



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Joe Cockeran
Sale 341-09-30

District: Forest Grove

Date: July 08, 2008

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,625,161.61	\$37,759.50	\$2,662,921.11
		Project Work:	\$(110,300.00)
		Advertised Value:	\$2,552,621.11



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timber description

Location: Portions of Sections 17, 20 and 21, T3N, R6W, W.M., Tillamook County, Oregon.

Stand Stocking: 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	21	0	98
Western Hemlock / Fir	21	0	98
Alder (Red)	15	0	98

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	6,341	3,711	391	10,443
Western Hemlock / Fir	38	14	1	53
Alder (Red)	0	90	0	90
Total	6,379	3,815	392	10,586



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comments: Pond Values Used: 2nd Quarter Calendar Year 2008

Western Red Cedar Stumpage Price = Pond Value minus Logging Cost
 $\$871.77/\text{MBF} = \$1,075/\text{MBF} - \$203.23/\text{MBF}$

SCALING COST ALLOWANCE = $\$5.00/\text{MBF}$

FUEL COST ALLOWANCE = $\$4.50/\text{Gallon}$

HAULING COST ALLOWANCE

Hauling costs equivalent to \$700 daily truck cost.

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

Brand and Paint: $1\$/\text{MBF} \times 10,586 \text{ MBF} = \$10,586$

Topping for snag creation: $\$40/\text{tree} \times 400 \text{ trees} = \$16,000$

TOTAL Other Costs (with Profit and Risk to be added) = $\$26,586$

Other Costs (No Profit & Risk to be added):

Skid trail closure/Slash piling: $\$110/\text{hr} \times 20 \text{ hours} = \$2,200$

Slash piling for firewood: $\$110/\text{hr} \times 20 \text{ hours} = \$2,200$

TOTAL Other Costs (No Profit & Risk added) = $\$4,400$



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logging conditions

combination#: 1 Douglas - Fir 46.75%
 Western Hemlock / Fir 55.19%
 Alder (Red) 62.11%

yarding distance: Medium (800 ft) downhill yarding: No
logging system: Cable: Medium Tower >40 - <70 Process: Manual Delimbing
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 9.0 bd. ft / load: 4,500
cost / mbf: \$85.43

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

combination#: 2 Douglas - Fir 19.92%

yarding distance: Short (400 ft) downhill yarding: No
logging system: Cable: Medium Tower >40 - <70 Process: Manual Delimbing
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 6.0 bd. ft / load: 4,200
cost / mbf: \$137.30

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

combination#: 3 Douglas - Fir 25.17%
 Western Hemlock / Fir 29.72%
 Alder (Red) 33.44%

yarding distance: Medium (800 ft) downhill yarding: No
logging system: Shovel Process: Manual Delimbing
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 12.0 bd. ft / load: 4,500
cost / mbf: \$46.38

machines: Shovel Logger

combination#: 4 Douglas - Fir 8.16%
 Western Hemlock / Fir 15.09%
 Alder (Red) 4.44%

yarding distance: Short (400 ft) downhill yarding: No
logging system: Shovel Process: Manual Delimbing
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 6.0 bd. ft / load: 4,200
cost / mbf: \$99.39

machines: Shovel Logger



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logging costs

Operating Seasons:	2.00	Profit Risk:	15.00%
Project Costs:	\$110,300.00	Other Costs (P/R):	\$26,586.00
Slash Disposal:	\$0.00	Other Costs:	\$4,400.00

Miles of Road

Road Maintenance: \$0.00

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	20.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.6
Western Hemlock / Fir	\$0.00	2.0	3.8
Alder (Red)	\$0.00	2.0	3.0



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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$87.07	\$16.73	\$0.83	\$67.48	\$2.51	\$26.19	\$0.00	\$5.00	\$0.42	\$206.23
Western Hemlock / Fir									
\$75.93	\$16.73	\$0.83	\$81.69	\$2.51	\$26.65	\$0.00	\$5.00	\$0.42	\$209.76
Alder (Red)									
\$72.99	\$16.73	\$0.00	\$103.48	\$0.00	\$32.25	\$0.00	\$5.00	\$0.00	\$230.45

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$456.95	\$250.72	\$0.00
Western Hemlock / Fir	\$0.00	\$339.81	\$130.05	\$0.00
Alder (Red)	\$0.00	\$650.00	\$419.55	\$0.00



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summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	10,443	\$250.72	\$2,618,268.96
Western Hemlock / Fir	53	\$130.05	\$6,892.65
Alder (Red)	90	\$419.55	\$37,759.50

Gross Timber Sale Value

Recovery: \$2,662,921.11

Prepared by: Matthew Frison

Phone: 503-357-2191

PROJECT COST SUMMARY SHEETTimber Sale: Joe CockeranSale Number: 341-09-30**PROJECT NO. 1: ROAD CONSTRUCTION****CONSTRUCTION**

Road Segment	Length	Cost
A to B	7+00	\$6,276.16
C to D	21+30	\$8,545.11
E to F	2+80	\$1,389.33
G to H	7+60	\$2,526.05
I to J	22+20	\$7,670.94
K to L	1+60	\$618.91
M to N	1+75	\$365.21
O to P	15+25	\$4,992.53
Q to R	2+15	\$808.69
81+65 stations		
1.55 miles		

TOTAL PROJECT NO. 1 COST = \$33,192.93**PROJECT NO. 2: SURFACING**

Road Segment	Amount	Type	Cost
A to B	519 cy	6" - 0	\$4,378.88
A to B	160 cy	1 1/2" - 0	\$1,630.40
C to D	1,526 cy	6" - 0	\$18,002.45
E to F	283 cy	6" - 0	\$2,936.73
G to H	566 cy	6" - 0	\$6,048.93
I to J	1,511 cy	6" - 0	\$16,344.71
I to J	80 cy	1 1/2" - 0	\$763.20
K to L	213 cy	6" - 0	\$2,359.43
M to N	142 cy	6" - 0	\$1,477.82
O to P	1,119 cy	6" - 0	\$13,472.31
Q to R	221 cy	6" - 0	\$2,824.29
S	40 cy	1 1/2" - 0	\$396.80
T	40 cy	1 1/2" - 0	\$392.00
Total	240 cy	1 1/2" - 0	
	6,100 cy	6" - 0	

TOTAL PROJECT NO. 2 COST = \$71,027.95**PROJECT NO. 3: GRASS SEEDING AND FERTILIZING**Grass seed and fertilize areas of disturbed
soil. \$749.77**TOTAL PROJECT NO. 3 COST = \$749.77****MOVE IN \$5,320.71****TOTAL ALL PROJECTS \$110,291.36****TOTAL CREDITS \$110,300.00**

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
 Road Segment: A to B

Timber Sale No. : 341-09-30
 Construction : 7+00 stations
0.13 miles

PROJECT NO. 1**EXCAVATION**

Clearing and Grubbing (Scatter)	0.64	acres @	\$980.00	per acre =	\$629.94
Balanced Road Construction	2.00	sta @	\$90.00	per sta =	\$180.00
Drift	5.00	sta @	\$150.00	per sta =	\$750.00
Endhaul					
Excavate & Load	500	cy @	\$1.40	per cy =	\$700.00
Haul	500	cy @	\$2.15	per cy =	\$1,074.22
Place Fill	500	cy @	\$2.12	per cy =	\$1,060.00
Compact Fill	5	hr @	\$36.62	per hr =	\$183.10
Construct "Y" Junction	1.00	sta @	\$150.00	per sta =	\$150.00
Grade, Ditch, and Roll	7.00	sta @	\$28.70	per sta =	\$200.90
TOTAL EXCAVATION COSTS=					\$4,928.16

CULVERTS - MATERIALS & INSTALLATION**Culverts**

34 LF of 18" \$578.00
\$578.00

Culvert Markers

2 markers \$20.00

Excavate existing culvert at Point B and reinstall culvert 50' up the road, past the junction.

