade rock						
Bedding and backfill	1½" - 0	\$0.80	\$15.03	\$0.50	24	\$391.92
				Subtotal =	24	\$391.92

Totals	All Rock =	24
	1½" - 0 =	24

TOTAL ROCK COSTS = \$391.92

EROSION CONTROL

Grass seed & fertilizer	0.05	ac @	\$425.00	per ac =	\$21.25
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TOTAL EROSION CONTROL COSTS = \$21.25

TOTAL PROJECT COST = \$1,023.17

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
Road Segment: K

Sale Number: FG-341-2022-W00858-01

PROJECT NO. 1

CULVERTS

Additional Installation Cost

Outlet repair 2 hrs @ \$175.00 per hr = \$350.00

TOTAL CULVERT COSTS = \$350.00

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Energy dissipator	24"- 12"	\$6.79	\$8.20	\$1.60	36	\$597.07
Fill armor	24"- 12"	\$6.79	\$8.20	\$1.60	24	\$398.05
Subtotal =					60	\$995.12

Totals

All Rock =	60
Riprap =	60

TOTAL ROCK COSTS = \$995.12

TOTAL PROJECT COST = \$1,345.12

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods
Road Segment: L

Sale Number: FG-341-2022-W00858-01

PROJECT NO. 1

CULVERTS

Culverts and Bands					
30" Diameter	120	LF @	\$39.00	per LF =	\$4,680.00
30" Band	4	ea @	\$73.58	per ea =	\$294.32
Markers & Stakes					
Culvert markers	2	ea @	\$10.00	per ea =	\$20.00
Additional Installation Cost					
Detail: 20' ditch out	1	hrs @	\$175.00	per hr =	\$175.00

TOTAL CULVERT COSTS = \$5,169.32

ROCK

	Rock Size	Base Cost \$/cy	Haul Cost \$/cy	Placement/ Processing Cost \$/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	\$0.80	\$11.05	\$0.50	60	\$741.00
				Subtotal =	60	\$741.00

Totals

All Rock =	60
1½" - 0 =	60

TOTAL ROCK COSTS = \$741.00

EROSION CONTROL

Grass seed & fertilizer	0.05	ac @	\$425.00	per ac =	\$21.25
Straw mulch (bale)	2	ea @	\$10.00	per ea =	\$20.00

TOTAL EROSION CONTROL COSTS = \$41.25

TOTAL PROJECT COST = \$5,951.57

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods

Sale Number: FG-341-2022-W00858-01
Improvement: 231+25 stations
4.38 miles

PROJECT NO. 2 ROAD BRUSHING

IMPROVEMENT

Roadside brushing 4.38 mi @ \$1,332.08 per mi = \$5,834.51

TOTAL PROJECT COST = \$5,834.51

SUMMARY OF CONSTRUCTION COST

Timber Sale: Backwoods

Sale Number: FG-341-2022-W00858-01

PROJECT No. 1 & 2 MOVE-IN, WITHIN AREA MOVE, & CLEANING COSTS

<u>Equipment</u>	<u>Total</u>
Brush Cutter	\$554.77
Grader	\$908.24
Loader (Med. & Large)	\$909.99
Roller (smooth/grid) & Compactor	\$663.23
Excavator (Large) - Equipment Cleaning	\$1,991.47
Dump Truck (10cy +)	\$320.98
<u>TOTAL MOVE-IN COSTS =</u>	<u>\$5,348.68</u>

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Backwoods
Sale Number: FG-341-2022-W00858-01
Stockpile Name: Beaverdam Stockpile

1 1/2" - 0: 624 cy (truck measure)
Total truck yardage: 624 cy

<u>1 1/2"-0 Base Cost</u>					
Load dump truck	<u>\$0.80</u>	/ cy x	<u>624</u>	cy =	<u>\$499.20</u>
				Subtotal =	<u>\$499.20</u>
				Per CY =	<u>\$0.80</u>
				Total =	<u><u>\$499.20</u></u>
1 1/2"-0 Cost = <u>\$0.80/cy</u>					

