



Timber Sale Appraisal
Franken Fir
Sale TL-341-2018-103-

District: Tillamook

Date: March 27, 2018

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$2,281,800.64	\$310,478.32	\$2,592,278.96
		Project Work:	(\$406,780.00)
		Advertised Value:	\$2,185,498.96



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Timber Description

Location: Portions of Sections 10, 11, 14, 15, and 23, T1N, R8W W.M., Tillamook County, Oregon.

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	16	0	95
Alder (Red)	14	0	95

Volume by Grade	2S	3S & 4S 6"-11"	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	2,213	3,275	0	0	0	0	5,488
Alder (Red)	0	0	304	169	126	267	866
Total	2,213	3,275	304	169	126	267	6,354

Comments: Pond Values Used: January, 2018

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
 $\$1,150/\text{MBF} = \$1,450/\text{MBF} - \$300/\text{MBF}$

Western Hemlock and Other Conifers Stumpage Price = Pond Value minus Logging Cost:
 $\$300/\text{MBF} = \$720/\text{MBF} - \$420/\text{MBF}$

Pulp (Conifer and Hardwood) Price = $\$25/\text{MBF}$

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

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

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

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

Other Costs (with Profit & Risk to be added):
Truck Assist (Area 2): $944 \text{ MBF} \times \$20/\text{MBF} = \$18,880$
Truck Assist (Area 3): $650 \text{ MBF} \times \$20/\text{MBF} = \$13,000$
TOTAL Other Costs (with Profit & Risk to be added) = $\$31,800$

Other Costs (No Profit & Risk added):
Machine Cleaning: $\$1,000/\text{machine} \times 2 \text{ machines} = \$2,000$
Slash Piling and Sorting (Cable): $\$5/\text{acre} \times 269 \text{ acres} = \$1,345$
Non-Project Road #1 Construction: $6+30 \text{ stations} \times \$125/\text{station} = \$787$
Non-Project Road #2 Construction: $2+00 \text{ stations} \times \$125/\text{station} = \$250$
Non-Project Road #3 Construction: $5+20 \text{ stations} \times \$125/\text{station} = \$650$
Non-Project Road #4 Construction: $13+30 \text{ stations} \times \$125/\text{station} = \$1,662$

Heliport Slash Sorting: $8 \text{ hours} \times \$140/\text{hr} = \$1,120$

Ditch Cleaning and Bank Sluff Removal:
Mobilization: two times – dump truck w/tilt bed & small excavator: $\$890 \times 2 = \$1,780$
Small Excavator (CAT 312 or equivalent): $40 \text{ hrs.} @ \$95/\text{hr} = \$3,800$
Dump Truck: $40 \text{ hrs} @ \$90/\text{hr} = \$3,600$

TOTAL Other Costs (No Profit & Risk added) = $\$16,994$

ROAD MAINTENANCE:
Spot Rocking: $20\text{cy}/\text{mmbf}/\text{mile} \times 6.354 \text{ MMBF} \times \$5.20/\text{cy} \times 6.6 \text{ miles}/6354 \text{ MBF} = \$0.69/\text{MBF}$

Interim Grading: $\$500/\text{mile} \times 6.6 \text{ miles} \times 3 \text{ times}/6354 \text{ MBF} = \$1.56/\text{MBF}$

Final Maintenance Grading: $\$1,500/\text{mile} \times 6.6 \text{ miles}/6,354 \text{ MBF} = \$1.56/\text{MBF}$

TOTAL Road Maintenance: $\$3.81/\text{MBF}$



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Logging Conditions

Combination#: 1 Douglas - Fir 72.13%
 Alder (Red) 76.80%

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

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

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

loads / day: 7 **bd. ft / load:** 3800

cost / mbf: \$292.50

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

Combination#: 2 Douglas - Fir 10.09%
 Alder (Red) 4.16%

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

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

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

loads / day: 6 **bd. ft / load:** 4000

cost / mbf: \$324.18

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

Combination#: 3 Douglas - Fir 6.36%
 Alder (Red) 9.70%

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: 20 **bd. ft / load:** 4000

cost / mbf: \$66.80

machines: Forwarder
Harvester

Combination#: 4 Douglas - Fir 11.42%
 Alder (Red) 9.34%

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

yarding distance: Long (1,500 ft) **downhill yarding:** Yes

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

loads / day: 5 **bd. ft / load:** 4000

cost / mbf: \$486.27

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



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Logging Costs

Operating Seasons: 2.00	Profit Risk: 10%
Project Costs: \$406,780.00	Other Costs (P/R): \$31,800.00
Slash Disposal: \$0.00	Other Costs: \$16,994.00

Miles of Road

Road Maintenance: \$3.81

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	3.0	4.0
Alder (Red)	\$0.00	3.0	3.8



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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									
\$303.48	\$4.00	\$1.38	\$68.25	\$5.00	\$38.21	\$0.00	\$7.00	\$2.67	\$429.99
Alder (Red)									
\$290.03	\$4.00	\$1.38	\$71.84	\$5.00	\$37.22	\$0.00	\$7.00	\$2.67	\$419.14

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$845.77	\$415.78	\$0.00
Alder (Red)	\$0.00	\$777.66	\$358.52	\$0.00



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Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	5,488	\$415.78	\$2,281,800.64
Alder (Red)	866	\$358.52	\$310,478.32

Gross Timber Sale Value

Recovery: \$2,592,278.96

Prepared By: Jonah Horn

Phone: 503-842-2545



PROJECT SUMMARY SHEET

Sale: Franken Fir

CONSTRUCTION

Point	E to F	3+80	stations =	\$2,495.96
Point	G to H	15+60	stations =	\$26,916.52
Point	K to L	3+40	stations =	\$1,455.04
Point	M to N	3+00	stations =	\$2,000.90
Point	Q to R	27+30	stations =	\$80,042.97
Point	S to T	3+40	stations =	\$5,649.68
Point	U to V	15+90	stations =	\$9,845.98
SUBTOTAL CONSTRUCTION				\$128,407.05