5 Hrs @ \$150.00 per hr = \$ 750.00

TOTAL CULVERT COSTS = **\$1,348.00**

PROJECT NO. 1 TOTAL COST = \$6,276.16

PROJECT NO. 2:**SURFACING**

	10	" deep =	58 cy/sta			
A to B	406	cy of	6" - 0	@	\$8.55 per cy =	\$3,469.50
A to B	160	cy of	1 1/2" - 0	@	\$10.19 per cy =	\$1,630.40
Curve Widening	40	cy of	6" - 0	@	\$8.55 per cy =	\$341.82
Junction	58	cy of	6" - 0	@	\$8.55 per cy =	\$495.64
Fill Widening	15	cy of	6" - 0	@	\$8.55 per cy =	\$128.18
Total =						
	160	cy of	1 1/2" - 0			
	519	cy of	6" - 0			

PROJECT NO. 2 TOTAL COST = \$6,065.55

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 0.32 acres @ \$200.00 per acre = \$64.28

PROJECT NO. 3 TOTAL COST = \$64.28

TOTAL COST = \$12,405.99

Timber Sale:	<u>Joe Cockeran</u>	Timber Sale No.:	<u>341-09-30</u>
Road Segment:	<u>C to D</u>	Construction:	<u>21+30</u> stations
			<u>0.40</u> miles

Clearing and Grubbing (Scatter)	1.96	acres @	\$980.00	per acre =	\$1,916.80
Balanced Road Construction	7.30	sta @	\$90.00	per sta =	\$657.00
Drift	14.00	sta @	\$150.00	per sta =	\$2,100.00
Construct Turnouts (2)	2	ea @	\$60.00	per ea =	\$120.00
Construct Turnaround (2)	2	ea @	\$75.00	per ea =	\$150.00
Landing	2	ea @	\$285.00	per ea =	\$570.00
Grade, Ditch, and Roll	21.30	sta @	\$28.70	per sta =	\$611.31
TOTAL EXCAVATION COSTS:					

PROJECT NO. 1 TOTAL COST = \$8,545.11

PROJECT NO. 2 TOTAL COST = \$18,002.45

PROJECT NO. 3 TOTAL COST = \$195.59

TOTAL COST = \$26,743.15

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
Road Segment: E to F

Timber Sale No. : 341-09-30
Construction : 2+80 stations
0.05 miles

PROJECT NO. 1**EXCAVATION**

Clearing and Grubbing (Scatter)	0.26	acres @	\$980.00	per acre =	\$251.97
Balanced Road Construction	2.80	sta @	\$90.00	per sta =	\$252.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	2.80	sta @	\$28.70	per sta =	\$80.36
TOTAL EXCAVATION COSTS=					\$869.33

CULVERTS - MATERIALS & INSTALLATION

Culverts
30 LF of 18" \$510.00
\$510.00

Culvert Markers
1 markers \$10.00

TOTAL CULVERT COSTS = \$520.00

PROJECT NO. 1 TOTAL COST = \$1,389.33

PROJECT NO. 2:

SURFACING	10	" deep =	58 cy/sta			
E to F	163	cy of	6" - 0	@	\$10.38 per cy =	\$1,691.48
Junction	40	cy of	6" - 0	@	\$10.38 per cy =	\$415.09
Landing (1)	80	cy of	6" - 0	@	\$10.38 per cy =	\$830.17
Total =	283	cy of	6" - 0			

PROJECT NO. 2 TOTAL COST = \$2,936.73

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 0.13 acres @ \$200.00 per acre = \$25.71

PROJECT NO. 3 TOTAL COST = \$25.71

TOTAL COST = \$4,351.78

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran Timber Sale No. : 341-09-30
Road Segment: G to H Construction : 7+60 stations
0.14 miles

PROJECT NO. 1**EXCAVATION**

Clearing and Grubbing (Scatter)	0.70	acres @	\$980.00	per acre =	\$683.93
Balanced Road Construction	7.60	sta @	\$90.00	per sta =	\$684.00
Construct Turnouts (1)	1	ea @	\$60.00	per ea =	\$60.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	7.60	sta @	\$28.70	per sta =	\$218.12
TOTAL EXCAVATION COSTS=					\$2,006.05

CULVERTS - MATERIALS & INSTALLATION**Culverts**

30 LF of 18" \$510.00
\$510.00

Culvert Markers

1 markers \$10.00

TOTAL CULVERT COSTS = \$520.00

PROJECT NO. 1 TOTAL COST = \$2,526.05

PROJECT NO. 2:**SURFACING**

	10	* deep =	58 cy/sta		
G to H	441	cy of	6" - 0	@	\$10.69 per cy = \$4,713.03
Turnarounds (1)	16	cy of	6" - 0	@	\$10.69 per cy = \$170.99
Turnouts (1)	29	cy of	6" - 0	@	\$10.69 per cy = \$309.93
Landing (1)	80	cy of	6" - 0	@	\$10.69 per cy = \$854.97
Total =	566	cy of	6" - 0		

PROJECT NO. 2 TOTAL COST = \$6,048.93

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 0.35 acres @ \$200.00 per acre = \$69.79

PROJECT NO. 3 TOTAL COST = \$69.79

TOTAL COST = \$8,644.76

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
 Road Segment: I to J

Timber Sale No. : 341-09-30
 Construction : 22+20 stations
0.42 miles

PROJECT NO. 1**EXCAVATION**

Clearing and Grubbing (Scatter)	2.04	acres @	\$980.00	per acre =	\$1,997.80
Balanced Road Construction	19.20	sta @	\$90.00	per sta =	\$1,728.00
Drift	3.00	sta @	\$150.00	per sta =	\$450.00
Construct Turnouts (3)	3	ea @	\$60.00	per ea =	\$180.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	22.20	sta @	\$28.70	per sta =	\$637.14
TOTAL EXCAVATION COSTS=					\$5,352.94

CULVERTS - MATERIALS & INSTALLATION**Culverts**

134 LF of 18" \$2,278.00
\$2,278.00

Culvert Markers

4 markers \$40.00

TOTAL CULVERT COSTS = \$2,318.00

PROJECT NO. 1 TOTAL COST = \$7,670.94

PROJECT NO. 2:**SURFACING**

	10	" deep =	58 cy/sta			
I to J	1,288	cy of	6" - 0	@	\$10.82 per cy =	\$13,932.49
Turnarounds (1)	16	cy of	6" - 0	@	\$10.82 per cy =	\$173.07
Junction	40	cy of	6" - 0	@	\$10.82 per cy =	\$432.69
Turnouts (3)	87	cy of	6" - 0	@	\$10.82 per cy =	\$941.09
Landing (1)	80	cy of	6" - 0	@	\$10.82 per cy =	\$865.37
Surfacing rock for the steep stretch of existing road at Point I	80	cy of	1 1/2" - 0	@	\$9.54 per cy =	\$763.20
Total =	80	cy of	1 1/2" - 0			
	1,511	cy of	6" - 0			

