



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Lou Whe Lou Whe
Sale 341-12-77

District: Forest Grove

Date: April 11, 2012

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,334,225.74	\$0.00	\$2,334,225.74
		Project Work:	\$(329,000.00)
		Advertised Value:	\$2,005,225.74



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timber description

Location: Portions of Sections 19, 20, and 30, T3N, R5W, W.M., Washington County, Oregon.
Portions of Sections 24 and 25, T3N, R6W, W.M., Tillamook County, Oregon.

Stand Stocking: 20%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	18	0	98

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	4,254	2,282	261	6,797
Total	4,254	2,282	261	6,797



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comments: Pond Values Used: 1st Quarter Calendar Year 2012.

Western hemlock and Other Conifers Stumpage Price = Pond Value
minus Logging Cost:
 $\$234.85/\text{MBF} = \$413.00/\text{MBF} - \$178.15/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost:
 $\$766.85/\text{MBF} = \$945.00/\text{MBF} - \$178.15/\text{MBF}$

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus
Logging Cost:
 $\$371.85/\text{MBF} = \$550.00/\text{MBF} - \$178.15/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE

Hauling costs equivalent to \$780 daily truck cost.

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

Brand and Paint: 6,797 MBF @ \$1/MBF = \$6,797

Total Other Costs (with Profit & Risk to be added) = \$6,797

Other Costs (No Profit & Risk added):

Blocking/waterbarring skid roads: 5hrs @ \$150/hr = \$750

Firewood sorting: 20hrs @ \$150/hr = \$3,000

Equipment cleaning: 3 machines @ \$1,000/machine = \$3,000

TOTAL Other Costs (No Profit & Risk added) = \$6,750

ROAD MAINTENANCE

Move-in = \$2,000

General Road Maintenance: 5.7 miles x \$1,000/mile = \$5,700

TOTAL: \$7,700 / 6,797 MBF = \$1.13/MBF



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logging conditions

combination#: 1 Douglas - Fir 16.88%
yarding distance: Long (1,500 ft) downhill yarding: No
logging system: Cable: Medium Tower >40 - <70 Process: Manual Felling/Delimbing
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 4.0 bd. ft / load: 4,300
cost / mbf: \$201.17

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

combination#: 2 Douglas - Fir 8.41%
yarding distance: Medium (800 ft) downhill yarding: No
logging system: Cable: Medium Tower >40 - <70 Process: Manual Felling/Delimbing
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 6.0 bd. ft / load: 4,300
cost / mbf: \$134.11

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

combination#: 3 Douglas - Fir 1.32%
yarding distance: Short (400 ft) downhill yarding: No
logging system: Cable: Small Tower <=40 Process: Manual Felling/Delimbing
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 7.0 bd. ft / load: 4,300
cost / mbf: \$89.73

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

combination#: 4 Douglas - Fir 73.38%
yarding distance: Short (400 ft) downhill yarding: No
logging system: Shovel Process: Manual Delimbing
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 8.0 bd. ft / load: 4,300
cost / mbf: \$72.81

machines: Shovel Logger



"STEWARDSHIP IN FORESTRY"

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Sale 341-12-77

District: Forest Grove

Date: April 11, 2012

logging costs

Operating Seasons:	2.00	Profit Risk:	10.00%
Project Costs:	\$329,000.00	Other Costs (P/R):	\$6,797.00
Slash Disposal:	\$0.00	Other Costs:	\$6,750.00

Miles of Road

Road Maintenance: \$1.13

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	4.3



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District: Forest Grove

Date: April 11, 2012

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$99.86	\$1.15	\$1.29	\$50.32	\$1.00	\$15.36	\$0.00	\$5.00	\$0.99	\$174.97

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$518.39	\$343.42	\$0.00



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District: Forest Grove

Date: April 11, 2012

summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	6,797	\$343.42	\$2,334,225.74

Gross Timber Sale Value

Recovery: \$2,334,225.74

Prepared by: Nate Hunter

Phone: 503-359-7434

TIMBER SALE SUMMARY
Lou Whe Lou Whe
Contract No. 341-12-77

1. **Type of Sale:** Recovery, sealed bid, Partial Cut-Moderate.
2. **Revenue Distribution:** 100% BOF; 56% Washington County; 44% Tillamook County, Tax Code 56-1.
3. **Sale Acreage:** Area 1 is 251 acres of Partial Cut – Moderate, Area 2 is 80 acres of Partial Cut - Moderate, Area 3 is 30 acres of Partial Cut – Moderate, and Area 4 is 7 acres of Right-of-Way. Acreage was determined using ESRI ArcMap GIS software.
4. **Cruise Data:** The Timber Sale was cruised with 40 variable radius plots using a 20 BAF prism. Volume estimates and plot data statistics were computed using SuperACE timber cruise software. The volume for Area 4 was estimated from cruise information. See the Cruise Report and Volume Summary for more information.
5. **Timber Description:** Timber Sale Area is medium to well stocked, 82 year old Douglas-fir stand with minor amounts of Western hemlock, noble fir, western redcedar, bigleaf maple and red alder. The average DBH of harvested Douglas-fir is approximately 18.5 inches. Estimated average net harvest volume is 18.3MBF/acre.
6. **Topography and Logging Method:** Slopes within the sale are predominately North and East facing aspects ranging from 5% to 70%. Area 1 – 6% cable based yarding and 94% ground based yarding; Area 2 – 75% cable based yarding and 25% ground based yarding; Area 3 – 70% cable based yarding and 30% ground based yarding; Area 4 – 100% ground based yarding. See the Logging Plan map for more information.
7. **Access:** All access 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 3.5 miles to the Timber Road. Turn right, proceed north approximately 6.5 miles and turn west onto Cochran Road. Go 2.6 miles to Wheeler Road, turn north and go 2.15 miles to Area 3.
8. **Projects:**

Project No. 1: 2.19 miles of road construction	\$34,878.63
9.99 miles of road improvement	\$35,192.36
Project No. 2: Surface 11.6 miles of road	\$247,523.28
Project No. 3: Grass seeding, fertilizing and mulching	\$1,441.96
Project No. 4: Block and vacate 0.59 mile of road	\$3,967.02
Move in and equipment cleaning	\$5,955.72
Total (rounded) credit for Project Work	\$329,000

9. Other Costs:

OTHER COSTS (Profit & Risk added):

Brand and Paint: 6,797 MBF @ \$1/MBF = \$6,797

TOTAL = \$6,797

OTHER COSTS (No Profit & Risk added):

Blocking/Waterbarring Skid Roads: 5 hrs @ \$150/hr = \$750

Firewood Sorting: 20 hrs @ \$150/hr = \$3,000

Equipment Cleaning: 3 machines @ \$1,000 per machine = \$3,000

TOTAL = \$6,750

ROAD MAINTENANCE

Move-in: \$2,000

Maintenance: \$1,000/Mile x 5.7 miles = \$5,700

TOTAL: \$7,700 (\$1.15/MBF)