IMPROVEMENT

Point	A to B	298+60	stations =	\$58,804.46
Point	C to D	41+70	stations =	\$2,957.47
Point	K to L	12+00	stations =	\$2,065.14
Point	O to P	20+60	stations =	\$12,234.28
Point	W to X	48+70	stations =	\$22,918.40
Point	Y to Z	10+20	stations =	\$3,425.44
SUBTOTAL IMPROVEMENT				\$102,405.19

RECONSTRUCTION

Point	A to B	5+60	stations =	\$34,186.04
Point	C to D	5+70	stations =	\$1,400.49
Point	I to J	7+40	stations =	\$11,358.93
Point	Q to R	14+60	stations =	\$52,721.21
SUBTOTAL RECONSTRUCTION				\$99,666.67

SPECIAL PROJECTS

Sale Area Brushing	6.2	Miles of Road	\$5,270.00
Out of Area Brushing	38.2	Miles of Road	\$36,600.00
Stockpiles:	Point AA	1,500 CY 2" Crushed	\$24,864.60
	Point BB	300 CY 3" Jaw-Run	\$3,498.00
SUBTOTAL SPECIAL PROJECTS			\$70,232.60

MOVE IN

\$6,068.49

GRAND TOTAL

\$406,780.00

SUMMARY OF CONSTRUCTION COST

Sale:		Franken Fir				Road:		A to B			
Construction -		0+00	stations	Improvement -		298+60	stations	Reconstruction -		5+60	stations
		0.00	miles			5.66	miles			0.11	miles
IMPROVEMENT: CLEARING AND GRUBBING -											
Side cast				0.091	acres @	\$1,500.00	per acre =	\$136.50			
Widening				0.183	acres @	\$1,500.00	per acre =	\$274.50			
								TOTAL CLEARING AND GRUBBING		\$411.00	
IMPROVEMENT: EXCAVATION -											
Pullback				285	cy. @	\$1.40	per c.y.=	\$399.00			
Widening				1179	cy. @	\$2.25	per c.y.=	\$2,652.75			
								TOTAL EXCAVATION		\$3,051.75	
IMPROVEMENT: ENDHAUL -											
Pullback		242+90	to	243+80	52	cy. @	\$3.05	per c.y.=	\$158.60		
Pullback		245+50	to	247+50	155	cy. @	\$3.20	per c.y.=	\$496.00		
Pullback		272+60	to	274+20	78	cy. @	\$4.57	per c.y.=	\$356.46		
Widening		122+10	to	123+40	176	cy. @	\$3.39	per c.y.=	\$596.64		
Widening		154+70	to	156+20	520	cy. @	\$3.76	per c.y.=	\$1,955.20		
Widening		192+10	to	192+90	78	cy. @	\$4.57	per c.y.=	\$356.46		
Widening		194+70	to	195+90	174	cy. @	\$4.68	per c.y.=	\$814.32		
Widening		247+50	to	248+50	231	cy. @	\$3.28	per c.y.=	\$757.68		
Spread & compact					1464	cy. @	\$0.25	per c.y.=	\$366.00		
								TOTAL ENDHAUL		\$5,857.36	
RECONSTRUCTION: CLEARING AND GRUBBING -											
Scattering				0.260	acres @	\$1,500.00	per acre =	\$390.00			
								TOTAL CLEARING AND GRUBBING		\$390.00	
RECONSTRUCTION: EXCAVATION -											
Full Bench Excavation to Drop Grade -				3600	cy. @	\$2.00	per c.y.=	\$7,200.00			
Drilling & Shooting -				2400	cy. @	\$6.00	per c.y.=	\$14,400.00			
								TOTAL EXCAVATION		\$21,600.00	
RECONSTRUCTION: ENDHAUL -											
Full Bench				3600	cy. @	\$2.88	per c.y.=	\$10,368.00			
Spread & compact				3600	cy. @	\$0.25	per c.y.=	\$900.00			
								TOTAL ENDHAUL		\$11,268.00	
CULVERTS - MATERIALS & INSTALLATION											
Culverts											
		160	LF of 18"	\$2,800.00				40	LF of 24"	\$1,080.00	
				\$2,800.00						\$1,080.00	
Culvert Stakes & Markers											
		17	markers	\$136.00							
				\$136.00							
								TOTAL CULVERTS		\$4,016.00	
ROCK											
261+80		to	304+20	960	cy. of	Crushed	@	\$14.30	per c.y.=	\$13,728.00	
186+00		to	191+60	140	cy. of	Crushed	@	\$15.16	per c.y.=	\$2,122.40	
186+00		to	191+60	310	cy. of	Pit-Run	@	\$9.82	per c.y.=	\$3,044.20	
Landing Rock		178+60,245+00		120	cy. of	Jaw-Run	@	\$14.75	per c.y.=	\$1,770.00	
Corner Repair		123+40		50	cy. of	Riprap	@	\$11.64	per c.y.=	\$582.00	
Energy Dissipator		All Pipes		25	cy. of	Riprap	@	\$10.03	per c.y.=	\$250.75	
Spot Rock		110+60-261+80		500	cy. of	Stockpile	@	\$10.78	per c.y.=	\$5,390.00	
Heliport		251+50		60	cy. of	Jaw-Run	@	\$14.15	per c.y.=	\$849.00	
Parking Area		292+00		60	cy. of	Crushed	@	\$14.21	per c.y.=	\$852.60	
Bedding/Backfill		All Pipes		50	cy. of	Stockpile	@	\$10.08	per c.y.=	\$504.00	
								TOTAL ROCK		\$29,092.95	
SPECIAL PROJECTS											
Construct Parking Area at 292+00 -				1.00	@	\$200.00		\$200.00			
Construct Heliport at 251+50 -				1.00	@	\$200.00		\$200.00			
Construct waste areas -				2.00	hours @	\$130.00	per hour	\$260.00			
Construct ditchout at culvert outlet -				1.00	@	\$60.00		\$60.00			
Construct landings at 178+60, 245+00 -				2.00	@	\$200.00	each	\$400.00			
Grade and shape road -				304.20	stations @	\$15.50	per station	\$4,715.10			
Pull ditch and enhaul -				70.00	stations @	\$100.00	per station	\$7,000.00			
Roll subgrade w/ vibratory roller prior to rocking -				304.20	stations @	\$13.20	per station	\$4,015.44			
Remove culverts from state lands				1.00	@	\$282.90	total	\$282.90			
Grass seed and fertilize -				0.50	acres @	\$220.00	per acre	\$110.00			
Mulching -				0.100	acres @	\$600.00	per acre	\$60.00			
								TOTAL SPECIAL PROJECTS		\$17,303.44	
GRAND TOTAL										\$92,990.50	