PROJECT NO. 2 TOTAL COST = \$17,107.91

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 1.02 acres @ \$200.00 per acre = \$203.86

PROJECT NO. 3 TOTAL COST = \$203.86

TOTAL COST = \$24,982.70

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
Road Segment: K to L

Timber Sale No. : 341-09-30
Construction : 1+60 stations
0.03 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.15	acres @	\$980.00	per acre =	\$143.99
Balanced Road Construction	1.60	sta @	\$90.00	per sta =	\$144.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	1.60	sta @	\$28.70	per sta =	\$45.92
TOTAL EXCAVATION COSTS=					\$618.91

PROJECT NO. 1 TOTAL COST = \$618.91

PROJECT NO. 2:

SURFACING

	10	" deep =	58 cy/sta		
K to L	93	cy of	6" - 0	@	\$11.08 per cy = \$1,030.17
Junction	40	cy of	6" - 0	@	\$11.08 per cy = \$443.09
Landing (1)	80	cy of	6" - 0	@	\$11.08 per cy = \$886.17
Total =	213	cy of	6" - 0		

PROJECT NO. 2 TOTAL COST = \$2,359.43

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.07	acres @	\$200.00	per acre =	\$14.69
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PROJECT NO. 3 TOTAL COST = \$14.69

TOTAL COST = \$2,993.03

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
Road Segment: M to N

Timber Sale No. : 341-09-30
Construction : 1+75 stations
0.03 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.16	acres @	\$980.00	per acre =	\$157.48
Balanced Road Construction	1.75	sta @	\$90.00	per sta =	\$157.50
Grade, Ditch, and Roll	1.75	sta @	\$28.70	per sta =	\$50.23
TOTAL EXCAVATION COSTS=					\$365.21

PROJECT NO. 1 TOTAL COST = \$365.21

PROJECT NO. 2:

SURFACING	10	" deep =	58 cy/sta		
M to N	102	cy of	6" - 0	@	\$10.41 per cy = \$1,061.53
Curve Widening	40	cy of	6" - 0	@	\$10.41 per cy = \$416.29
Total =	142	cy of	6" - 0		

PROJECT NO. 2 TOTAL COST = \$1,477.82

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.08	acres @	\$200.00	per acre =	\$16.07
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PROJECT NO. 3 TOTAL COST = \$16.07

TOTAL COST = \$1,859.09

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
 Road Segment: O to P

Timber Sale No. : 341-09-30
 Construction : 15+25 stations
0.29 miles

PROJECT NO. 1**EXCAVATION**

Clearing and Grubbing (Scatter)	1.40	acres @	\$980.00	per acre =	\$1,372.36
Balanced Road Construction	10.25	sta @	\$90.00	per sta =	\$922.50
Drift	5.00	sta @	\$150.00	per sta =	\$750.00
Construct Turnouts (2)	2	ea @	\$60.00	per ea =	\$120.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	15.25	sta @	\$28.70	per sta =	\$437.68
TOTAL EXCAVATION COSTS=					\$3,962.53

CULVERTS - MATERIALS & INSTALLATION

Culverts
 60 LF of 18" \$1,020.00
\$1,020.00

Culvert Markers
 1 markers \$10.00

TOTAL CULVERT COSTS = \$1,030.00

PROJECT NO. 1 TOTAL COST = \$4,992.53

PROJECT NO. 2:**SURFACING**

	10	" deep =	58 cy/sta			
O to P	885	cy of	6" - 0	@	\$12.04 per cy =	\$10,655.04
Curve Widening	40	cy of	6" - 0	@	\$12.04 per cy =	\$481.58
Turnarounds (1)	16	cy of	6" - 0	@	\$12.04 per cy =	\$192.63
Turnouts (2)	58	cy of	6" - 0	@	\$12.04 per cy =	\$698.30
Junction	40	cy of	6" - 0	@	\$12.04 per cy =	\$481.58
Landing (1)	80	cy of	6" - 0	@	\$12.04 per cy =	\$963.17
Total =	1,119	cy of	6" - 0			

PROJECT NO. 2 TOTAL COST = \$13,472.31

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 0.70 acres @ \$200.00 per acre = \$140.04

PROJECT NO. 3 TOTAL COST = \$140.04

TOTAL COST = \$18,604.88

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran
Road Segment: Q to R

Timber Sale No. : 341-09-30
Construction : 2+15 stations
0.04 miles

PROJECT NO. 1**EXCAVATION**

Clearing and Grubbing (Scatter)	0.20	acres @	\$980.00	per acre =	\$193.48
Balanced Road Construction	2.15	sta @	\$90.00	per sta =	\$193.50
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	2.15	sta @	\$28.70	per sta =	\$61.71
TOTAL EXCAVATION COSTS=					\$808.69

PROJECT NO. 1 TOTAL COST = \$808.69

PROJECT NO. 2:

SURFACING	10	" deep =	58 cy/sta		
Q to R	125	cy of	6" - 0	@	\$12.78 per cy = \$1,597.45
Turnarounds (1)	16	cy of	6" - 0	@	\$12.78 per cy = \$204.47
Landing (1)	80	cy of	6" - 0	@	\$12.78 per cy = \$1,022.37
Total =	221	cy of	6" - 0		

PROJECT NO. 2 TOTAL COST = \$2,824.29

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.10	acres @	\$200.00	per acre =	\$19.74
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PROJECT NO. 3 TOTAL COST = \$19.74

TOTAL COST = \$3,652.72

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran Timber Sale No. : 341-09-30
Road Segment: S

PROJECT NO. 2:

SURFACING

Landing 40 cy of 1 1/2" - 0 @ \$9.92 per cy = \$396.80
Total = 40 cy of 1 1/2" - 0

PROJECT NO. 2 TOTAL COST = \$396.80

TOTAL COST = \$396.80

SUMMARY OF CONSTRUCTION COST

Timber Sale: Joe Cockeran Timber Sale No. : 341-09-30
Road Segment: T

PROJECT NO. 2:

SURFACING

Landing	<u>40</u>	cy of	<u>1 1/2" - 0</u>	@	\$9.80 per cy =	<u>\$392.00</u>
Total =	<u>40</u>	cy of	<u>1 1/2" - 0</u>			

PROJECT NO. 2 TOTAL COST = \$392.00

TOTAL COST = \$392.00

ROCK DEVELOPMENT COST SUMMARY

Timber Sale: Joe Cockeran
Sale Number: 341-09-30
Road Name: Salmonback Rd.

