



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Thin Women
Sale WO-341-2019-19-

District: West Oregon

Date: January 23, 2019

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$332,641.53	\$17,266.50	\$349,908.03
		Project Work:	(\$54,001.00)
		Advertised Value:	\$295,907.03



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Timber Description

Location: Portions of Section 34, T9S, R8W and Portions of Sections 4 and 5, T10S, R8W, W.M., Polk County, Oregon.

Stand Stocking: 40%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	13	0	97
Western Hemlock / Fir	16	0	96
Alder (Red)	12	0	95

Volume by Grade	2S	3S & 4S 6"-11"	SM & Better	Camprun	Total
Douglas - Fir	229	1,684	19	0	1,932
Western Hemlock / Fir	5	8	0	0	13
Alder (Red)	0	0	0	45	45
Total	234	1,692	19	45	1,990

Comments: Pond Values Used: Local Pond Values, January, 2019.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$675.87/\text{MBF} = \$1,135.00/\text{MBF} - \$459.13/\text{MBF}$

Pulp Logs (Conifer & Hardwoods) = \$4/Ton

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

Intermediate Support/Tail Trees: 15 supports @ \$100/support = \$1,500.

TOTAL Other Costs (with Profit & Risk to be added) = \$1,500.

Other Costs (No Profit & Risk added):

Non-Project Roads and Landings: \$750

Invasive Species Equipment Cleaning: \$2,000

Water Bar and Block Dirt Roads: 77 stations @ \$15.96/station = \$1,229

Firewood Sorting & Landing Piling: 14 landings @ \$180/landing = \$2,520

Landing Piling: 10 landings @ \$100/landing = \$1,000

TOTAL Other Costs (No Profit & Risk added) = \$7,499

Slash Disposal:

Move-in; \$1,290

Weed wash equipment: \$300

Work: 36 hours @ \$150/hr = \$5,400

Total slash disposal = \$6,990

ROAD MAINTENANCE

Move-in: (Grader) \$778

Final Road Maintenance: \$8,166

TOTAL Road maintenance: \$8,944/1,990 MBF = \$4.49/MBF



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Logging Conditions

Combination#: 1 Douglas - Fir 47.47%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Harvester Head Delimbing

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

tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

loads / day: 5 **bd. ft / load:** 3700

cost / mbf: \$420.56

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

Combination#: 2 Douglas - Fir 8.38%

Logging System: Shovel **Process:** Harvester Head Delimbing

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

tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

loads / day: 7 **bd. ft / load:** 3700

cost / mbf: \$206.33

machines: Forwarder
Harvester

Combination#: 3 Douglas - Fir 13.25%
 Western Hemlock / Fir 30.00%
 Alder (Red) 30.00%

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

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

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 12 **bd. ft / load:** 3800

cost / mbf: \$161.85

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

Combination#: 4 Douglas - Fir 30.91%
 Western Hemlock / Fir 70.00%
 Alder (Red) 70.00%

Logging System: Shovel **Process:** Harvester Head Delimbing

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

tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

loads / day: 15 **bd. ft / load:** 3800

cost / mbf: \$93.76

machines: Forwarder
Harvester



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District: West Oregon

Date: January 23, 2019

Logging Costs

Operating Seasons: 3.00	Profit Risk: 12%
Project Costs: \$54,001.00	Other Costs (P/R): \$1,500.00
Slash Disposal: \$6,990.00	Other Costs: \$7,499.00

Miles of Road

Road Maintenance: \$4.49

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	4.0
Western Hemlock / Fir	\$0.00	2.0	3.8
Alder (Red)	\$0.00	2.0	3.5



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$267.35	\$4.62	\$6.62	\$122.31	\$0.75	\$48.20	\$3.51	\$2.00	\$3.77	\$459.13
Western Hemlock / Fir									
\$114.19	\$4.67	\$6.62	\$130.00	\$0.75	\$30.75	\$3.51	\$2.00	\$3.77	\$296.26
Alder (Red)									
\$114.19	\$4.71	\$6.62	\$142.50	\$0.75	\$32.25	\$3.51	\$2.00	\$3.77	\$310.30

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$629.69	\$170.56	\$0.00
Western Hemlock / Fir	\$0.00	\$536.23	\$239.97	\$0.00
Alder (Red)	\$0.00	\$694.00	\$383.70	\$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	1,932	\$170.56	\$329,521.92
Western Hemlock / Fir	13	\$239.97	\$3,119.61
Alder (Red)	45	\$383.70	\$17,266.50

Gross Timber Sale Value

Recovery: \$349,908.03

Prepared By: Jon Long

Phone: 541-929-9169

SUMMARY OF ALL PROJECT COSTS

Sale Name: Thin Women

Date: July 2018

Time: 14:46

Project #1 - New Construction

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>	
A to B (dirt)	22.2 sta	\$2,828	
C to D (dirt)	19.1 sta	\$2,284	
E to F (dirt)	2.6 sta	\$1,358	
Pt. G	N/A	\$1,951	
H to I (dirt)	5.0 sta	\$2,017	
J to K (dirt)	5.6 sta	\$3,997	
L to M (rocked)	1.0 sta	\$2,036	
TOTALS	55.5 sta	1.1 Mi	\$16,471

Project #2 - Road Improvement

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>	
1 to 2	223.2 sta	\$12,948	
3 to 4	128.8 sta	\$12,215	
5 to 6 (dirt)	18.2 sta	\$1,569	
7 to 8 (dirt)	4.3 sta	\$1,172	
9 to 10	5.9 sta	\$3,775	
11 to 12	11.0 sta	\$2,200	
TOTALS	391.4 sta	7.4 Mi	\$33,879

Move in

	<u>Cost</u>	
Excavator, C325 or equiv.	\$1,290	
Dozer, D-7 or equiv.	\$805	
Grader, G14 or equiv.	\$778	
Vibratory roller	\$778	
TOTAL		\$3,651

GRAND TOTAL

\$54,001

Compiled by A. Arvin

Date 07/05/2018

SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 1	LENGTH	const	22.2 sta
ROAD	A to B (dirt)	Unsurfaced, outsloped			

CLEARING AND GRUBBING

0.9 acres	@	\$1,337.00 /acre	=	\$1,203
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TOTAL CLEARING AND GRUBBING =	\$1,203
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EXCAVATION

Shape/outslope subgrade (with road grader)	22.2 sta	@	\$ 15.40 /sta	=	\$342
Compact subgrade (with vibratory roller)	22.2 sta	@	\$ 13.20 /sta	=	\$293

TOTAL EXCAVATION =	\$635
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SURFACING

			Size	Cost/yd	
Junction rock	30 cy of		jaw-run	\$30.51	= \$915
Spread/compact rock (with dozer)	0.5 sta	@	\$149.00 /hr	=	\$75

TOTAL ROCK COST =	\$990
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Compiled by:	A. Arvin
Date:	Jul 5, 2018

GRAND TOTAL =====>	\$2,828
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SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 1	LENGTH const	19.1 sta
ROAD	C to D (dirt)	Unsurfaced, outsloped		

CLEARING AND GRUBBING

1.3 acres	@	\$1,337.00 /acre	=	\$1,738
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TOTAL CLEARING AND GRUBBING =	\$1,738
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EXCAVATION

Shape/outslope subgrade (with road grader)	19.1 sta	@	\$ 15.40 /sta	=	\$294
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Compact subgrade (with vibratory roller)	19.1 sta	@	\$ 13.20 /sta	=	\$252
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TOTAL EXCAVATION =	\$546
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Compiled by:

A. Arvin

Date:

Jul 5, 2018

GRAND TOTAL =====>

\$2,284

SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 1	LENGTH const	2.6 sta
ROAD	E to F (dirt)	Unsurfaced, outsloped		

CLEARING AND GRUBBING

0.3 acres	@	\$1,337.00 /acre	=	\$401
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TOTAL CLEARING AND GRUBBING =	\$401
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EXCAVATION

With D7 dozer or equivalent

Construct road	2.6 sta	@	\$190.00 /sta	=	\$494
Landing Construction	1 Ldg	@	\$389.00 /Ldg	=	\$389
Shape/outslope subgrade (with road grader)	2.6 sta	@	\$ 15.40 /sta	=	\$40
Compact subgrade (with vibratory roller)	2.6 sta	@	\$ 13.20 /sta	=	\$34

TOTAL EXCAVATION =	\$957
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Compiled by:
Date:

A. Arvin
Jul 5, 2018

GRAND TOTAL =====>

\$1,358

SUMMARY OF CONSTRUCTION COST

SALE Thin Woman Project # 1 LENGTH const
ROAD Pt. G

CLEARING AND GRUBBING

0.2 acres @ \$1,337.00 /acre = \$267

TOTAL CLEARING AND GRUBBING = \$267

EXCAVATION

With D7 dozer or equivalent

Landing Construction 1 Ldg @ \$389.00 /Ldg = \$389

TOTAL EXCAVATION = \$389

Landing rock 40 cy of jaw-run \$30.51 = \$1,220
Spread/compact rock 0.5 hr. @ \$149.00 /hr = \$75
(with dozer)

TOTAL ROCK = \$1,295

Compiled by:

A. Arvin

Date:

Jul 5, 2018

GRAND TOTAL =====>

\$1,951

SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 1	LENGTH const	5.0 sta
ROAD	H to I (dirt)	Unsurfaced, outsloped		

CLEARING AND GRUBBING

0.4 acres	@	\$1,337.00 /acre	=	\$535
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TOTAL CLEARING AND GRUBBING =	\$535
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EXCAVATION

With D7 dozer or equivalent

Construct road	5 sta	@	\$190.00 /sta	=	\$950
Landing Construction	1 Ldg	@	\$389.00 /Ldg	=	\$389
Shape/outslope subgrade (with road grader)	5.0 sta	@	\$15.40 /sta	=	\$77
Compact subgrade (with vibratory roller)	5.0 sta	@	\$13.20 /sta	=	\$66

TOTAL EXCAVATION =	\$1,482
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Compiled by:
Date:

A. Arvin
Jul 5, 2018

GRAND TOTAL =====>	\$2,017
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SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 1	LENGTH const	5.6 sta
ROAD	J to K (dirt)	Unsurfaced, outsloped		

CLEARING AND GRUBBING

0.5 acres	@	\$1,337.00 /acre	=	\$669
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TOTAL CLEARING AND GRUBBING =	\$669
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EXCAVATION

With D7 dozer or equivalent

Construct road	5.6 sta	@	\$190.00 /sta	=	\$1,064
End Haul Excavation	200 yds	@	\$4.00 /yd	=	\$800
Landing Construction	1 Ldg	@	\$389.00 /Ldg	=	\$389
Shape subgrade	5.6 sta	@	\$15.40 /sta	=	\$86
(with road grader)					
Compact subgrade	5.6 sta	@	\$13.20 /sta	=	\$74
(with vibratory roller)					

TOTAL EXCAVATION =	\$2,413
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SURFACING

Junction rock	30 cy of	Size jaw-run	Cost/yd \$30.51	=	\$915
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TOTAL ROCK COST =	\$915
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Compiled by:	A. Arvin
Date:	Jul 5, 2018

GRAND TOTAL =====>	\$3,997
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SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 1	LENGTH const	1.0 sta
ROAD	L to M (rocked)	Surfaced, outsloped		

CLEARING AND GRUBBING

0.1 acres	@	\$1,337.00 /acre	=	\$134
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TOTAL CLEARING AND GRUBBING =	\$134
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EXCAVATION