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Backwoods
 Sale Number: FG-341-2022-W00858-01
 Quarry Name: Woods Point

4" - 0: 5,310 cy (truck measure)
 Rip-Rap: 120 cy (truck measure)
 Total truck yardage: 5,430 cy
 Total in place yardage: 5,221 cy
 Oversize - Pile: 20%
 Swell: 130%
 Compaction: 116%

Move-in & Other Base Cost

Quarry development & overburden removal				\$2,106.48
Equipment cleaning & move in excavator				\$1,956.09
Equipment cleaning & move in dozer				\$1,930.64
Move in & setup drill				\$562.65
Move in loader				\$838.31
Move in & setup crusher				\$3,576.70
Move in Dump Trucks				\$475.20
Gradation tests	\$71.50 /2,000cy x	<u>3</u>	tests =	\$214.50
6 Test Drills & Drill Reports				\$792.00
Clean up quarry				\$500.00
			Subtotal =	<u>\$12,952.57</u>
			Per CY =	<u>\$2.39/cy</u>

4"-0 Base Cost

Drill & shoot	<u>\$2.80</u>	/ cy x	<u>5,106</u>	cy =	\$14,296.15
Push rock	<u>\$0.80</u>	/ cy x	<u>6,638</u>	cy =	\$5,310.00
Oversize - Pile	<u>\$0.80</u>	/ cy x	<u>1,328</u>	cy =	\$1,062.00
Load crusher	<u>\$0.80</u>	/ cy x	<u>5,310</u>	cy =	\$4,248.00
Crush (4" - 0)	<u>\$3.30</u>	/ cy x	<u>5,310</u>	cy =	\$17,523.00
Load dump truck	<u>\$0.80</u>	/ cy x	<u>5,310</u>	cy =	\$4,248.00
				Subtotal =	<u>\$46,687.15</u>
				Per CY =	<u>\$8.79/cy</u>

24" -12" Rip-rap Base Cost

Drill & shoot	<u>\$2.80</u>	/ cy x	<u>120</u>	cy =	\$336.00
Push rock	<u>\$0.80</u>	/ cy x	<u>120</u>	cy =	\$96.00
Load dump truck	<u>\$0.80</u>	/ cy x	<u>120</u>	cy =	\$96.00
				Subtotal =	<u>\$528.00</u>
				Per CY =	<u>\$4.40/cy</u>
				Total =	<u>\$60,167.72</u>

4"-0 Base Cost = \$11.18/cy
 24" - 12" Rip-rap Base Cost = \$6.79/cy

CRUISE REPORT
Backwoods
#FG-341-2022-W00858-01

1. LOCATION:

Portions of Sections 15 and 16, T1N, R6W, W.M., Tillamook County, Oregon.

2. CRUISE DESIGN:

The timber cruise was designed using an estimated coefficient of variation (CV) of 59%, average stand diameter of 19 inches, sampling error (SE) of 11% and a minimum of 100 grade trees.

3. SAMPLING METHOD:

The Timber Sale Area was cruised in March of 2022 with 26 variable radius grade plots using a 40 BAF prism. Plots were laid out on a 5 chain x 5 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

4. CRUISE RESULTS:

138 trees were measured and graded producing a standard error of 5.5% on the Douglas-fir Basal Area and 5.4% on the Douglas-fir Net Board Foot Volume.

5. TREE MEASUREMENT AND GRADING:

All sample trees were measured and graded following the Official Log Scaling and Grading Rules as adopted by the NW Log Rules Advisory Group. 40 foot segments were favored.

- a) **Height Standards:** Total tree heights were measured to the nearest foot. Bole heights were calculated to a six-inch top.
- b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.
- c) **Form Factors:** 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 SuperAce 2008 cruise software.
- b) **Deductions:** The following percent volume deductions are by species to account for the hidden defect and breakage. For conifers two percent was deducted. For hardwoods five percent was deducted.