Swell:	<u>1.30</u>	Pit Run (trk measure)	<u>1,340 cy</u>
Shrinkage:	<u>1.16</u>	Total Truck Yardage:	<u>1,340 cy</u>
Drill Pct.:	<u>100%</u>	Total In Place Yardage:	<u>1,031 cy</u>

Scalp & Clear Overburden:	<u>\$150.00 /hr</u> x	<u>10 hr</u>	=	<u>\$1,500.00</u>
Rip Rock:	<u>\$1.90 /cy</u> x	<u>1,031 cy</u>	=	<u>\$1,958.46</u>
Push Rock:	<u>\$0.70 /cy</u> x	<u>1,340 cy</u>	=	<u>\$938.00</u>
Load Dump Truck:	<u>\$0.70 /cy</u> x	<u>1,340 cy</u>	=	<u>\$938.00</u>
		Subtotal		<u>\$5,334.46</u>

Move in Excavator	<u>\$750.00</u>
Move in D-8	<u>\$750.00</u>
Move in Loaders	<u>\$570.00</u>
Clean Up Pit	<u>\$300.00</u>
	Subtotal <u>\$2,370.00</u>

PIT DEVELOPMENT COST \$5.75/cy

TOTAL PRODUCTION COST \$7,704.46

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Timber Sale: Joe Cockeran
Sale Number: 341-09-30
Pit Name: Howdy Pit

Swell:	<u>1.30</u>	Pit Run (trk measure)	<u>4,920 cy</u>
Shrinkage:	<u>1.16</u>	Total Truck Yardage:	<u>4,920 cy</u>
Drill Pct.:	<u>100%</u>	Total In Place Yardage:	<u>3,785 cy</u>

Pit Exploration	<u>\$150.00 /hr</u>	x	<u>40 hr</u>	=	<u>\$6,000.00</u>
Scalp & Clear Overburden:	<u>\$150.00 /hr</u>	x	<u>40 hr</u>	=	<u>\$6,000.00</u>
Drill & Shoot (Lifters):	<u>\$2.50 /cy</u>	x	<u>cy</u>	=	<u>\$0.00</u>
Drill & Shoot (Down holes):	<u>\$4.60 /cy</u>	x	<u>cy</u>	=	<u>\$0.00</u>
Load Dump Truck with Overburden:	<u>\$75.00 /hr</u>	x	<u>20 hr</u>	=	<u>\$1,500.00</u>
Rip Rock:	<u>\$1.90 /cy</u>	x	<u>3,785 cy</u>	=	<u>\$7,190.77</u>
Push Rock:	<u>\$0.70 /cy</u>	x	<u>4,920 cy</u>	=	<u>\$3,444.00</u>
Load Dump Truck:	<u>\$0.70 /cy</u>	x	<u>4,920 cy</u>	=	<u>\$3,444.00</u>
			Subtotal		<u>\$27,578.77</u>

Move in Excavator	<u>\$750.00</u>
Move in D-8	<u>\$750.00</u>
Move in Loaders	<u>\$570.00</u>
Clean Up Pit	<u>\$300.00</u>
	Subtotal <u>\$2,370.00</u>

PIT DEVELOPMENT COST \$6.09/cy

TOTAL PRODUCTION COST \$29,948.77

Move-In Calculations

Timber Sale: Joe Cockeran

Sale Number: **341-09-30**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
4.0	Main Lines	7
4.0	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Base Cost	Woods Cost	Pilot Cars	Within Area			Within		
					Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Area Cost	Total Cost
1	Drill & Compressor	\$276.00	\$307.54		\$46.00	0.00	0.00	0.00	\$0.00	\$583.54
0	Brush Cutter	\$0.00	\$0.00		\$4.00	0.00	0.00	0	\$0.00	\$0.00
1	Graders	\$300.00	\$334.29		\$3.65	0.00	0.00	0	\$0.00	\$634.29
0	Loader (Small)	\$0.00	\$0.00	1	\$3.55	0.00	0.00	0	\$0.00	\$0.00
1	Loader (Med. & Large)	\$414.38	\$416.96	1	\$9.00	0.00	0.00	0	\$0.00	\$831.34
1	Rollers (smooth/grid) & Compactor	\$308.58	\$224.25		\$5.00	0.00	0.00	0	\$0.00	\$532.83
0	Excavators (Small)	\$40.25	\$0.00		\$22.00	0.00	0.00	0	\$0.00	\$40.25
0	Excavators (Med.)	\$62.10	\$0.00		\$35.50	0.00	0.00	0	\$0.00	\$62.10
1	Excavators (Large)	\$466.13	\$496.80	1	\$44.80	0.00	0.00	0	\$0.00	\$962.93
0	Tired Backhoes/Skidlers	\$0.00	\$0.00		\$3.00	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D6)	\$0.00	\$0.00	2	\$7.10	0.00	0.00	0	\$0.00	\$0.00
0	Tractors (D7)	\$0.00	\$0.00	2	\$11.30	0.00	0.00	0	\$0.00	\$0.00
1	Tractor (D8)	\$473.80	\$449.49	2	\$15.10	0.00	0.00	0	\$0.00	\$923.29
3	Dump Truck (10 cy +)	\$350.00	\$240.00		\$2.85	0.00	0.00	0	\$0.00	\$590.00
0	Dump Truck (Off Hiway)	\$0.00	\$0.00	1	\$4.75	0.00	0.00	0	\$0.00	\$0.00
1	Water Truck (1500 Gal)	\$95.00	\$65.14		\$2.85	0.00	0.00	0	\$0.00	\$160.14
0	Water Truck (2500 Gal)	\$0.00	\$0.00		\$2.85	0.00	0.00	0	\$0.00	\$0.00
					TOTAL MOVE-IN COSTS:					\$5,320.71

TIMBER SALE SUMMARY

Joe Cockeran

Contract No. 341-09-30

1. **Type of Sale:** The sale is a modified clearcut in Areas 1 and 3, auto-mark partial-cut (pc-m) in Areas 2 and 4, and R/W (construction) in Area 5. The sale is recovery, sealed bid auction.
2. **Revenue Distribution:** 100% BOF, Tillamook County, Tax Code 56-1.
3. **Sale Acreage:** Area 1 is 61 net acres; Area 2 is 35 net acres; Area 3 is 95 net acres; Area 4 is 50 net acres; Area 5 (R/W) is 6 net acres. Acreage was determined using GIS.
4. **Timber Volume:**

SPECIES	2 SAW	3 SAW	4 SAW	SPECIES TOTAL
Douglas-fir				
Area 1	1,979	1,218	134	3,331
Area 2	624	374	32	1,032
Area 3	2,661	1,352	167	4,180
Area 4	860	663	47	1,570
Area 5 (R/W)	217	104	11	332
Total:	6,341	3,711	391	10,443
Hemlock / Other Conifers	38	14	1	53
Alder / Other Hardwoods	0	90	0	90
TOTAL:	6,379	3,815	392	10,586