PROJECT COST SUMMARY SHEET

Timber Sale: Lou Whe Lou Whe

Sale Number: 341-12-77

PROJECT NO. 1: ROAD CONSTRUCTION AND IMPROVEMENT

CONSTRUCTION

Road Segment	Length	Cost
F to G	8+00	\$2,209.51
H to I	15+00	\$3,887.83
J to K	16+75	\$5,692.41
L to M	1+50	\$631.78
N to O	31+25	\$7,034.59
P to Q	3+50	\$1,163.91
R to S	11+75	\$3,247.84
V to W	11+75	\$3,422.12
X to Y	3+75	\$1,876.33
Z to AA	7+50	\$3,108.91
BB to CC	4+80	\$2,603.40
115+55 stations		
2.19 miles		

SUBTOTAL CONSTRUCTION \$34,878.63

IMPROVEMENTS

Road Segment	Length	Cost
A to B	348+50	\$24,453.85
C to D	116+00	\$4,727.90
D to DD	34+00	\$1,705.80
D to E	8+40	\$1,571.08
T to U	20+50	\$2,733.73
527+40 stations		
9.99 miles		

SUBTOTAL IMPROVEMENTS \$35,192.36

TOTAL PROJECT NO. 1 COST = \$70,070.99

PROJECT NO. 2: SURFACING

Road Segment	Amount	Type	Cost
A to B	5,818 cy	1 1/2" - 0	\$81,684.72
A to B	40 cy	24" - 6"	\$279.60
A to B	200 cy	Reject	\$1,196.00
C to D	2,450 cy	1 1/2" - 0	\$36,333.50
C to D	20 cy	Reject	\$100.40
D to DD	961 cy	3" - 0	\$14,549.54
D to DD	20 cy	Reject	\$130.40
H to I	979 cy	3" - 0	\$15,272.40
J to K	1,037 cy	3" - 0	\$15,897.21
J to K	20 cy	Reject	\$110.40
L to M	230 cy	3" - 0	\$3,438.50
N to O	1,876 cy	3" - 0	\$27,896.12
P to Q	352 cy	3" - 0	\$5,153.28
R to S	701 cy	3" - 0	\$10,220.58
T to U	758 cy	3" - 0	\$10,619.58
X to Y	349 cy	3" - 0	\$4,980.23
Z to AA	706 cy	3" - 0	\$10,385.26
BB to CC	628 cy	3" - 0	\$9,275.56
Total	8,268 cy	1 1/2" - 0	
	8,577 cy	3" - 0	
	40 cy	24" - 6"	
	260 cy	Reject	

TOTAL PROJECT NO. 2 COST = \$247,523.28

PROJECT NO. 3: GRASS SEED, FERTILIZE, & MULCH

Grass seed and fertilize areas of disturbed soil. \$1,441.96

TOTAL PROJECT NO. 3 COST = \$1,441.96

PROJECT NO. 4: ROAD BLOCKING AND VACATING

Blocking and vacating of roads. \$2,159.33
Excavator move in and cleaning. \$1,807.69

TOTAL PROJECT NO. 4 COST = \$3,967.02

MOVE IN & EQUIPMENT CLEANING \$5,955.72

TOTAL ALL PROJECTS \$328,958.97

TOTAL CREDITS \$329,000.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe Timber Sale No. : 341-12-77
 Road Segment: A to B (Wheeler Road) Improvement: 348+50 stations
6.60 miles

PROJECT NO. 1

EXCAVATION

Culvert No. 2 Installation

Excavate existing culvert and fill	600	cy @	\$1.40	per cy =	\$840.00
Endhaul unsuitable fill material	200	cy @	\$1.50	per cy =	\$300.00
Haul fill material	200	cy @	\$5.98	per cy =	\$1,196.00
Place fill and riprap	640	cy @	\$2.12	per cy =	\$1,356.80
Compact fill with plate compactor	5	hr @	\$36.62	per hr =	\$183.10
Pump culvert installation	5	hr @	\$5.00	per hr =	\$25.00
Compact Waste Area	200	cy @	\$0.25	per cy =	\$50.00
Grade, Ditch, and Roll	348.50	sta @	\$28.70	per sta =	\$10,001.95
TOTAL EXCAVATION COSTS=					\$13,952.85

CULVERTS - MATERIALS & INSTALLATION

Culverts

248	LF of 18"	\$4,464.00	36	LF of 24"	\$864.00
80	LF of 42"	\$4,880.00			

Culvert Markers

11 markers	\$110.00
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Bands

3 ea of 42" @	\$61.00	per ea =	183.00
			183.00

TOTAL CULVERT COSTS = \$10,501.00

PROJECT NO. 1 TOTAL COST = \$24,453.85

PROJECT NO. 2:

SURFACING

	3	" deep =	15 cy/sta			
A to B (Wheeler Road)	5,228	cy of	1 1/2" - 0	@	\$14.04	per cy = \$73,401.12
Surfacing (Culvert No. 2)	84	cy of	1 1/2" - 0	@	\$14.04	per cy = \$1,179.36
Curve Widening	50	cy of	1 1/2" - 0	@	\$14.04	per cy = \$702.00
Turnouts (46)	276	cy of	1 1/2" - 0	@	\$14.04	per cy = \$3,875.04
Culvert Beddings (9)	200	cy of	Reject	@	\$5.98	per cy = \$1,196.00
Junctions (9)	180	cy of	1 1/2" - 0	@	\$14.04	per cy = \$2,527.20
Riprap	20	cy of	24" - 6"	@	\$6.99	per cy = \$139.80
Fill Armor	20	cy of	24" - 6"	@	\$6.99	per cy = \$139.80
Total =						
	5818	cy of	1 1/2" - 0		\$14.04	per cy = \$81,684.72
	200	cy of	Reject		\$5.98	per cy = \$1,196.00
	40	cy of	24" - 6"		\$6.99	per cy = \$279.60

PROJECT NO. 2 TOTAL COST = \$83,160.32

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.30 acres @	\$220.00	per acre =	\$66.00
Mulch	3.00 bales @	\$4.50	per bale =	\$13.50

PROJECT NO. 3 TOTAL COST = \$79.50

TOTAL COST = \$107,693.67

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe
 Road Segment: C to D (S. Lousignont Rd.)