7. CRUISERS: The sale was cruised by ODF cruisers Nathan Hunter, Shamus Smith, and Mark Savage.

Prepared by: Nate Hunter 3-10-22

Reviewed by: Mark Savage 3-23-22
Date

TC PSTATS			PROJECT STATISTICS						PAGE 1			
			PROJECT		BKWDS		DATE		3/10/2022			
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
01N	06	16	00U1	00MC		74.00	26	145	S	W		
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			26	145	5.6							
CRUISE			26	145	5.6	8,496	1.7					
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			133	99.4	19.4	132	46.4	204.6	42,624	42,624	9,375	9,375
DOUG FIR-S			7	7.9	15.8	48	2.7	10.8				
R ALDER			5	7.5	13.8	99	2.1	7.7	812	812	194	194
TOTAL			145	114.8	18.9	124	51.3	223.1	43,436	43,436	9,569	9,569
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			37.7	3.5	603	625	647					
DOUG FIR-S												
R ALDER			66.5	33.0	103	154	205					
TOTAL			48.9	4.3	548	572	597	96	24	11		
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			30.5	2.8	132	136	140					
DOUG FIR-S												
R ALDER			59.1	29.4	25	36	46					
TOTAL			43.0	3.8	120	125	129	74	18	8		
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			53.6	10.7	89	99	110					
DOUG FIR-S			275.5	55.1	4	8	12					
R ALDER			368.2	73.6	2	7	13					
TOTAL			62.2	12.4	101	115	129	161	40	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			27.3	5.5	193	205	216					
DOUG FIR-S			247.7	49.5	5	11	16					
R ALDER			360.8	72.2	2	8	13					
TOTAL			34.8	7.0	208	223	239	50	13	6		
CL	68.1	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15		
DOUG FIR			27.2	5.4	40,302	42,624	44,945					
DOUG FIR-S												
R ALDER			398.6	79.7	165	812	1,459					
TOTAL			29.7	5.9	40,856	43,436	46,015	37	9	4		
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			26.0	5.2	8,888	9,375	9,861					
DOUG FIR-S												

TC PSTATS					PROJECT STATISTICS			PAGE 2	
					PROJECT	BKWDS	DATE	3/10/2022	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
01N	06	16	00U1	00MC	74.00	26	145	S	W
CL	68.1	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER		382.8	76.6	46	194	343			
TOTAL		28.8	5.8	9,017	9,569	10,120	35	9	4

Species, Sort Grade - Board Foot Volumes (Project)

T01N R06W S16 Ty00MC 74.00

Project: **BKWDS**Page **1**Acres **74.00**Date **3/10/2022**Time **1:08:59PM**

Spp	S T	So rt	Gr 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														17	12		0.00	6.1
DF			2M	67		28,968	28,968	2,144		6	67	26			7	93	39	14	294	1.59	98.5
DF			3M	29		12,324	12,324	912		97	3			0	17	82	38	8	97	0.61	126.8
DF			4M	4		1,332	1,332	99		100			73	27			18	6	22	0.30	60.5
DF Totals				98		42,624	42,624	3,154		35	47	18	2	1	10	87	34	10	146	0.95	291.9
RA			CU														19	12		0.00	1.4
RA			CR	100		812	812	60		71	29		28		14	58	26	9	86	0.79	9.4
RA Totals				2		812	812	60		71	29		28		14	58	25	9	75	0.71	10.8
Totals						43,436	43,436	3,214		36	46	18	3	1	10	87	33	10	143	0.95	302.7