5. **Cruise Data:** Areas 1 and 3 were variable-plot cruised using a 40 and 46.94 BAF and full plots. Area 3 and 4 were variable-plot cruised using a 33.61 and 40 BAF and full plots. Total R/W volume was determined using average take-tree and leave-tree volumes multiplied by R/W acres. A conifer top cruise diameter of 6 inches DIB was used. Logs were graded favoring 40 ft. log segments. Cruise statistics: DF take trees for all Areas: CV = 47.1%, SE = 7.3%.
6. **Timber Description:** Areas 1, 2, 3 and 4 are well stocked, unmanaged stands of Douglas-fir with a minor component of other conifer and hardwoods. The stands are approximately 60 years old. The average DF take-tree DBH is 21. Estimated take-tree volume for Areas 1 and 3 averages 52 MBF per acre. Estimated take-tree volume for Areas 2 and 4 averages 31 MBF per acre. For all conifer leave trees in Areas 2 and 4; the quadratic mean DBH is 27 inches, an average of 42 trees/acre and 37 MBF per acre.
7. **Topography and Logging Method:** The topography ranges from 15 to 70% with average slope being approximately 35%. The sale area is roughly 65% cable yarding and 35% ground based yarding (percentages are based on MBF harvested).
8. **Access:** From Highway 26, at milepost 31.7, turn south onto the Salmonberry Road. Drive for approximately 5 miles to access Area 4. To access Areas 1, 2 and 3, turn east onto Section 10 Road at milepost 1.25 of the Salmonberry Road. Drive 2.25 miles, turn right onto Fire Road No. 2, drive 2.0 miles, turn right onto Giveout Grade Road, proceed another 0.5 miles to the timber sale area. See Exhibit A "Vicinity Map".

9. Project Costs:

<u>Project No. 1</u>	Construct 1.55 miles of road:	\$33,192.93
<u>Project No. 2</u>	Surfacing Roads: (6,100 cy of 6" pitrun) and (240 cy 1 1/2" crushed)	\$71,027.95
<u>Project No. 3</u>	Grass Seed and Fertilization:	\$749.77
	Move in cost:	\$5,320.71
	Total Project Cost:	\$110,291.36

10. Other Costs:

Other Costs with (P/R):

Brand and paint (\$1.00/MBF):	\$10,586.00
Topping 400 trees for snag creation (\$40/Tree):	\$16,000.00
Total (P/R):	\$26,586.00

Other Costs (No P/R):

Skid Trail / Road Closure / Slash Piling (20 hrs. @ \$110.00/hr):	\$ 2,200.00
Slash Piling for Firewood (20 hrs. @ \$110.00/hr):	\$ 2,200.00
Total (No P/R):	\$4,400.00

TOTAL: **\$30,986.00**

CRUISE REPORT

Joe Cockeran

341-09-30

- 1) **Acreage Calculation:** Area 1 is 61 net acres; Area 2 is 35 net acres; Area 3 is 95 net acres; Area 4 is 50 net acres; Area 5 (R/W) is 6 net acres. Acres were determined using GIS.
- 2) **Cruise Method:** Approximately half of the plots used for volume computations were measured by the timber sale preparer. The other half of the plots were taken from the Oregon Department of Forestry's Stand Level Inventory System (SLI). All plots from SLI were measured within Areas 1, 2 and 3. A total of 19 were used for plot and tree information.

Plots are, more or less, randomly placed. They are spaced apart relatively evenly at a ratio of 1 plot for every 6 net acres in each Area.

Areas 1 and 3 were variable-plot cruised using 40 or 46.94 BAF and full plots. Area 3 was variable-plot cruised using a 33.61 or 40 BAF and full plots. Area 1 had a total of 11 plots, Area 2 had 6 plots, Area 3 had 16 plots and Area 4 had 9 plots.

3) **Sampling Intensity:**

Areas 1, 2, 3 and 4	Estimated	Actual Take
CV	65%	47.1%
SE	10%	7.3%
No. of Plots	42	42

- 4) **Form Factors:** Form factors were measured at a form point of 16 feet. Approximately 1 tree per species was measured on each plot cruised. Measurements were taken using a relascop and diameter tape on standing trees.
- 5) **Height Standards:** Conifer and hardwood merchantable heights were estimated to the nearest foot.
- 6) **Diameter Standards:** Diameters were measured outside bark at breast height (4.5') to the nearest inch.
- 7) **Grading System:** All trees were graded favoring 40' segments and 12' minimum length.
- 8) **Merchantable Top:** Conifer and hardwood merchantable tops were measured to 6 inches DIB.
- 9) **Computation Procedures:** Volumes were computed using SuperACE. All volumes are in Scribner Board Feet.

Total R/W volume was determined using average take-tree and leave-tree volumes multiplied by the R/W acres.

- 10) **Cruisers:** The sale was cruised by Matt Frison (23 of 42 plots) in February 2008.

11) **Signatures:**

Preparer:

Matt Frison

Date

Unit Forester:

Erik Marcy

Date

TC PSTATS				PROJECT STATISTICS				PAGE 1		
				PROJECT JOECRAN		DATE 6/27/2008				
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
03	06	21	100	MC1		156.00	27	169	S	W
03	06	21	300	MC3						
				TREES		ESTIMATED	PERCENT			
				PER PLOT		TOTAL	SAMPLE			
				PLOTS	TREES	TREES	TREES			
TOTAL			27	169	6.3					
CRUISE			27	169	6.3	15,404	1.1			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE			TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS
TREES			/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC
DF TAKE			156	89.2	22.2	109	240.4	48,644	48,142	10,692
R ALDER			5	6.9	15.4	98	8.9	1,136	1,136	225
DF LEAVE			5	1.5	30.8	105	7.6	1,450	1,407	328
NF LEAVE			2	.9	24.8	103	3.0	580	580	131
NF TAKE			1	.3	30.0	109	1.5	301	292	66
TOTAL			169	98.7	22.0	108	261.5	52,111	51,557	11,441
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL	68.1	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DF TAKE		55.8	4.5	730	764	798				
R ALDER		49.1	24.4	148	196	244				
DF LEAVE		34.0	16.9	804	968	1,132				
NF LEAVE		17.4	16.3	544	650	756				
NF TAKE										
TOTAL		56.6	4.3	720	753	786	128	32	14	
CL	68.1	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DF TAKE		49.7	4.0	160	166	173				
R ALDER		46.4	23.1	30	39	47				
DF LEAVE		20.6	10.2	201	224	247				
NF LEAVE		18.9	17.7	121	147	173				
NF TAKE										
TOTAL		50.8	3.9	158	164	171	103	26	11	
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DF TAKE		46.1	9.0	81	89	97				
R ALDER		519.6	101.9		7	14				
DF LEAVE		304.1	59.6	1	1	2				
NF LEAVE		519.6	101.9		1	2				
NF TAKE		519.6	101.9		0	1				
TOTAL		41.8	8.2	91	99	107	72	18	8	
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DF TAKE		40.0	7.8	222	240	259				
R ALDER		519.6	101.9		9	18				
DF LEAVE		300.9	59.0	3	8	12				
NF LEAVE		519.6	101.9		3	6				
NF TAKE		519.6	101.9		2	3				
TOTAL		30.1	5.9	246	261	277	38	9	4	

PROJECT STATISTICS

PROJECT JOE CRAN

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
03	06	21	100	MCI	156.00	27	169	S	W
03	06	21	300	MC3					

CL	68.1	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DF TAKE		42.4	8.3	44,137	48,142	52,148			
R ALDER		519.6	101.9		1,136	2,293			
DF LEAVE		289.3	56.7	609	1,407	2,205			
NF LEAVE		519.6	101.9		580	1,171			
NF TAKE		519.6	101.9		292	589			
TOTAL		33.8	6.6	48,144	51,557	54,971	47	12	5

