



Timber Sale Appraisal
Long Walker
Sale AT-341-2018-46-

District: Astoria

Date: February 05, 2018

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$4,647,029.48	\$117,453.42	\$4,764,482.90
		Project Work:	(\$355,547.00)
		Advertised Value:	\$4,408,935.90



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Timber Description

Location: Portions of Sections 8, 9 16, 17 and 25, T5N, R6W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	21	0	96
Western Hemlock / Fir	13	0	99
Alder (Red)	17	0	97

Volume by Grade	2S	3S	4S	CR 6" - 8"	CR 8" - 14"	Total
Douglas - Fir	6,907	1,058	232	0	0	8,197
Western Hemlock / Fir	72	44	13	0	0	129
Alder (Red)	0	0	0	0	217	217
Total	6,979	1,102	245	0	217	8,543

Comments: Pond Values Used: Local Pond Values, October 2017.

Expected log markets are; Warrenton, OR, Tillamook, OR, Mist, OR, Garibaldi, OR, Forest Grove, OR, Willamina, OR, Banks, OR, Longview, WA, Vancouver, WA.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$1,300/\text{MBF} = \$1,550/\text{MBF} - \$250/\text{MBF}$

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

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

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

HAULING COST ALLOWANCE
Hauling costs equivalent to $\$780$ daily truck cost.

Other Costs (with Profit & Risk to be added):
Machine Washing for Invasive Weeds = $\$2,000$
TOTAL Other Costs (with Profit & Risk to be added) = $\$2,000$

Other Costs (No Profit & Risk added):
None.

SLASH DISPOSAL
TOTAL Slash Disposal = $\$22,491$

ROAD MAINTENANCE
(See attached Road Maintenance Cost Summary Sheet)
TOTAL Road Maintenance: $\$31,347/8,543 \text{ MBF} = \$3.67/\text{MBF}$



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Logging Conditions

Combination#: 1	Douglas - Fir	80.00%
	Western Hemlock / Fir	80.00%
	Alder (Red)	80.00%

Logging System: Shovel **Process:** Stroke Delimber

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

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

loads / day: 10 **bd. ft / load:** 4600

cost / mbf: \$68.96

machines: Stroke Delimber (B)

Combination#: 2	Douglas - Fir	4.00%
	Western Hemlock / Fir	4.00%
	Alder (Red)	4.00%

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

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

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

loads / day: 10 **bd. ft / load:** 4100

cost / mbf: \$146.34

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

Combination#: 3	Douglas - Fir	16.00%
	Western Hemlock / Fir	16.00%
	Alder (Red)	16.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Falling/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: \$356.76

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



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Logging Costs

Operating Seasons: 3.00	Profit Risk: 12%
Project Costs: \$355,547.00	Other Costs (P/R): \$2,000.00
Slash Disposal: \$22,491.00	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$3.67

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	4.5
Western Hemlock / Fir	\$0.00	3.0	4.5
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	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
\$118.10	\$3.82	\$1.54	\$90.14	\$0.23	\$25.66	\$2.63	\$7.00	\$0.00	\$249.12
Western Hemlock / Fir									
\$118.10	\$3.71	\$1.54	\$58.36	\$0.23	\$21.83	\$2.63	\$7.00	\$0.00	\$213.40
Alder (Red)									
\$118.10	\$3.78	\$1.54	\$114.77	\$0.23	\$28.61	\$2.63	\$7.00	\$0.00	\$276.66

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$808.73	\$559.61	\$0.00
Western Hemlock / Fir	\$0.00	\$677.79	\$464.39	\$0.00
Alder (Red)	\$0.00	\$817.92	\$541.26	\$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	8,197	\$559.61	\$4,587,123.17
Western Hemlock / Fir	129	\$464.39	\$59,906.31
Alder (Red)	217	\$541.26	\$117,453.42

Gross Timber Sale Value

Recovery: \$4,764,482.90

Prepared By: Matthew Dimick

Phone: 503-325-5451

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Long Walker

ROAD CONSTRUCTION:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Project No. 1	1A-1B, 1C-1D, 2A-2B, 2C-2D, 2E-2F, 3A-3B, 4A-4B, 4C-4D	106.10	
			\$ 129,925
TOTALS		106.10	\$129,925

ROAD IMPROVEMENT:

Project No. 2	Road segment	Length/Sta	Cost
	I1 to I2, I3 to I4,	116.15	\$ 19,568
	TOTALS	116.15	\$ 19,568

SPECIAL PROJECTS:

	<u>Description</u>	<u>Cost</u>
Project No. 3	Rock Crushing	\$ 186,828
Project No. 4	Road Vacating	\$ 3,409
	Project Road Maintinence	\$ 7,380
	TOTAL	\$ 197,617

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
Dozer D8	\$ 1,406
Excavator C330	\$ 1,406
Excavator C315	\$ 805
Dump Trucks 12cy x 5	\$ 815
Dump Trucks 20cy x 2	\$ 382
Front End Loader C966 x2	\$ 1,556
Backhoe C 580	\$ 321
Grader 14G	\$ 778
Vibratory Roller	\$ 778
Water Truck (2,500 gallon)	\$ 190
TOTAL	\$ 8,437

GRAND TOTAL	\$ 355,547
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Compiled By: Matt Dimick Date: 11/01/2017

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Long Walker NEW CONSTRUCTION: 106.10 STATIONS 2.01 MILES
 ROAD: 1A to 1B, 1C to 1D, 2A to 2B, 2C to 2D, 2E to 2F, 3A to 3B, 4A to 4B, and 4C to 4D, IMPROVEMENT: STATIONS MILES
 POINTS:

CLEARING & GRUBBING

	Method	Acres/amount		Rate		Cost
1A-1B	Scatter outside of right-of-way	3.10	x	\$ 1,337	=	\$4,144.70
1C-1D	Scatter outside of right-of-way	1.00	x	\$ 1,337	=	\$1,337.00
2A-2B	Scatter outside of right-of-way	2.40	x	\$ 1,337	=	\$3,208.80
2C-2D	Scatter outside of right-of-way	0.30	x	\$ 1,337	=	\$401.10
2E-2F	Scatter outside of right-of-way	0.30	x	\$ 1,337	=	\$401.10
3A-3B	Scatter outside of right-of-way	0.50	x	\$ 1,337	=	\$668.50
4A-4B	Scatter outside of right-of-way	2.20	x	\$ 1,337	=	\$2,941.40
4C-4D	Scatter outside of right-of-way	2.20	x	\$ 1,337	=	\$2,941.40

SUB TOTAL FOR CLEARING & GRUBBING

\$16,044

EXCAVATION

	Material	Cy/amount		Rate		Cost
1A to 1B						
	Common Drift excavation \$/cy	2,900.00	x	\$1.80	=	\$5,220.00
	Embankment compaction	2,900.00	x	\$0.70	=	\$2,030.00
	Cutlope rounding \$/sta.	1.00	x	\$43.00	=	\$43.00
	Landing Construction	1	x	\$389.00	=	\$389.00
						\$7,682.00
1C to 1D						
	Common Drift excavation \$/cy	900.00	x	\$1.80	=	\$1,620.00
	Embankment compaction	900.00	x	\$0.70	=	\$630.00
	Landing Construction	1	x	\$389.00	=	\$389.00
						\$2,639.00
2A to 2B						
	Balanced Construction	20.00	x	\$122.00	=	\$2,440.00
	Landing Construction	1	x	\$389.00	=	\$389.00
2C to 2D						
	Balanced Construction	1.50	x	\$122.00	=	\$183.00
	Landing Construction	1	x	\$389.00	=	\$389.00
2E to 2F						
	Balanced Construction	1.00	x	\$122.00	=	\$122.00
	Landing Construction	1	x	\$389.00	=	\$389.00
						\$3,912.00
3A to 3B						
	Balanced Construction	4.00	x	\$122.00	=	\$488.00
	Landing Construction	2	x	\$389.00	=	\$778.00
						\$1,266.00
4A to 4B						
	Common Drift excavation \$/cy	2,250.00	x	\$1.80	=	\$4,050.00
	Embankment compaction	2,250.00	x	\$0.70	=	\$1,575.00
	Cutlope rounding \$/sta.	2.50	x	\$43.00	=	\$107.50
	Landing Construction	1	x	\$389.00	=	\$389.00
						\$6,121.50
4C to 4D						
	Balanced Construction	18.00	x	\$122.00	=	\$2,196.00
	Landing Construction	1	x	\$389.00	=	\$389.00
						\$2,585.00
						\$ 24,205.50

SUB TOTAL FOR EXCAVATION

\$

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
1A to 1B					2A to 2B				
3+00	18" CCP	40	\$19.53	\$781.20	1+00	18" CCP	30	\$19.53	\$585.90
3+90	18" CCP	30	\$19.53	\$585.90	15+00	18" CCP	30	\$19.53	\$585.90
8+90	18" CCP	30	\$19.53	\$585.90	4A to 4B				
12+30	18" CCP	40	\$19.53	\$781.20	5+70	18" CCP	30	\$19.53	\$585.90
22+00	18" CCP	40	\$19.53	\$781.20	9+20	18" CCP	30	\$19.53	\$585.90
1C to 1D					12+20	18" CCP	30	\$19.53	\$585.90
1+60	18" CCP	40	\$19.53	\$781.20	4C to 4D				
5+00	18" CCP	30	\$19.53	\$585.90	5+30	18" CCP	30	\$19.53	\$585.90
					10+10	18" CCP	30	\$19.53	\$585.90

	Description	Quantity	Rate	Cost
Other/miscellaneous:	Dissipator construction (C315hrs.)	2.00	\$180.00	\$360.00
Culvert stakes & markers:	6' X 2 1/2" white fiberglass posts	14	\$20.00	\$280.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$9,624