TC PLOGSTVB				Log Stock Table - MBF															
T01N R06W S16 Ty00MC 74.00				Project: BKWDS Acres 74.00				Page 1 Date 3/10/2022 Time 1:08:58PM											
Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spe	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	32	82		82	2.6							27		40	16		
DF		2M	34	61		61	1.9					49	12						
DF		2M	36	177		177	5.6					33	60	50	34				
DF		2M	40	1,823		1,823	57.8					57	662	441	546	118			
DF		3M	28	1		1	.0				1								
DF		3M	30	1		1	.0			1									
DF		3M	32	24		24	.8			24									
DF		3M	33	6		6	.2			6									
DF		3M	34	127		127	4.0			25	37	65							
DF		3M	35	2		2	.1			2									
DF		3M	36	169		169	5.4			39	87	43							
DF		3M	38	12		12	.4			12									
DF		3M	39	2		2	.1			2									
DF		3M	40	568		568	18.0			81	253	203	31						
DF		4M	12	1		1	.0			1									
DF		4M	14	1		1	.0			1									
DF		4M	15	14		14	.4			14									
DF		4M	16	19		19	.6			18	1								
DF		4M	17	10		10	.3			10									
DF		4M	18	19		19	.6			19									
DF		4M	19	1		1	.0			1									
DF		4M	20	7		7	.2			7									
DF		4M	22	7		7	.2			7									
DF		4M	24	9		9	.3			9									
DF		4M	26	6		6	.2			6									
DF		4M	30	4		4	.1			4									
DF		Totals		3,154		3,154	98.1			290	379	449	765	491	607	157	16		
RA		CR	16	17		17	27.6			6	3			7					
RA		CR	32	9		9	14.5			9									
RA		CR	40	35		35	57.9					24	10						
RA		Totals		60		60	1.9			15	3	24	10	7					
Total		All Species		3,214		3,214	100.0			305	382	474	775	498	607	157	16		

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		3/10/2022	
T01NR06W S16 Ty00MC 74.00				Project BKWDS										Time:		1:09:01PM	
				Acres 74.00										Grown Year:			
S Spec T	DBH	Sample Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals				
			FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF		
DF	11	2	87	109	4.662	3.08	9.32	10.3	47.5	2.74	96	443	203	71	33		
DF	12	1	89	115	1.959	1.54	3.92	13.4	65.0	1.50	53	255	111	39	19		
DF	14	4	88	114	5.757	6.15	11.51	20.0	91.2	6.55	230	1,051	485	170	78		
DF	15	3	88	124	3.761	4.62	11.28	16.6	77.8	5.35	188	878	396	139	65		