With D7 dozer or equivalent

Construct road	1 sta	@	\$190.00 /sta	=	\$190
Landing Construction	1 Ldgs	@	\$389.00 /Ldg	=	\$389
Shape subgrade (with road grader)	1.0 sta	@	\$15.40 /sta	=	\$15
Compact subgrade (with vibratory roller)	1.0 sta	@	\$13.20 /sta	=	\$13

TOTAL EXCAVATION =	\$607
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SURFACING

		Size	Cost/yd		
Base rock	50 cy of	jaw-run	\$30.51	=	\$1,526
Landing rock (sta. 1+00)	40 cy of	jaw-run	\$30.51	=	\$1,220
Spread/compact rock (with dozer)	0.5 hr.	@	\$149.00 /hr	=	\$75

TOTAL ROCK COST =	\$1,295
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Compiled by:
Date:

A. Arvin
Jul 5, 2018

GRAND TOTAL =====>	\$2,036
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SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project # 2	LENGTH	improve	223.2 sta
ROAD	1 to 2	(Beaver Creek/Hatchery Rd.)	Surfaced, crowned		

IMPROVEMENT

Remove sod (with road grader)	4.0 hr	@	\$100.00 /hr	=	\$400
Spot grading surface rock	16.0 hr	@	\$100.00 /hr	=	\$1,600
Clean out culverts (inlets and outlets)	3 culverts	@	\$90.00 ea	=	\$270

TOTAL IMPROVEMENT = \$2,270

SURFACING

			Size	Cost/yd	
Spot rock	200 cy of		1½-0"	\$4.51	= \$902
Culvert bedding and backfill	100 cy of		1½-0"	\$4.51	= \$451
Dissipator	10 cy of		24"-6"	\$32.00	= \$320
Fill Armor	40 cy of		jaw-run	\$30.51	= \$1,220

TOTAL ROCK COST = \$2,893

SPECIAL PROJECTS

Culvert Replacement

Sta. 32+90

36"x40' CMP	40 ft	@	\$39.69 /ft	=	\$1,588
Replace pipe and improve fill	10 hr	@	\$140.00 /hr	=	\$1,400
Armor inlet	1 hr	@	\$140.00 /hr	=	\$140
Install dissipator	1 hr	@	\$140.00 /hr	=	\$140

Sta. 33+90

Install ditch disconnect (18" x 30')	30 ft	@	\$19.53 /ft	=	\$586
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Sta. 55+50

Replace 24"x30' pipe	30 ft	@	\$27.04 /ft	=	\$811
Culvert disposal				=	\$150

Roadside Brushing Sta. 82+40 to Pt. 2	2.7 mi	@	\$1,100.00 /mi	=	\$2,970
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TOTAL SPECIAL PROJECTS COST = \$7,785

Compiled by: A. Arvin
Date: Jul 5, 2018

GRAND TOTAL =====> \$12,948

SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project #	2	LENGTH	improve	128.8 sta
ROAD	3 to 4	(Beaver Ridge Rd.)		Surfaced, crowned (Sta. 0+00-109+25)		
				outsloped (Sta. 109+25-128+75)		

Remove sod (with road grader)	8.0 hr	@	\$100.00 /hr	=	\$800
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Grade/process surface rock	128.8 sta	@	\$ 15.50 /sta	=	\$1,996
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Remove bank slough (with excavator)	2.0 hr	@	\$140.00 /hr	=	\$280
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Remove bank slough (10yd dump truck)	2.0 hr	@	\$83.00 /hr	=	\$166
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TOTAL IMPROVEMENT =	\$3,242
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SURFACING

Spot rock	250 cy of	Size 1½-0"	Cost/yd \$25.33	=	\$6,333
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TOTAL ROCK COST =	\$6,333
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SPECIAL PROJECTS

Roadside Brushing Pt. 3 to Pt. 4	2.4 mi	@	\$1,100.00 /mi	=	\$2,640
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TOTAL SPECIAL PROJECTS COST =	\$2,640
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Compiled by:	A. Arvin
Date:	Jul 5, 2018

GRAND TOTAL =====>	\$12,215
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SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project #	2	LENGTH	improve	18.2 sta
ROAD	5 to 6 (dirt)			Unsurfaced, outsloped		

CLEARING AND GRUBBING

0.1 acres	@	\$1,337.00 /acre	=	\$134
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Shape/outslope subgrade (with road grader)	18.2 sta	@	\$ 15.40 /sta	=	\$280
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Compact subgrade (with vibratory roller)	18.2 sta	@	\$ 13.20 /sta	=	\$240
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TOTAL IMPROVEMENT =	\$654
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SURFACING

Junction rock	30 cy of	Size jaw-run	Cost/yd \$30.51	=	\$915
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TOTAL ROCK COST =	\$915
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Compiled by:	A. Arvin
Date:	Jul 5, 2018

GRAND TOTAL =====>	\$1,569
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SUMMARY OF CONSTRUCTION COST

SALE	Thin Woman	Project #	2	LENGTH	improve	4.3 sta
ROAD	7 to 8 (dirt)				Unurfaced, outsloped	

CLEARING AND GRUBBING

0.1 acres	@	\$1,337.00 /acre	=	\$134
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Shape/outslope subgr (with road grader)	4.3 sta	@	\$ 15.40 /sta	=	\$66
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Compact subgrade (with vibratory roller)	4.3 sta	@	\$13.20 /sta	=	\$57
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TOTAL IMPROVEMENT =	\$257
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SURFACING

Junction rock	30 cy of	Size jaw-run	Cost/yd \$30.51	=	\$915
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TOTAL ROCK COST =	\$915
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Compiled by:	A. Arvin
Date:	Jul 5, 2018

GRAND TOTAL =====>	\$1,172
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SUMMARY OF CONSTRUCTION COST

SALE Thin Woman Project # 2 LENGTH improve 5.9 sta
ROAD 9 to 10 Surfaced, crowned

Remove sod (with road grader)	1.0 hr	@	\$100.00 /hr	=	\$100
Grade/process surface rock	5.9 sta	@	\$ 15.50 /sta	=	\$91
Spread/compact waste and landing rock (with dozer)	1.0 hr.	@	\$149.00 /hr	=	\$149

SURFACING

			Size	Cost/yd		
Landing rock	40	cy of	jaw-run	\$30.51	=	\$1,220
Spot rock	30	cy of	1½-0"	\$33.17	=	\$995
Junction rock	40	cy of	jaw-run	\$30.51	=	\$1,220

Compiled by: A. Arvin
Date: Jul 5, 2018

GRAND TOTAL =====> \$3,775

SUMMARY OF CONSTRUCTION COST

SALE ROAD	Thin Woman 11 to 12	Project # 2	LENGTH	improve Surfaced, outsloped	11.0 sta
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Remove sod (with road grader)	1.5 hr	@	\$100.00 /hr	=	\$150
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Grade/process surface rock	11.0 sta	@	\$ 15.50 /sta	=	\$171
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TOTAL IMPROVEMENT =	\$321
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SURFACING

Spot rock	50 cy of	Size 1½-0"	Cost/yd \$33.17	=	\$1,659
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TOTAL ROCK COST =	\$1,659
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SPECIAL PROJECTS

Roadside Brushing Pt. 3 to Pt. 4	0.2 mi	@	\$1,100.00 /mi	=	\$220
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TOTAL SPECIAL PROJECTS COST =	\$220
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Compiled by:	A. Arvin
Date:	Jul 5, 2018

GRAND TOTAL =====>	\$2,200
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SUMMARY OF MAINTENANCE COST

SALE	Thin Woman	- Final Maintenance Cost Estimate <i>(Costed in appraisal, not in project costs)</i>
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Spot Grading	<u>Move-in</u>		
	Grader	\$	778

Road Segment	Length (Sta.)	Mileage
1 to Steer Cr Rd.	124.2	2.4
1 to 2	223.2	4.2
3 to 4	128.8	2.4
9 to 10	5.9	0.1
11 to 12	11.0	0.2
Total	493.1	9.3

9.3 Miles @ 3 miles per day = 3.1 days x 10 hr/day = 31 hrs
31 hrs x \$100/hr = \$3,100

Maintenance Rock:

	Volume	Cost/CY	Cost
1½'-0"	200	\$25.33	\$5,066
Grading			\$3,100
Grand Total			\$ 8,944

TS Volume 1,990 MBF

Cost / MBF = \$4.49

NOTES:

3"-0" rock may be substituted for 1 1/2"-0" where needed.

Rock Haul Cost Computation

SALE NAME: Thin Women
ROAD NAME: Hatchery Creek Rd
ROCK SOURCE: Rickard Rock Quarry
Route: Hwy. 20, Beaver Creek Road

DATE: Jul 5, 2018
CLASS: Medium
10 CY truck

Points:

1-2, 3-4, 5-6, 7-8, 9-10,

TIME Computation:

Road speed time factors:

1.	55 MPH	5.0	MRT	5.5 minutes
2.	50 MPH	5.0	MRT	6.0 minutes
3.	45 MPH	7.0	MRT	9.3 minutes
4.	40 MPH	9.0	MRT	13.5 minutes
5.	35 MPH	7.5	MRT	12.9 minutes
6.	30 MPH	11.0	MRT	22.0 minutes
7.	25 MPH	10.0	MRT	24.0 minutes
8.	20 MPH	2.5	MRT	7.5 minutes
9.	15 MPH	1.4	MRT	5.6 minutes
10.	10 MPH	1.6	MRT	9.6 minutes
11.	05 MPH	0.4	MRT	4.8 minutes

60.40

Dump or spread time per RT

0.50 minutes

Total hauling cycle time for this setting
(100% efficiency)

121.20 minutes

Operator efficiency correction	0.85
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142.59 minutes

Job efficiency correction	0.90
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158.43 minutes

Truck capacity (CY)	10.00
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15.84 min/CY

Loading time, delay time per CY

0.25 min/CY

TIME (minutes) J. Long

16.09 min/CY

COST per CY computation

Cost of truck and operator per hour

\$83.00 /hr.

Cost of truck and operator per minute

\$1.38 /min

Cost per CY

\$22.20 /CY

Spread and compact Water truck, Grader & Roller

\$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.97	\$33.17	\$34.67
3 - 0"	\$ 9.31	\$31.51	\$33.01
Jaw Run	\$ 8.31	\$30.51	\$32.01
Pit-Run	7.65	\$29.85	\$31.35

Note: Pit costs April 2017, Rickard Rock Quarry

Rock Haul Cost Computation

SALE NAME: Thin women
ROAD NAME: Hatchery Creek Road
ROCK SOURCE: Rickard Rock Quarry
Route: Hwy. 20, Beaver Creek Road
Points: 1 to 2 and 3 to 4

DATE: Jul 5, 2018
CLASS: Medium
18 CY truck

TIME Computation:

Road speed time factors:

1.	55 MPH	5.0	MRT	5.5 minutes
2.	50 MPH	5.0	MRT	6.0 minutes
3.	45 MPH	7.0	MRT	9.3 minutes
4.	40 MPH	9.0	MRT	13.5 minutes
5.	35 MPH	7.5	MRT	12.9 minutes
6.	30 MPH	11.0	MRT	22.0 minutes
7.	25 MPH	10.0	MRT	24.0 minutes
8.	20 MPH	2.5	MRT	7.5 minutes
9.	15 MPH	1.4	MRT	5.6 minutes
10.	10 MPH	1.6	MRT	9.6 minutes
11.	05 MPH	0.4	MRT	4.8 minutes

Total MRT	60.40
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Dump or spread time per RT

1.00 minutes

Total hauling cycle time for this setting
(100% efficiency)

121.70 minutes

Operator efficiency correction	0.85
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143.18 minutes

Job efficiency correction	0.90
---------------------------	------

159.09 minutes

Truck capacity (CY)	18.00
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8.84 min/CY

Loading time, delay time per CY

0.25 min/CY

TIME (minutes) J. Long

9.09 min/CY

COST per CY computation

Cost of truck and operator per hour

\$95.00 /hr.