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **C to D**

<u>Construction -</u>	<u>0+00</u>	<u>stations</u>	<u>Improvement -</u>	<u>41+70</u>	<u>stations</u>	<u>Reconstruction -</u>	<u>5+70</u>	<u>stations</u>
	0.00	miles		0.79	miles		0.11	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.006	acres @	\$660.00	per acre =	\$3.96	
Scattering	0.370	acres @	\$980.00	per acre =	\$362.60	
TOTAL CLEARING AND GRUBBING						\$366.56

RECONSTRUCTION: EXCAVATION -

Widening	139	cy. @	\$1.40	per c.y. =	\$194.60	
TOTAL EXCAVATION						\$194.60

RECONSTRUCTION: ENDBHAUL -

Widening	41+70	to	42+50	139	cy. @	\$2.88	per c.y. =	\$400.32	
Spread & compact				139	cy. @	\$0.25	per c.y. =	\$34.75	
TOTAL ENDBHAUL									\$435.07

ROCK

41+70	to	42+70	80	cy. of	Pit-Run	@	\$8.87	per c.y. =	\$709.60	
TOTAL ROCK									\$709.60	

SPECIAL PROJECTS

Construct turnaround -	1.00	@	\$75.00		\$75.00	
Construct extended ditchout at 40+50 -	1.00	@	\$90.00		\$90.00	
Improve Existing Ditchouts -	10.00	@	\$30.00	each	\$300.00	
Construct Rolling OHV Dip -	1.00	@	\$150.00		\$150.00	
Remove log cribbing @ 0+00 -	0.00	hours @	\$130.00	per hour	\$0.00	
Grade and shape road -	47.40	stations @	\$23.25	per station	\$1,102.05	
Construct landing -	1.00	@	\$250.00		\$250.00	
Roll subgrade w/ vibratory roller prior to rocking -	47.40	stations @	\$13.20	per station	\$625.68	
Grass seed and fertilize -	0.27	acres @	\$220.00	per acre	\$59.40	
TOTAL SPECIAL PROJECTS						\$2,652.13

GRAND TOTAL **\$4,357.96**

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **E to F**

<u>Construction -</u>	<u>3+80</u>	<u>stations</u>	<u>Improvement -</u>	<u>0+00</u>	<u>stations</u>	<u>Reconstruction -</u>	<u>0+00</u>	<u>stations</u>
	<u>0.07</u>	<u>miles</u>		<u>0.00</u>	<u>miles</u>		<u>0.00</u>	<u>miles</u>

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist.</u> <u>To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>			
0+00		3+50	35%		Outslope	\$191	=		\$668.50
3+50		3+80	60%	0.1	Outslope	\$1,521	=		\$456.30
									TOTAL
									\$1,124.80

ROCK

0+00	to	1+00	80	cy. of	Pit-Run	@	\$8.86 per c.y.=	\$708.80	
Junction Rock		0+00	20	cy. of	Pit-Run	@	\$8.84 per c.y.=	\$176.80	
									TOTAL ROCK
									\$885.60

SPECIAL PROJECTS

Construct turnaround -	1.00	@	\$75.00	\$75.00	
Construct landing -	1.00	@	\$250.00	\$250.00	
Grade and shape road -	3.80	stations @	\$14.00	per station	\$53.20
Roll subgrade w/ vibratory roller prior to rocking -	3.80	stations @	\$13.20	per station	\$50.16
Grass seed and fertilize -	0.26	acres @	\$220.00	per acre	\$57.20
					TOTAL SPECIAL PROJECTS
					\$485.56

GRAND TOTAL **\$2,495.96**

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **G to H**

<u>Construction -</u>	<u>15+60</u>	<u>stations</u>	<u>Improvement -</u>	<u>0+00</u>	<u>stations</u>	<u>Reconstruction -</u>	<u>0+00</u>	<u>stations</u>
	0.30	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist.</u> <u>To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>		
0+00		1+80	20%		Ditch	\$183	=	\$329.40
1+80		3+80	45%		Ditch	\$367	=	\$734.00
3+80		5+50	25%		Ditch	\$219	=	\$372.30
5+50		6+30	25%		Outslope	\$165	=	\$132.00
6+30		8+40	45%		Outslope	\$269	=	\$564.90
8+40		9+00	45%		Ditch	\$367	=	\$220.20
9+00		11+20	65%	0.2	Ditch	\$2,951	=	\$6,492.20
11+20		12+20	50%		Ditch	\$651	=	\$651.00
12+20		13+00	50%		Outslope	\$459	=	\$367.20
13+00		15+60	40%		Outslope	\$243	=	\$631.80
								TOTAL
								\$10,495.00