Timber Sale No.: 341-12-77
 Improvement: 116+00 stations
2.20 miles

PROJECT NO. 1

EXCAVATION

Construct Junction at 74+00	1.00	sta @	\$118.70	per sta =	\$118.70	
Grade, Ditch, and Roll	116.00	sta @	\$28.70	per sta =	\$3,329.20	
				TOTAL EXCAVATION COSTS=	\$3,447.90	

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	\$540.00
30	LF of 24"	\$720.00
		<u>\$1,260.00</u>

Culvert Markers

2 markers	<u>\$20.00</u>
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TOTAL CULVERT COSTS = \$1,280.00

PROJECT NO. 1 TOTAL COST = \$4,727.90

PROJECT NO. 2:

SURFACING

	4	" deep =	20 cy/sta			
C to D	2,320	cy of	1 1/2" - 0	@	\$14.83 per cy =	\$34,405.60
Culvert Bedding (1)	20	cy of	Reject	@	\$5.02 per cy =	\$100.40
Turnouts (7)	70	cy of	1 1/2" - 0	@	\$14.83 per cy =	\$1,038.10
Junction	60	cy of	1 1/2" - 0	@	\$14.83 per cy =	<u>\$889.80</u>
Total =						
	2450	cy of	1 1/2" - 0		\$14.83 per cy =	\$36,333.50
	20	cy of	Reject		\$5.02 per cy =	\$100.40

PROJECT NO. 2 TOTAL COST = \$36,433.90

PROJECT NO. 3:

Mulch	1.00 bales @	\$4.50 per bale =	<u>\$4.50</u>
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PROJECT NO. 3 TOTAL COST = \$4.50

TOTAL COST = \$41,166.30

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe
 Road Segment: D to DD (Hawkins Pit Rd)

Timber Sale No. : 341-12-77
 Improvement 34+00 stations
0.64 miles

PROJECT NO. 1

EXCAVATION

Grade, Ditch, and Roll	34.00	sta @	\$28.70	per sta =	<u>\$975.80</u>	
					TOTAL EXCAVATION COSTS=	\$975.80

CULVERTS - MATERIALS & INSTALLATION

Culverts
 30 LF of 24" \$720.00
 Culvert Markers
 1 markers \$10.00

TOTAL CULVERT COSTS = \$730.00

PROJECT NO. 1 TOTAL COST = \$1,705.80

PROJECT NO. 2:

SURFACING

	5	" deep =	25 cy/sta			
D to DD (Hawkins Pit Rd)	850	cy of	3" - 0	@	\$15.14 per cy =	\$12,869.00
Turnouts (4)	36	cy of	3" - 0	@	\$15.14 per cy =	\$545.04
Landing (1)	75	cy of	3" - 0	@	\$15.14 per cy =	\$1,135.50
Culvert Bedding	20	cy of	Reject	@	\$6.52 per cy =	<u>\$130.40</u>
Total =	961	cy of	3" - 0		\$15.14 per cy =	\$14,549.54
	20	cy of	Reject		\$6.52 per cy =	\$130.40

PROJECT NO. 2 TOTAL COST = \$14,679.94

TOTAL COST = \$16,385.74

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No.:	<u>341-12-77</u>
Road Segment:	<u>D to E (Carlson Creek)</u>	Improvement:	<u>8+40</u> stations
			<u>0.16</u> miles

PROJECT NO. 1

EXCAVATION

Road Improvement	8.40	sta @	\$50.00	per sta =	\$420.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	8.40	sta @	\$28.70	per sta =	\$241.08
TOTAL EXCAVATION COSTS=					\$1,021.08

CULVERTS - MATERIALS & INSTALLATION

Culverts	
30 LF of 18"	\$540.00
Culvert Markers	
1 markers	\$10.00

TOTAL CULVERT COSTS = \$550.00

PROJECT NO. 1 TOTAL COST = \$1,571.08

PROJECT NO. 4:

Construct Tank Trap	1.00	each @	\$25.00	per each =	\$25.00
Remove Culvert	1.00	each @	\$150.00	per each =	\$150.00
Construct Waterbars (4)	4.00	each @	\$50.00	per each =	\$200.00
Grass seed and fertilize areas of disturbed soil.	0.39	acres @	\$220.00	per acre =	\$84.85
Mulch	2.00	bales @	\$4.50	per bale =	\$9.00

PROJECT NO. 4 TOTAL COST = \$468.85

TOTAL COST = \$2,039.93

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe

Timber Sale No. : 341-12-77

Road Segment: F to G

Construction: 8+00 stations

0.15 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.92	acres @	\$980.00	per acre =	\$899.91
Balanced Road Construction	8.00	sta @	\$90.00	per sta =	\$720.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	8.00	sta @	\$28.70	per sta =	\$229.60
TOTAL EXCAVATION COSTS=					\$2,209.51

PROJECT NO. 1 TOTAL COST = \$2,209.51

PROJECT NO. 4:

Construct Waterbars (4)	4.00	each @	\$60.00	per each =	\$240.00
Grass seed and fertilize areas of disturbed soil.	0.92	acres @	\$220.00	per acre =	\$202.02
PROJECT NO. 4 TOTAL COST =					\$442.02

TOTAL COST = \$2,651.53

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe

Timber Sale No. : 341-12-77

Road Segment: H to I

Construction: 15+00 stations
0.28 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.72	acres @	\$980.00	per acre =	\$1,687.33
Balanced Road Construction	15.00	sta @	\$90.00	per sta =	\$1,350.00
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	15.00	sta @	\$28.70	per sta =	\$430.50
TOTAL EXCAVATION COSTS=					\$3,887.83

PROJECT NO. 1 TOTAL COST = \$3,887.83

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
H to I	795	cy of	3" - 0	@	\$15.60 per cy = \$12,402.00
Turnouts (1)	18	cy of	3" - 0	@	\$15.60 per cy = \$280.80
Turnaround (1)	16	cy of	3" - 0	@	\$15.60 per cy = \$249.60
Landing (1)	150	cy of	3" - 0	@	\$15.60 per cy = \$2,340.00
Total =	979	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$15,272.40

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 0.86 acres @ \$220.00 per acre = \$189.40

PROJECT NO. 3 TOTAL COST = \$189.40

TOTAL COST = \$19,349.63

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No.:	<u>341-12-77</u>
Road Segment:	<u>J to K</u>	Construction:	<u>16+75</u> stations
			<u>0.32</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.92	acres @	\$980.00	per acre =	\$1,884.18
Balanced Road Construction	15.75	sta @	\$90.00	per sta =	\$1,417.50
Drift	1.00	sta @	\$150.00	per sta =	\$150.00
Construct Turnouts (1)	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	16.75	sta @	\$28.70	per sta =	\$480.73
			TOTAL EXCAVATION COSTS=		\$4,412.41

CULVERTS - MATERIALS & INSTALLATION

Culverts					
30 LF of 18"	\$540.00	30 LF of 24"	\$720.00		
	\$540.00		\$720.00		
Culvert Markers					
2 markers	\$20.00				
				TOTAL CULVERT COSTS =	\$1,280.00