Cost of truck and operator per minute

\$1.58 /min

Cost per CY

\$14.36 /CY

Spread and compact	Water truck, Grader & Roller
--------------------	------------------------------

\$1.50 /CY

Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ 10.97	\$25.33	\$26.83
3 - 0"	\$ 9.31	\$23.67	\$25.17
Jaw Run	\$ 8.31	\$22.67	\$24.17
Pit-Run	7.65	\$22.01	\$23.51

Rock Haul Cost Computation

SALE NAME:	Thin Women	DATE:	Jul 5, 2018
ROAD NAME:	Hatchery Creek Rd	CLASS:	Medium
ROCK SOURCE:	Stockpile 1 1/2 rock		10 CY truck
Route:	Beaver Creek Road to Beaver Ridge Rd		

Points:

All roads requiring 1 1/2"-0"

TIME Computation:

Road speed time factors:

1.	55 MPH	0.0	MRT	0.0 minutes
2.	50 MPH	0.0	MRT	0.0 minutes
3.	45 MPH	0.0	MRT	0.0 minutes
4.	40 MPH	0.0	MRT	0.0 minutes
5.	35 MPH	0.0	MRT	0.0 minutes
6.	30 MPH	0.0	MRT	0.0 minutes
7.	25 MPH	2.0	MRT	4.8 minutes
8.	20 MPH	3.0	MRT	9.0 minutes
9.	15 MPH	1.0	MRT	4.0 minutes
10.	10 MPH	0.4	MRT	2.4 minutes
11.	05 MPH	0.2	MRT	2.4 minutes

6.60

Dump or spread time per RT	0.50 minutes
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Total hauling cycle time for this setting (100% efficiency)	23.10 minutes
----------------------------------------------------------------	---------------

Operator efficiency correction	0.85	27.18 minutes
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Job efficiency correction	0.90	30.20 minutes
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Truck capacity (CY)	10.00	3.02	min/CY
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Loading time, delay time per CY	0.25 min/CY
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TIME (minutes) per cubic yard 3.27 min/CY

COST per CY computation

Cost of truck and operator per hour	\$83.00 /hr.
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Cost of truck and operator per minute	\$1.38 /min
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Cost per CY	\$4.51 /CY
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Spread and compact	Water truck, Grader & Roller	\$1.50 /CY
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Size	Cost/Yd (Pit)	Cost Delivered w/o processing	Cost Delivered with processing
1½ - 0"	\$ -	\$4.51	\$6.01
3 - 0"	\$ -	\$4.51	\$6.01
Jaw Run	\$ -	\$4.51	\$6.01
Pit-Run	0.00	\$4.51	\$6.01

Note:

Thin Women (341-19-19)
FY 2018

TIMBER CRUISE REPORT

1. **Sale Area Location:** Portions of Sections 4 and 5, T10S, R8W, W.M., and Portions of Section 34, T9S, R8W, W.M., Polk County, Oregon.

2. **Fund Distribution:**

- a. **Fund** BOF 65%, CSL 35%
- b. **Tax Code**

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Stream Buffers	Existing Roads	Green Tree Retention Areas	Net Sale Acres	Acreage Comp. Method
1a	Modified Clearcut	53	0	0	0	53	GIS
1b	Thinning	13	0	1	N/A	12	GIS
1c	Modified Clearcut	4	0	0	0	4	GIS
2	Thinning	14	<1	1	N/A	13	GIS
3	Thinning	27	2	<1	N/A	22	GIS
4	Thinning	51	6	1	N/A	43	GIS
5	Thinning	41	1	1	N/A	38	GIS
6	Modified Clearcut	1	0	0	0	1	GIS
Total		199	9	5	0	185	

4. **Cruisers and Cruise Dates:** Area 1 was cruised by Andrew Arvin and Matt McBride in March of 2018. Area 2 was cruised by Andrew Arvin in April of 2018. Areas 3, 4, and 5 were cruised by Aaron McEwen in October of 2016. Lastly, Area 6 was cruised by Jon Long and Aaron McEwen in March of 2018.

5. **Cruise Method and Computation:** Area's 1 through 5 of the sale were cruised using variable radius plot sampling. Area 1a, a modified clearcut, was cruised using a 33.6 BAF with plots 4 chains by 7 chains in a grid, with 31 cruise plots taken, a third of them being measured. Area 6 is a modified clearcut that was ITS (Individual Tree Sample) cruised measuring every third Douglas fir for DBH, height, form factor, grade, and defect. All western hemlock were measured in Area 6. Data for Area's 1, 2, and 6 were entered into the Atterbury SuperACE 2008 cruise program to determine stand statistics and net board foot volume. Leave trees were taken out to determine volume in the thinning portions of Area 1b. Area 2 was cruised using a 20 BAF, and trees were measured for DBH and height. Area's 3, 4, and 5 of the sale were cruised using a 20 BAF with plots 4 chains apart taken on transects through the units. 46 plots were taken in Area's 3, 4, and 5. The thinning cruise plots were measured for DBH and height. Thinning cruise plot data was entered into a variable plot excel spreadsheet to determine average DBH, TPA, and net volume per acre. A weighted average based on acreage was used to determine the board foot volume for Area 4. Snags were tallied, but were not added to the cruise volume. A Hidden defect and breakage of 5% was applied to the resulting volume. A 4% in-growth was added to the volume in Areas 3, 4, and 5. Grade breakdown was determined by applying the average grade breakdown from several similar thinning sales.

2016 Digital ortho photos, 1991 and 2002 aerial photos, LiDar, and ArcMap GIS were used to map the boundaries for the sale, and ArcMap GIS was used to determine gross and net acreage.

- 6. Measurement Standards:** For Area 1, tree heights were taken to a diameter outside bark (DOB) of 7 inches. In Areas 2, 3, 4, and 5 tree heights were measured to a DOB of 6 inches. Lastly, in Area 6, tree heights were measured to a DOB of 7 inches for trees smaller than 24 inches in diameter. Trees larger than 24 inches in diameter had tree heights measured to 40% of DOB at form point. Diameters were measured to the nearest inch, and for Areas 2, 3, 4, and 5, and a standard form factor of 86 was used. Most trees were graded in 40 foot log segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.
- 7. Timber Description:** Timber in sale Areas 1-5 consists primarily of 30 to 40 year-old planted Douglas-fir. In Areas 4 and 6 the timber age ranges from 36-81 year-old Douglas-fir and western hemlock. Trees in Area 1 show reduced growth and vigor due to Swiss Needle Cast disease. The average volume per acre to be harvested (net) is approximately 15 MBF in Area 1 clearcut, and 5 MBF in the Area 1 thinning. Average net volume per acre in Area 2 is approximately 5 MBF, and Area 3 is 11 MBF. Area 4 and Area 5 have an approximate net volume per acre of 9 MBF. Lastly, Area 6 has a net volume per acre of approximately 54 MBF.
- 8. Total Volume (MBF) by Species and Grade:** (See attached volume report “Species, Sort Grade – Board Foot Volumes - Project”).

Area	Species	Gross Cruise Volume	In-Growth (4%)	Cruised D&B	Hidden D&B (3-5%)	Net Sale Volume
1.a. (MC)	Douglas-fir	796	-	(30)	(24)	742
	Red Alder	45	-	-	-	45
	Western Hemlock	13	-	-	(1)	12
1.b. (PC)	Douglas-fir	63	-	(4)	(2)	57
1.c. (MC)	Douglas-fir	60		(2)	(2)	56
2 (PC)	Douglas-fir	67	-	-	(2)	65
3 (PC)	Douglas-fir	249	10	-	(7)	252
4 (PC)	Douglas-fir	365	15	-	(11)	369
5 (PC)	Douglas-fir	346	-	-	(10)	336
6 (MC)	Douglas-fir	60	-	(2)	(3)	55
	Western Hemlock	1	-	-	-	1
*Total		2,065	25	(38)	(62)	1,990

Grade % Breakdown / Volume by Grade

Area	Species	Ave. DBH	Tot. Net Vol.	SM	2-Saw	3-Saw	4-Saw	Camp Run
1.a. & 1.c. (MC)	Douglas-fir	13	Grade %	-	5%	65%	30%	-
			798	-	40	519	239	-
	Red alder	12	Grade %	-	-	-	-	100%
			45	-	-	-	-	45
	Western hemlock	16	Grade %	-	42%	42%	16%	-
			12	-	5	5	2	-
	Total Area 1 (MC)		855	-	45	524	241	45
1.b. (PC)	Douglas-fir	12	Grade %	-	-	44%	56%	-
			57	-	-	25	32	-
2 (PC)	Douglas-fir	11	Grade %	-	15%	68%	17%	-
			65	-	10	44	11	-
3 (PC)	Douglas-fir	13	Grade %	-	16%	67%	17%	-
			252	-	40	169	43	-
4 (PC)	Douglas-fir	14	Grade %	-	16%	67%	17%	-
			369	-	59	247	63	-
5 (PC)	Douglas-fir	12.5	Grade %	-	16%	67%	17%	-
			336	-	54	225	57	-
	Total Area 2-5 (PC)		1,079	-	163	710	206	
6 (MC)	Douglas-fir	23	Grade %	35%	47%	15%	3%	-
			55	19	26	8	2	-
	Western hemlock	13	Grade %	-	-	73%	27%	
			1	-	-	1	< 1	
	Total Area 6 (MC)		56	19	26	9	2	
	Total All Areas/ All Species		Grade %	1%	12%	62%	23%	2%
			1,990	19	234	1,243	449	45

Attachments:

For units 1, 2, and 6 Atterbury SuperACE 2008 outputs:

- Project Statistics
- Stand Table Summary
- Species/Sort/Grade-BF Vol.
- Log Stock Table

For units 3, 4, and 5: Excel Cruise Plot Spreadsheets

Prepared by: Aaron McEwen / Andrew Arvin

Date: 06/01/2018

Unit Forester: _____

Date: _____

Evelyn Hukari

TC PSTATS			PROJECT THWOMAN						PAGE 1	DATE 4/25/2018	
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt	
10S	08	05	1REVISED	CC	57.00		31	184	S	W	
			PLOTS	TREES	TREES PER PLOT		ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES			
TOTAL			31	184	5.9						
CRUISE			12	69	5.8		12,408		.6		
DBH COUNT											
REFOREST											
COUNT			19	115	6.1						
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			62	195.7	12.9	40	49.3	176.7	15,021	14,448	3,962
R ALDER			4	14.9	12.1	36	3.4	11.9	840	840	256
SN			1	5.5	17.0	28	2.1	8.7			
WHEMLOCK			2	1.6	15.6	56	0.5	2.2	238	238	64
TOTAL			69	217.7	13.0	40	55.4	199.4	16,098	15,526	4,282
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5		10	15	
DOUG FIR			62.2	7.9	83	90	97				
R ALDER			8.7	5.0	55	58	60				
SN											
WHEMLOCK			31.9	29.9	109	155	201				
TOTAL			63.3	7.6	82	89	95	160	40	18	
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			33.4	6.0	184	196	207				
R ALDER			186.7	33.5	10	15	20				
SN			299.6	53.8	3	6	8				
WHEMLOCK			399.4	71.7	0	2	3				
TOTAL			28.0	5.0	207	218	229	31	8	3	
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			31.0	5.6	167	177	187				
R ALDER			171.4	30.8	8	12	16				
SN			299.6	53.8	4	9	13				
WHEMLOCK			387.1	69.5	1	2	4				
TOTAL			20.8	3.7	192	199	207	17	4	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	
DOUG FIR			32.6	5.8	13,603	14,448	15,293				
R ALDER			184.3	33.1	562	840	1,117				
SN											
WHEMLOCK			387.2	69.5	73	238	404				
TOTAL			27.4	4.9	14,762	15,526	16,290	30	8	3	