ROCK

0+00 to	15+60	900	cy. of	Jaw-Run	@	\$14.27 per c.y.=	\$12,843.00	
Landing Rock	12+60, 15+60	120	cy. of	Jaw-Run	@	\$14.51 per c.y.=	\$1,741.20	
Junction Rock	0+00	20	cy. of	Jaw-Run	@	\$14.21 per c.y.=	\$284.20	
								TOTAL ROCK
								\$14,868.40

SPECIAL PROJECTS

Construct turnarounds -	2.00	@	\$75.00	each	\$150.00	
Construct ditchouts -	2.00	@	\$60.00	each	\$120.00	
Grade and shape road -	15.60	stations @	\$15.50	per station	\$241.80	
Construct landings -	2.00	@	\$300.00	each	\$600.00	
Roll subgrade w/ vibratory roller prior to rocking -	15.60	stations @	\$13.20	per station	\$205.92	
Grass seed and fertilize -	1.07	acres @	\$220.00	per acre	\$235.40	
						TOTAL SPECIAL PROJECTS
						\$1,553.12

GRAND TOTAL **\$26,916.52**

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **I to J**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	7+40	stations
	0.00	miles		0.00	miles		0.14	miles

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.017	acres	@	\$660.00	per acre =	\$11.22	
Scattering	0.630	acres	@	\$980.00	per acre =	\$617.40	
TOTAL CLEARING AND GRUBBING							\$628.62

RECONSTRUCTION: EXCAVATION -

Widening	181	cy.	@	\$1.40	per c.y.=	\$253.40	
TOTAL EXCAVATION							\$253.40

RECONSTRUCTION: ENDHAUL -

Widening	0+00	to	0+75	181	cy.	@	\$2.58	per c.y.=	\$466.98
Spread & compact				181	cy.	@	\$0.25	per c.y.=	\$45.25
TOTAL ENDHAUL									\$512.23

CULVERTS - MATERIALS & INSTALLATION

<u>Culverts</u>	30	LF of 18"	\$525.00	40	LF of 24"	\$1,080.00
			\$525.00			\$1,080.00
<u>Culvert Stakes & Markers</u>						
2 markers			\$16.00			
			\$16.00			
TOTAL CULVERTS						\$1,621.00

ROCK

0+00 to	7+40	430	cy. of	Jaw-Run	@	\$14.29 per c.y.=	\$6,144.70	
Landing Rock	7+40	60	cy. of	Jaw-Run	@	\$14.36 per c.y.=	\$861.60	
Junction Rock	0+00	20	cy. of	Jaw-Run	@	\$14.22 per c.y.=	\$284.40	
Energy Dissipator	All Pipes	10	cy. of	Riprap	@	\$9.60 per c.y.=	\$96.00	
							TOTAL ROCK	\$7,386.70

SPECIAL PROJECTS

Construct landing -	1.00	@	\$250.00		\$250.00
Construct ditch -	1.40	stations @	\$100.00	per station	\$140.00
Grade and shape road -	7.40	stations @	\$15.50	per station	\$114.70
Construct turnaround -	1.00	@	\$75.00		\$75.00
Roll subgrade w/ vibratory roller prior to rocking -	7.40	stations @	\$13.20	per station	\$97.68
Remove large stumps -	1.00	lump sum @	\$130.00		\$130.00
Grass seed and fertilize -	0.68	acres @	\$220.00	per acre	\$149.60
TOTAL SPECIAL PROJECTS					\$956.98

GRAND TOTAL **\$11,358.93**

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **K to L**

<u>Construction -</u>	<u>3+40</u>	<u>stations</u>	<u>Improvement -</u>	<u>12+00</u>	<u>stations</u>	<u>Reconstruction -</u>	<u>0+00</u>	<u>stations</u>
	0.06	miles		0.23	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist.</u> <u>To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>			
12+00		14+40	40%		Ditch	\$330	=	\$792.00	
14+40		15+40	20%		Outslope	\$139	=	\$139.00	
TOTAL									\$931.00

IMPROVEMENT: CLEARING AND GRUBBING -

Scattering	0.220	acres	@	\$980.00	per acre =	\$215.60	
TOTAL CLEARING AND GRUBBING							\$215.60

ROCK

12+00 to	13+00	70	cy. of	Pit-Run	@	\$9.18	per c.y.=	\$642.60	
Landing Rock	8+80	80	cy. of	Pit-Run	@	\$9.21	per c.y.=	\$736.80	
TOTAL ROCK									\$1,379.40

SPECIAL PROJECTS

Improve landing just off spur at 8+80 -	1.00	hours @	\$130.00	per hour	\$130.00	
Construct ditchout at 14+40 -	1.00	@	\$60.00		\$60.00	
Grade and shape road -	15.40	stations @	\$15.50	per station	\$238.70	
Construct landing at Point L -	1.00	@	\$250.00		\$250.00	
Roll subgrade w/ vibratory roller prior to rocking -	15.40	stations @	\$13.20	per station	\$203.28	
Grass seed and fertilize -	0.51	acres @	\$220.00	per acre	\$112.20	
TOTAL SPECIAL PROJECTS						\$994.18

GRAND TOTAL **\$3,520.18**

SUMMARY OF CONSTRUCTION COST

Sale:

Franken Fir

Road:

M to N

Construction -	3+00	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.06	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist. To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>			
0+00		1+00	50%		Ditch	\$651	=	\$651.00	
2+00		2+50	20%		Ditch	\$183	=	\$91.50	
2+50		3+00	20%		Outslope	\$139	=	\$69.50	
								TOTAL	\$812.00

ROCK

0+00	to	1+00	80	cy. of	Pit-Run	@	\$9.14 per c.y.=	<u>\$731.20</u>	
								TOTAL ROCK	\$731.20