Subtotal of Clearing, Exc., Culv. (new construction)

\$49,873

SURFACING			Subgrade prep: (1A-1B, 1C-1D, 2A-2B, 2C-2D, 2E-2F, 3A-3B, 4A- 4B, 4C-4D) (1A-1B, 1C-1D, 2A-2B, 2C-2D, 2E-2F, 3A-3B, 4A- 4B, 4C-4D)		Description		Stations/ amount	x	Rate/ sta/amt	Cost
			Grade, Shape, and Ditch 16'				106.1	x	\$24.83	\$2,634.46
			Subgrade compaction				106.1	x	\$20.19	\$2,142.16

ROAD SEGMENT 1A to 1B				POINT TO POINT 1A to 1B		Sta. to Sta. 0+00 to 26+50		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-26+50	10	Station	63	Stations	26.5	1,670	\$8.34	\$13,924
Surface Rock	3/4"- 0" Crushed	0+00-2+30, 12+00-26+50	3	Station	16	Stations	16.5	264	\$9.10	\$2,402
Turnouts	5"-0" Crushed	5+25, 13+75, 17+75, 20+60, 23+00	N/A	Turnout	22	Turnouts	5	110	\$8.34	\$917
Turnarounds	5"-0" Crushed	3+60, 10+60, 14+75, 26+50	N/A	Turnaround	11	Turnarounds	4	44	\$8.34	\$367
Landings	6"-0" Pit Run	5+25	N/A	Landing	50	Landings	1	50	\$8.34	\$417
Subgrade Re-enforcement	6"-0" Pit Run	8+50	N/A	Station	40	Stations	1	40	\$8.34	\$334
Curve Widening	5"-0" Crushed	0+75-1+96	10	Station	11	Stations	1	11	\$8.34	\$92
Dissipater	24"-6" Rip Rap	12+30, 22+00	N/A	Dissipater	10	Dissipater	2	20	\$8.34	\$167
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Total								2,231		

ROAD SEGMENT 1C to 1D				POINT TO POINT 1C to 1D		Sta. to Sta. 0+00 to 9+50		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-9+50	10	Station	63	Stations	9.5	599	\$8.34	\$4,991
Surface Rock	3/4"- 0" Crushed	0+00-9+50	3	Station	16	Stations	9.5	152	\$9.10	\$1,383
Turnouts	5"-0" Crushed	5+50	N/A	Turnout	22	Turnouts	1	22	\$8.34	\$183
Turnarounds	5"-0" Crushed	0+75	N/A	Turnaround	11	Turnarounds	1	11	\$8.34	\$92
Landings	6"-0" Pit Run	5+25	N/A	Landing	50	Landings	1	50	\$8.34	\$417
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Total								856		

ROAD SEGMENT 2A to 2B				POINT TO POINT 2A to 2B		Sta. to Sta. 0+00 to 20+00		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-20+00	10	Station	63	Stations	20	1,260	\$8.34	\$10,508
Turnarounds	5"-0" Crushed	6+00, 10+00, 17+50	N/A	Turnaround	11	Turnarounds	3	33	\$8.34	\$275
Landings	6"-0" Pit Run	5+00	N/A	Landing	70	Landings	1	70	\$8.34	\$584
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Total								1,385		

ROAD SEGMENT 2C to 2D				POINT TO POINT 2C to 2D		Sta. to Sta. 0+00 to 1+50		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-1+50	10	Station	63	Stations	1.5	95	\$8.34	\$788
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Landings	6"-0" Pit Run	1+50	N/A	Landing	70	Landings	1	70	\$8.34	\$584
Total								187		

ROAD SEGMENT 2E to 2F				POINT TO POINT 2E to 2F		Sta. to Sta. 0+00 to 1+00		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-1+00	10	Station	63	Stations	1	63	\$8.34	\$525
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Landings	6"-0" Pit Run	1+00	N/A	Landing	70	Landings	1	70	\$8.34	\$584
Total								155		

ROAD SEGMENT 3A to 3B				POINT TO POINT 3A to 3B		Sta. to Sta. 0+00 to 4+00		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-4+00	10	Station	63	Stations	4	252	\$8.34	\$2,102
Landings	6"-0" Pit Run	2+00	N/A	Landing	50	Stations	1	50	\$8.34	\$417
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Landings	6"-0" Pit Run	4+00	N/A	Landing	70	Landings	1	70	\$8.34	\$584
Total								394		

ROAD SEGMENT 4A to 4B				POINT TO POINT 4A to 4B		Sta. to Sta. 0+00 to 25+60		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-25+60	10	Station	63	Stations	25.6	1,613	\$8.34	\$13,451
Turnouts	5"-0" Crushed	5+00, 13+70, 19+60	N/A	Turnout	22	Turnouts	3	66	\$8.34	\$550
Turnarounds	5"-0" Crushed	23+00	N/A	Turnaround	11	Turnarounds	1	11	\$8.34	\$92
Landings	6"-0" Pit Run	25+60	N/A	Landing	70	Landings	1	70	\$8.34	\$584
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Total								1,782		

ROAD SEGMENT 4C to 4D				POINT TO POINT 4C to 4D		Sta. to Sta. 0+00 to 18+00		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of	Stations	Number of			
Base Rock	5"-0" Crushed	0+00-18+00	10	Station	63	Stations	18	1,134	\$8.34	\$9,458
Turnouts	5"-0" Crushed	3+60, 8+80, 13+90	N/A	Turnout	22	Turnouts	2	44	\$8.34	\$367
Turnarounds	5"-0" Crushed	18+00	N/A	Turnaround	11	Turnarounds	1	11	\$8.34	\$92
Landings	6"-0" Pit Run	18+00	N/A	Landing	70	Landings	1	70	\$8.34	\$584
Junction	5"-0" Crushed	0+00	10	Junction	22	Junctions	1	22	\$8.34	\$183
Total								1,281		

Processing:		Description	No.sta	Rate/sta	Cost
		Water, Process & Compact:	106.10	\$56.48	\$5,992.53

		24"-6" rr	6"-0" pr	5'-0" crushed	3/4"-0" crushed	Total	
SUB TOTAL FOR SURFACING		20	610	7,224	416	8,270	
SPECIAL PROJECTS							
Description					Cy/Amount	Rate	Cost
							\$80,051
SUB TOTAL FOR SPECIAL PROJECTS							
Subtotal of Surfacing & Spec. Proj. (New Construction)							\$80,051
Subtotal of Clearing, Exc., Culv. (New Construction)							\$49,873
GRAND TOTAL							\$129,925

Compiled By: Matt Dimick

Date: 11/01/2017

SALE NAME: Long Walker
ROAD: I1 to I2, and I3 to I4
POINTS:

NEW CONSTRUCTION:	_____ STATIONS	_____ MILES
IMPROVEMENT:	116.15 STATIONS	2.20 MILES

CLEARING & GRUBBING

CLEARING & GRUBBING					
Method	Acres/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
SUB TOTAL FOR CLEARING & GRUBBING					

	Material	Cy/amount	x	Rate	=	Cost
I1 to I2			x		=	
0+85	Clear culvert outlet w/315, \$/hr	0.5	x	\$101.00	=	\$50.50
3+90	Clear culvert outlet w/315, \$/hr	0.5	x	\$101.00	=	\$50.50
46+20-48+00	Reconstruct ditchline w/315, \$/hr	1	x	\$101.00	=	\$101.00
			x		=	
I3 to I4			x		=	
43+05	Install dissipator w/315, \$/hr	2	x	\$101.00	=	\$202.00
43+50	Install ditch filter w/315, \$/hr	1	x	\$101.00	=	\$101.00
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
SUB TOTAL FOR EXCAVATION						\$505

[illegible]

Subtotal of Clearing, Exc., Culv.	\$505
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SURFACING				Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep:				Description			
				Grade, Shape and Ditch 16'	118.15	x	\$24.83 \$2,884.00
				Subgrade Compaction	118.15	x	\$20.19 \$2,345.07
				Additional grader time to prep ditches and remove sod - \$/hr	6.00	x	\$100.00 \$600.00
				Ditch waste material & road sod w/315 - \$/hr	6.00	x	\$101.00 \$606.00
				Haul bank slough, ditch waste material & road sod w/dump truck - \$/hr	6.00	x	\$79.00 \$474.00

ROAD SEGMENT		I1 to I2		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	I1 to I2 Volume (CY) per	0+00 to 48+00 Number of					
Subgrade Leveling	5"-0" Crushed	N/A	N/A	load	11	loads	16	176	\$8.34	\$1,468
Surface Rock	5"-0" Crushed	35+10-48+00	N/A	station	13	stations	12.90	168	\$8.34	\$1,399
Turnouts	5"-0" Crushed	44+05	N/A	turnout	11	turnouts	1	11	\$8.34	\$92
Junctions	5"-0" Crushed	40+50	N/A	junction	11	junctions	1	11	\$8.34	\$92
Total Rock for Road Segment:				I1 to I2				366		

\$3,050

ROAD SEGMENT		I3 to I4		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (Inches)	I3 to I4 Volume (CY) per	0+00 to 68+15 Number of					
Subgrade Leveling	5"-0" Crushed	N/A	N/A	load	11	loads	10	110	\$8.34	\$917
Traction Rock	3/4"-0" Crushed	0+00-12+20	2	station	13	stations	12.20	159	\$9.10	\$1,443
Turnouts	5"-0" Crushed	8+05	N/A	turnout	11	turnouts	1	11	\$8.34	\$92
Junctions	5"-0" Crushed	11+05	N/A	junction	11	junctions	1	11	\$8.34	\$92
Dissipator	24"-6" riprap	43+05	N/A	diss.	33	diss.	1	33	\$8.34	\$275
Ditch filters	6"-0" pit-run	43+50	N/A	filter	11	filters	1	11	\$8.34	\$92
Total Rock for Road Segment:				I3 to I4				335		