TC PSTATS				PROJECT STATISTICS				PAGE	1		
				PROJECT	THWOMAN			DATE	4/25/2018		
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt	
10S	08	05	A2NORA	THIN	13.00		10	96	S	W	
					TREES	ESTIMATED		PERCENT			
				PLOTS	TREES	PER PLOT	TREES	TREES			
TOTAL			10	96	9.6						
CRUISE			7	51	7.3		2,752	1.9			
DBH COUNT											
REFOREST											
COUNT			3	29	9.7						
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
DOUG FIR-L			27	93.6	15.1	54	29.9	116.0	12,238	12,238	3,245
DOUG FIR-T			20	107.0	10.6	30	20.2	66.0	5,117	5,117	1,292
R ALDER-L			2	7.4	12.2	37	1.7	6.0	273	273	67
WHEMLOCK-L			2	3.7	14.0	50	1.1	4.0	374	374	119
TOTAL			51	211.7	12.9	42	53.5	192.0	18,001	18,001	4,723
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-L			36.4	7.1	128	138	148				
DOUG FIR-T			73.5	16.9	51	62	72				
R ALDER-L			141.4	132.4		30	70				
WHEMLOCK-L											
TOTAL			57.0	8.1	96	104	113	130	32	14	
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-L			17.7	5.9	88	94	99				
DOUG FIR-T			45.9	15.3	91	107	123				
R ALDER-L			165.3	55.0	3	7	11				
WHEMLOCK-L			316.2	105.2		4	8				
TOTAL			12.6	4.2	203	212	221	7	2	1	
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-L			17.8	5.9	109	116	123				
DOUG FIR-T			37.9	12.6	58	66	74				
R ALDER-L			161.0	53.6	3	6	9				
WHEMLOCK-L			316.2	105.2		4	8				
TOTAL					192	192	192				
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-L			17.5	5.8	11,526	12,238	12,949				
DOUG FIR-T			43.5	14.5	4,376	5,117	5,858				
R ALDER-L			225.0	74.9	69	273	477				
WHEMLOCK-L			316.2	105.2		374	768				
TOTAL					18,001	18,001	18,001				

TC PSTATS				PROJECT STATISTICS				PAGE	1			
				PROJECT	THWOMAN				DATE	4/25/2018		
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt		
10S	08	04	THWOM6	CC	1.00		1	44	S	W		
				TREES	ESTIMATED		PERCENT					
				PER PLOT	TOTAL		SAMPLE					
				PLOTS	TREES	TREES	TREES					
TOTAL			1	44	44.0							
CRUISE			1	44	44.0		106	41.5				
DBH COUNT												
REFOREST												
COUNT												
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			31	93.0	22.9	96	55.7	266.5	59,130	57,480	12,425	12,290
WHEMLOCK			13	13.0	12.8	30	3.2	11.6	560	560	215	215
TOTAL			44	106.0	21.9	88	59.4	278.1	59,690	58,040	12,639	12,505
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		68.6	12.3	542	618	694						
WHEMLOCK		60.2	17.4	36	43	51						
TOTAL		98.8	14.9	381	448	515	390		97	43		

TC PSTATS				PROJECT STATISTICS				PAGE	1			
				PROJECT	THWOMAN				DATE	4/25/2018		
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt		
10S	08	05	1THINREV	THIN	12.00		31	184	S	W		
				TREES	ESTIMATED		PERCENT					
				PER PLOT	TOTAL		SAMPLE					
					TREES		TREES					
TOTAL			31	184	5.9							
CRUISE			12	69	5.8		2,606		2.6			
DBH COUNT												
REFOREST												
COUNT			19	115	6.1							
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-L			35	91.2	14.2	50	26.7	100.8	9,775	9,529	2,587	2,571
DOUG FIR-T			27	104.0	11.6	32	22.3	75.9	5,274	4,950	1,382	1,350
R ALDER-L			4	14.9	12.1	36	3.4	11.9	840	840	256	256
SN-L			1	5.5	17.0	28	2.1	8.7				
WHEMLOCK-L			2	1.6	15.6	56	0.5	2.2	238	238	64	64
TOTAL			69	217.2	13.0	40	55.4	199.4	16,128	15,557	4,290	4,241
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-L			47.9	8.1	108	117	127					
DOUG FIR-T			56.7	11.1	49	55	61					
R ALDER-L			8.7	5.0	55	58	60					
SN-L												
WHEMLOCK-L			31.9	29.9	109	155	201					
TOTAL			63.3	7.6	82	89	95	160	40	18		
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-L			27.9	5.0	87	91	96					
DOUG FIR-T			53.3	9.6	94	104	114					
R ALDER-L			186.7	33.5	10	15	20					
SN-L			299.6	53.8	3	6	8					
WHEMLOCK-L			399.4	71.7	0	2	3					
TOTAL			29.6	5.3	206	217	229	35	9	4		
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-L			28.5	5.1	96	101	106					
DOUG FIR-T			47.1	8.5	69	76	82					
R ALDER-L			171.4	30.8	8	12	16					
SN-L			299.6	53.8	4	9	13					
WHEMLOCK-L			387.1	69.5	1	2	4					
TOTAL			20.8	3.7	192	199	207	17	4	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			
DOUG FIR-L			30.7	5.5	9,004	9,529	10,055					
DOUG FIR-T			47.3	8.5	4,530	4,950	5,371					
R ALDER-L			184.3	33.1	562	840	1,117					
SN-L												
WHEMLOCK-L			387.2	69.5	73	238	404					
TOTAL			26.2	4.7	14,824	15,557	16,290	28	7	3		

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																				
<div>T10S R08W S05 TyCC57.00</div>				Project:		THWOMAN										Page		1						
				Acres		57.00										Date		4/25/2018						
																Time		10:27:25AM						
S So Gr Spp T rt ad		%	Bd. Ft. per Acre			Total	Percent of Net Board Foot Volume								Average Log				Logs					
		Net					Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length					Ln	Dia	Bd	CF/	
			4-5	6-11	12-16						17+	12-20	21-30	31-35	36-99	Ft	In	Ft						Lf
RA	DO K	100	840	840	48	100					33	67	36	6	56	0.48	14.9							
RA Totals		5	840	840	48	100					33	67	36	6	56	0.48	14.9							
DF	CU CU		100.0	220											8	8		0.00	15.0					
DF	DO 2M	4	8.5	759	694	40	100				60	40	31	12	149	1.23	4.7							
DF	DO 3M	65	1.1	9,459	9,353	533	97 3				2	49	49	36	8	81	0.61	115.8						
DF	DO 4M	31	4.0	4,583	4,401	251	19	81					36	31	23	10	24	6	33	0.39	131.7			
DF Totals		93	3.8	15,021	14,448	824	6	88	7					11	14	41	34	28	7	54	0.52	267.2		
WH	DO 2M	41		98	98	6	100				100				32	12	160	1.28	.6					
WH	DO 3M	38		91	91	5	100				100				32	9	90	0.76	1.0					
WH	DO 4M	21		49	49	3	38	62					100				24	6	30	0.37	1.6			
WH Totals		2		238	238	14	8	51	41					20	80					28	8	73	0.70	3.3
Totals			3.6	16,098	15,526	885	6	88	7					10	13	41	36	29	7	54	0.52	285.3		

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>T10S R08W S05 TyTHIN13.00</div>				Project:		THWOMAN										Page		1			
				Acres		13.00										Date		4/25/2018			
																Time		10:08:43AM			
S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%GrossNet			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	L	DO 2M	29		3,655	3,655	48	100					52	48		29	12	145	1.07	25.2	
DF	L	DO 3M	56		6,837	6,837	89	100						21	79		38	8	89	0.65	76.9
DF	L	DO 4M	15		1,745	1,745	23	81	19			24	34	24	19	23	5	26	0.35	68.4	
DF Totals			68		12,238	12,238	159	12	59	30		3	20	29	47	31	7	72	0.62	170.6	
DF	T	DO 3M	62		3,182	3,182	41	100						28	72		38	7	69	0.49	46.0
DF	T	DO 4M	38		1,934	1,934	25	100					20	56	12	13	25	5	28	0.26	68.8
DF Totals			28		5,117	5,117	67	38	62			7	21	21	50	30	6	45	0.38	114.7	
RA	L	DO K	100		273	273	4	100							100		40	6	60	0.37	4.5
RA Totals			2		273	273	4	100							100		40	6	60	0.37	4.5
WH	L	DO 3M	90		337	337	4	100							100		40	8	90	0.71	3.7
WH	L	DO 4M	10		37	37	0	100					100				14	5	10	0.24	3.7
WH Totals			2		374	374	5	10	90			10			90	27	7	50	0.59	7.5	
Totals					18,001	18,001	234	19	61	20		5	20	26	49	30	7	61	0.52	297.3	

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>T10S R08W S04 TyCC1.00</div>				Project: THWOMAN6										Page 1							
				Acres 1.00										Date 4/25/2018							
														Time 10:31:42AM							
Spp	S T	So rt	Gr ad	%	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
				Net					Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	
				BdFt	4-5	6-11	12-16					17+	12-20	21-30	31-35	36-99					
DF		DO	CU		100.0	960											24	18		0.00	3.0
DF		DO	SM	35	.7	20,460	20,310	20			18	82			5	95	39	18	564	2.67	36.0
DF		DO	2M	47	1.3	27,390	27,030	27			57	43		6	5	89	38	15	334	1.84	81.0
DF		DO	3M	15	2.0	8,820	8,640	9		80	20			2	33	65	36	9	99	0.76	87.0
DF		DO	4M	3		1,500	1,500	2	26	74			28	40	24	8	24	6	33	0.45	45.0
DF Totals				99	2.8	59,130	57,480	57	1	14	36	49	1	4	10	85	35	12	228	1.40	252.0
WH		CU	CU														6	11		0.00	1.0
WH		DO	3M	73		410	410	0		100					71	29	34	6	59	0.67	7.0
WH		DO	4M	27		150	150	0		100			80	20			19	6	21	0.40	7.0
WH Totals				1		560	560	1		100			21	5	52	21	25	7	37	0.56	15.0
Totals					2.8	59,690	58,040	58	1	15	36	49	1	4	10	85	34	11	217	1.36	267.0

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>T10S R08W S05 TyTHIN12.00</div>				Project:		THWOMAN										Page1					
				Acres		12.00										Date4/25/2018 Time10:56:53AM					
S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
				Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
RA	L	DO K	100	840	840	10	100				3367				36	6	56	0.48	14.9		
RA Totals			5	840	840	10	100				3367				36	6	56	0.48	14.9		
DF	L	CU CU		100.0	73										6	7		0.00	8.0		
DF	L	DO 2M	7	8.5	767	702	8	100				6040				31	12	149	1.23	4.7	
DF	L	DO 3M	76	1.5	7,368	7,260	87	964				4852				36	8	86	0.65	84.7	
DF	L	DO 4M	17		1,568	1,568	19	32	68			42	29	15	14	22	6	30	0.36	51.5	
DF Totals			61	2.5	9,775	9,529	114	5	85	10			7	9	42	42	29	7	64	0.59	149.0
DF	T	CU CU		100.0	145										10	9		0.00	6.9		
DF	T	DO 3M	43		2,140	2,140	26	100				105436				35	7	68	0.51	31.5	
DF	T	DO 4M	57	6.0	2,989	2,811	34	12	88			33	32	28	8	25	6	35	0.41	79.7	
DF Totals			32	6.1	5,274	4,950	59	7	93			19	22	39	20	26	7	42	0.43	118.1	
WH	L	DO 2M	41		98	98	1	100				100				32	12	160	1.28	.6	
WH	L	DO 3M	38		91	91	1	100				100				32	9	90	0.76	1.0	
WH	L	DO 4M	21		49	49	1	38	62			100				24	6	30	0.37	1.6	
WH Totals			2		238	238	3	8	51	41			20	80			28	8	73	0.70	3.3
Totals				3.5	16,128	15,557	187	6	88	7			10	13	41	36	29	7	55	0.52	285.2