SPECIAL PROJECTS

Construct landing -	1.00	@	\$250.00		\$250.00
Construct ditchouts -	1.00	@	\$60.00		\$60.00
Grade and shape road -	3.00	stations @	\$15.50	per station	\$46.50
Roll subgrade w/ vibratory roller prior to rocking -	3.00	stations @	\$13.20	per station	\$39.60
Grass seed and fertilize -	0.28	acres @	\$220.00	per acre	\$61.60
				TOTAL SPECIAL PROJECTS	\$457.70

GRAND TOTAL

\$2,000.90

SUMMARY OF CONSTRUCTION COST

Sale:			Franken Fir			Road:			O to P					
Construction -			0+00	stations	Improvement -			20+60	stations	Reconstruction -			0+00	stations
			0.00	miles				0.39	miles				0.00	miles
IMPROVEMENT: EXCAVATION -														
Widening					217	cy. @	\$1.40	per c.y.=	\$303.80					
										TOTAL EXCAVATION		\$303.80		
IMPROVEMENT: ENDHAUL -														
Widening				0+00	to	10+00	217	cy. @	\$2.63	per c.y.=	\$570.71			
Spread & compact							217	cy. @	\$0.25	per c.y.=	\$54.25			
										TOTAL ENDHAUL		\$624.96		
CULVERTS - MATERIALS & INSTALLATION														
<u>Culvert Stakes & Markers</u>														
1 markers														
\$8.00														
\$8.00														
TOTAL CULVERTS														
\$8.00														
ROCK														
0+00 to				20+60	730	cy. of	Crushed	@	\$14.30	per c.y.=	\$10,439.00			
Junction Rock				0+00	20	cy. of	Crushed	@	\$14.14	per c.y.=	\$282.80			
										TOTAL ROCK		\$10,721.80		
SPECIAL PROJECTS														
Grade and shape road -					20.60	stations @	\$14.00	per station	\$288.40					
Roll subgrade w/ vibratory roller prior to rocking -					20.60	stations @	\$13.20	per station	\$271.92					
Grass seed and fertilize -					0.07	acres @	\$220.00	per acre	\$15.40					
										TOTAL SPECIAL PROJECTS		\$575.72		
GRAND TOTAL														
														\$12,234.28

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **Q to R**

Construction -	27+30	stations	Improvement -	0+00	stations	Reconstruction -	14+60	stations
	0.52	miles		0.00	miles		0.28	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station		
14+60		17+20	75%	0.1	Ditch	\$4,105	=	\$10,673.00
17+20		19+40	50%		Ditch	\$651	=	\$1,432.20
19+40		21+00	65%	0.1	Ditch	\$2,847	=	\$4,555.20
21+00		22+70	25%		Outslope	\$165	=	\$280.50
22+70		27+90	60%		Outslope	\$1,493	=	\$7,763.60
27+90		34+60	60%	0.3	Ditch	\$2,400	=	\$16,080.00
34+60		39+90	25%		Outslope	\$165	=	\$874.50
39+90		41+90	60%		Outslope	\$1,493	=	\$2,986.00
								TOTAL
								\$44,645.00

RECONSTRUCTION: CLEARING AND GRUBBING -

Side cast	0.209	acres @	\$1,500.00	per acre =	\$313.50	
Scattering	1.410	acres @	\$1,500.00	per acre =	\$2,115.00	
						TOTAL CLEARING AND GRUBBING
						\$2,428.50

RECONSTRUCTION: EXCAVATION -

Pullback	1317	cy. @	\$1.40	per c.y.=	\$1,843.80	
Widening	4342	cy. @	\$1.97	per c.y.=	\$8,553.74	
						TOTAL EXCAVATION
						\$10,397.54

RECONSTRUCTION: ENDHAUL -

Pullback	2+80	to	3+90	191	cy. @	\$3.31	per c.y.=	\$632.21
Pullback	5+60	to	6+20	130	cy. @	\$3.40	per c.y.=	\$442.00
Pullback	7+00	to	8+00	217	cy. @	\$3.45	per c.y.=	\$748.65
Pullback	9+50	to	12+40	503	cy. @	\$3.55	per c.y.=	\$1,785.65
Pullback	12+60	to	14+50	276	cy. @	\$3.64	per c.y.=	\$1,004.64
Widening/Full Bench				4342	cy. @	\$3.44	per c.y.=	\$14,936.48
Spread & compact				5659	cy. @	\$0.25	per c.y.=	\$1,414.75
								TOTAL ENDHAUL
								\$20,964.38

CULVERTS - MATERIALS & INSTALLATION

<u>Culverts</u>								
60	LF of 18"	\$1,050.00	70	LF of 24"	\$1,890.00			
40	LF of 30"	\$1,440.00	0	LF of 36"	\$0.00			
		\$2,490.00			\$1,890.00			
<u>Culvert Stakes & Markers</u>								
5 markers		\$40.00						
		\$40.00						
								TOTAL CULVERTS
								\$4,420.00

ROCK

0+00	to	41+90	2,260	cy. of	Jaw-Run	@	\$16.14	per c.y.=	\$36,476.40
14+60	to	22+20	150	cy. of	Crushed	@	\$16.09	per c.y.=	\$2,413.50
28+00	to	38+80	200	cy. of	Crushed	@	\$16.36	per c.y.=	\$3,272.00
Landing Rock		37+50, 41+90	120	cy. of	Jaw-Run	@	\$16.52	per c.y.=	\$1,982.40
Stream Crossing Fill		11+00, 13+60	150	cy. of	Pit-Run	@	\$11.45	per c.y.=	\$1,717.50
Junction Rock		0+00	20	cy. of	Jaw-Run	@	\$15.77	per c.y.=	\$315.40
Energy Dissipator		All Pipes	25	cy. of	Riprap	@	\$11.45	per c.y.=	\$286.25
									TOTAL ROCK
									\$46,463.45