PROJECT NO. 1 TOTAL COST = \$5,692.41

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
J to K	835	cy of	3" - 0	@	\$15.33 per cy = \$12,800.55
Culvert Bedding (1)	20	cy of	Reject	@	\$5.52 per cy = \$110.40
Turnouts (2)	36	cy of	3" - 0	@	\$15.33 per cy = \$551.88
Turnaround (1)	16	cy of	3" - 0	@	\$15.33 per cy = \$245.28
Landing (1)	150	cy of	3" - 0	@	\$15.33 per cy = \$2,299.50
Total =					
	1037	cy of	3" - 0		\$15.33 per cy = \$15,897.21
	20	cy of	Reject		\$5.52 per cy = \$110.40

PROJECT NO. 2 TOTAL COST = \$16,007.61

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.96	acres @	\$220.00	per acre =	\$211.49
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PROJECT NO. 3 TOTAL COST = \$211.49

TOTAL COST = \$21,911.51

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No. :	<u>341-12-77</u>
Road Segment:	<u>L to M</u>	Construction:	<u>1+50</u> stations
			<u>0.03</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.17	acres @	\$980.00	per acre =	\$168.73
Balanced Road Construction	1.50	sta @	\$90.00	per sta =	\$135.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade, Ditch, and Roll	1.50	sta @	\$28.70	per sta =	\$43.05
TOTAL EXCAVATION COSTS=					\$631.78

PROJECT NO. 1 TOTAL COST = \$631.78

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
L to M	80	cy of	3" - 0	@	\$14.95 per cy = \$1,196.00
Landing (1)	150	cy of	3" - 0	@	\$14.95 per cy = \$2,242.50
Total =	230	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$3,438.50

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.09	acres @	\$220.00	per acre =	\$18.94
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PROJECT NO. 3 TOTAL COST = \$18.94

TOTAL COST = \$4,089.22

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe
 Road Segment: N to O

Timber Sale No. : 341-12-77
 Construction: 31+25 stations
0.59 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	3.59	acres @	\$784.00	per acre =	\$2,812.21
Balanced Road Construction	31.25	sta @	\$90.00	per sta =	\$2,812.50
Construct Turnouts (1)	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	13.25	sta @	\$28.70	per sta =	\$380.28
Grade and Roll (Outslope)	18.00	sta @	\$27.20	per sta =	\$489.60
TOTAL EXCAVATION COSTS=					\$7,034.59

PROJECT NO. 1 TOTAL COST = \$7,034.59

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
N to O	1,656	cy of	3" - 0	@	\$14.87 per cy = \$24,624.72
Turnouts (3)	54	cy of	3" - 0	@	\$14.87 per cy = \$802.98
Turnaround (1)	16	cy of	3" - 0	@	\$14.87 per cy = \$237.92
Landing (1)	150	cy of	3" - 0	@	\$14.87 per cy = \$2,230.50
Total =	1876	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$27,896.12

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 1.79 acres @ \$220.00 per acre = \$394.57

PROJECT NO. 3 TOTAL COST = \$394.57

TOTAL COST = \$35,325.28

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No. :	<u>341-12-77</u>
Road Segment:	<u>P to Q</u>	Construction:	<u>3+50</u> stations <u>0.07</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.40	acres @	\$980.00	per acre =	\$393.71
Balanced Road Construction	3.50	sta @	\$90.00	per sta =	\$315.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade and Roll (Outslope)	3.50	sta @	\$27.20	per sta =	\$95.20
TOTAL EXCAVATION COSTS=					\$1,163.91

PROJECT NO. 1 TOTAL COST = \$1,163.91

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
P to Q	186	cy of	3" - 0	@	\$14.64 per cy = \$2,723.04
Turnaround (1)	16	cy of	3" - 0	@	\$14.64 per cy = \$234.24
Landing (1)	150	cy of	3" - 0	@	\$14.64 per cy = \$2,196.00
Total =	352	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$5,153.28

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.20	acres @	\$220.00	per acre =	\$44.19
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PROJECT NO. 3 TOTAL COST = \$44.19

TOTAL COST = \$6,361.38

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No. :	<u>341-12-77</u>
Road Segment:	<u>R to S</u>	Construction:	<u>11+75</u> stations
			<u>0.22</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.35	acres @	\$980.00	per acre =	\$1,321.74
Balanced Road Construction	9.75	sta @	\$90.00	per sta =	\$877.50
Drift	2.00	sta @	\$150.00	per sta =	\$300.00
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	6.00	sta @	\$28.70	per sta =	\$172.20
Grade and Roll (Outslope)	5.75	sta @	\$27.20	per sta =	\$156.40
			TOTAL EXCAVATION COSTS=		\$3,247.84

PROJECT NO. 1 TOTAL COST = \$3,247.84

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
R to S	517	cy of	3" - 0	@	\$14.58 per cy = \$7,537.86
Turnouts (1)	18	cy of	3" - 0	@	\$14.58 per cy = \$262.44
Turnaround (1)	16	cy of	3" - 0	@	\$14.58 per cy = \$233.28
Landing (1)	150	cy of	3" - 0	@	\$14.58 per cy = \$2,187.00
Total =	701	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$10,220.58

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.67	acres @	\$220.00	per acre =	\$148.36
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PROJECT NO. 3 TOTAL COST = \$148.36

TOTAL COST = \$13,616.78

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No. :	<u>341-12-77</u>
Road Segment:	<u>T to U</u>	Improvement:	<u>20+50 stations</u> <u>0.39 miles</u>

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	2.35	acres @	\$627.00	per acre =	\$1,475.38
Construct Turnouts (1)	2	ea @	\$60.00	per ea =	\$120.00
Grade, Ditch, and Roll	20.50	sta @	\$28.70	per sta =	\$588.35
TOTAL EXCAVATION COSTS=					\$2,183.73

CULVERTS - MATERIALS & INSTALLATION

Culverts

30	LF of 18"	\$540.00
		<u>\$540.00</u>

Culvert Markers

1	markers	<u>\$10.00</u>
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TOTAL CULVERT COSTS = \$550.00

PROJECT NO. 1 TOTAL COST = \$2,733.73

PROJECT NO. 2:

SURFACING

	6	" deep =	31 cy/sta			
T to U	636	cy of	3" - 0	@	\$14.01	per cy = \$8,910.36
Turnouts (2)	22	cy of	3" - 0	@	\$14.01	per cy = \$308.22
Turnaround	10	cy of	3" - 0	@	\$14.01	per cy = \$140.10
Landing (1)	90	cy of	3" - 0	@	\$14.01	per cy = <u>\$1,260.90</u>
Total =	758	cy of	3" - 0			