TC		PSTNDSUM										Stand Table Summary										Page		1	
																						Date:		4/25/2018	
T10S R08W S05 TyCC					57.00					Project					THWOMAN					Time:		10:27:27AM			
										Acres					57.00					Grown Year:					
S	T				Tot						Average Log		Net		Net		T o t a l s								
		DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF									
DF		8	1	88	17	8.163	2.85	8.16	3.2	20.0	.76	26	163	43	15	9									
DF		9	1	86	26	7.231	2.85	7.23	4.4	20.0	.90	32	145	51	18	8									
DF		10	4	86	49	20.898	11.40	20.90	7.9	32.5	4.68	164	679	267	94	39									
DF		11	4	86	62	17.271	11.40	17.27	12.8	55.0	6.32	222	950	360	126	54									
DF		12	14	86	58	50.794	39.89	50.79	14.6	48.6	21.59	741	2,467	1,231	423	141									
DF		13	6	85	66	18.549	17.10	24.73	14.5	50.0	10.25	360	1,237	584	205	70									
DF		14	13	85	68	34.652	37.04	53.31	16.3	56.0	25.30	868	2,985	1,442	495	170									
DF		15	7	86	75	16.254	19.95	30.19	17.3	70.0	14.92	523	2,113	850	298	120									
DF		16	6	86	81	12.245	17.10	20.41	22.8	93.0	13.66	465	1,898	778	265	108									
DF		17	2	86	90	3.616	5.70	7.23	23.5	87.5	4.84	170	633	276	97	36									
DF		18	2	85	76	3.225	5.70	6.45	24.4	80.0	4.48	157	516	256	90	29									
DF		19	1	88	91	1.447	2.85	2.89	32.1	125.0	2.65	93	362	151	53	21									
DF		20	1	85	91	1.306	2.85	2.61	34.4	115.0	2.56	90	300	146	51	17									
DF		Totals		62	86	61	195.652	176.67	252.18	15.5	57.3	112.90	3,912	14,448	6,436	2,230	824								
RA		10	1	87	64	5.465	2.98	5.46	11.9	50.0	1.78	65	273	102	37	16									
RA		11	1	87	65	4.516	2.98	4.52	17.1	60.0	2.13	77	271	121	44	15									
RA		14	1	86	53	2.788	2.98	2.79	21.2	60.0	1.63	59	167	93	34	10									
RA		16	1	86	45	2.135	2.98	2.13	25.6	60.0	1.50	55	128	86	31	7									
RA		Totals		4	87	60	14.904	11.92	14.90	17.2	56.3	7.04	256	840	402	146	48								
WH		14	1	87	81	1.014	1.08	2.03	15.9	60.0	1.03	32	122	59	18	7									
WH		18	1	86	70	.613	1.08	1.23	26.0	95.0	1.02	32	117	58	18	7									
WH		Totals		2	87	77	1.627	2.17	3.25	19.7	73.2	2.05	64	238	117	37	14								
SN		17	1	86	40	5.501	8.67																		
SN		Totals		1	86	40	5.501	8.67																	
Totals		69		86	61	217.684	199.43	270.34	15.7	57.4	122.00	4,233	15,526	6,954	2,413	885									

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		4/25/2018	
<div>T10S R08W S05 TyTHIN13.00</div>					Project					THWOMAN			Time:		10:30:30AM		
					Acres					13.00			Grown Year:				
S Sp	T	DBH	Sample Trees	Tot FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	T o t a l s			
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
DF	L	13	1	89	59	4.661	4.30	4.66	19.6	60.0	2.61	92	280	34	12	4	
DF	L	14	9	88	70	36.170	38.67	60.28	16.2	57.3	27.76	974	3,456	361	127	45	
DF	L	15	7	88	76	24.507	30.07	49.01	17.3	64.3	24.23	850	3,151	315	111	41	
DF	L	16	3	89	78	9.231	12.89	18.46	20.4	81.7	10.76	378	1,508	140	49	20	
DF	L	17	7	89	85	19.080	30.07	38.16	24.9	100.7	27.12	952	3,843	353	124	50	
DF	L	Totals	27	88	75	93.649	116.00	170.58	19.0	71.7	92.48	3,245	12,238	1,202	422	159	
DF	T	8	3	85	30	28.361	9.90	28.36	3.9	23.3	3.15	111	662	41	14	9	
DF	T	9	3	82	43	22.409	9.90	22.41	6.8	30.0	4.34	152	672	56	20	9	
DF	T	10	3	88	67	18.151	9.90	18.15	11.1	50.0	5.76	202	908	75	26	12	
DF	T	11	1	89	54	5.000	3.30	5.00	12.6	50.0	1.80	63	250	23	8	3	
DF	T	12	2	87	52	8.403	6.60	8.40	14.5	45.0	3.48	122	378	45	16	5	
DF	T	13	3	88	57	10.740	9.90	10.74	19.3	60.0	5.91	207	644	77	27	8	
DF	T	14	2	88	58	6.174	6.60	6.17	22.4	60.0	3.93	138	370	51	18	5	
DF	T	15	2	89	79	5.378	6.60	10.76	17.8	75.0	5.45	191	807	71	25	10	
DF	T	16	1	89	85	2.363	3.30	4.73	22.2	90.0	2.98	105	425	39	14	6	
DF	T	Totals	20	86	50	106.981	66.00	114.72	11.3	44.6	36.81	1,292	5,117	479	168	67	
WH	L	14	2	86	72	3.742	4.00	7.48	15.9	50.0	3.80	119	374	49	15	5	
WH	L	Totals	2	86	72	3.742	4.00	7.48	15.9	50.0	3.80	119	374	49	15	5	
RA	L	11	1	88	69	4.546	3.00	4.55	14.8	60.0	1.85	67	273	24	9	4	
RA	L	14	1	88	39	2.806	3.00										
RA	L	Totals	2	88	58	7.352	6.00	4.55	14.8	60.0	1.85	67	273	24	9	4	
Totals			51	87	62	211.724	192.00	297.33	15.9	60.5	134.95	4,723	18,001	1,754	614	234	

TC		PSTNDSUM										Stand Table Summary										Page		1	
																						Date:		4/25/2018	
T10S R08W S04 TyCC					1.00					Project					THWOMAN6					Time:		10:31:41AM			
										Acres					1.00					Grown Year:					
S	T				Tot						Average Log		Net		Net		T o t a l s								
		DBH	Sample Trees	FF 16'	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF									
DF		11	2	85	63	6.000	3.96	6.00	13.0	50.0	2.22	78	300	2	1	0									
DF		14	1	86	80	3.000	3.21	6.00	14.1	55.0	2.41	85	330	2	1	0									
DF		15	2	86	85	6.000	7.36	12.00	18.6	72.5	6.34	223	870	6	2	1									
DF		16	2	86	103	6.000	8.38	12.00	24.5	100.0	8.36	293	1,200	8	3	1									
DF		17	2	85	118	6.000	9.46	18.00	20.4	88.3	10.44	366	1,590	10	4	2									
DF		18	1	86	113	3.000	5.30	6.00	34.1	135.0	5.84	205	810	6	2	1									
DF		20	2	88	119	6.000	13.09	15.00	36.6	154.0	15.63	548	2,310	16	5	2									
DF		21	1	89	110	3.000	7.22	9.00	31.3	126.7	8.03	282	1,140	8	3	1									
DF		23	4	88	145	12.000	34.62	36.00	48.3	224.2	49.52	1,737	8,070	50	17	8									
DF		24	2	87	125	6.000	18.85	18.00	46.9	206.7	24.07	845	3,720	24	8	4									
DF		25	2	87	132	6.000	20.45	18.00	53.0	255.0	27.19	954	4,590	27	10	5									
DF		26	3	85	145	9.000	33.18	27.00	54.9	235.6	46.04	1,481	6,360	46	15	6									
DF		28	2	87	152	6.000	25.66	21.00	65.7	338.6	39.34	1,380	7,110	39	14	7									
DF		29	2	88	140	6.000	27.52	18.00	75.4	373.3	38.66	1,357	6,720	39	14	7									
DF		30	1	86	141	3.000	14.73	9.00	80.8	390.0	20.72	727	3,510	21	7	4									
DF		32	2	86	151	6.000	33.51	18.00	96.1	491.7	49.29	1,729	8,850	49	17	9									
DF		Totals		31	87	124	93.000	266.50	249.00	49.4	230.8	354.11	12,290	57,480	354	123	57								
WH		9	1	80	20	1.000	.44	1.00	5.1	20.0	.16	5	20	0	0	0									
WH		10	1	83	19	1.000	.55	1.00	5.1	20.0	.16	5	20	0	0	0									
WH		11	2	81	38	2.000	1.32	2.00	10.3	35.0	.66	21	70	1	0	0									
WH		12	3	81	40	3.000	2.36	3.00	12.5	33.3	1.20	38	100	1	0	0									
WH		13	3	82	42	3.000	2.77	3.00	14.8	40.0	1.42	44	120	1	0	0									
WH		15	1	80	56	1.000	1.23	1.00	28.5	60.0	.91	28	60	1	0	0									
WH		16	1	79	71	1.000	1.40	2.00	19.0	55.0	1.22	38	110	1	0	0									
WH		17	1	83	51	1.000	1.58	1.00	35.5	60.0	1.13	35	60	1	0	0									
WH		Totals		13	81	42	13.000	11.63	14.00	15.3	40.0	6.87	215	560	7	2	1								
Totals		44		86	113	106.000	278.12	263.00	47.5	220.7	360.98	12,505	58,040	361	125	58									