\$2,544

Processing:		Description	No.sta	Rate/sta	Cost
		Water, Process & Compact:	116.15	\$56.48	\$6,560

		24"-6" rr	6"-0" pit	6"-0"	1 1/2"-0"	3/4"-0"	Total
SUB TOTAL FOR SURFACING		33	11	498		159	701

\$19,063

SPECIAL PROJECTS	
SUB TOTAL FOR SPECIAL PROJECTS	

\$0

SUB TOTAL FOR SPECIAL PROJECTS		Subtotal of Surfacing & Spec. Proj.	\$19,063
		Subtotal of Clearing, Exc., Culv.	\$505
GRAND TOTAL			\$19,568

Compiled By: Andrew Arvin

Date: 10/27/2017

CRUSHED ROCK COST

SALE NAME:	Long Walker
PROJECT:	1
Stockpile:	Buster Creek

MATERIAL: 5'-0", Pit-Run,
 & Rip Rap

DATE: 10/30/2017
BY: D.Bangs

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$6.65	/cy
Load:	\$0.60	/cy
Spread:	\$1.08	/cy

Truck type: D12 No. trucks: 5
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 715

CRUSHED ROCK HAUL COSTS 8,397 cy @ \$8.34 /cy

PIT RUN ROCK COST

SALE NAME:	Long Walker
PROJECT:	1
QUARRY:	Cow Creek Stockpile

MATERIAL: 3/4" - 0"

DATE: 10/30/2017
BY: D.Bangs

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$7.12	/cy
Load:	\$0.72	/cy
Spread:	\$1.26	/cy

Truck type: D12 No. trucks: 5
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 668

PIT RUN ROCK HAUL COSTS

575 cy @ \$9.10 /cy

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 3 Timber Sale Name: Long Walker

Quarry: Buster Creek

Location: NW 1/4, Section 25, T5N, R7W, W.M. Shrink: 16%

County: Clatsop

By: C.Bangs Loading Hopper: Yes

Date: 11/01/17

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"		CR			
5"-0"	40%	CR	2,000	7,722	10,042
6"-0"		PR		621	621
24"-6"		RR		53	53
36"		RR			
TOTAL CUBIC YARDS OF ROCK:			2,000	8,396	10,716

1) MOBILIZATION & SET UP:

Lowboy Mobilized				EQUIPMENT	QUANTITY	RATE	COST
EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
Loading Hopper	1	\$553	\$553				
Screening Plants	1	\$553	\$553				
2 Stage Crusher	1	\$2,175	\$2,175				
Drill & Compressor	1	\$1,406	\$1,406				
Off Highway Dump Truck	2	\$774	\$1,548				
Excavator	1	\$1,406	\$1,406				
Front End Loader	1	\$805	\$805				
D6 Cat	1	\$778	\$778				
Powder	1	\$351	\$351				

SUB TOTAL FOR MOBILIZATION

\$9,574

EQUIPMENT SET UP	TIMES	RATE	COST
2 Stage Crusher	1	\$2,175	\$2,175
Screening Plants	1	\$293	\$293
Loading Hopper	1	\$293	\$293
Original Calibration	1	\$544	\$544

SUB TOTAL FOR SET UP COSTS

\$3,305

TOTAL MOBILIZATION & SET UP COSTS

\$12,879

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Clear, Load, Haul to Waste Area	20	HRS	\$282	\$5,640
Slash and Stumps (1 truck, 1 exc.)				
Pile & Burn Slash and Stumps(1 exc)	10	HRS	\$155	\$1,550
Move-in Fire Truck for the burning of the Clearing Debris	1.0	EA	\$120	\$120

TOTAL CLEARING & GRUBBING COSTS

\$7,310

3) EXCAVATION

MATERIAL DESCRIPTION		QUANTITY	UNIT	RATE	COST
Overburden Removal	Excavator	100	HRS	\$155.00	\$15,500
Excavate, Load, Haul to Waste Area (1 OR, 1 Exc.)	OR Truck	100	HRS	\$130.00	\$13,000
Bench, Access Road and Drilling preparation (Excavator/OR Truck)		20	HRS	\$155.00	\$3,100
		20	HRS	\$125.00	\$2,500

TOTAL EXCAVATION COSTS

\$34,100

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping	20%	2,143	\$2.20	\$4,715
crushed	10,042	94%	Drill & shoot	80%	11,786	\$2.70	\$31,823
pit run	621	6%	Oversize red	5%	533	\$5.80	\$3,092
rip rap	53	0%	Other				
Total	10,716						
reject	4,017	37.5%					

TOTAL ROCK DEVELOPMENT COSTS

\$39,630

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate			
Calibrate			
Test	5	\$57.30	\$287
Test			

TOTAL CALIBRATION & TESTING COSTS

\$287

6) FEEDING & LOADING

DESCRIPTION		CU. YD. QUANTITY		COST CU. YD.		TOTAL COST
Dig & Feed Rock		14,059		\$0.78		\$10,946
Shot rock (loading/hauling) hrs.	C330	100		\$155.00		\$15,500
	ORx2	190		\$125.00		\$23,750

TOTAL FEEDING & LOADING COSTS

\$50,196

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
5"-0"	crushed	10,042	2 stage w/s	140	\$2.48	\$24,890

TOTAL ROCK CRUSHING COSTS

\$24,890

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer	4	\$113.00	\$452.00
Compactor		\$77.00	
Grader		\$100.00	
Excavator		\$155.00	

Rock for Floor (CY)	\$/CY Haul	Total

\$452.00

SUB TOTAL

\$452

HAUL & STOCKPILE

STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1. _____					
2. _____					
3. Buster Creek	5"-0"	6	2,320	\$4.32	\$10,019
4. _____					
5. _____					
6. _____					

SUB TOTAL

\$10,019

TOTAL STOCKPILING COSTS

\$10,471

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load and haul reject material to Waste Area	\$4,017
\$1.00 /CY 4,017 CY	
D6 hours to work waste area 16 Hours	\$113.00 /Hour
	\$1,808
Final Quarry Maintenance - Access Road Construction	
C330 8 Hours \$155.00 /Hour	\$1,240

TOTAL MISCELLANEOUS COSTS

\$7,065

10) GRAND TOTAL:

\$186,828

\$/Cubic Yard

\$18.60

Footnotes:

HAUL and STOCKPILE COST

SALE NAME: Long Walker
 QUARRY: Buster Creek

ROCK TYPE: Crushed

Location 1. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
							0.10
Truck type: <u>D12</u> No. trucks: _____ Delay min.: <u>15</u> Efficiency: <u>75%</u>							
Ave haul: #DIV/0! /cy Load: \$0.00 /cy Stockpile: #N/A /cy							
Truck type: <u>D12</u> No. trucks: _____ Delay min.: <u>12</u> Efficiency: <u>75%</u>							
Production: cy/day = 0							
Truck type: _____ No. trucks: _____ Delay min.: <u>10</u> Efficiency: <u>75%</u>							
Location 1. 0 Haul and Stockpile Cost #DIV/0! /cy							

Location 2. 0	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
			7.50		1.30		
Truck type: <u>D20</u> No. trucks: _____ Delay min.: <u>15</u> Efficiency: <u>75%</u>							
Ave haul: #DIV/0! /cy Load: \$0.00 /cy Stockpile: #N/A /cy							
Truck type: <u>D12</u> No. trucks: _____ Delay min.: <u>12</u> Efficiency: <u>75%</u>							
Production: cy/day = 0							
Truck type: <u>D10</u> No. trucks: _____ Delay min.: <u>10</u> Efficiency: <u>75%</u>							
Location 2. 0 Haul and Stockpile Cost #DIV/0! /cy							

Location 3. Buster Creek 5"-0"	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
				0.40	1.35	0.10	0.10
Truck type: <u>OR</u> No. trucks: _____ Delay min.: <u>12</u> Efficiency: <u>85%</u>							
Ave haul: \$3.49 /cy Load: \$0.00 /cy Stockpile: \$0.83 /cy							
Truck type: <u>D12</u> No. trucks: <u>6</u> Delay min.: <u>12</u> Efficiency: <u>85%</u>							
Production: cy/day = 1,088							
Truck type: <u>D10</u> No. trucks: _____ Delay min.: <u>5</u> Efficiency: <u>75%</u>							
Location 3. Buster Creek Haul and Stockpile Cost \$4.32 /cy							

Timber Sale
Vacating Costs V1 to V2

Work Description	Station	Pump	C330	C315	D24 trk	D10/12 trk	Labor	Straw-bales	Seed-lbs
V1 to V2									
Waterbar	0+00		0.5						
Waterbar	0+50		0.5						
Remove fill and culvert	1+15	8.00	16.00				4.00	20	10
Waterbar	2+50		0.50						
Waterbar	3+50		0.50						
Haul off old culverts	N/A					1.5			
Total Quantity (Hours)		8.00	18.00	0.00	0	1.5	4	20	10
Rates		\$10.00	\$155.00	\$101.00	\$127.00	\$99.00	\$40.00	\$10.73	\$1.60
Total Dollars		\$80	\$2,790	\$0	\$0	\$149	\$160	\$215	\$16

Total Cost

\$3,409

**Long Walker
TIMBER CRUISE REPORT
FY 2018**

1. Sale Area Location: Areas 1, 2, 3, and 4 are located in portions of Sections 8, 9, 16, 17, and 25, T5N, R6W, W.M., Clatsop County, OR.