CL	68.1	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DF TAKE		41.8	8.2	9,817	10,693	11,568			
R ALDER		519.6	101.9		225	454			
DF LEAVE		293.0	57.4	140	328	516			
NF LEAVE		519.6	101.9		131	264			
NF TAKE		519.6	101.9		66	132			
TOTAL		33.1	6.5	10,700	11,442	12,183	45	11	5

TC		Stand Table Summary										Page		1	
PSTNDSUM												Date:		6/27/2008	
T03_R06_S21 TyMC1 61.00 T03_R06_S21 TyMC3 95.00					Project JOE CRAN					Time:		3:50:24PM			
					Acres 156.00					Grown Year:					
S Spec T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
	DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DT	9	1	87	68	3.219	1.42	3.22	9.7	40.0	.89	31	129	139	49	20
DT	11	1	87	79	2.155	1.42	4.31	8.4	35.0	1.03	36	151	161	57	24
DT	12	3	88	89	5.559	4.37	11.12	11.5	48.5	3.63	127	539	566	199	84
DT	13	6	89	96	10.088	9.30	20.18	14.6	60.1	8.37	294	1,212	1,306	458	189
DT	15	2	86	104	2.399	2.94	4.80	22.0	84.7	3.01	106	406	470	165	63
DT	16	1	87	100	1.018	1.42	2.04	24.2	95.0	1.40	49	193	219	77	30
DT	17	2	89	119	1.804	2.84	3.61	31.2	127.5	3.20	113	460	500	176	72
DT	18	6	88	119	5.504	9.73	15.71	25.3	102.6	11.31	397	1,612	1,764	619	252
DT	19	5	88	126	3.981	7.84	11.94	28.7	123.9	9.77	343	1,480	1,524	535	231
DT	20	5	87	116	3.639	7.94	10.27	31.6	131.4	9.23	324	1,349	1,440	505	211
DT	21	6	88	115	3.976	9.56	11.29	34.6	140.7	11.15	391	1,589	1,739	610	248
DT	22	7	88	135	4.047	10.68	12.14	42.2	195.1	14.62	513	2,368	2,280	800	369
DT	23	6	87	130	3.371	9.73	10.11	44.5	198.0	12.82	450	2,002	1,999	702	312
DT	24	15	87	128	7.181	22.56	22.00	46.8	202.2	29.32	1,029	4,447	4,574	1,605	694
DT	25	12	86	123	5.385	18.36	16.16	50.2	219.0	23.11	811	3,539	3,605	1,265	552
DT	26	11	87	137	4.324	15.94	13.77	56.2	254.0	22.05	774	3,497	3,440	1,207	546
DT	27	12	86	137	4.734	18.82	16.04	57.3	269.9	26.20	919	4,330	4,087	1,434	676
DT	28	11	87	129	4.155	17.77	12.80	63.1	289.5	23.02	808	3,705	3,591	1,260	578
DT	29	12	87	132	4.104	18.82	12.95	68.3	318.4	25.22	885	4,124	3,934	1,380	643
DT	30	7	86	133	2.163	10.62	6.49	76.9	354.3	14.21	499	2,299	2,217	778	359
DT	31	8	87	136	2.487	13.04	8.07	78.5	369.1	18.06	633	2,979	2,817	988	465
DT	32	2	85	140	.509	2.84	1.53	92.4	433.3	4.02	141	662	627	220	103
DT	33	1	85	142	.239	1.42	.72	100.9	490.0	2.06	72	352	322	113	55
DT	34	5	86	133	1.217	7.68	3.88	89.0	418.7	9.83	345	1,624	1,533	538	253
DT	35	3	88	151	.669	4.47	2.23	107.0	574.8	6.81	239	1,284	1,062	373	200
DT	36	4	87	148	.833	5.89	1.90	119.2	616.1	6.44	226	1,168	1,005	353	182
DT	37	2	85	135	.394	2.94	1.18	116.7	541.2	3.93	138	640	614	215	100
DT	Totals	156	87	118	89.155	240.36	240.44	44.5	200.2	304.72	10,693	48,142	47,537	16,681	7,510
DL	30	3	84	113	.930	4.57	2.79	65.7	260.0	5.22	183	726	814	286	113
DL	32	2	87	133	.545	3.04	1.91	75.8	357.1	4.12	145	681	643	226	106
DL	Totals	5	85	120	1.476	7.61	4.70	69.8	299.4	9.34	328	1,407	1,456	512	220
RA	13	2	88	176	3.876	3.57	3.88	23.5	120.0	2.50	91	465	390	142	73
RA	15	1	88	157	1.456	1.79	1.46	30.2	140.0	1.21	44	204	189	69	32
RA	20	1	88	148	.819	1.79	.82	54.5	280.0	1.23	45	229	192	70	36
RA	21	1	87	129	.743	1.79	.74	60.8	320.0	1.24	45	238	194	70	37
RA	Totals	5	88	164	6.894	8.93	6.89	32.6	164.8	6.18	225	1,136	964	351	177
NL	23	1	88	126	.528	1.52	1.58	42.3	190.0	1.61	67	301	251	105	47
NL	27	1	87	121	.383	1.52	1.15	55.4	243.3	1.53	64	280	238	99	44
NL	Totals	2	88	124	.911	3.04	2.73	47.8	212.4	3.14	131	580	489	204	91
NT	30	1	87	126	.310	1.52	.93	70.5	313.3	1.58	66	292	246	102	45
NT	Totals	1	87	126	.310	1.52	.93	70.5	313.3	1.58	66	292	246	102	45
Totals		169	87	121	98.745	261.48	255.70	44.7	201.6	324.95	11,442	51,557	50,693	17,849	8,043

TC PLOGSTVB			Log Stock Table - MBF																
T03_R06_S21 TyMC1 T03_R06_S21 TyMC3				61.00 95.00		Project: JOECRAN Acres 156.00										Page 1 Date 6/27/2008 Time 3:50:23PM			
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+
DT		DO 2M	40	4,706	1.4	4,640	61.8					257	410	2346	1209	418			
DT		DO 3M	20	19		19	.3			3	16								
DT		DO 3M	21	10		10	.1	1	2		7								
DT		DO 3M	22	9		9	.1	5			4								
DT		DO 3M	23	10		10	.1	1			5	4							
DT		DO 3M	24	3		3	.0	3											
DT		DO 3M	30	3		3	.0		3										
DT		DO 3M	32	52		52	.7		10	9	32								
DT		DO 3M	34	13		13	.2		13										
DT		DO 3M	36	15		15	.2			7		8							
DT		DO 3M	38	8		8	.1		8										
DT		DO 3M	40	2,440		2,429	32.3			162	408	525	641	420	273				
DT		DO 4M	12	7		7	.1		3	3									
DT		DO 4M	14	4		4	.1		1	3									
DT		DO 4M	15	27		27	.4		20	7									
DT		DO 4M	16	13		13	.2		1	11									
DT		DO 4M	17	2		2	.0		2										
DT		DO 4M	18	16		16	.2		11	5									
DT		DO 4M	20	16		16	.2		7	9									
DT		DO 4M	21	11		11	.1		6		5								
DT		DO 4M	22	6		6	.1		4	2									
DT		DO 4M	23	5		5	.1		5										
DT		DO 4M	24	40		40	.5		18	21									
DT		DO 4M	25	12		12	.2		12										
DT		DO 4M	26	6		6	.1		3	3									
DT		DO 4M	27	19		19	.3		19										
DT		DO 4M	28	21		21	.3		14	7									
DT		DO 4M	30	2		2	.0		2										
DT		DO 4M	32	21		21	.3		21										
DT		DO 4M	33	6		6	.1		6										
DT		DO 4M	34	13		13	.2		13										
DT		DO 4M	37	6		6	.1		6										
DT		DO 4M	38	16		16	.2		16										
DT		DO 4M	39	2		2	.0		2										
DT		DO 4M	40	32		32	.4		32										
DT		Totals		7,588	1.0	7,510	93.4		235	268	427	594	910	830	2619	1209	418		
DL		DO 2M	40	182	3.7	175	79.8							107	68				