SPECIAL PROJECTS

Construct waste areas -	1.00	hours @	\$130.00	per hour	\$130.00	
Construct ditchouts -	2.00	@	\$60.00	each	\$120.00	
Grade and shape road -	41.90	stations @	\$14.75	per station	\$618.03	
Construct landings -	2.00	@	\$250.00	each	\$500.00	
Construct turnarounds -	2.00	@	\$75.00	each	\$150.00	
Roll subgrade w/ vibratory roller prior to rocking -	41.90	stations @	\$13.20	per station	\$553.08	
Remove large stumps -	1.00	lump sum @	\$675.00		\$675.00	
Grass seed and fertilize -	2.63	acres @	\$220.00	per acre	\$578.60	
Mulching -	0.201	acres @	\$600.00	per acre	\$120.60	
						TOTAL SPECIAL PROJECTS
						\$3,445.31

GRAND TOTAL **\$132,764.18**

SUMMARY OF CONSTRUCTION COST

Sale:			Franken Fir			Road:			S to T		
<u>Construction -</u>			3+40 stations			<u>Improvement -</u>			0+00 stations		
			0.06 miles						0.00 miles		
<u>Reconstruction -</u>			0+00 stations						0.00 miles		
			0.06 miles						0.00 miles		

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station			
0+00		3+40	25%		Outslope	\$165	=	\$561.00	
								TOTAL	\$561.00

ROCK									
0+00	to	3+40	210	cy. of	Jaw-Run	@	\$15.98	per c.y.=	\$3,355.80
Landing Rock		3+40	60	cy. of	Jaw-Run	@	\$16.02	per c.y.=	\$961.20
Junction Rock		0+00	20	cy. of	Jaw-Run	@	\$15.95	per c.y.=	\$319.00
								TOTAL ROCK	\$4,636.00

SPECIAL PROJECTS									
Construct turnaround -			1.00		@		\$75.00		\$75.00
Construct landing -			1.00		@		\$250.00		\$250.00
Grade and shape road -			3.40		stations @		\$14.00	per station	\$47.60
Roll subgrade w/ vibratory roller prior to rocking -			3.40		stations @		\$13.20	per station	\$44.88
Grass seed and fertilize -			0.16		acres @		\$220.00	per acre	\$35.20
								TOTAL SPECIAL PROJECTS	\$452.68
								GRAND TOTAL	\$5,649.68

SUMMARY OF CONSTRUCTION COST

Sale:

Franken Fir

Road:

U to V

<u>Construction -</u>	<u>15+90</u>	<u>stations</u>	<u>Improvement -</u>	<u>0+00</u>	<u>stations</u>	<u>Reconstruction -</u>	<u>0+00</u>	<u>stations</u>
	0.30	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

<u>Station</u>	<u>to</u>	<u>Station</u>	<u>Avg. Sideslope</u>	<u>Avg. Dist.</u> <u>To W.A. (mi.)</u>	<u>Outslope/Ditch</u>	<u>Cost per Station</u>		
0+00		1+40	50%		Outslope	\$459	=	\$642.60
1+40		4+80	45%		Outslope	\$269	=	\$914.60
4+80		5+90	60%	0.2	Outslope	\$1,576	=	\$1,733.60
5+90		6+70	40%		Outslope	\$243	=	\$194.40
6+70		7+60	60%	0.2	Outslope	\$1,576	=	\$1,418.40
7+60		8+50	40%		Outslope	\$243	=	\$218.70
8+50		9+50	60%	0.1	Outslope	\$1,521	=	\$1,521.00
9+50		10+30	45%		Outslope	\$269	=	\$215.20
10+30		15+90	20%		Outslope	\$139	=	\$778.40
								TOTAL
								\$7,636.90

ROCK

0+00	to	1+00	60	cy. of	Jaw-Run	@	\$16.06 per c.y.=	\$963.60
Junction Rock		0+00	20	cy. of	Jaw-Run	@	\$16.05 per c.y.=	\$321.00
								TOTAL ROCK
								\$1,284.60

SPECIAL PROJECTS

Construct landing -	1.00	@	\$250.00		\$250.00
Grade and shape road -	15.90	stations @	\$14.00	per station	\$222.60
Roll subgrade w/ vibratory roller prior to rocking -	15.90	stations @	\$13.20	per station	\$209.88
Grass seed and fertilize -	1.10	acres @	\$220.00	per acre	\$242.00
					TOTAL SPECIAL PROJECTS
					\$924.48
					GRAND TOTAL
					\$9,845.98

SUMMARY OF CONSTRUCTION COST

Sale: **Franken Fir**

Road: **W to X**

Construction -	0+00	stations	Improvement -	48+70	stations	Reconstruction -	0+00	stations
	0.00	miles		0.92	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Scattering	0.220	acres @	\$980.00	per acre =	\$215.60	
					TOTAL CLEARING AND GRUBBING	\$215.60

IMPROVEMENT: EXCAVATION -

Slope Stabilization Prep.	2.0	hours @	\$145.00	per hour	\$290.00	
					TOTAL EXCAVATION	\$290.00

CULVERTS - MATERIALS & INSTALLATION

Pipe-Arch Installation Listed Separately Culverts

70	LF of 18"	\$1,225.00	0	LF of 24"	\$0.00
0	LF of 30"	\$0.00	40	LF of 36"	\$1,900.00
0	LF of 42"	\$0.00	40	LF of 53" x 41"	\$4,250.00
50	LF of 60" x 46"	\$6,030.00	0	LF of 60"	\$0.00
		<u>\$7,255.00</u>			<u>\$6,150.00</u>