2. Fund Distribution: BOF 100%
Tax Code 8-01 (100%)

3. Sale Acreage by Area:

Area	Treatment	Gross Acres	Stream Buffer	Existing Surface Roads	New Road Construction	Net Acres	Survey Method
1	Modified Clearcut	60	4	-	4	52	GIS
2	Modified Clearcut	38	8	-	2	28	GIS
3	Partial Cut	41	3	-	1	37	GIS
4	Modified Clearcut	102	25	-	2	75	GIS
5	R/W in sale	9	-	-	-	9	GIS
5	R/W out of sale	3	-	-	-	3	GIS
TOTALS		253	40	-	9	204	

4. Cruisers and Cruise Dates:

All areas were cruised by Kevin Berry, Dave Rygell, and Matt Dimick during September 2017.

5. Cruise Method and Computation:

Areas 1, 2, and 4 are modified clearcut units and were variable plot cruised using a 40 BAF. These plots are located on a 2.5 chain by 10 chain grid, with every third plot measured and graded. A total of 70 plots were sampled, with 23 graded plots, 47 count plots.

Area 3 is a partial cut unit and was variable plot cruised using a 33.61 BAF. These plots are located on a 2 chain by 4 chain grid, with every third plot measured and graded. A total of 46 plots were sampled, with 16 graded plots, 30 count plots.

Data was collected on Allegro 2 data collectors, and downloaded to the Atterbury Super A.C.E. program for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

AREA	CRUISE	TRACT	TYPE	ACRES
1, 2, and 4	Long Walker	Area124	MC	155
3	Long Walker	Area3	PC	37
5 (R/W)	Long Walker	Area124	R/W	12

6. Timber Description:

Areas 1, 2, and 4 are modified clearcut units, approximately 70 to 85 years-old, consisting of Douglas-fir, western hemlock, red alder, bigleaf maple, and minor amounts of western redcedar. The average Douglas-fir tree size is 22.5 inches DBH, with an average height of 78 foot bole height. The average western hemlock is 12.4 inches DBH with an average height of 42 feet to a merchantable top (7 inch d.o.b). The average red alder tree size 25 inches DBH with an average height of 54 foot bole height. The net volume per acre to be harvested is 49.5 MBF/acre.

Area 3 is an "auto-mark" thinning unit, approximately 40 years-old, consisting of Douglas-fir and western hemlock, and red alder. The average Douglas-fir tree size is 14.3 inches DBH, with an average height of 50 feet to a merchantable top (7 inch d.o.b.) The average Western hemlock is 23 inches DBH with an average height of 65 feet to a merchantable top (7 inch d.o.b). The average red alder is 12.1 inches DBH with an average height of 36 feet to a merchantable top (7 inch d.o.b). The net volume per acre to be harvested is 7.3 MBF/acre.

Area 5 R/W is similar to the timber description mentioned above in Areas 1, 2, and 4 The average volume per acre to be harvested 49.5 MBF/acre.

7. Statistical Analysis and Stand Summary

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1, 2, and 4	55.0	8%	35.7	4.3%
3	55.0	10%	31.5	4.6

8. Volumes by Species and Log Grade:

Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

Species	DBH	Net Vol.	2 Saw	3 Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	21.8"	8,197	6,907	1,058	232	-	1%	96%
Hemlock / True Fir	13.0"	129	72	44	13	-	<1%	1%
Red Alder	17.4"	217	-	-	-	217	3%	3%
TOTALS		8,543	6,979	1,102	245	217		

9. Approvals:

Prepared by: Matt Dimick

Date: 10/12/2017

Unit Forester Approval: 

Date: 12/04/17

10. Attachments:

Cruise Designs and Maps – 3 pages

Volume Reports - 5 pages

Statistics Reports -6 pages

Stand Table Summary – 3 page

Log Stock Tables – 2 pages

Revised August, 2002

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Long Walker **Area(s)** 1, 2 and 4

Harvest Type: Modified Clearcut

Approx. Cruise Acres: 156 **Estimated CV%** 55 Net BF or
BA/Acre **SE% Objective** 8

Planned Sale Volume: 29 MMBF **Estimated Sale Area Value/Acre:** \$ 28,400.00

A. Cruise Goals: (a) Grade minimum 100 trees:

Determine log grades for sale value; Determine snag and leave tree species and sizes;
Determine "diameter limit" harvest parameters;

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 Full point
Cruise Line Direction(s) N, S
Cruise Line Spacing 10 chains (660 Feet)
Cruise Plot Spacing 2.5 chains (165 Feet)
Grade/Count Ratio 1:2

Record all hardwood as camp run. Record all cedar as leave. Record all snags as SN and record diameter & total height. If plot lands in buffer then offset at least 1/2 chain outside the buffer.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" or 40% of dob at 16' form point. Generally, use 7" outside bark for trees less than 18" dbh and 40% of dob @ FP for trees greater than 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; Hardwood form factors are a Standard 87.
- 5. Tree Segments:** Record log segments in "standard" 32" and 40' log lengths whenever possible. Do not record odd segments just to maximize grade. The maximum segment length is 40'. The minimum segment length is 12' for conifer and 8' for hardwoods. Minimum merchantable diameter for conifer is 8" dbh and 10" dbh for hardwoods. One foot of trim is assumed for each merchantable segment.

- 6. Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir);
H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir);

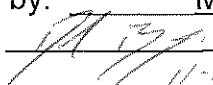
X:\STATE_FORESTS\UNIT_JEWELL\Timber Sales\2018\Long Walker\Pre-sale\Cruise\LongWalkerCruiseDesignMC.docx

SF (Silver fir); A (Red alder); M (Bigleaf maple); DL (Douglas-fir over 30" dbh); HL (Western hemlock over 30" dbh); SL (Sitka spruce over 30" dbh); CL (Western red cedar over 30" dbh); NFL (Noble fir over 30" dbh); SFL (Silver fir over 30" dbh)

B. Sort: Use code "1" (Domestic).

C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points. On "measure/grade" plots paint the tree diameter on each tree starting with the first tree right of the cruise line direction and continuing clockwise.
9. **Cruising Equipment:** Relaskop, Rangefinder, Biltmore Stick, Compass, Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, cruise lines and plot locations, BAF or plot size, measure/count plot ratio, north arrow, and scale bar.

Cruise Design by: Matt Dimick
Approved by: 
Date: 11-1-17

Revised August, 2002

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Long Walker **Area(s)** 3

Harvest Type: Partial Cut

Approx. Cruise Acres: 38 **Estimated CV%** 55 Net BF or
BA/Acre **SE% Objective** 10

Planned Sale Volume: 9 MBF **Estimated Sale Area Value/Acre:** \$ 28,400.00

A. Cruise Goals: (a) Grade minimum 80 trees:

Determine log grades for sale value; Determine snag and leave tree species and sizes;
Determine "diameter limit" harvest parameters;

B. Cruise Design:

1. Plot Cruises: BAF 33.33 Full point
Cruise Line Direction(s) E, W
Cruise Line Spacing 4 chains (264 Feet)
Cruise Plot Spacing 2 chains (132 Feet)
Grade/Count Ratio 1:2

The BA target is 150 sqft. Alternate leaving 4 and 5 trees every plot. Record all hardwood as camp run. Record all cedar as leave. Record all snags as SN and record diameter & total height. If plot lands in buffer then offset at least 1/2 chain outside the buffer.

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark is 7" or 40% of dob at 16' form point. Generally, use 7" outside bark for trees less than 18" dbh and 40% of dob @ FP for trees greater than 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; Hardwood form factors are a Standard 87.
- 5. Tree Segments:** Record log segments in "standard" 32" and 40' log lengths whenever possible. Do not record odd segments just to maximize grade. The maximum segment length is 40'. The minimum segment length is 12' for conifer and 8' for hardwoods. Minimum merchantable diameter for conifer is 8" dbh and 10" dbh for hardwoods. One foot of trim is assumed for each merchantable segment.

- 6. Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir);
H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir);