Log Stock Table - MBF

T03_R06_S21 TyMC1 61.00
T03_R06_S21 TyMC3 95.00

Project: JOE CRAN
Acres 156.00

Page 2
Date 6/27/2008
Time 3:50:23PM

S Spp	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+
DL		DO	3M 36	6		6	2.7					6							
DL		DO	3M 40	34		34	15.4					34							
DL		DO	4M 14	2		2	.8			2									
DL		DO	4M 16	3		3	1.3			3									
DL		Totals		226	3.0	220	2.7			5		40			107	68			
NL		DO	2M 40	65		65	71.3							65					
NL		DO	3M 40	23		23	25.5					23							
NL		DO	4M 20	3		3	3.1			3									
NL		Totals		91		91	1.1			3		23			65				
NT		DO	2M 40	34	4.3	32	71.3									32			
NT		DO	3M 40	12		12	25.5					12							
NT		DO	4M 26	1		1	3.2			1									
NT		Totals		47	3.1	45	.6			1		12				32			
RA		DO	3M 32	177		177	100.0					104		36	37				
RA		Totals		177		177	2.2					104		36	37				
Total		All Species		8,129	1.1	8,043	100.0		235	277	427	761	921	866	2828	1310	418		

TC PSTATS				PROJECT STATISTICS				PAGE 1			
				PROJECT JOECRAN				DATE 6/27/2008			
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
03_03_	06_06_	21 21	200 400	PC2 PC4	85.00	15	133	S	W		
				TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
			PLOTS	TREES							
TOTAL			15	133	8.9						
CRUISE			15	133	8.9	10,104	1.3				
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
DF TAKE		67	79.9	18.8	92		153.5	31,802	30,611	6,947	6,948
DF LEAVE		61	35.1	27.3	127		143.0	35,236	34,670	7,226	7,225
WH LEAVE		4	3.6	21.5	94		9.0	1,782	1,750	408	408
NF LEAVE		1	.3	36.0	130		2.2	581	547	114	114
TOTAL		133	118.9	21.8	102		307.7	69,400	67,578	14,694	14,694
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DF TAKE		49.6	6.1	496	528	560					
DF LEAVE		25.2	3.2	1,005	1,039	1,072					
WH LEAVE		63.9	36.5	406	640	874					
NF LEAVE											
TOTAL		48.3	4.2	742	775	807	93	23	10		
CL	68.1	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DF TAKE		44.9	5.5	113	119	126					
DF LEAVE		21.2	2.7	210	215	221					
WH LEAVE		56.8	32.4	97	144	191					
NF LEAVE											
TOTAL		43.0	3.7	160	166	172	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		
DF TAKE		93.4	25.0	60	80	100					
DF LEAVE		22.9	6.1	33	35	37					
WH LEAVE		193.5	51.7	2	4	5					
NF LEAVE		387.3	103.4		0	1					
TOTAL		62.3	16.6	99	119	139	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		
DF TAKE		37.2	9.9	138	153	169					
DF LEAVE		16.0	4.3	137	143	149					
WH LEAVE		171.7	45.9	5	9	13					
NF LEAVE		387.3	103.4		2	4					
TOTAL		22.4	6.0	289	308	326	22	5	2		
CL	68.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DF TAKE		37.3	10.0	27,558	30,611	33,663					
DF LEAVE		16.8	4.5	33,110	34,670	36,229					
WH LEAVE		173.6	46.4	939	1,750	2,561					
NF LEAVE		387.3	103.4		547	1,113					

TC PSTATS				PROJECT STATISTICS				PAGE	2	
				PROJECT	JOE CRAN			DATE	6/27/2008	
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
03_03_	06_06_	21	200	PC2	85.00		15	133	S	W
03_03_	06_06_	21	400	PC4						
CL	68.1		COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
TOTAL			23.9	6.4	63,272	67,578	71,883	24	6	3
CL	68.1		COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DF TAKE			35.8	9.6	6,284	6,948	7,611			
DF LEAVE			15.3	4.1	6,930	7,225	7,520			
WH LEAVE			172.2	46.0	220	408	595			
NF LEAVE			387.3	103.4		114	231			
TOTAL			22.5	6.0	13,811	14,694	15,577	22	5	2