DF	16	12	89	131	13.222	18.46	39.67	19.7	90.6	22.32	783	3,592	1,652	580	266		
DF	17	10	88	130	9.760	15.38	28.30	24.0	104.1	19.34	678	2,948	1,431	502	218		
DF	18	11	87	130	9.577	16.92	26.12	27.1	120.0	20.18	708	3,134	1,494	524	232		
DF	19	15	86	130	11.720	23.08	35.16	29.8	125.8	29.90	1,049	4,423	2,212	776	327		
DF	20	15	87	132	10.578	23.08	31.03	33.1	144.8	29.23	1,026	4,492	2,163	759	332		
DF	21	4	89	139	2.558	6.15	7.68	39.0	189.2	8.52	299	1,452	631	221	107		
DF	22	14	88	145	8.159	21.54	25.06	42.4	200.7	30.30	1,063	5,030	2,242	787	372		
DF	23	7	87	149	3.733	10.77	11.73	47.6	222.3	15.92	559	2,607	1,178	413	193		
DF	24	6	86	140	2.938	9.23	9.30	47.8	213.2	12.67	445	1,983	938	329	147		
DF	25	9	86	144	4.062	13.85	12.64	53.6	242.1	19.32	678	3,060	1,429	502	226		
DF	26	4	86	146	1.669	6.15	5.42	57.9	270.8	8.95	314	1,469	662	232	109		
DF	27	5	86	147	1.935	7.69	6.58	59.4	282.9	11.13	391	1,861	824	289	138		
DF	28	3	85	145	1.079	4.62	3.96	57.0	279.1	6.43	226	1,105	476	167	82		
DF	29	1	86	137	.335	1.54	1.01	74.4	350.0	2.13	75	352	158	55	26		
DF	30	4	85	138	1.254	6.15	3.76	79.3	376.7	8.49	298	1,417	629	221	105		
DF	32	1	84	136	.275	1.54	.83	85.5	393.3	2.01	71	325	149	52	24		
DF	34	1	84	131	.244	1.54	.73	98.0	463.3	2.04	72	339	151	53	25		
DF	38	1	83	147	.195	1.54	.78	95.4	525.0	2.13	75	410	157	55	30		
DF	Totals	133	87	132	99.433	204.62	285.79	32.8	149.1	267.17	9,375	42,624	19,771	6,937	3,154		
RA	10	1	73	95	2.821	1.54	2.82	7.4	30.0	.58	21	85	43	15	6		
RA	12	1	74	101	1.959	1.54	1.96	19.0	60.0	1.02	37	118	76	28	9		
RA	16	1	85	99	1.102	1.54	2.20	25.0	110.0	1.51	55	242	112	41	18		
RA	18	1	85	103	.871	1.54	1.74	27.5	130.0	1.32	48	226	97	35	17		
RA	20	1	84	101	.705	1.54	.71	47.2	200.0	.92	33	141	68	25	10		
RA	Totals	5	77	99	7.457	7.69	9.43	20.6	86.1	5.35	194	812	396	144	60		
DF S	10	2	86	40	5.641	3.08											
DF S	20	1	84	60	.705	1.54											
DF S	21	1	84	55	.640	1.54											
DF S	22	1	85	125	.583	1.54											
DF S	40	2	84	19	.353	3.08											
DF S	Totals	7	85	48	7.922	10.77											
Totals		145	87	124	114.812	223.08	295.22	32.4	147.1	272.52	9,569	43,436	20,167	7,081	3,214		