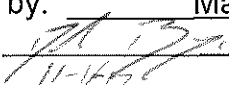
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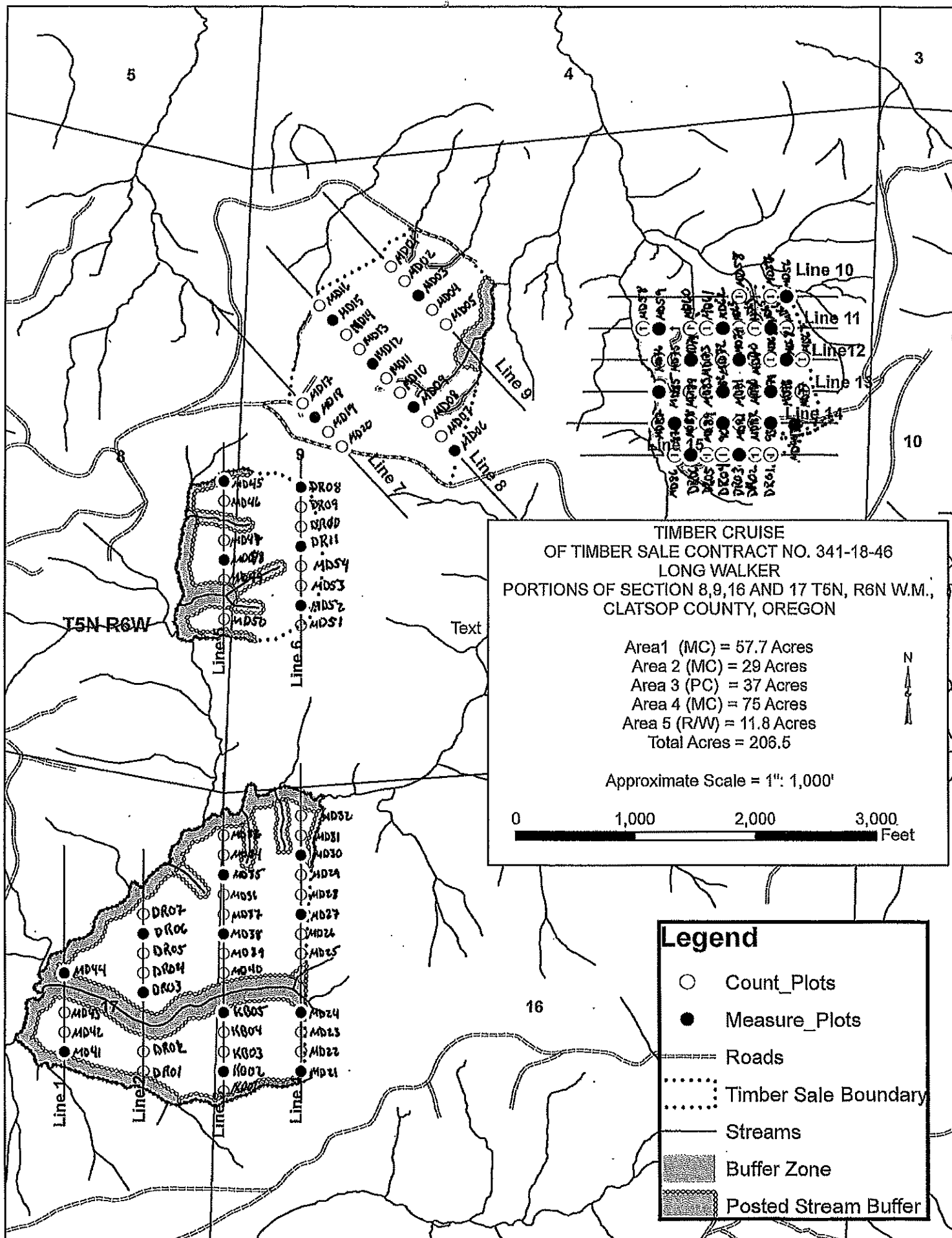
SF (Silver fir); A (Red alder); M (Bigleaf maple); DL (Douglas-fir over 30" dbh); HL (Western hemlock over 30" dbh); SL (Sitka spruce over 30" dbh); CL (Western red cedar over 30" dbh); NFL (Noble fir over 30" dbh); SFL (Silver fir over 30" dbh)

B. Sort: Use code "1" (Domestic).

C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points. On "measure/grade" plots paint the tree diameter on each tree starting with the first tree right of the cruise line direction and continuing clockwise.
9. **Cruising Equipment:** Relaskop, Rangefinder, Biltmore Stick, Compass, Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging.
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, cruise lines and plot locations, BAF or plot size, measure/count plot ratio, north arrow, and scale bar.

Cruise Design by: Matt Dimick
Approved by: 
Date: 11-1-15



TC PSCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T005 R06W S09 TyR/W12.00 T005 R06W S09 TyTAKE155.00 T005 R06W S09 TyTAKE37.00										Project: LONGWALK					Page 1					
										Acres 204.00					Date 10/12/2017					
															Time 1:05:17PM					
Spp	S So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
							Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
D	DOCU														8	21		0.00	1.6	
D	DO2S	84	1.3	34,289	33,856	6,907		5	26	69	0	2	10	88	38	16	430	2.53	78.7	
D	DO3S	13	.6	5,217	5,186	1,058			94	2	4	3	16	42	39	32	8	84	0.77	61.6
D	DO4S	3	1.0	1,152	1,140	232	7	93				39	30	22	9	23	6	28	0.42	41.4
D Totals		96	1.2	40,658	40,182	8,197	0	19	22	59	2	4	14	80	32	11	219	1.60	183.2	
A DOCR		100	2.9	1,096	1,065	217		35	11	54		45	33	22	32	9	124	1.13	8.6	
A Totals		3	2.9	1,096	1,065	217		35	11	54		45	33	22	32	9	124	1.13	8.6	
H DO2S		55		353	353	72			100				25	75	39	13	221	1.53	1.6	
H DO3S		34		214	214	44		100					100		32	6	50	0.44	4.3	
H DO4S		11	4.1	67	64	13		100					100		31	6	40	0.60	1.6	
H Totals		2	.4	634	631	129		44	56				58	42	33	7	84	0.74	7.5	
Totals			1.2	42,389	41,878	8,543	0	20	22	58	2	5	15	78	32	11	210	1.54	199.2	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1							
		Project: LONGWALK										Date 10/12/2017							
												Time 1:05:40PM							
T005 R06W S09 TTAKE										T005 R06W S09 TTAKE									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt										
005	06W	09	A124	TAKE	155.00	70	142	1	W										
S So Gr T rt ad Spp		% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
		Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Dia	Bd	CF/ Lf				
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft In	Ft			
D	DO	CU													9 22		0.00	1.6	
D	DO	2S	86	1.3	41,854	41,325	6,405	5	25	69	0	2	10	88	38 16	431	2.53	95.9	
D	DO	3S	11	.5	5,434	5,405	838	93	3	4	3	19	36	42	32 8	83	0.77	65.1	
D	DO	4S	3		1,158	1,158	179	9	91		41	25	24	11	23 6	27	0.42	42.3	
D	Totals		97	1.2	48,446	47,888	7,423	0	17	22	60	2	4	13	81	33 11	234	1.67	204.9
A	DO	CR	100	3.7	1,031	993	154	15	14	71		59	33	8	28 13	199	1.95	5.0	
A	Totals		2	3.7	1,031	993	154	15	14	71		59	33	8	28 13	199	1.95	5.0	
H	DO	2S	49		323	323	50	100			100				40 12	200	1.40	1.6	
H	DO	3S	41		262	262	41	100			100				32 6	50	0.44	5.2	
H	DO	4S	10		65	65	10	100			100				31 6	40	0.55	1.6	
H	Totals		1		650	650	101	50	50			50	50		33 7	77	0.68	8.5	
Type Totals				1.2	50,127	49,531	7,677	0	17	23	60	2	5	14	79	33 11	227	1.63	218.3

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page		1											
				Project: LONGWALK										Date		10/12/2017											
														Time		8:35:46AM											
T005 R06W S09 TTAKE														T005 R06W S09 TTAKE													
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt									
005		06W		09		A3		TAKE		37.00		46		34		1		W									
S Spp		So T		Gr rt		ad		% Net BdFt		Bd. Ft. per Acre Def% Gross Net		Total Net MBF		Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
														Log Scale Dia. 4-5 6-11 12-16 17+				Log Length 12-20 21-30 31-35 36-99				Ln Dia Bd CF/ Ft In Ft Lf					
D		DO		CU														4 13		0.00		1.6					
D		DO		2S		2				147 147		5		100		100		22 14		160 1.68		.9					
D		DO		3S		78		.9		4,238 4,200		155		100		3 76 21		33 9		92 0.76		45.7					
D		DO		4S		20		5.8		1,123 1,057		39		100		33 56 12		22 6		28 0.45		37.1					
D		Totals				74		1.9		5,508 5,404		200		97 3		9 14 61 16		28 8		63 0.66		85.4					
A		DO		CR		100				1,389 1,389		51		100		33 67		35 6		56 0.53		24.7					
A		Totals				19				1,389 1,389		51		100		33 67		35 6		56 0.53		24.7					
H		DO		2S		88				486 486		18		100		100		32 16		320 2.31		1.5					
H		DO		4S		12		20.0		76 61		2		100		100		31 7		40 0.87		1.5					
H		Totals				7		2.7		562 547		20		11 89		100		32 12		180 1.60		3.0					
Type Totals								1.6		7,459 7,340		272		91 9		6 10 59 25		29 7		65 0.66		113.1					

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page		1									
				Project: LONGWALK										Date		10/12/2017									
														Time		8:36:31AM									
T005 R06W S09 TLEAV										T005 R06W S09 TLEAV															
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt							
005		06W		09		A3		LEAV		37.00		46		71		1		W							
S So Gr T rt ad Spp		% Net BdFt		Bd. Ft. per Acre Def% Gross Net			Total Net MBF		Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
									Log Scale Dia.				Log Length				Ln Dia Bd CF/ Ft In Ft Lf								
									4-5 6-11 12-16 17+				12-20 21-30 31-35 36-99												
DL		DO CU															6 16 0.00				3.8				
DL		DO 2S		50			.6 8,105 8,058			298		79 21				0 58 42				34 14 245 1.86				32.8	
DL		DO 3S		38			.7 6,187 6,146			227		98 2				0 3 69 28				34 9 103 0.88				59.9	
DL		DO 4S		12			1,763 1,763			65		2 98				20 59 21				24 6 29 0.51				61.0	
DL		Totals		95			.6 16,056 15,967			591		0 49 41 10				2 8 58 32				29 9 101 0.99				157.5	
HL		DO 2S		70			4.1 634 608			22		81 19				100				32 13 201 1.74				3.0	
HL		DO 3S		19			160 160			6		100				15 11 74				26 11 99 1.20				1.6	
HL		DO 4S		11			94 94			3		100				100				24 6 30 0.53				3.1	
HL		Totals		5			3.0 887 861			32		29 57 13				3 13 84				27 10 111 1.21				7.8	
Type Totals							.7 16,944 16,828			623		0 48 41 11				2 8 59 30				29 9 102 1.00				165.3	