TC		PSTNDSUM		Stand Table Summary									Page		1	
													Date:		4/25/2018	
T10S R08W S05 TyTHIN				12.00		Project				THWOMAN			Time:		10:56:55AM	
						Acres				12.00			Grown Year:			
S SpC	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 L		11	1	86 72	4.364	2.88	4.36	13.8	60.0	1.72	60	262	21	7	3	
DF L		12	5	86 62	18.335	14.40	18.33	15.2	54.0	8.39	278	990	101	33	12	
DF L		13	4	85 76	12.498	11.52	18.75	14.4	50.0	7.69	270	937	92	32	11	
DF L		14	9	85 71	24.247	25.92	40.41	16.1	56.7	18.56	651	2,290	223	78	27	
DF L		15	5	86 77	11.734	14.40	21.12	18.2	73.3	10.95	384	1,549	131	46	19	
DF L		16	5	86 82	10.313	14.40	18.56	22.2	90.0	11.74	412	1,671	141	49	20	
DF L		17	2	86 90	3.654	5.76	7.31	23.5	87.5	4.89	172	639	59	21	8	
DF L		18	2	85 76	3.259	5.76	6.52	24.4	80.0	4.53	159	522	54	19	6	
DF L		19	1	89 91	1.463	2.88	2.93	32.1	125.0	2.68	94	366	32	11	4	
DF L		20	1	86 91	1.320	2.88	2.64	34.4	115.0	2.59	91	304	31	11	4	
DF L		Totals	35	86 74	91.187	100.80	140.94	18.2	67.6	73.73	2,571	9,529	885	308	114	
DF T		8	1	88 17	8.050	2.81	8.05	3.2	20.0	.74	26	161	9	3	2	
DF T		9	1	87 26	7.131	2.81	7.13	4.4	20.0	.89	31	143	11	4	2	
DF T		10	4	86 49	20.608	11.24	20.61	7.9	32.5	4.61	162	670	55	19	8	
DF T		11	3	87 58	12.774	8.43	12.77	12.5	53.3	4.56	160	681	55	19	8	
DF T		12	9	86 56	32.201	25.29	32.20	14.3	45.6	13.11	460	1,467	157	55	18	
DF T		13	2	86 45	6.097	5.62	6.10	15.0	50.0	2.61	91	305	31	11	4	
DF T		14	4	83 62	10.515	11.24	13.14	16.8	54.0	6.83	221	710	82	26	9	
DF T		15	2	86 71	4.580	5.62	9.16	15.4	62.5	4.03	141	572	48	17	7	
DF T		16	1	85 79	2.013	2.81	2.01	28.4	120.0	2.01	57	242	24	7	3	
DF T		Totals	27	86 51	103.968	75.87	111.18	12.1	44.5	39.40	1,350	4,950	473	162	59	
RA L		10	1	87 64	5.465	2.98	5.46	11.9	50.0	1.78	65	273	21	8	3	
RA L		11	1	87 65	4.516	2.98	4.52	17.1	60.0	2.13	77	271	26	9	3	
RA L		14	1	86 53	2.788	2.98	2.79	21.2	60.0	1.63	59	167	20	7	2	
RA L		16	1	86 45	2.135	2.98	2.13	25.6	60.0	1.50	55	128	18	7	2	
RA L		Totals	4	87 60	14.904	11.92	14.90	17.2	56.3	7.04	256	840	85	31	10	
WH L		14	1	87 81	1.014	1.08	2.03	15.9	60.0	1.03	32	122	12	4	1	
WH L		18	1	86 70	.613	1.08	1.23	26.0	95.0	1.02	32	117	12	4	1	
WH L		Totals	2	87 77	1.627	2.17	3.25	19.7	73.2	2.05	64	238	25	8	3	
SN L		17	1	86 40	5.501	8.67										
SN L		Totals	1	86 40	5.501	8.67										
Totals		69	86 61		217.188	199.43	270.27	15.7	57.6	122.23	4,241	15,557	1,467	509	187	

TC		PLOGSTVB		Log Stock Table - MBF															
T10S R08W S05 TyCC				57.00		Project:		THWOMAN								Page		1	
						Acres		57.00								Date		4/25/2018	
																Time		10:27:24AM	
Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
RA		DO	K	32	16		16	32.5			16								
RA		DO	K	36	7		7	15.3			7								
RA		DO	K	38	10		10	19.9			10								
RA		DO	K	40	15		15	32.3			15								
RA		Totals			48		48	5.4			48								
DF		DO	2M	30	28	13.3	24	2.9					24						
DF		DO	2M	32	16		16	1.9					16						
DF		DO	3M	26	12		12	1.4					12						
DF		DO	3M	32	228	2.2	223	27.0			24	91	108						
DF		DO	3M	34	40		40	4.8			40								
DF		DO	3M	36	32		32	3.9			32								
DF		DO	3M	38	28		28	3.4			28								
DF		DO	3M	40	200		199	24.1			77	60	47	15					
DF		DO	4M	13	8		8	.9					8						
DF		DO	4M	14	17		17	2.0		1	9	6							
DF		DO	4M	16	26	16.0	22	2.6		9	11	2							
DF		DO	4M	18	8		8	1.0		8									
DF		DO	4M	20	36		36	4.4		5	24	7							
DF		DO	4M	24	29		29	3.6		5	25								
DF		DO	4M	26	3		3	.3		3									
DF		DO	4M	28	2		2	.3			2								
DF		DO	4M	30	43		43	5.2			43								
DF		DO	4M	32	47	13.1	41	5.0		11	30								
DF		DO	4M	34	17		17	2.0		6		11							
DF		DO	4M	40	25		25	3.0			25								
DF		Totals			856	3.8	824	93.1		48	369	176	175	54					
WH		DO	2M	32	6		6	41.2					6						
WH		DO	3M	32	5		5	38.3			5								
WH		DO	4M	24	3		3	20.5		1	2								
WH		Totals			14		14	1.5		1	2	5	6						
Total		All Species			918	3.6	885	100.0		49	419	181	175	60					

TC		PLOGSTVB																Log Stock Table - MBF							
T10S R08W S05 TyTHIN				13.00				Project: THWOMAN Acres 13.00				Page 1 Date 4/25/2018 Time 10:08:42AM													
Spp	S T	So Gr rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches																
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+					
DF	L	DO	2M	24	10		10	6.0					10												
DF	L	DO	2M	28	10		10	6.2					10												
DF	L	DO	2M	30	5		5	3.3					5												
DF	L	DO	2M	32	23		23	14.3					23												
DF	L	DO	3M	32	17		17	10.4		4	13														
DF	L	DO	3M	34	2		2	1.3		2															
DF	L	DO	3M	38	4		4	2.3			4														
DF	L	DO	3M	40	67		67	41.9		14	47	6													
DF	L	DO	4M	12	1		1	.9		1															
DF	L	DO	4M	16	1		1	.7		1															
DF	L	DO	4M	18	2		2	1.2		2															
DF	L	DO	4M	20	1		1	.6		1															
DF	L	DO	4M	22	5		5	3.0		5															
DF	L	DO	4M	24	1		1	.9		1															
DF	L	DO	4M	28	2		2	1.0		2															
DF	L	DO	4M	32	1		1	.8		1															
DF	L	DO	4M	34	4		4	2.7		4															
DF	L	DO	4M	38	4		4	2.7		4															
DF		Totals			159		159	68.0		18	23	64	6	48											
DF	T	DO	3M	32	4		4	6.3				4													
DF	T	DO	3M	34	7		7	10.8		7															
DF	T	DO	3M	38	8		8	11.3		8															
DF	T	DO	3M	40	22		22	33.8		14	4	5													
DF	T	DO	4M	16	2		2	3.7		2															
DF	T	DO	4M	18	2		2	3.7		2															
DF	T	DO	4M	24	9		9	13.1		9															
DF	T	DO	4M	26	1		1	1.4		1															
DF	T	DO	4M	28	3		3	4.4		3															
DF	T	DO	4M	30	2		2	2.5		2															
DF	T	DO	4M	32	3		3	4.4		3															
DF	T	DO	4M	36	3		3	4.7		3															
DF		Totals			67		67	28.4		25	28	4	9												
RA	L	DO	K	40	4		4	100.0		4															
RA		Totals			4		4	1.5		4															
WH	L	DO	3M	40	4		4	90.0			4														

TC PLOGSTVB				Log Stock Table - MBF																
<div>T10S R08W S05 TyTHIN13.00</div>				Project: THWOMAN												Page 2				
				Acres 13.00												Date 4/25/2018				
																Time 10:08:42AM				
Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
									2-3	4-5	6-7		8-9	10-11	12-13	14-15		16-19	20-23	24-29
WH	L	DO	4M	14	0		0	10.0	0											
WH		Totals			5		5	2.1	0		4									
Total		All Species			234		234	100.0	44		55	72	15	48						

TC PLOGSTVB		Log Stock Table - MBF																	
T10S R08W S04 TyCC1.00					Project: THWOMAN6					Acres 1.00					Page 1				
										Date 4/25/2018					Time 10:31:44AM				
Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
DF		DO	CU	24	1	100.0													
DF		DO	SM	32	1		1	1.9						1					
DF		DO	SM	40	19		19	33.4						8	11				
DF		DO	2M	24	1	12.5	1	2.2					0	1					
DF		DO	2M	28	0		0	.7					0						
DF		DO	2M	32	1		1	2.3					0	1					
DF		DO	2M	36	1		1	.9					1						
DF		DO	2M	40	24		23	40.9					5	5	9	5			
DF		DO	3M	28	0		0	.4			0								
DF		DO	3M	32	3	6.5	3	4.5		0	1	1	0						
DF		DO	3M	34	0		0	.4			0								
DF		DO	3M	36	0		0	.4			0								
DF		DO	3M	40	5		5	9.3		1	1	1	1						
DF		DO	4M	15	0		0	.1			0								
DF		DO	4M	16	0		0	.4			0								
DF		DO	4M	18	0		0	.1			0								
DF		DO	4M	20	0		0	.1			0								
DF		DO	4M	24	0		0	.3		0	0								
DF		DO	4M	26	0		0	.2			0								
DF		DO	4M	28	0		0	.2			0								
DF		DO	4M	30	0		0	.4		0	0								
DF		DO	4M	32	0		0	.6		0		0							
DF		DO	4M	38	0		0	.2		0									
DF		Totals			59	2.8	57	99.0		0	3	3	2	8	6	19	16		
WH		DO	3M	32	0		0	51.8			0	0							
WH		DO	3M	40	0		0	21.4			0								
WH		DO	4M	16	0		0	10.7			0								
WH		DO	4M	18	0		0	3.6			0								
WH		DO	4M	20	0		0	7.1			0								
WH		DO	4M	28	0		0	5.4			0								
WH		Totals			1		1	1.0			0	0							
Total		All Species			60	2.8	58	100.0		0	3	3	2	8	6	19	16		

TC		PLOGSTVB		Log Stock Table - MBF																	
T10S R08W S05 TyTHIN 12.00				Project:		THWOMAN												Page		1	
																		Date		4/25/2018	
																		Time		10:56:52AM	
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+			
RA	L	DO K	32	3	3	32.5			3												
RA	L	DO K	36	2	2	15.3			2												
RA	L	DO K	38	2	2	19.9			2												
RA	L	DO K	40	3	3	32.3			3												
RA	Totals			10	10	5.4			10												
DF	L	DO 2M	30	6	13.3	5	4.4					5									
DF	L	DO 2M	32	3		3	2.9					3									
DF	L	DO 3M	32	39	2.7	38	33.6		2	19	17										
DF	L	DO 3M	34	3		3	2.7		3												
DF	L	DO 3M	36	5		5	4.3		5												
DF	L	DO 3M	38	1		1	.9		1												
DF	L	DO 3M	40	40		40	34.6		14	13	10	3									
DF	L	DO 4M	14	1		1	1.2			1											
DF	L	DO 4M	16	4		4	3.7		2	2											
DF	L	DO 4M	20	2		2	2.1		1	1											
DF	L	DO 4M	24	4		4	3.8		1	3											
DF	L	DO 4M	26	1		1	.5		1												
DF	L	DO 4M	28	0		0	.4			0											
DF	L	DO 4M	32	3		3	2.4		2	1											
DF	L	DO 4M	40	3		3	2.3			3											
DF	Totals			117	2.5	114	61.3		6	37	33	27	12								
DF	T	DO 3M	26	2		2	4.2				2										
DF	T	DO 3M	32	9		9	14.7		3		6										
DF	T	DO 3M	34	5		5	8.8		5												
DF	T	DO 3M	36	2		2	3.2		2												
DF	T	DO 3M	38	5		5	8.0		5												
DF	T	DO 3M	40	3		3	4.3		3												
DF	T	DO 4M	13	2		2	2.7				2										
DF	T	DO 4M	14	2		2	3.7		0	2											
DF	T	DO 4M	16	1	66.7	0	.7				0										
DF	T	DO 4M	18	2		2	2.9		2												
DF	T	DO 4M	20	5		5	8.7			4	1										
DF	T	DO 4M	24	2		2	3.1			2											
DF	T	DO 4M	30	9		9	15.0			9											
DF	T	DO 4M	32	7	18.1	6	9.8		1	5											

TC		PLOGSTVB		Log Stock Table - MBF															
T10S R08W S05 TyTHIN				12.00		Project:		THWOMAN		Acres		12.00		Page		2			
														Date		4/25/2018			
														Time		10:56:52AM			
Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches										
									2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39
DF	T	DO	4M	34	3		3	5.8		1		2							
DF	T	DO	4M	40	3		3	4.3			3								
DF		Totals			63	6.1	59	31.8		4	41	4	10						
WH	L	DO	2M	32	1		1	41.2					1						
WH	L	DO	3M	32	1		1	38.3			1								
WH	L	DO	4M	24	1		1	20.5		0	0								
WH		Totals			3		3	1.5		0	0	1	1						
Total		All Species			194	3.5	187	100.0		10	88	39	37	13					

FPA Written Plan for Timber Harvest

Thin Women Timber Sale

Portions of Sections 4 and 5, T10S, R8W, W.M., and Portions of Section 34, T9S, R8W, W.M., Polk County, Oregon.