PROJECT NO. 2 TOTAL COST = \$10,619.58

TOTAL COST = \$13,353.31

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No.:	<u>341-12-77</u>
Road Segment:	<u>V to W</u>	Construction:	<u>11+75</u> stations
			<u>0.22</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	1.35	acres @	\$784.00	per acre =	\$1,057.39
Balanced Road Construction	11.75	sta @	\$90.00	per sta =	\$1,057.50
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	11.75	sta @	\$28.70	per sta =	\$337.23
TOTAL EXCAVATION COSTS=					\$2,872.12

CULVERTS - MATERIALS & INSTALLATION

Culverts	
30 LF of 18"	\$540.00
Culvert Markers	
1 markers	\$10.00

TOTAL CULVERT COSTS = \$550.00

PROJECT NO. 1 TOTAL COST = \$3,422.12

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.67	acres @	\$220.00	per acre =	\$148.36
PROJECT NO. 3 TOTAL COST =					\$148.36

PROJECT NO. 4:

Construct Tank Trap	1.00	each @	\$60.00	per each =	\$60.00
Remove Culvert	1.00	each @	\$150.00	per each =	\$150.00
Construct Waterbars (3)	3.00	each @	\$90.00	per each =	\$270.00
Grass seed and fertilize areas of disturbed soil.	0.54	acres @	\$4.00	per acre =	\$2.16
PROJECT NO. 4 TOTAL COST =					\$482.16

TOTAL COST = \$4,052.63

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No.:	<u>341-12-77</u>
Road Segment:	<u>X to Y</u>	Construction:	<u>3+75</u> stations <u>0.07</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.43	acres @	\$980.00	per acre =	\$421.83
Balanced Road Construction	3.75	sta @	\$90.00	per sta =	\$337.50
Landing	1	ea @	\$285.00	per ea =	\$285.00
Grade and Roll (Outslope)	3.75	sta @	\$27.20	per sta =	\$102.00
TOTAL EXCAVATION COSTS=					\$1,146.33

CULVERTS - MATERIALS & INSTALLATION

Culverts	
40 LF of 18"	\$720.00
Culvert Markers	
1 markers	\$10.00

TOTAL CULVERT COSTS = \$730.00

PROJECT NO. 1 TOTAL COST = \$1,876.33

PROJECT NO. 2:

SURFACING	10	" deep =	53 cy/sta		
X to Y	199	cy of	3" - 0	@	\$14.27 per cy = \$2,839.73
Landing (1)	150	cy of	3" - 0	@	\$14.27 per cy = \$2,140.50
Total =	349	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$4,980.23

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.22	acres @	\$220.00	per acre =	\$47.35
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PROJECT NO. 3 TOTAL COST = \$47.35

TOTAL COST = \$6,903.91

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No. :	<u>341-12-77</u>
Road Segment:	<u>Z to AA</u>	Construction:	<u>7+50</u> stations
			<u>0.14</u> miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.86	acres @	\$980.00	per acre =	\$843.66
Balanced Road Construction	7.50	sta @	\$90.00	per sta =	\$675.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Landing	2	ea @	\$285.00	per ea =	\$570.00
Grade, Ditch, and Roll	7.50	sta @	\$28.70	per sta =	\$215.25
TOTAL EXCAVATION COSTS=					\$2,378.91

CULVERTS - MATERIALS & INSTALLATION

Culverts			
40 LF of 18"	\$720.00		
Culvert Markers			
1 markers	\$10.00		
TOTAL CULVERT COSTS =			\$730.00

PROJECT NO. 1 TOTAL COST = \$3,108.91

PROJECT NO. 2:

SURFACING	10	" deep =	52 cy/sta		
Z to AA	390	cy of	3" - 0	@	\$14.71 per cy = \$5,736.90
Turnaround (1)	16	cy of	3" - 0	@	\$14.71 per cy = \$235.36
Landing (2)	300	cy of	3" - 0	@	\$14.71 per cy = \$4,413.00
Total =	706	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$10,385.26

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.43	acres @	\$220.00	per acre =	\$94.70
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PROJECT NO. 3 TOTAL COST = \$94.70

TOTAL COST = \$13,588.87

SUMMARY OF CONSTRUCTION COST

Timber Sale: Lou Whe Lou Whe
Road Segment: BB to CC

Timber Sale No. : 341-12-77
Construction: 4+80 stations
0.09 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.55	acres @	\$980.00	per acre =	\$539.94
Balanced Road Construction	4.80	sta @	\$90.00	per sta =	\$432.00
Construct Turnaround (1)	1	ea @	\$75.00	per ea =	\$75.00
Approach to landing	1.00	sta @	\$118.70	per sta =	\$118.70
Landings	2	ea @	\$285.00	per ea =	\$570.00
Grade, Ditch, and Roll	4.80	sta @	\$28.70	per sta =	\$137.76
TOTAL EXCAVATION COSTS=					\$1,873.40

CULVERTS - MATERIALS & INSTALLATION

Culverts

40 LF of 18" \$720.00

Culvert Markers

1 markers \$10.00

TOTAL CULVERT COSTS = **\$730.00**

PROJECT NO. 1 TOTAL COST = \$2,603.40

PROJECT NO. 2:

SURFACING

	10	" deep =	52 cy/sta		
BB to CC	250	cy of	3" - 0	@	\$14.77 per cy = \$3,692.50
Turnaround (1)	16	cy of	3" - 0	@	\$14.77 per cy = \$236.32
Junction	10	cy of	3" - 0	@	\$14.77 per cy = \$147.70
Landing (2)	300	cy of	3" - 0	@	\$14.77 per cy = \$4,431.00
Approach to landing	52	cy of	3" - 0	@	\$14.77 per cy = \$768.04
Total =	628	cy of	3" - 0		

PROJECT NO. 2 TOTAL COST = \$9,275.56

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil. 0.28 acres @ \$220.00 per acre = \$60.61

PROJECT NO. 3 TOTAL COST = \$60.61

TOTAL COST = \$11,939.57

SUMMARY OF CONSTRUCTION COST

Timber Sale:	<u>Lou Whe Lou Whe</u>	Timber Sale No. :	<u>341-12-77</u>
Road Segment:	<u>V1 to V2</u>	Vacate:	<u>3+00</u> stations
			<u>0.06</u> miles

PROJECT NO. 4:

Remove Culvert	1.00 each @	\$150.00	per each =	\$150.00
Excavate Fill	150.00 cy @	\$2.12	per cy =	\$318.00
Rip Road	3.00 sta @	\$50.00	per sta =	\$150.00
Construct Tank Traps	2.00 each @	\$50.00	per each =	\$100.00
Grass seed and fertilize areas of disturbed soil.	0.14 acres @	\$220.00	per acre =	\$30.30
Mulch	4.00 bales @	\$4.50	per bale =	\$18.00
PROJECT NO. 4 TOTAL COST =				<u>\$766.30</u>