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1						
				Project: LONGWALK										Date 10/12/2017						
														Time 1:05:56PM						
T005 R06W S09 TR/W												T005 R06W S09 TR/W								
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt		
005		06W		09		A124		R/W		12.00		70		142		1		W		
S So Gr Spp T rt ad				% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Dia	Bd	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft In	Ft		
D DO CU																	9 22		0.00	1.6
D DO 2S				86	1.3 41,854 41,325			496	5	25	69		0	2	10	88	38 16	431	2.53	95.9
D DO 3S				11	.5 5,434 5,405			65	93	3	4		3	19	36	42	32 8	83	0.77	65.1
D DO 4S				3	1,158 1,158			14	9	91			41	25	24	11	23 6	27	0.42	42.3
D Totals				97	1.2 48,446 47,888			575	0	17	22	60	2	4	13	81	33 11	234	1.67	204.9
A DO CR				100	3.7 1,031 993			12	15	14	71		59	33	8		28 13	199	1.95	5.0
A Totals				2	3.7 1,031 993			12	15	14	71		59	33	8		28 13	199	1.95	5.0
H DO 2S				49	323 323			4		100						100	40 12	200	1.40	1.6
H DO 3S				41	262 262			3	100						100		32 6	50	0.44	5.2
H DO 4S				10	65 65			1	100						100		31 6	40	0.55	1.6
H Totals				1	650 650			8	50	50				50	50		33 7	77	0.68	8.5
Type Totals					1.2 50,127 49,531			594	0	17	23	60	2	5	14	79	33 11	227	1.63	218.3

PROJECT STATISTICS						PAGE	1				
PROJECT LONGWAL						DATE	10/12/2017				
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
005	06	09	A124	R/W	204.00	186	1,021	1	W		
005	06W	09	A124	TAKE							
005	06W	09	A3	TAKE							
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		301	81.5	21.8	75	45.2	211.0	40,658	40,182	9,435	9,435
R ALDER		12	6.7	17.4	42	2.6	11.1	1,096	1,065	309	309
WHEMLOCK		5	5.9	13.1	43	1.5	5.5	634	631	184	184
TOTAL		318	94.1	21.1	71	49.6	227.5	42,389	41,878	9,929	9,929
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		77.2	4.4	887	928	970					
R ALDER		114.3	34.4	156	238	320					
WHEMLOCK		71.9	35.7	121	188	255					
TOTAL		80.5	4.5	850	891	931		259	65	29	
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		118.5	8.7	74	82	89					
R ALDER		424.4	31.1	5	7	9					
WHEMLOCK		453.3	33.2	4	6	8					
TOTAL		110.8	8.1	86	94	102		490	122	54	
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		119.7	8.8	192	211	229					
R ALDER		579.0	42.4	6	11	16					
WHEMLOCK		408.2	29.9	4	5	7					
TOTAL		113.9	8.3	209	227	246		518	129	58	
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		124.2	9.1	36,526	40,182	43,838					
R ALDER		639.8	46.9	566	1,065	1,564					
WHEMLOCK		406.0	29.7	444	631	819					
TOTAL		120.2	8.8	38,190	41,878	45,566		577	144	64	

TC TSTATS				STATISTICS				PAGE 1			
				PROJECT		LONGWAL		DATE 10/12/2017			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
005	06W	09	A124	TAKE	155.00	70	457	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
TOTAL				70	457	6.5					
CRUISE				23	142	6.2	15,246	.9			
DBH COUNT											
REFOREST											
COUNT				47	315	6.7					
BLANKS											
100 %											
STAND SUMMARY											
SAMPLE				TREES	AVG	BOLE	RBL	BASAL	GROSS	NET	
TREES				/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	
									CF/AC	CF/AC	
DOUG FIR				137	88.8	22.5	78	51.8	245.7	48,446	47,888
R ALDER				3	2.7	25.0	54	1.8	9.1	1,031	993
WHEMLOCK				2	6.9	12.4	42	1.6	5.7	650	650
TOTAL				142	98.4	22.0	75	55.5	260.6	50,127	49,531
										11,179	11,179
										275	275
										191	191
										11,646	11,646
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %		COEFF		SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD: 1.0		VAR.%		S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		69.9		6.0	947	1,008	1,068				
R ALDER		77.2		53.4	196	420	644				
WHEMLOCK		92.7		86.8	19	145	271				
TOTAL		71.8		6.0	924	983	1,042	206	51	23	
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		50.0		6.0	84	89	94				
R ALDER		544.0		65.0	1	3	4				
WHEMLOCK		305.4		36.5	4	7	9				
TOTAL		48.3		5.8	93	98	104	93	23	10	
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		38.8		4.6	234	246	257				
R ALDER		543.1		64.9	3	9	15				
WHEMLOCK		298.8		35.7	4	6	8				
TOTAL		34.6		4.1	250	261	271	48	12	5	
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		39.5		4.7	45,631	47,888	50,145				
R ALDER		542.6		64.8	350	993	1,636				
WHEMLOCK		299.7		35.8	417	650	883				
TOTAL		35.7		4.3	47,417	49,531	51,644	51	13	6	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LONGWAL	DATE 10/12/2017				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
005	06W	09	A124	R/W	12.00	70	457	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
PLOTS		TREES								
TOTAL		70	457	6.5						
CRUISE		23	142	6.2		1,180	12.0			
DBH COUNT										
REFOREST										
COUNT		47	315	6.7						
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		137	88.8	22.5	78	51.8	245.7	48,446	47,888	11,179
R ALDER		3	2.7	25.0	54	1.8	9.1	1,031	993	275
WHEMLOCK		2	6.9	12.4	42	1.6	5.7	650	650	191
TOTAL		142	98.4	22.0	75	55.5	260.6	50,127	49,531	11,646
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5 10		15		
DOUG FIR	69.9	6.0	947	1,008	1,068					
R ALDER	77.2	53.4	196	420	644					
WHEMLOCK	92.7	86.8	19	145	271					
TOTAL	71.8	6.0	924	983	1,042	206	51	23		
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	50.0	6.0	84	89	94					
R ALDER	544.0	65.0	1	3	4					
WHEMLOCK	305.4	36.5	4	7	9					
TOTAL	48.3	5.8	93	98	104	93	23	10		
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	38.8	4.6	234	246	257					
R ALDER	543.1	64.9	3	9	15					
WHEMLOCK	298.8	35.7	4	6	8					
TOTAL	34.6	4.1	250	261	271	48	12	5		
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	39.5	4.7	45,631	47,888	50,145					
R ALDER	542.6	64.8	350	993	1,636					
WHEMLOCK	299.7	35.8	417	650	883					
TOTAL	35.7	4.3	47,417	49,531	51,644	51	13	6		

TC TSTATS				STATISTICS				PAGE 1	
				PROJECT		LONGWAL		DATE 10/12/2017	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
005	06W	09	A3	00PC	37.00	46	314	1	W
				TREES	ESTIMATED	PERCENT			
				PER PLOT	TOTAL	SAMPLE			
					TREES	TREES			
TOTAL		46	314	6.8					
CRUISE		16	108	6.8	5,854		1.8		
DBH COUNT									
REFOREST									
COUNT		30	206	6.9					
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
DOUGLEAV		67	79.1	18.2	61	33.4	142.5	16,232	16,145
DOUG FIR		27	48.5	14.3	50	14.3	54.1	5,508	5,404
R ALDER		6	24.7	12.1	36	5.7	19.7	1,389	1,389
HEMLEAV		6	3.9	19.5	57	1.8	8.0	887	861
WHEMLOCK		1	1.5	23.0	65	0.9	4.4	562	547
SNAG		1	.6	15.0	40	0.2	.7		153
TOTAL		108	158.2	16.3	54	56.8	229.4	24,578	24,346
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
DOUGLEAV		111.2	13.6	242	280	318			
DOUG FIR		35.8	7.0	115	124	133			
R ALDER		9.1	4.1	54	57	59			
HEMLEAV		44.5	19.8	203	253	304			
WHEMLOCK									
SNAG									
TOTAL		115.4	11.1	200	225	250	532	133	59
CL: 68.1 %		COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUGLEAV		40.0	5.9	74	79	84			
DOUG FIR		119.0	17.5	40	48	57			
R ALDER		231.8	34.1	16	25	33			
HEMLEAV		365.7	53.9	2	4	6			
WHEMLOCK		347.0	51.1	1	2	2			
SNAG		678.2	99.9	0	1	1			
TOTAL		36.5	5.4	150	158	167	53	13	6
CL: 68.1 %		COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUGLEAV		36.3	5.3	135	142	150			
DOUG FIR		117.6	17.3	45	54	63			
R ALDER		231.6	34.1	13	20	26			
HEMLEAV		332.0	48.9	4	8	12			
WHEMLOCK		347.0	51.1	2	4	7			
SNAG		678.2	99.9	0	1	1			
TOTAL		27.8	4.1	220	229	239	31	8	3
CL: 68.1 %		COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUGLEAV		40.6	6.0	15,180	16,145	17,111			
DOUG FIR		121.4	17.9	4,437	5,404	6,371			
R ALDER		232.1	34.2	914	1,389	1,864			
HEMLEAV		332.7	49.0	439	861	1,283			

TC TSTATS				STATISTICS				PAGE	2
				PROJECT	LONGWAL			DATE	10/12/2017
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
005	06W	09	A3	00PC	37.00	46	314	1	W
CL: 68.1%		COEFF	NET BF/ACRE				# OF PLOTS REQ.	INF. POP.	
SD: 1.0		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
WHBMLOCK		347.0	51.1	267	547	827			
SNAG									
TOTAL		31.5	4.6	23,216	24,346	25,476	40	10	4