Protected Resource: Marbled Murrelet Management Area (Endangered species nesting site).

Situation: Sale Area 1B is partially located within the buffer portion of the Beavers Rock and Thin Woman Marbled Murrelet Management Areas (MMMA). Sale Area 3 is partially located within the buffer portion of the Upper Steere MMMA. Sale Areas 4 and 5 are partially located within the buffer portion of the Cedar Beaver MMMA. Thinning operations will occur within the non-habitat buffer of the MMMA's. No harvesting will occur within the occupied habitat of MMMA's, although use of guylines and tailholds may be allowed in the MMMA's. Replacement of two culverts will occur on the Hatchery Fall Creek Road within the Thin Women MMMA non-habitat buffer.

Resource Protection Measures:

1. Felling Operations within seasonally restricted buffers shall not be allowed from April 1 through August 5 and from August 6 through September 15 between two hours before sunset and two hours after sunrise, unless otherwise approved in writing by STATE.
2. Cable Yarding Operations within seasonally restricted buffers shall not be allowed from April 1 through August 5 and from August 6 through September 15 between two hours before sunset and two hours after sunrise, unless otherwise approved in writing by STATE.
3. Ground-Based Operations within seasonally restricted buffers shall not be allowed from October 1 through August 5 and from August 6 through September 15 between two hours before sunset and two hours after sunrise, unless otherwise approved in writing by STATE.
4. The use of mechanized equipment, including chainsaws within seasonally restricted buffers shall not be allowed from April 1 through August 5 and from August 6 through September 15 between two hours before sunset and two hours after sunrise, unless otherwise approved in writing by STATE.
5. Non-Project Road and Landing Operations within seasonally restricted buffers shall not be allowed from October 1 through August 5 and from August 6 through September 15 between two hours before sunset and two hours after sunrise, unless otherwise approved in writing by STATE.
6. Some activities associated with Project Nos. 1 and 2 (Road Construction and Improvement) within seasonally restricted buffers shall not be allowed from October 1 through August 5 and from August 6 through September 15 between two hours before sunset and two hours after sunrise, unless otherwise approved in writing by STATE. Seasonal restrictions do not apply to road improvement on commonly used roads.
7. Human food trash will be policed and removed from all project areas, landings, and roadways on a daily basis. Food items and food waste will be stored inside appropriate containers or vehicles.
8. Use of Guylines in the Marbled Murrelet Management Areas (MMMA's) shown on Exhibit A will have the following restrictions:

- (1) Consultation with STATE and approval of each Guyline and cable line placement is required before Guylining is allowed in these areas. A lead time of two weeks is required to schedule a field consultation between STATE, PURCHASER, the Operator, and the person responsible for Guyline selection and cable rigging. Consultation will include identification of nesting platforms and cover trees.
- (2) The following trees within the MMMA will not be selected for Guyline anchors:
 - (A) Trees with potential nest platforms or immediately surrounding trees that provide cover to the potential nest platforms, as determined by STATE.
 - (B) If feasible, the largest trees in the areas where the number of large trees is limited.
 - (C) If feasible, minor conifer species not commonly found in the stand.
 - (D) Trees in a group of two or more.
- (3) Cables located within the MMMA will be located so that raising, lowering or use of the line will not damage trees considered to have suitable nesting platforms or associated cover trees.
- (4) Lines that may damage, in the opinion of the ODF Area Biologist or authorized representative, potential or existing nesting platforms or associated cover trees must be removed and relocated.
- (5) The use of chainsaws within the MMMA shall not be allowed from April 1 through August 5 and from August 6 through September 15 between 2 hours before sunset to 2 hours after sunrise.
- (6) Any plans to Guyline in the MMMA must be addressed in the Operations Plan and at the Pre-Operations meeting.

I, the undersigned, submit this written plan in compliance with the requirements of the Forest Practices Act, regarding operations conducted within 300 feet of an endangered species nesting site.

PURCHASER REPRESENTATIVE

DATE

STATE REPRESENTATIVE

DATE

FPA Written Plan for Timber Harvest

Thin Women Timber Sale

Portions of Section 34, T9S, R8W, W.M., Polk County, Oregon

Protected Resources: Blodgett Creek, a small Type F stream.

Situation: Approximately 900 feet of a small, Type F stream is adjacent to the timber sale boundary in Area 3. Thinning harvest operations will occur within 100 feet of the stream and skylines may pass over the stream buffer, although no yarding will occur over the stream or buffer.

Resource Protection Measures:

1. An average 75 foot horizontal distance no-harvest stream buffer has been posted along all portions of the Type F stream.
2. Trees adjacent to the stream buffer shall be felled so that they do not enter into the buffer.
3. Skyline cables will not be lowered into streamside vegetation during the yarding cycle.
4. Skyline corridors passing over the stream will be spaced a minimum of 100 feet apart.
5. Where the logging system requires the skyline to pass over the stream, cables will be pulled out of the streamside vegetation prior to rigging the next yarding road.

I, the undersigned, submit this written plan in compliance with the requirements of the Forest Practices Act, regarding operations conducted within 100 feet of Type F streams.

PURCHASER REPRESENTATIVE

DATE

STATE REPRESENTATIVE

DATE

Thin Women - Seasonal Operational Periods

Project Work




	Jan	Feb	Mar	Apr	May	June	July	Aug	5th	6th	Sep	15th	16th	Oct	Nov	Dec
Project No. 1 - Road Construction																
Pts. A to B, C to D, E to F, G, J to K, L to M																
Pts. H to I																
Project No. 2 - Road Improvement																
Pts. 1 to 2 (except culvert replacement), 3 to 4, 9 to 10, 11 to 12																
Pts. 1 to 2 (culvert replacement)																
Pts. 5 to 6 (first 250 feet), 7 to 8																

Area 1.A. & 1.C.³, Area 2⁵, Area 6⁴ and the portions of Area 3, Area 4⁴ & Area 5 outside of the MMMA (see Exhibit "A")

	Jan	Feb	Mar	Apr	May	June	July	Aug	5th	6th	Sep	15th	16th	Oct	Nov	Dec
Felling																
Ground Yarding																
Cable Yarding																
Log Hauling on Unsurfaced Roads																
Slash Piling																

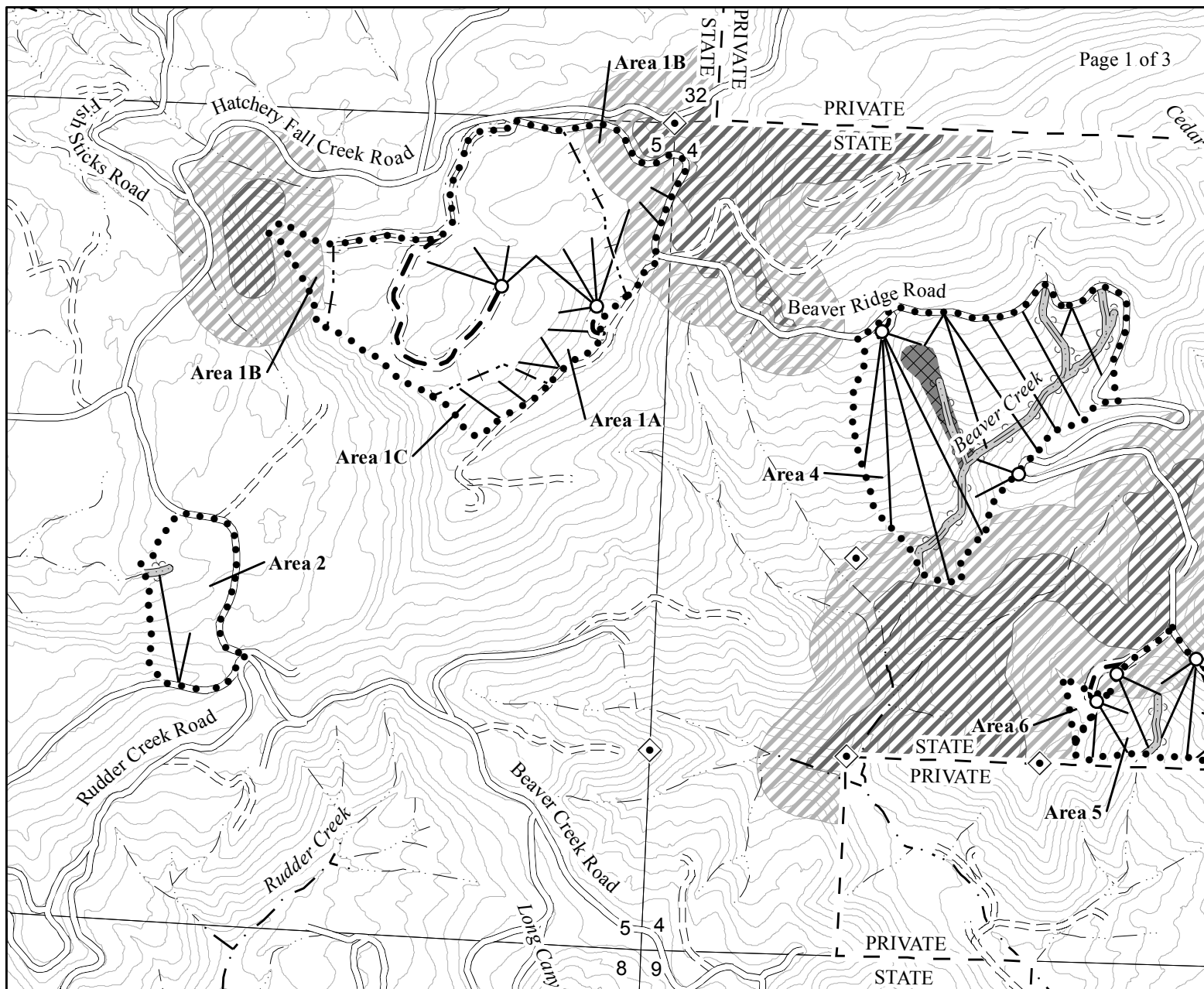
Area 1.B. and the portions of Area 3, Area 4⁴ & Area 5 inside the MMMA (see Exhibit "A")

	Jan	Feb	Mar	Apr	May	June	July	Aug	5th	6th	Sep	15th	16th	Oct	Nov	Dec
Felling																
Ground Yarding																
Cable Yarding																
Chainsaw use for tailholds/guylines																
Log Hauling on Unsurfaced Roads																
Log Hauling on Surfaced Roads																

		
Activity Prohibited	Activity Allowed	Activity allowed 2 hrs after sunrise to 2 hrs. before sunset

1. If weather conditions are dry, ODF may allow work to continue.
2. Work may start on the culvert at sta 55+50 after July 1, ODF will contact ODF&W & request permission to work outside of the in-stream work period.
3. Felling activities in Area 1.C. shall not begin until after Aug. 5, 2019 or when surveys are done.
4. Felling activities in Area 4 (west 1/2 only) & Area 6 shall be completed by March 15, 2020.
5. Felling activities in Area 2 shall be completed by April 1, 2021.