TOTAL COST = \$766.30

341-12-77

EQUIPMENT					Within			Within			
No.	DESCRIPTION	Equipment Cleaning	Base Cost	Woods Cost	Pilot Cars	Area Move	Begin Mileage	End Mileage	Total Miles	Area Cost	Total Cost
0	Drill & Compressor		\$0.00	\$0.00		\$46.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Brush Cutter		\$0.00	\$0.00		\$4.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Graders		\$300.00	\$210.22		\$3.65	\$0.00	\$0.00	\$0.00	\$0.00	\$510.22
1	Loader (Small)		\$376.44	\$187.49	1	\$3.55	\$0.00	\$0.00	\$0.00	\$0.00	\$563.93
0	Loader (Med. & Large)		\$0.00	\$0.00	1	\$9.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Rollers (smooth/grid) & Compactors		\$308.59	\$162.15		\$5.00	\$0.00	\$0.00	\$0.00	\$0.00	\$470.74
0	Excavators (Small)	\$0	\$0.00	\$0.00		\$22.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Excavators (Med.)	\$0	\$0.00	\$0.00		\$35.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Excavators (Large)	\$1,000	\$466.14	\$341.55	1	\$44.80	\$0.00	\$0.00	\$0.00	\$0.00	\$1,807.69
0	Tired Backhoes/Skidders	\$0	\$0.00	\$0.00		\$3.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Tractors (D6)	\$0	\$0.00	\$0.00	2	\$7.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
0	Tractors (D7)	\$0	\$0.00	\$0.00	2	\$11.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Tractor (D8)	\$1,000	\$473.80	\$312.51	2	\$15.10	\$0.00	\$0.00	\$0.00	\$0.00	\$1,786.31
4	Dump Truck (10 cy +)		\$466.67	\$212.00		\$2.85	\$0.00	\$0.00	\$0.00	\$0.00	\$678.67
0	Dump Truck (Off Hiway)		\$0.00	\$0.00	1	\$4.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1	Water Truck (1500 Gal)		\$95.00	\$43.16		\$2.85	\$0.00	\$0.00	\$0.00	\$0.00	\$138.16
0	Water Truck (2500 Gal)		\$0.00	\$0.00		\$2.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL MOVE-IN COSTS:											\$5,955.72

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Timber Sale: Lou Whe Lou Whe

Sale Number: 341-12-77

Pit Name: Rock Creek Ridge Pit

Swell:	<u>130%</u>	1-1/2"-0 (trk measure)	<u>8,268 cy</u>
Shrinkage:	<u>116%</u>	3"-0 (trk measure)	<u>8,577 cy</u>
Drill Pct.:	<u>100%</u>	6"-0 (trk measure)	<u>cy</u>
		Stockpile (stockpile measurement)	<u>cy</u>
		Total Truck Yardage:	<u>16,845 cy</u>
		Total In Place Yardage:	<u>12,958 cy</u>

Pit Development & Cleanup including Clearing and grubbing of
Waste Area @ adjacent to pit, place overburden
in Waste Area, spread and compact.

\$3,000.00

Drill & Shoot (Downholes):	<u>\$2.50 /cy x</u>	<u>12,958 cy</u>	=	<u>\$32,394.23</u>
Load Crusher:	<u>\$0.70 /cy x</u>	<u>16,845 cy</u>	=	<u>\$11,791.50</u>
Crushing (1-1/2" - 0):	<u>\$3.00 /cy x</u>	<u>8,268 cy</u>	=	<u>\$24,804.00</u>
Crushing (3" - 0):	<u>\$3.00 /cy x</u>	<u>8,577 cy</u>	=	<u>\$25,731.00</u>
Load Dump Truck:	<u>\$0.70 /cy x</u>	<u>16,845 cy</u>	=	<u>\$11,791.50</u>
		Subtotal		<u>\$109,512.23</u>

Equipment Cleaning				\$2,000.00
Move in Crusher (3 Stage)				\$2,987.00
Set up Crusher				\$3,024.00
Move in and set up Drill and Compressor				\$346.98
Move in Excavator				\$637.66
Move in D-8				\$637.43
Move in Loader				\$572.60
Clean Up Pit				\$300.00
Gradation Tests (\$65/2000 cy)	<u>\$65.00</u>	<u>cy/2000cy x</u>	<u>9</u> tests	<u>\$585.00</u>
Change Gradation				<u>\$210.00</u>
		Subtotal		<u>\$9,300.67</u>

PIT DEVELOPMENT COST \$7.05/cy

TOTAL PRODUCTION COST \$118,812.90

VOLUME SUMMARY
 (Shown in MBF)
Lou Whe Lou Whe
341-12-77
February 2012

AREA 1: PC-M (251 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	2,873	1,540	177	4,590
	Hidden D&B (2%)	57	31	4	92
	NET TOTAL	2,816	1,509	173	4,498
	% of Total	62	34	4	

AREA 2: PC-M (80 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	916	491	56	1,463
	Hidden D&B (2%)	18	10	1	29
	NET TOTAL	898	481	55	1,434
	% of Total	62	34	4	

AREA 3: PC-M (30 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	343	184	21	548
	Hidden D&B (2%)	7	4	0	11
	NET TOTAL	336	180	21	537
	% of Total	62	34	4	

AREA 4: R/W (7 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir	Cruise Volume	208	114	13	335
	Hidden D&B (2%)	4	2	1	7
	NET TOTAL	204	112	12	328
	% of Total	91	34	4	

SALE TOTAL

SPECIES		2 SAW	3 SAW	4 SAW	TOTAL
Douglas-fir		4,254	2,282	261	6,797

RESIDUAL STAND SPECIFICATIONS

SALE NAME: Lou Whe Lou Whe

SALE NUMBER: 341-12-77

AREA 1

Residual QMD assumption (from leave tree cruise information)

24

Target Relative Density

33

	Minimum	Target	Maximum
Relative Density	31	33	35
Basal Area	150	160	170
Trees per Acre	48	51	54

AREA 2

Residual QMD assumption (from leave tree cruise information)

24

Target Relative Density

33

	Minimum	Target	Maximum
Relative Density	31	33	35
Basal Area	150	160	170
Trees per Acre	48	51	54

AREA 3

Residual QMD assumption (from leave tree cruise information)

24

Target Relative Density

33

	Minimum	Target	Maximum
Relative Density	31	33	35
Basal Area	150	160	170
Trees per Acre	48	51	54