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LONGWAL	DATE 10/12/2017				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
005	06W	09	A3	TAKE	37.00	46	107	1	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL				46	107	2.3				
CRUISE				12	34	2.8	2,763	1.2		
DBH COUNT										
REFOREST										
COUNT				26	73	2.8				
BLANKS				8						
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TRBES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR		27	48.5	14.3	50	14.3	54.1	5,508	5,404	1,564
R ALDER		6	24.7	12.1	36	5.7	19.7	1,389	1,389	461
WHEMLOCK		1	1.5	23.0	65	0.9	4.4	562	547	153
TOTAL		34	74.7	13.9	46	21.0	78.2	7,459	7,340	2,178
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		35.8	7.0	115	124	133				
R ALDER		9.1	4.1	54	57	59				
WHEMLOCK										
TOTAL		53.4	9.1	108	119	130	114	28	13	
CL: 68.1 %		COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		119.0	17.5	40	48	57				
R ALDER		231.8	34.1	16	25	33				
WHEMLOCK		347.0	51.1	1	2	2				
TOTAL		85.9	12.7	65	75	84	295	74	33	
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		117.6	17.3	45	54	63				
R ALDER		231.6	34.1	13	20	26				
WHEMLOCK		347.0	51.1	2	4	7				
TOTAL		79.6	11.7	69	78	87	253	63	28	
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		121.4	17.9	4,437	5,404	6,371				
R ALDER		232.1	34.2	914	1,389	1,864				
WHEMLOCK		347.0	51.1	267	547	827				
TOTAL		83.7	12.3	6,435	7,340	8,245	280	70	31	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	LONGWAL	DATE 10/12/2017					
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
005	06W	09	A3	LEAV	37.00	46	207	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
		PLOTS	TREES								
TOTAL		46	207	4.5							
CRUISE		16	71	4.4	3,062	2.3					
DBH COUNT											
REFOREST											
COUNT		28	136	4.9							
BLANKS		2									
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
DOUGLEAV		64	78.3	18.1	61	32.9	140.3	16,056	15,967	4,593	4,593
HEMLEAV		6	3.9	19.5	57	1.8	8.0	887	861	258	258
SNAG		1	.6	15.0	40	0.2	.7				
TOTAL		71	82.8	18.2	61	35.0	149.1	16,944	16,828	4,851	4,851
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	
DOUGLEAV	112.3	14.0	244	283	323						
HEMLEAV	44.5	19.8	203	253	304						
SNAG											
TOTAL	110.3	13.1	241	277	313		486	122		54	
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10		15	
DOUGLEAV	40.3	5.9	74	78	83						
HEMLEAV	365.7	53.9	2	4	6						
SNAG	678.2	99.9	0	1	1						
TOTAL	34.2	5.0	79	83	87		47	12		5	
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10		15	
DOUGLEAV	36.9	5.4	133	140	148						
HEMLEAV	332.0	48.9	4	8	12						
SNAG	678.2	99.9	0	1	1						
TOTAL	29.6	4.4	143	149	156		35	9		4	
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10		15	
DOUGLEAV	41.8	6.2	14,983	15,967	16,950						
HEMLEAV	332.7	49.0	439	861	1,283						
SNAG											
TOTAL	34.8	5.1	15,966	16,828	17,691		48	12		5	

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		10/12/2017	
T005 R06W S09 TyR/W				12.00		Project				LONGWALK				Time:		1:07:46PM	
T005 R06W S09 TyTAKE				155.00		Acres				204.00				Grown Year:			
T005 R06W S09 TyTAKE				37.00													
S Spec T	DBH	Sample Trees	Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals				
			FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF		
D	8	4	87	36	8.412	2.94	8.41	5.0	10.0		42	84		86	17		
D	11	4	85	73	3.325	2.19	3.88	14.2	54.3		55	211		112	43		
D	12	13	86	89	9.790	7.69	15.86	15.1	53.2		240	844		490	172		
D	13	4	84	116	3.186	2.94	6.37	18.5	65.0		118	414		240	84		
D	14	6	86	83	2.732	2.92	6.84	13.7	46.0		94	314		191	64		
D	15	12	87	86	5.386	6.58	10.77	20.4	74.7		220	805		449	164		
D	16	4	86	102	1.572	2.19	3.14	25.8	94.2		81	296		165	60		
D	17	14	85	106	5.579	8.79	12.09	29.3	107.5		354	1,300		722	265		
D	18	9	85	89	3.109	5.49	6.22	30.3	100.0		188	622		384	127		
D	19	12	85	101	4.474	8.81	9.69	35.8	121.5		347	1,178		709	240		
D	20	1	86	66	.166	.36	.33	28.5	95.0		9	32		19	6		
D	21	4	87	103	1.221	2.94	2.44	47.7	165.0		117	403		238	82		
D	22	14	85	115	3.893	10.28	11.12	39.6	151.5		440	1,685		897	344		
D	23	2	85	103	.509	1.47	1.02	57.5	215.0		59	219		119	45		
D	24	8	85	126	1.869	5.87	5.61	49.8	199.2		279	1,117		569	228		
D	25	10	85	118	2.154	7.34	6.03	54.5	221.4		329	1,335		670	272		
D	26	18	86	122	3.584	13.21	10.75	56.2	233.7		604	2,513		1,233	513		
D	27	16	86	123	2.954	11.75	8.49	64.0	263.5		544	2,238		1,109	457		
D	28	14	86	126	2.404	10.28	6.87	71.5	303.5		491	2,084		1,002	425		
D	29	8	86	126	1.280	5.87	3.84	73.8	317.5		283	1,220		578	249		
D	30	12	86	130	1.795	8.81	5.38	77.7	351.7		418	1,893		853	386		
D	31	12	84	133	1.681	8.81	5.04	85.2	372.2		429	1,877		876	383		
D	32	18	86	138	2.366	13.21	7.10	94.0	438.5		667	3,113		1,362	635		
D	33	12	84	137	1.483	8.81	4.45	99.4	450.6		442	2,005		903	409		
D	34	10	85	134	1.164	7.34	3.49	104.3	476.0		364	1,663		743	339		
D	35	10	85	142	1.099	7.34	3.30	116.5	548.0		384	1,806		783	368		
D	36	10	85	135	1.039	7.34	3.12	118.6	563.3		370	1,755		754	358		
D	37	2	82	146	.197	1.47	.59	129.3	596.7		76	352		156	72		
D	38	6	85	136	.559	4.40	1.68	123.7	623.3		207	1,046		423	213		
D	39	6	84	138	.531	4.40	1.59	138.8	657.8		221	1,048		451	214		
D	40	10	84	138	.841	7.34	2.52	147.9	722.7		373	1,824		761	372		
D	41	6	84	151	.480	4.40	1.44	166.8	818.9		240	1,180		490	241		
D	43	2	86	140	.146	1.47	.44	176.7	900.0		77	393		157	80		
D	44	4	82	120	.278	2.94	.83	155.3	703.3		130	587		264	120		
D	46	2	82	133	.127	1.47	.38	186.7	870.0		71	332		145	68		
D	48	2	85	146	.117	1.47	.47	149.3	845.0		70	395		142	81		
D	Totals	301	86	101	81.503	210.95	181.61	52.0	221.3		9,435	40,182		19,248	8,197		
A	11	1	87	51	.904	.60	.90	14.0	50.0		13	45		26	9		
A	12	3	86	52	2.278	1.79	2.28	18.7	56.7		43	129		87	26		
A	13	2	86	54	1.294	1.19	1.29	22.0	60.0		28	78		58	16		
A	22	2	87	46	.945	2.49	.95	51.0	70.0		48	66		98	13		
A	27	4	86	78	1.255	4.99	3.14	56.4	238.0		177	747		361	152		
A	Totals	12	86	56	6.675	11.06	8.56	36.1	124.4		309	1,065		630	217		
H	10	2	86	60	4.288	2.34	4.29	14.0	50.0		60	214		122	44		
H	18	2	86	88	1.324	2.34	2.65	36.5	120.0		97	318		197	65		
H	23	1	85	78	.276	.80	.55	50.5	180.0		28	99		57	20		
H	Totals	5	86	67	5.888	5.47	7.49	24.6	84.3		184	631		376	129		
Totals		318	86	96	94.066	227.49	197.65	50.2	211.9		9,929	41,878		20,254	8,543		