Disclaimer : This matrix does not supersede the timing restrictions defined in the Timber Sale Contract.



Legend

Boundaries

- Timber Sale Boundary
- + - Area Boundary (Posted)
- == Right of Way (Posted)

Roads

- ==== Surfaced Road
- == Unsurfaced Road
- New Construction

Streams

- Type F Stream
- Type N Stream
- Unposted Stream Buffer
- Stream Buffer

Marbled Murrelet Management Area

- ▨ Occupied Habitat
- ▨ Non-Habitat Buffer

Cable Corridors

- Landings
- ◆ Land Survey Monument
- ▨ Partial Cut Not Required

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-19-019
THIN WOMEN
PORTIONS OF SECTION 34, T09S, R08W,
& SECTIONS 4 & 5, T10S, R08W, W.M.,
POLK COUNTY, OREGON

This product is for informational use and may not have been prepared for or be suitable for legal, engineering or survey purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of this information.

Scale

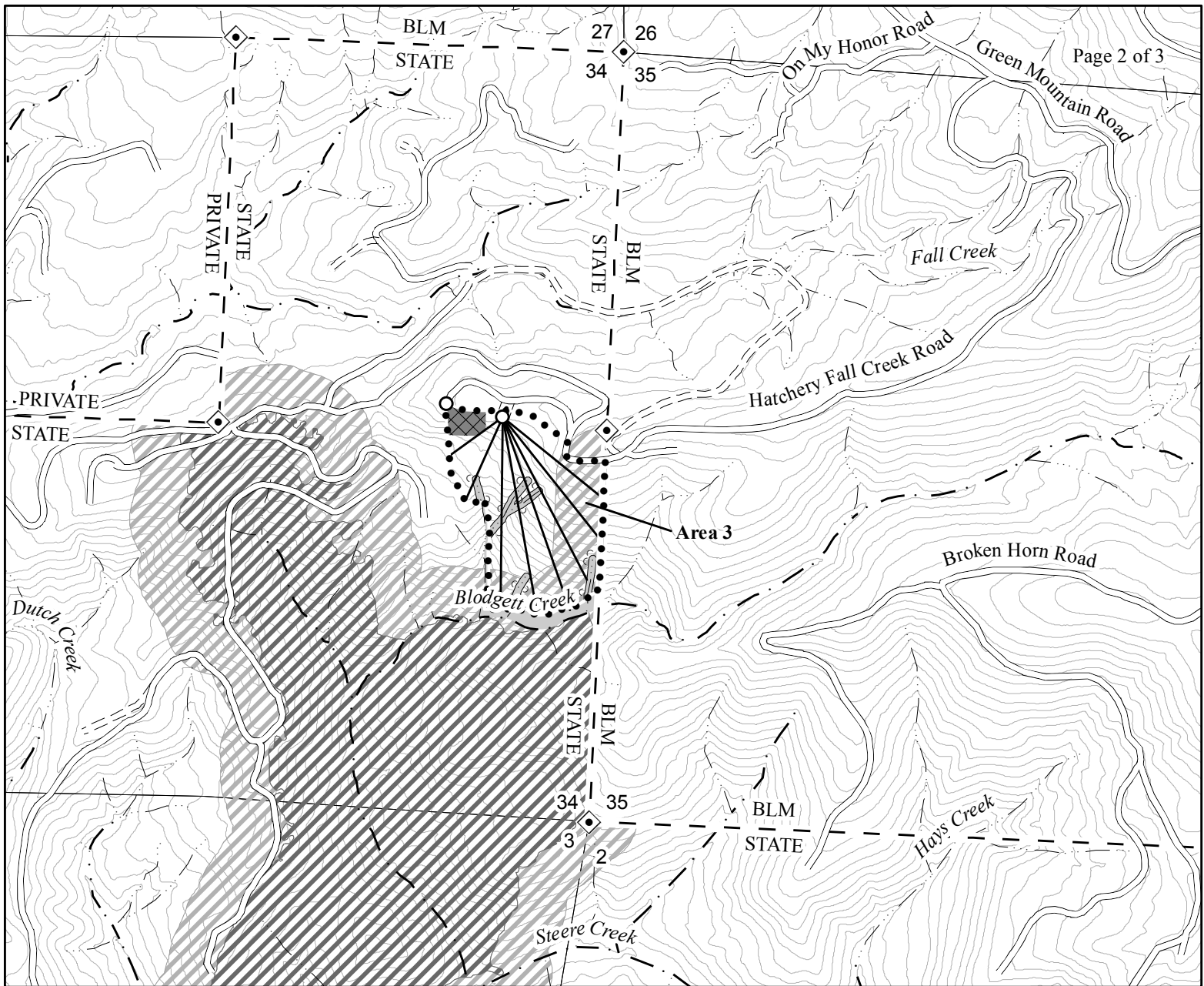
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AREA	NET ACRES	
	TRACTOR	CABLE
1A (MC)	37	16
1B (PC)	9	3
1C (MC)	0	4
2 (PC)	9	4
3 (PC)	0	22
4 (PC)	1	42
5 (PC)	1	37
6 (MC)	1	0
TOTAL	58	128



Created By: Blake McKinley
blake.mckinley@oregon.gov
Date: 06/01/2018



- Legend**
- Boundaries**
- Timber Sale Boundary
 - Right of Way (Posted)
- Roads**
- ==== Surfaced Road
 - == Unsurfaced Road
 - New Construction
- Streams**
- Type F Stream
 - Type N Stream
 - ~~~~~ Unposted Stream Buffer
 - Stream Buffer
- Marbled Murrelet Management Area**
- ▨ Occupied Habitat
 - ▩ Non-Habitat Buffer
- Cable Corridors**
- Landings
 - ◆ Land Survey Monument
 - ▨ Partial Cut Not Required

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-19-019
THIN WOMEN
PORTIONS OF SECTION 34, T09S, R08W,
& SECTIONS 4 & 5, T10S, R08W, W.M.,
POLK COUNTY, OREGON

This product is for informational use and may not have been prepared for or be suitable for legal, engineering or survey purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of this information.

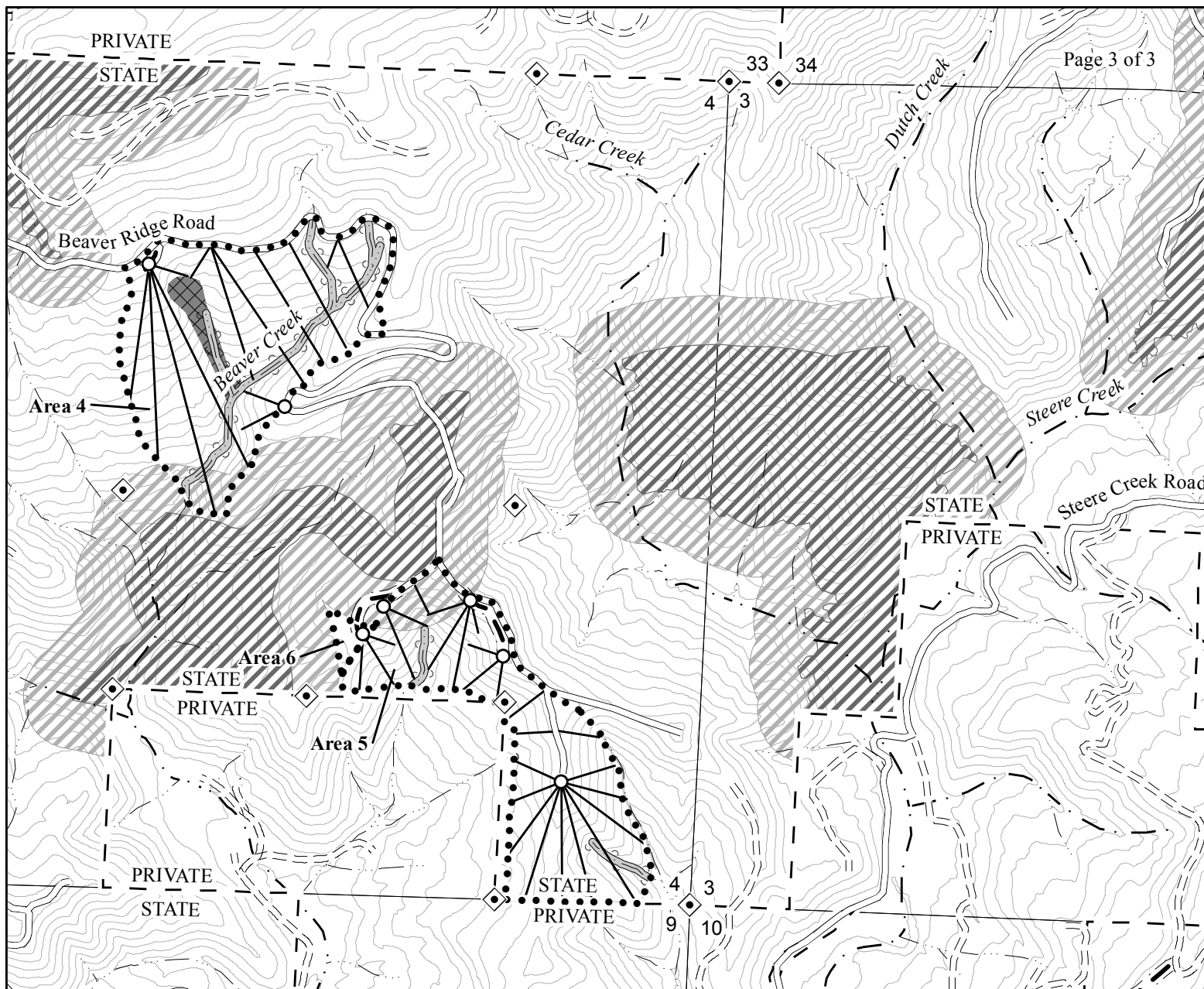
Scale
1:12,000



	NET ACRES	NET ACRES
AREA	TRACTOR	CABLE
1A (MC)	37	16
1B (PC)	9	3
1C (MC)	0	4
2 (PC)	9	4
3 (PC)	0	22
4 (PC)	1	42
5 (PC)	1	37
6 (MC)	1	0
TOTAL	58	128



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Legend

Boundaries

- Timber Sale Boundary
- : — Right of Way (Posted)

Roads

- ==== Surfaced Road
- == == Unsurfaced Road
- — New Construction

Streams

- — · Type F Stream
- · · · · Type N Stream
- ~~~~~ Unposted Stream Buffer

Stream Buffer

Marbled Murrelet Management Area

Occupied Habitat

Non-Habitat Buffer

Cable Corridors

- Landings
- ◆ Land Survey Monument
- ▨ Partial Cut Not Required

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-19-019
 THIN WOMEN
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 POLK COUNTY, OREGON

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Scale

1:12,000



NET ACRES NET ACRES
 AREA TRACTOR CABLE

1A (MC)	37	16
1B (PC)	9	3
1C (MC)	0	4
2 (PC)	9	4
3 (PC)	0	22
4 (PC)	1	42
5 (PC)	1	37
6 (MC)	1	0
TOTAL	58	128



Created By: Blake McKinley
 blake.mckinley@oregon.gov
 Date: 06/05/2018