Culvert Stakes & Markers

5 markers	<u>\$40.00</u>
	\$40.00

TOTAL CULVERTS \$13,445.00

ROCK

1+80 to 3+70	50	cy. of	Crushed	@	\$14.32	per c.y.=	\$716.00	
16+40 to 19+40	90	cy. of	Crushed	@	\$14.59	per c.y.=	\$1,313.10	
48+00 to 48+40	20	cy. of	Crushed	@	\$15.13	per c.y.=	\$302.60	
Culvert Bedding/Backfill All Pipes	70	cy. of	Crushed	@	\$14.01	per c.y.=	\$980.70	
Fill 18+20-18+70	50	cy. of	Pit-Run	@	\$9.91	per c.y.=	\$495.50	
Slope Stabilization 18+20-18+70	100	cy. of	Riprap	@	\$9.91	per c.y.=	\$991.00	
Energy Dissipator All Pipes	100	cy. of	Riprap	@	\$10.02	per c.y.=	\$1,002.00	
							TOTAL ROCK	\$5,800.90

SPECIAL PROJECTS

Construct waste areas -	1.00	hours @	\$130.00	per hour	\$130.00	
Install 2 Pipe-Arch culverts (Including Endhaul) -	1.00	lump sum @	\$2,200.00		\$2,200.00	
Grade and shape road -	9.00	stations @	\$15.50	per station	\$139.50	
Roll subgrade w/ vibratory roller prior to rocking -	9.00	stations @	\$13.20	per station	\$118.80	
Remove culverts from state lands	3.00	@	\$365.40	total	\$365.40	
Grass seed and fertilize -	0.26	acres @	\$220.00	per acre	\$57.20	
Mulching -	0.260	acres @	\$600.00	per acre	\$156.00	
					TOTAL SPECIAL PROJECTS	\$3,166.90

GRAND TOTAL \$22,918.40

SUMMARY OF CONSTRUCTION COST

Sale:		Franken Fir			Road:		Y to Z				
Construction -		0+00	stations	Improvement -		10+20	stations	Reconstruction -		0+00	stations
		0.00	miles			0.19	miles			0.00	miles
IMPROVEMENT: CLEARING AND GRUBBING -											
Scattering				0.110	acres @	\$980.00	per acre =	\$107.80			
TOTAL CLEARING AND GRUBBING								\$107.80			
CULVERTS - MATERIALS & INSTALLATION											
<u>Culverts</u>											
100 LF of 18"				\$1,750.00	0 LF of 24"				\$0.00		
				\$1,750.00					\$0.00		
<u>Culvert Stakes & Markers</u>											
3 markers				\$24.00							
				\$24.00	TOTAL CULVERTS				\$1,774.00		
ROCK											
Spot Rock Over Pipes		All Pipes	60	cy. of	Stockpile	@	\$12.27	per c.y.=	\$736.20		
Energy Dissipator		All Pipes	15	cy. of	Riprap	@	\$9.56	per c.y.=	\$143.40		
Bedding/Backfill		All Pipes	30	cy. of	Stockpile	@	\$11.57	per c.y.=	\$347.10		
								TOTAL ROCK	\$1,226.70		
SPECIAL PROJECTS											
Grade and shape road -				10.20	stations @	\$15.50	per station	\$158.10			
Roll subgrade w/ vibratory roller prior to rocking -				10.20	stations @	\$13.20	per station	\$134.64			
Grass seed and fertilize -				0.11	acres @	\$220.00	per acre	\$24.20			
TOTAL SPECIAL PROJECTS								\$316.94			
GRAND TOTAL								\$3,425.44			

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Kilchis Junction	Location:	SW 1/4, SW 1/4, Sec. 2, T1N, R8W, WM
Sale:	Franken Fir	Road:	10275 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	10275 c.y.
Drill Pct.:	100%	In Place Total:	7339 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area, place overburden in Waste Area, spread and compact.						\$10,035.72
Drill & Shoot:	\$2.50	/cu.yd.	x	7339	cu.yds.	= \$18,347.50
Haul Screening Waste:	\$2.88	/cu.yd.	x	846	cu.yds.	= \$2,436.48
Haul Existing Overburden Pile:	\$2.88	/cu.yd.	x	1000	cu.yds.	= \$2,880.00
Load Crusher:	\$0.70	/cu.yd.	x	9900	cu.yds.	= \$6,930.00
Crush Rock:	\$2.69	/cu.yd.	x	9900	cu.yds.	= \$26,631.00
Load Dump Truck:	\$0.70	/cu.yd.	x	10275	cu.yds.	= \$7,192.50
Screen 2" Crushed Rock:	\$1.50	/cu.yd.	x	4230	cu.yds.	= \$6,345.00

Subtotal **\$80,798.20**

Move In/Set-up Crusher	1	@	\$5,326.00	=	\$5,326.00
Move In and set up Drill and Compressor	1	@	\$486.45	=	\$486.45
Move in Roller and Compactor	1	@	\$486.45	=	\$486.45
Move in Grader	1	@	\$189.07	=	\$189.07
Move in D-8	1	@	\$817.09	=	\$817.09
Move in Loader	1	@	\$673.93	=	\$673.93
Move in Excavator	1	@	\$904.89	=	\$904.89
Move in Trucks	4	@	\$157.97	=	\$631.88
Change Gradation	1	@	\$210.00	=	\$210.00