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

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

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

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

TC		PLOGSTVB		Log Stock Table - MBF																
<div>T03N R06W S24 Ty00PC361.00</div>				Project: LOUWHE												Page 1				
				Acres 361.00												Date 2/28/2012				
																Time 8:43:36AM				
S T	Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches								20-23	24-29	30-39	40+
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19				
DF		DO	2M	18	22		22	.3						22						
DF		DO	2M	20	100		100	1.5						29	71					
DF		DO	2M	24	105		105	1.6						66		39				
DF		DO	2M	30	44		44	.7								44				
DF		DO	2M	34	56		56	.9							56					
DF		DO	2M	40	3,806		3,806	57.7				1038	1255	1290	223					
DF		DO	3M	26	13		13	.2			13									
DF		DO	3M	28	14		14	.2			14									
DF		DO	3M	32	94		94	1.4			39	32	23							
DF		DO	3M	34	42		42	.6			42									
DF		DO	3M	36	184		184	2.8			131	53								
DF		DO	3M	38	83		83	1.3			73	10								
DF		DO	3M	40	1,784		1,784	27.0			210	473	1101							
DF		DO	4M	12	35		35	.5			35									
DF		DO	4M	14	24		24	.4			24									
DF		DO	4M	16	20	10.2	18	.3			18									
DF		DO	4M	18	16		16	.2			16									
DF		DO	4M	20	4		4	.1			4									
DF		DO	4M	22	15		15	.2			15									
DF		DO	4M	24	10		10	.1			10									
DF		DO	4M	26	32		32	.5			32									
DF		DO	4M	28	15		15	.2			15									
DF		DO	4M	30	15		15	.2			15									
DF		DO	4M	32	8		8	.1			8									
DF		DO	4M	38	18	18.3	15	.2			15									
DF		DO	4M	40	49		49	.7			49									
DF		Totals			6,607		6,602	100.0			750	595	1124	1038	1371	1418	306			
Total		All Species			6,607		6,602	100.0			750	595	1124	1038	1371	1418	306			

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>T03N R06W S24 Ty00PC361.00</div>						Project: LOUWHE						Page 1									
						Acres 361.00						Date 2/28/2012									
												Time 8:43:35AM									
S So Gr Spp T 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	DO 2M	62	11,447	11,447	4,133			70	30	3	4	1	92	38	15	313	1.65	36.6			
DF	DO 3M	34	6,134	6,134	2,214		100				1	6	93	38	8	104	0.64	59.1			
DF	DO 4M	4	2.1	720	705	255		100		38	34	3	25	20	6	24	0.31	29.6			
DF Totals		100	.1	18,302	18,287	6,602		37	44	19	3	4	3	90	34	10	146	0.93	125.2		
Totals			0.1	18,302	18,287	6,602		37	44	19	3	4	3	90	34	10	146	0.93	125.2		

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		2/28/2012	
T03N R06W S24 Ty00PC361.00				Project				LOUWHE				Time:		8:49:07AM			
				Acres				361.00				Grown Year:					
S Sp	T	Tot			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	T o t a l s				
		Sample DBH	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF		
DF		9	1	89	93	2.264	1.00	2.26	10.9	60.0	.70	25	136	254	89	49	
DF		10	2	89	95	3.667	2.00	7.33	7.5	35.0	1.57	55	257	566	199	93	
DF		11	1	91	88	1.515	1.00	3.03	9.5	40.0	.82	29	121	297	104	44	
DF		13	2	86	124	2.170	2.00	4.34	18.1	82.5	2.24	79	358	810	284	129	
DF		15	4	88	103	3.259	4.00	6.52	21.7	96.3	4.02	141	627	1,453	510	227	
DF		16	6	85	126	4.297	6.00	11.46	21.8	94.4	7.13	250	1,081	2,576	904	390	
DF		17	1	86	109	.634	1.00	1.27	29.1	120.0	1.05	37	152	380	133	55	
DF		18	11	87	126	6.225	11.00	17.54	25.9	114.2	12.97	455	2,003	4,683	1,643	723	
DF		19	11	88	138	5.587	11.00	16.76	31.4	144.2	15.00	526	2,418	5,416	1,900	873	
DF		20	8	88	142	3.667	8.00	11.46	33.4	154.0	10.89	382	1,765	3,932	1,380	637	
DF		21	5	87	128	2.079	5.00	6.24	35.4	157.3	6.29	221	981	2,270	797	354	
DF		22	10	88	142	3.788	10.00	11.74	42.3	200.0	14.16	497	2,349	5,112	1,794	848	
DF		23	8	89	144	2.773	8.00	9.01	45.4	216.2	11.66	409	1,948	4,209	1,477	703	
DF		24	4	88	151	1.273	4.00	4.77	43.4	207.3	5.91	207	990	2,134	749	357	
DF		25	3	88	156	.880	3.00	3.52	46.1	230.0	4.63	162	810	1,671	586	292	
DF		26	2	86	145	.542	2.00	1.90	54.0	257.1	2.92	102	488	1,054	370	176	
DF		27	2	85	155	.503	2.00	2.01	52.7	261.2	3.02	106	526	1,091	383	190	
DF		28	2	84	159	.468	2.00	1.87	52.1	268.8	2.78	97	503	1,002	352	182	
DF		29	1	85	143	.218	1.00	.65	77.3	373.3	1.44	51	244	520	183	88	
DF		31	2	82	162	.382	2.00	1.53	70.4	347.5	3.06	107	530	1,106	388	191	
DF		Totals		86	88	126	46.191	86.00	125.22	31.5	146.0	112.29	3,940	18,287	40,537	14,223	6,602
Totals				86	88	126	46.191	86.00	125.22	31.5	146.0	112.29	3,940	18,287	40,537	14,223	6,602

TC PSTATS			PROJECT STATISTICS						PAGE	1		
			PROJECT			LOUWHE			DATE	2/28/2012		
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt	
03N	06	24	1	00PC		361.00		40	491	S	W	
					TREES	ESTIMATED		PERCENT				
			PLOTS	TREES	PER PLOT		TREES	SAMPLE				
							TREES		TREES			
TOTAL			40	491	12.3							
CRUISE			18	86	4.8		16,675		.5			
DBH COUNT												
REFOREST												
COUNT			22	261	11.9							
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
			TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T			86	46.2	18.5	127	20.0	86.0	18,302	18,287	3,940	3,940
TOTAL			86	46.2	18.5	127	20.0	86.0	18,302	18,287	3,940	3,940
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-T			54.8	5.9	501	533	564					
TOTAL			54.8	5.9	501	533	564	120	30	13		
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-T			49.6	5.4	107	113	119					
TOTAL			49.6	5.4	107	113	119	98	25	11		
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-T			70.5	11.1	41	46	51					
TOTAL			70.5	11.1	41	46	51	199	50	22		
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-T			68.3	10.8	77	86	95					
TOTAL			68.3	10.8	77	86	95	186	47	21		
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-T			72.6	11.5	16,190	18,287	20,383					
TOTAL			72.6	11.5	16,190	18,287	20,383	210	53	23		
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-T			71.4	11.3	3,496	3,940	4,384					
TOTAL			71.4	11.3	3,496	3,940	4,384	203	51	23		