TC		PSTNDSUM		Stand Table Summary									Page		1	
													Date:		6/27/2008	
T03_R06_S21 TyPC2		35.00		Project		JOECRAN		Time:		3:52:12PM						
T03_R06_S21 TyPC4		50.00		Acres		85.00		Grown Year:								
S Spe T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net		Totals	Tons	Cunits	MBF	
	DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre					Bd.Ft. Acre
DL	21	1	88	143	.913	2.20	2.74	39.7	193.3	3.10	109	530	264	93	45	
DL	23	2	89	146	1.561	4.50	4.68	48.6	213.2	6.50	228	998	553	194	85	
DL	24	3	87	143	2.494	7.83	8.51	45.6	212.3	11.06	388	1,806	940	330	153	
DL	25	7	88	141	5.209	17.76	17.59	49.6	232.7	24.89	873	4,093	2,115	742	348	
DL	26	8	87	148	4.856	17.90	15.76	58.2	273.5	26.15	918	4,310	2,222	780	366	
DL	27	6	87	153	3.370	13.40	12.93	54.6	274.8	20.12	706	3,552	1,711	600	302	
DL	28	11	87	145	5.993	25.63	19.57	66.4	317.3	37.03	1,299	6,210	3,147	1,104	528	
DL	29	6	86	137	3.097	14.21	9.29	72.2	340.2	19.13	671	3,161	1,626	570	269	
DL	30	7	86	148	3.347	16.51	12.30	70.0	347.6	24.56	862	4,275	2,088	732	363	
DL	31	6	87	137	2.731	14.31	8.61	81.7	393.7	20.05	704	3,391	1,705	598	288	
DL	32	2	87	149	.787	4.39	3.15	72.8	375.0	6.53	229	1,180	555	195	100	
DL	33	1	86	164	.370	2.20	1.48	81.8	420.0	3.45	121	621	293	103	53	
DL	34	1	86	156	.348	2.20	1.39	84.7	390.0	3.36	118	544	286	100	46	
DL	Totals	61	87	145	35.075	143.04	118.00	61.2	293.8	205.94	7,225	34,670	17,505	6,141	2,947	
DT	9	2	87	66	9.945	4.39	9.94	8.9	50.0	2.47	88	497	210	75	42	
DT	10	1	87	108	4.028	2.20	8.06	8.4	35.0	1.95	68	282	166	57	24	
DT	11	1	88	127	3.329	2.20	6.66	10.9	50.0	2.07	73	333	176	62	28	
DT	13	3	88	106	7.269	6.70	14.54	15.6	67.0	6.45	227	975	548	193	83	
DT	15	1	87	107	1.790	2.20	3.58	22.4	100.0	2.29	80	358	195	68	30	
DT	16	3	85	128	4.799	6.70	11.17	24.2	98.5	7.71	270	1,100	656	230	93	
DT	17	2	86	134	2.787	4.39	8.36	23.0	96.7	5.49	192	808	466	164	69	
DT	18	4	87	131	5.614	9.92	16.84	25.8	104.1	12.38	434	1,754	1,052	369	149	
DT	19	1	88	140	1.116	2.20	3.35	31.0	133.3	2.95	104	446	251	88	38	
DT	20	5	88	129	5.135	11.20	15.41	32.8	141.7	14.37	505	2,183	1,221	429	186	
DT	21	4	87	145	3.790	9.12	11.37	39.8	167.9	12.90	452	1,909	1,097	384	162	
DT	22	11	88	138	10.096	26.65	30.29	42.1	189.9	36.32	1,274	5,752	3,087	1,083	489	
DT	23	9	88	138	7.398	21.34	22.19	46.9	210.2	29.64	1,041	4,666	2,519	885	397	
DT	24	12	87	134	8.496	26.69	24.79	50.6	217.0	35.76	1,254	5,379	3,040	1,066	457	
DT	25	2	86	150	1.289	4.39	3.87	58.0	263.3	6.39	224	1,018	543	191	87	
DT	27	1	86	149	.552	2.20	1.66	68.8	320.0	3.25	114	530	276	97	45	
DT	28	3	87	143	1.541	6.59	5.14	65.0	317.0	9.51	334	1,629	808	284	138	
DT	29	1	88	135	.479	2.20	1.44	71.8	323.3	2.94	103	465	250	88	39	
DT	30	1	86	141	.448	2.20	1.34	82.5	393.3	3.16	111	528	268	94	45	
DT	Totals	67	87	122	79.900	153.48	199.99	34.7	153.1	197.99	6,948	30,611	16,829	5,905	2,602	
HL	17	1	85	109	1.463	2.31	2.93	30.9	120.0	2.90	91	351	246	77	30	
HL	20	1	87	120	1.057	2.31	3.17	33.2	133.3	3.37	105	423	287	90	36	
HL	25	1	86	128	.644	2.20	1.93	55.8	253.3	3.45	108	490	293	92	42	
HL	31	1	85	123	.419	2.20	1.26	82.8	386.7	3.33	104	486	283	88	41	
HL	Totals	4	86	117	3.584	9.01	9.29	43.9	188.4	13.05	408	1,750	1,109	347	149	
NL	36	1	85	144	.311	2.20	.93	121.9	586.7	2.72	114	547	232	97	46	
NL	Totals	1	85	144	.311	2.20	.93	121.9	586.7	2.72	114	547	232	97	46	
Totals		133	87	129	118.871	307.72	328.21	44.8	205.9	419.70	14,694	67,578	35,674	12,490	5,744	

Log Stock Table - MBF

T03_R06_S21 TyPC2 35.00
T03_R06_S21 TyPC4 50.00

Project: JOECRAN
Acres 85.00

Page 1
Date 6/27/2008
Time 3:52:12PM

S T Spp	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+
DL	DO	2M	40	2,435	1.9	2,389	81.1					12	360	1154	836	25		
DL	DO	3M	32	77		77	2.6				31	45						
DL	DO	3M	33	2		2	.1				2							
DL	DO	3M	34	13		13	.4				13							
DL	DO	3M	36	4		4	.1					4						
DL	DO	3M	37	4		4	.1				4							
DL	DO	3M	40	414		412	14.0			50	18	78	138	128				
DL	DO	4M	12	1		1	.0				1							
DL	DO	4M	14	8		8	.3				8							
DL	DO	4M	16	8		8	.3				8							
DL	DO	4M	20	2		2	.1				2							
DL	DO	4M	21	1		1	.0				1							
DL	DO	4M	22	4		4	.1					4						
DL	DO	4M	24	4		4	.1		3		1							
DL	DO	4M	25	6		6	.2		6									
DL	DO	4M	26	1		1	.0				1							
DL	DO	4M	28	2		2	.1				2							
DL	DO	4M	29	2		2	.1		2									
DL	DO	4M	31	3		3	.1				3							
DL	DO	4M	33	2		2	.1		2									
DL	DO	4M	37	2		2	.1		2									
DL	Totals			2,995	1.6	2,947	51.3		15	95	58	124	150	489	1154	836	25	
DT	DO	2M	40	1,567	5.3	1,484	57.0					135	493	741	116			
DT	DO	3M	32	76		76	2.9				51	26						
DT	DO	3M	34	31		31	1.2				31							
DT	DO	3M	35	10		10	.4				10							
DT	DO	3M	36	28		28	1.1					20	8					
DT	DO	3M	40	910	2.1	891	34.2			148	115	327	284	17				
DT	DO	4M	12	3		3	.1				3							
DT	DO	4M	14	8		8	.3				8							
DT	DO	4M	16	7		7	.3		3		4							
DT	DO	4M	18	3		3	.1				3							
DT	DO	4M	20	6		6	.2				6							
DT	DO	4M	21	2		2	.1		2									
DT	DO	4M	22	2		2	.1				2							
DT	DO	4M	24	26		26	1.0				26							

Log Stock Table - MBF

T03_R06_S21 TyPC2	35.00
T03_R06_S21 TyPC4	50.00

Project: JOECRAN
Acres 85.00

Page 2
Date 6/27/2008
Time 3:52:12PM

S Spp	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+
DT		DO	4M	25	2		2	.1			2								
DT		DO	4M	26	16		16	.6		6	10								
DT		DO	4M	28	4		4	.2			4								
DT		Totals			2,703	3.7	2,602	45.3		11	309	161	335	418	510	741	116		
HL		DO	2M	40	95	2.8	93	62.3						34	29	30			
HL		DO	3M	40	52		52	34.7			7	11	22	11					
HL		DO	4M	14	2		2	1.2			2								
HL		DO	4M	26	3		3	1.8			3								
HL		Totals			151	1.8	149	2.6			12	11	22	11	34	29	30		
NL		DO	2M	40	46	6.3	43	93.2							16		27		
NL		DO	3M	40	3		3	6.8			3								
NL		Totals			49	5.9	46	.8			3				16		27		
Total		All Species			5,899	2.6	5,744	100.0		27	417	233	481	579	1032	1940	982	53	

Residual Stand Specifications

Joe Cockeran
Timber Sale No. 341-08-97

AREAS 2 and 4

Residual QMD assumption (from cruise leave tree information) - 27 inches.
Target Relative Density - 29

	Minimum	Target	Maximum
Relative Density - (RD)	28	31	33
Basal Area - (BA)	150	160	170
Trees per Acre - (TPA)	37	40	45

$$RD = BA / \sqrt{DBH}$$

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

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

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