TC TSTNDSUM				Stand Table Summary											
Project LONGWAL															
T005 R06W S09 TTAKE										T005 R06W S09 TTAKE					
Twp	Rge	Sec	Tract	Type			Acres	Plots	Sample Trees	Page:	1				
005	06W	09	A124	TAKE			155.00	70	142	Date:	10/12/20:				
										Time:	1:08:03PM				
S Spec	T	Av			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals		
		Sample DBH	FF Trees	Ht 16' Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
D		8	2	87	36	10.276	3.59	10.28	5.0	10.0	51	103	80	16	
D		11	1	86	68	2.718	1.79	2.72	16.0	60.0	43	163	67	25	
D		12	4	86	96	9.134	7.17	15.99	14.9	52.9	237	845	368	131	
D		13	2	84	116	3.892	3.59	7.78	18.5	65.0	144	506	223	78	
D		14	1	86	95	1.678	1.79	5.03	13.0	43.3	65	218	101	34	
D		15	3	87	89	4.385	5.38	8.77	21.0	76.7	184	672	285	104	
D		16	1	86	114	1.285	1.79	2.57	28.0	105.0	72	270	111	42	
D		17	5	85	112	5.689	8.97	12.52	30.1	111.8	377	1,400	584	217	
D		18	3	86	93	3.045	5.38	6.09	31.3	105.0	191	639	296	99	
D		19	6	85	101	5.465	10.76	11.84	35.8	121.5	424	1,439	658	223	
D		21	2	87	103	1.491	3.59	2.98	47.7	165.0	142	492	221	76	
D		22	7	85	115	4.756	12.55	13.59	39.6	151.5	537	2,059	833	319	
D		23	1	85	103	.622	1.79	1.24	57.5	215.0	71	267	111	41	
D		24	4	85	126	2.284	7.17	6.85	49.8	199.2	341	1,364	528	211	
D		25	5	85	118	2.631	8.97	7.37	54.5	221.4	401	1,631	622	253	
D		26	9	86	122	4.378	16.14	13.13	56.2	233.7	738	3,069	1,145	476	
D		27	8	86	123	3.609	14.35	10.37	64.0	263.5	664	2,734	1,029	424	
D		28	7	86	126	2.936	12.55	8.39	71.5	303.5	600	2,546	930	395	
D		29	4	86	126	1.564	7.17	4.69	73.8	317.5	346	1,490	536	231	
D		30	6	86	130	2.192	10.76	6.58	77.7	351.7	511	2,313	792	358	
D		31	6	84	133	2.053	10.76	6.16	85.2	372.2	525	2,293	813	355	
D		32	9	86	138	2.890	16.14	8.67	94.0	438.5	815	3,802	1,264	589	
D		33	6	84	137	1.812	10.76	5.44	99.4	450.6	541	2,449	838	380	
D		34	5	85	134	1.422	8.97	4.27	104.3	476.0	445	2,031	690	315	
D		35	5	85	142	1.342	8.97	4.03	116.5	548.0	469	2,207	727	342	
D		36	5	85	135	1.269	8.97	3.81	118.6	563.3	451	2,144	700	332	
D		37	1	82	146	.240	1.79	.72	129.3	596.7	93	430	144	67	
D		38	3	85	136	.683	5.38	2.05	123.7	623.3	253	1,278	393	198	
D		39	3	84	138	.649	5.38	1.95	138.8	657.8	270	1,280	419	198	
D		40	5	84	138	1.028	8.97	3.08	147.9	722.7	456	2,228	707	345	
D		41	3	84	151	.587	5.38	1.76	166.8	818.9	294	1,442	455	223	
D		43	1	86	140	.178	1.79	.53	176.7	900.0	94	480	146	74	
D		44	2	82	120	.340	3.59	1.02	155.3	703.3	158	717	245	111	
D		46	1	82	133	.155	1.79	.47	186.7	870.0	87	406	135	63	
D		48	1	85	146	.143	1.79	.57	149.3	845.0	85	482	132	75	
D		Totals	137	86	104	88.819	245.71	203.29	55.0	235.6	11,179	47,888	17,328	7,423	
A		22	1	87	46	1.154	3.05	1.15	51.0	70.0	59	81	91	13	
A		27	2	86	78	1.533	6.10	3.83	56.4	238.0	216	912	335	141	
A		Totals	3	86	64	2.687	9.14	4.99	55.1	199.1	275	993	426	154	
H		10	1	86	60	5.238	2.86	5.24	14.0	50.0	73	262	114	41	
H		18	1	86	88	1.617	2.86	3.23	36.5	120.0	118	388	183	60	
H		Totals	2	86	67	6.855	5.71	8.47	22.6	76.7	191	650	297	101	
Totals		142	86	101	98.362	260.57	216.75	53.7	228.5	11646	49,531	18,051	7,677		

TC TSTNDSUM				Stand Table Summary												
Project LONGWAL																
T005 R06W S09 TTAKE												T005 R06W S09 TTAKE				
Twp	Rge	Sec	Tract	Type				Acres	Plots	Sample Trees			Page:	1		
005	06W	09	A3	TAKE				37.00	46	34			Date:	10/12/20:		
												Time:	8:42:05AM			
S Spec	T	Sample			Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals		
		DBH	Trees	FF	Ht				Net	Net		Cu.Ft.	Bd.Ft.	Tons	Cunits	MBF
				16'	Tot				Cu.Ft.	Bd.Ft.		Cu.Ft.	Bd.Ft.			
D		11	2	84	84	6.069	4.01	9.10	11.7	46.7		106	425		39	16
D		12	5	85	68	12.749	10.01	15.30	16.5	55.0		252	841		93	31
D		14	4	85	71	7.493	8.01	14.99	14.8	50.0		221	749		82	28
D		15	6	86	81	9.905	12.02	19.81	19.3	70.8		382	1,403		141	52
D		16	2	86	78	2.868	4.01	5.74	21.3	72.5		122	416		45	15
D		17	4	85	78	5.082	8.01	10.16	24.6	83.8		250	851		93	31
D		18	3	83	73	3.400	6.01	6.80	26.2	80.0		178	544		66	20
D		20	1	86	66	.918	2.00	1.84	28.5	95.0		52	174		19	6
D		Totals	27	85	75	48.483	54.07	83.73	18.7	64.5		1,564	5,404		579	200
A		11	1	87	51	4.982	3.29	4.98	14.0	50.0		70	249		26	9
A		12	3	86	52	12.559	9.86	12.56	18.7	56.7		234	712		87	26
A		13	2	86	54	7.134	6.58	7.13	22.0	60.0		157	428		58	16
A		Totals	6	86	52	24.675	19.73	24.68	18.7	56.3		461	1,389		171	51
H		23	1	85	78	1.519	4.38	3.04	50.5	180.0		153	547		57	20
H		Totals	1	85	78	1.519	4.38	3.04	50.5	180.0		153	547		57	20
Totals			34	85	68	74.678	78.18	111.45	19.5	65.9		2178	7,340		806	272

T005 R06W S09 TyR/W	12.00
T005 R06W S09 TyTAKE	155.00
T005 R06W S09 TyTAKE	37.00

Project: LONGWALK
Acres 204.00

Page 1
Date 10/12/2017
Time 1:08:28PM

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	40+	
D		DO	2S	15	3		3	.0					3								
D		DO	2S	20	26	21.4	20	.2										20			
D		DO	2S	22	17		17	.2					8	10							
D		DO	2S	24	46		46	.6										13		33	
D		DO	2S	25	9		9	.1					4	5							
D		DO	2S	27	15		15	.2					15								
D		DO	2S	28	38	13.7	33	.4											33		
D		DO	2S	32	658		653	8.0			75	61	268	68	35	93	53				
D		DO	2S	35	7		7	.1						7							
D		DO	2S	36	38	16.0	32	.4										32			
D		DO	2S	37	13		13	.2					13								
D		DO	2S	40	6,125	1.1	6,058	73.9					215	312	631	1987	1556	1264	93		
D		DO	3S	17	20		20	.2				8	13								
D		DO	3S	20	12		12	.1				7	5								
D		DO	3S	21	11		11	.1				7	4								
D		DO	3S	22	36		36	.4				15	20								
D		DO	3S	24	9		9	.1				4	5								
D		DO	3S	25	14		14	.2				9	5								
D		DO	3S	27	89		89	1.1				9	80								
D		DO	3S	28	4		4	.1				4									
D		DO	3S	29	11		11	.1					11								
D		DO	3S	32	382	1.7	375	4.6			50	105	208	13							
D		DO	3S	33	59		59	.7			59										
D		DO	3S	35	6		6	.1				6									
D		DO	3S	36	34		34	.4			27		7								
D		DO	3S	37	15		15	.2					15								
D		DO	3S	38	8		8	.1				8									
D		DO	3S	40	356		356	4.3			138	78	89	13		37					
D		DO	4S	12	3		3	.0			3										
D		DO	4S	13	2		2	.0					2								
D		DO	4S	14	2		2	.0				2									
D		DO	4S	15	20		20	.2			8	12									
D		DO	4S	16	26	5.4	24	.3			22		3								
D		DO	4S	17	2		2	.0				2									
D		DO	4S	18	1		1	.0			1										
D		DO	4S	19	10		10	.1				10									
D		DO	4S	20	27		27	.3			24	3									

Log Stock Table - MBF

T005 R06W S09 TyR/W 12.00
 T005 R06W S09 TyTAKE 155.00
 T005 R06W S09 TyTAKE 37.00

Project: LONGWALK
 Acres 204.00

Page 2
 Date 10/12/2017
 Time 1:08:28PM

S T Spp	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spe	Net Volume by Scaling Diameter in Inches												
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+	
D		DO	4S	21		9		9	.1		3	6								
D		DO	4S	22		14		14	.2			11	3							
D		DO	4S	23		1		1	.0			1								
D		DO	4S	25		10		10	.1			10								
D		DO	4S	26		33		33	.4			33								
D		DO	4S	28		1		1	.0			1								
D		DO	4S	30		1	25.0	1	.0			1								
D		DO	4S	31		34		34	.4		7	27								
D		DO	4S	32		17	4.1	16	.2			3	13							
D		DO	4S	40		21		21	.3		7			15						
D		Totals				8,294	1.2	8,197	96.0		17	425	379	758	649	720	2059	1715	1350	125
A		DO	CR	21		6		6	2.9			6								
A		DO	CR	22		35	18.5	28	13.0			5				23				
A		DO	CR	28		63		63	28.9								63			
A		DO	CR	32		72		72	33.1			17				55				
A		DO	CR	36		27		27	12.2			27								
A		DO	CR	39		13		13	6.2			13								
A		DO	CR	40		8		8	3.6			8								
A		Totals				224	2.9	217	2.5			65	12			78	63			
H		DO	2S	32		18		18	14.0							18				
H		DO	2S	40		54		54	41.9					54						
H		DO	3S	32		44		44	34.0			44								
H		DO	4S	31		14	4.1	13	10.1			13								
H		Totals				129		129	1.5			57		54		18				
Total		All Species				8,647	1.2	8,543	100.0		17	547	391	758	703	720	2156	1777	1350	125

Logging Plan

OF TIMBER SALE CONTRACT NO. 341-18-46

LONG WALKER

PORTIONS OF SECTIONS 8, 9,
16, 17, AND 25, T5N, R6W, W.M.,
CLATSOP COUNTY, OREGON

Area 1 (MC) = 52 Acres

Area 2 (MC) = 28 Acres

Area 3 (PC) = 37 Acres

Area 4 (MC) = 75 Acres

Area 5 (RW) = 12 Acres

Totals Acres = 204 Acres

Legend



Ownership Boundary



Timber Sale Boundary



Type F Stream



Type N Stream



Non Posted Buffer



Posted Streams Buffer



Surfaced Road



New Road Construction- Surfaced



Landing Construction



Survey Monument

0 500 1,000 2,000 Feet

1 inch = 1,000 feet