CRUISE REPORT
Lou Whe Lou Whe
341-12-77

- 1. Cruise Design:** The cruise design assumed a Coefficient of Variation of 43%, an average stand diameter of 18 inches, a desired sampling error of 11% and a sample size of 100 graded trees. Pre-cruise plots indicated that 5 or 6 take trees per plot could be realized with a 20 BAF prism. One cruise line was laid out in each sale area and plots were spaced 6 chains apart. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.
- 2. Sampling Method:** The Sale Areas were cruised in February, 2012 with 20 variable radius grade plots and 20 variable radius count plots using a 20 BAF prism. Cruisers 'thinned' plots from below to 160 ft² of basal area by assigning a 'Take' or 'Leave' status to each tree in every plot.
- 3. Cruise Results:** 86 trees were measured and graded producing a cumulative sampling error of 10.8% on the basal area and 11.5% on the board foot volume.
- 4. Form Factors:** Form factors were measured using a form point of 16 feet.
- 5. Height Standards:** Total tree heights were measured to the nearest foot.
- 6. Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.
- 7. Grading System:** All trees were graded favoring 40 foot segments.
- 8. Merchantable Top:** Conifer merchantable heights were calculated to a 6 inch top DIB.
- 9. Computation Procedures:** Volumes and cruise statistics for the Timber Sale Area were computed using the Super Ace 2008 program.
- 10. Deductions:** 2% applied to reflect hidden defect and potential breakage.
- 11. Cruisers:** The sale was cruised by ODF cruisers Nate Hunter, Joe Koch, and Mark Savage.
- 12. Signatures:**

Prepared by:

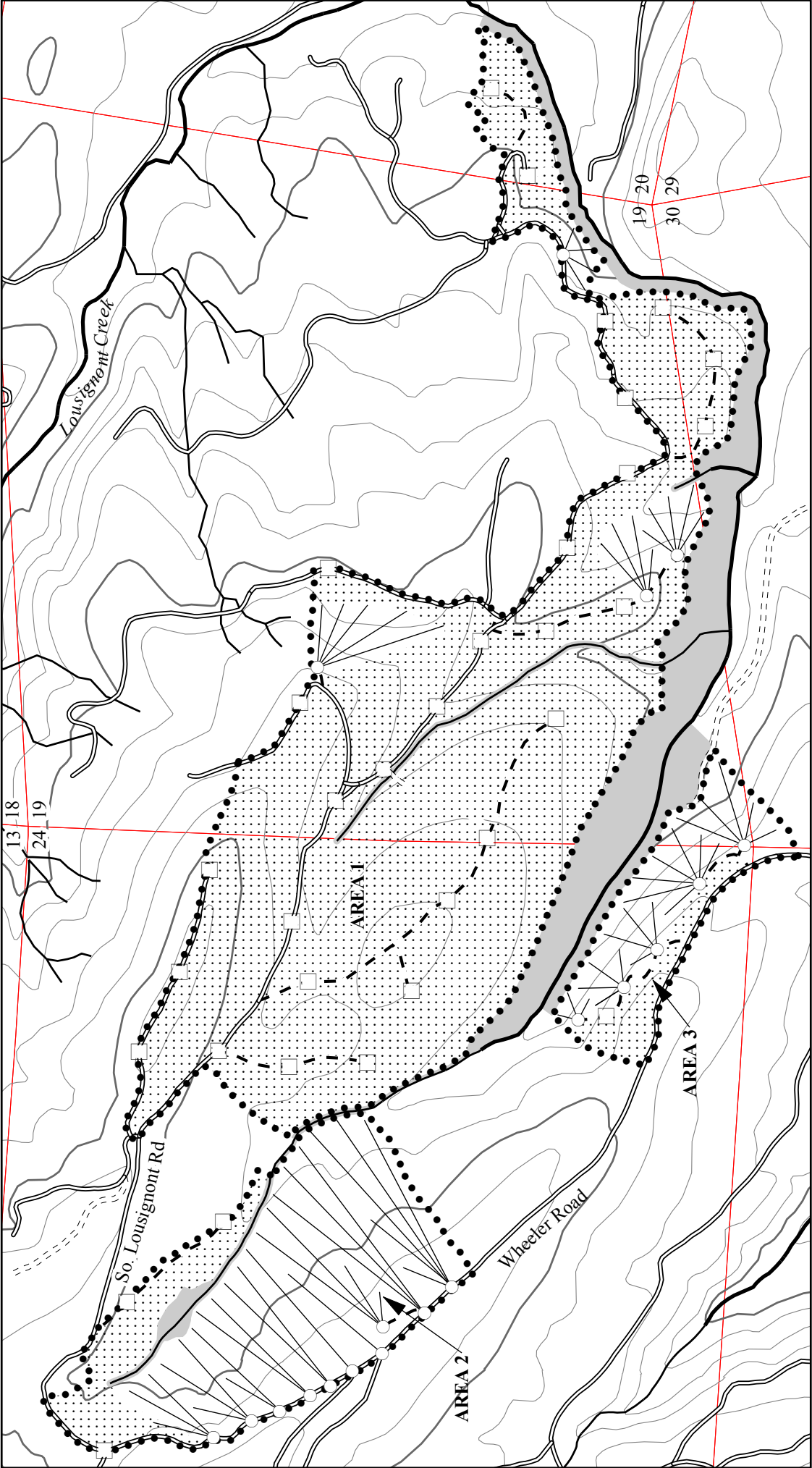
Nate Hunter

Date

Reviewed by:

Eric Foucht

Date

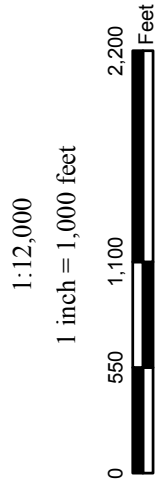


Legend

- Timber Sale Boundary
- ===== Surfaced Road
- Unsurfaced Road
- - - - - New Construction
- Type F Stream
- Type N Stream
- ▬ Stream Buffer
- Cable Landing
- Tractor Landing
- Tractor Yarding Area
- ◁ Cable Yarding Area
- 400 Foot Contour Band
- 80 Foot Contour Band
- ▬ ODF Ownership Boundary
- ▭ Sections

LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-12-77
LOU WHE LOU WHE
PORTIONS OF SECTIONS 19, 20 & 30, T3N, R5W, W.M.
WASHINGTON COUNTY, OREGON
PORTIONS OF SECTIONS 24 & 25, T3N, R6W, W.M.
TILLAMOOK COUNTY, OREGON



APPROXIMATE NET ACRES	
TRACTOR	CABLE
AREA 1	235
AREA 2	15
AREA 3	8
AREA 4	7
TOTAL	265

Forest Grove District GIS
February, 2012
This product is for informational use and may not be
suitable for legal, engineering, or surveying purposes.