VOLUME SUMMARY
(Shown in MBF)
Backwoods
FG-341-2022-W00858-01
March 2022

UNIT 1: Modified Clearcut (74 ACRES)

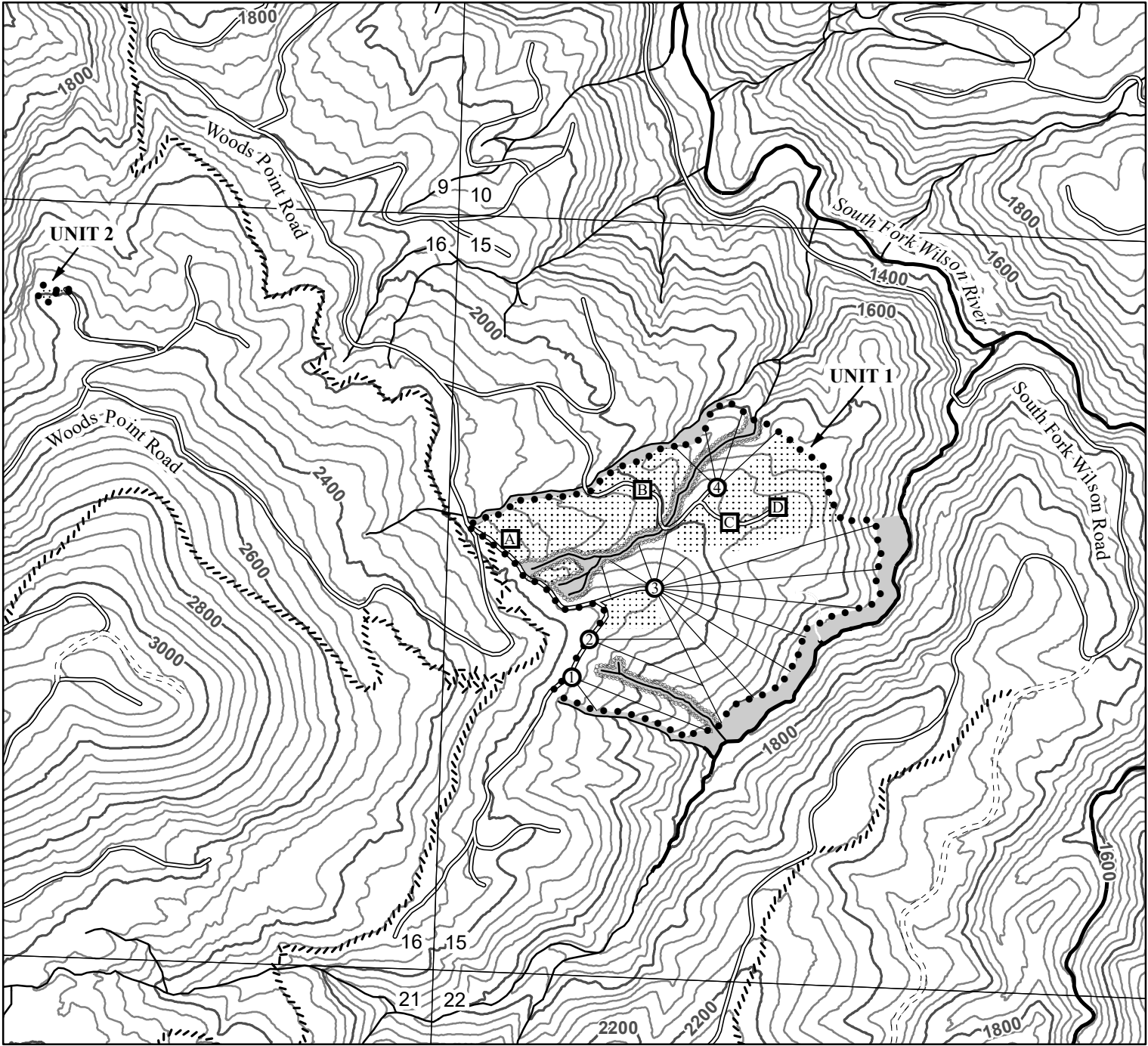
SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	2,144	912	99	0	3,155
	Hidden D&B (2%)	(43)	(18)	(2)	(0)	(63)
	NET TOTAL	2,101	894	97	0	3,092
	% of Total	68	29	3	0	
Red Alder	Cruise Volume	0	0	0	60	60
	Hidden D&B (5%)	(0)	(0)	(0)	(3)	(3)
	NET TOTAL	0	0	0	57	57
	% of Total	0	0	0	100	

UNIT 2: Clearcut (<1 ACRE)

Douglas-fir	Cruise Volume	0	4	2	0	6
	Hidden D&B (2%)	(0)	(0)	(0)	(0)	(0)
	NET TOTAL	0	4	2	0	6
	% of Total	0	67	33	0	

SALE TOTAL

SPECIES	2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	2,101	898	99	0	3,098
Red Alder	0	0	0	57	57
Total	2,101	898	99	57	3,155



LEGEND

- Timber Sale Boundary
- - - - - Stream Buffer Boundary
- Surfaced Roads
- - - - - Unsurfaced Roads
- ////// Recreation Trails
- Type-F Stream
- Type-N Stream
- Stream Buffer
- ◁ Cable Yarding Area
- ▤ Tractor Yarding Area
- Cable Landing
- Tractor Landing
- Section Lines
- 40 Foot Contour Band
- 200 Foot Contour Band

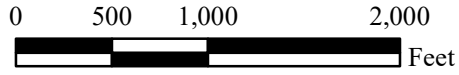
LOGGING PLAN

FOR TIMBER SALE CONTRACT #FG-341-2022-W00858-01
BACKWOODS
PORTIONS OF SECTIONS 15 & 16, T1N, R6W, W.M.,
TILLAMOOK COUNTY, OREGON

Forest Grove District GIS
March, 2022

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	
	CABLE	TRACTOR
UNIT 1	47	27
UNIT 2	0	<1
TOTAL	47	27