Subtotal **\$9,725.76**

Base Cost=	\$8.81	Per Cu.Yd.	TOTAL PRODUCTION COSTS	\$90,523.96
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Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST
A to B 26180 30420 (Crushed)	3.04	2.45	8.81	14.30	960	\$13,728.00
A to B 18600 19160 (Crushed)	3.90	2.45	8.81	15.16	140	\$2,122.40
A to B 18600 19160 (Pit-Run)	3.90	1.10	4.82	9.82	310	\$3,044.20
A to B Landing Rock (Jaw-Run)	3.49	2.45	8.81	14.75	120	\$1,770.00
A to B Corner Repair (Riprap)	5.07	1.75	4.82	11.64	50	\$582.00
A to B Energy Dissipator (Riprap)	3.46	1.75	4.82	10.03	25	\$250.75
A to B Heliport (Jaw-Run)	2.89	2.45	8.81	14.15	60	\$849.00
A to B Parking Area (Crushed)	2.95	2.45	8.81	14.21	60	\$852.60
C to D 4170 4270 (Pit-Run)	2.95	1.10	4.82	8.87	80	\$709.60
E to F 0 100 (Pit-Run)	2.94	1.10	4.82	8.86	80	\$708.80
E to F Junction Rock (Pit-Run)	2.92	1.10	4.82	8.84	20	\$176.80
G to H 0 1560 (Jaw-Run)	3.01	2.45	8.81	14.27	900	\$12,843.00
G to H Landing Rock (Jaw-Run)	3.25	2.45	8.81	14.51	120	\$1,741.20
G to H Junction Rock (Jaw-Run)	2.95	2.45	8.81	14.21	20	\$284.20
I to J 0 740 (Jaw-Run)	3.03	2.45	8.81	14.29	430	\$6,144.70
I to J Landing Rock (Jaw-Run)	3.10	2.45	8.81	14.36	60	\$861.60
I to J Junction Rock (Jaw-Run)	2.96	2.45	8.81	14.22	20	\$284.40
I to J Energy Dissipator (Riprap)	3.03	1.75	4.82	9.60	10	\$96.00
K to L 1200 1300 (Pit-Run)	3.26	1.10	4.82	9.18	70	\$642.60
K to L Landing Rock (Pit-Run)	3.29	1.10	4.82	9.21	80	\$736.80
M to N 0 100 (Pit-Run)	3.22	1.10	4.82	9.14	80	\$731.20
O to P 0 2060 (Crushed)	3.04	2.45	8.81	14.30	730	\$10,439.00
O to P Junction Rock (Crushed)	2.88	2.45	8.81	14.14	20	\$282.80
Q to R 0 4190 (Jaw-Run)	4.88	2.45	8.81	16.14	2260	\$36,476.40
Q to R 1460 2220 (Crushed)	4.83	2.45	8.81	16.09	150	\$2,413.50
Q to R 2800 3880 (Crushed)	5.10	2.45	8.81	16.36	200	\$3,272.00
Q to R Landing Rock (Jaw-Run)	5.26	2.45	8.81	16.52	120	\$1,982.40
Q to R Stream Crossing Fill (Pit-Run)	4.88	1.75	4.82	11.45	150	\$1,717.50
Q to R Junction Rock (Jaw-Run)	4.51	2.45	8.81	15.77	20	\$315.40
Q to R Energy Dissipator (Riprap)	4.88	1.75	4.82	11.45	25	\$286.25
S to T 0 340 (Jaw-Run)	4.72	2.45	8.81	15.98	210	\$3,355.80
S to T Landing Rock (Jaw-Run)	4.76	2.45	8.81	16.02	60	\$961.20
S to T Junction Rock (Jaw-Run)	4.69	2.45	8.81	15.95	20	\$319.00
U to V 0 100 (Jaw-Run)	4.80	2.45	8.81	16.06	60	\$963.60
U to V Junction Rock (Jaw-Run)	4.79	2.45	8.81	16.05	20	\$321.00
W to X 180 370 (Crushed)	3.06	2.45	8.81	14.32	50	\$716.00
W to X 1640 1940 (Crushed)	3.33	2.45	8.81	14.59	90	\$1,313.10
W to X 4800 4840 (Crushed)	3.87	2.45	8.81	15.13	20	\$302.60
W to X Culvert Bedding/Backfill (Crushed)	3.45	1.75	8.81	14.01	70	\$980.70
W to X Fill (Pit-Run)	3.34	1.75	4.82	9.91	50	\$495.50
W to X Slope Stabilization (Riprap)	3.34	1.75	4.82	9.91	100	\$991.00
W to X Energy Dissipator (Riprap)	3.45	1.75	4.82	10.02	100	\$1,002.00
Y to Z Energy Dissipator (Riprap)	2.99	1.75	4.82	9.56	15	\$143.40
AA to BB Stockpile (Crushed)	3.63	1.85	8.81	14.29	1740	\$24,864.60
AA to BB Stockpile (Jaw-Run)	1.00	1.85	8.81	11.66	300	\$3,498.00
				Total C.Y.	10275	Sub Total
						\$146,572.60

TOTAL ROCKING COSTS \$146,572.60

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Existing_Stockpile	Location:	SW 1/4, SW1/4, Sec. 29, T1N, R7W, WM
Sale:	Franken Fir	Road:	640 c.y.
Swell:	1.40	Stockpile:	c.y.
Shrinkage	1.16	Total Truck Loads:	640 c.y.
Drill Pct.:	0%	In Place Total:	457 c.y.

Load Dump Truck: \$0.70 /cu.yd. x 640 cu.yds. = \$448.00

Subtotal \$448.00

Move in Loader	1	@	\$673.93	=	\$673.93
Move in Trucks	2	@	\$157.97	=	\$315.94
Change Gradation					
				Subtotal	\$989.87

Base Cost= \$2.25 Per Cu.Yd.

TOTAL PRODUCTION COSTS \$1,437.87

Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST
A to B Spot Rock (Stockpile)	6.08	2.45	2.25	10.78	500	\$5,390.00
A to B Bedding/Backfill (Stockpile)	6.08	1.75	2.25	10.08	50	\$504.00
Y to Z Spot Rock Over Pipes (Stockpile)	7.57	2.45	2.25	12.27	60	\$736.20
Y to Z Bedding/Backfill (Stockpile)	7.57	1.75	2.25	11.57	30	\$347.10
				Total C.Y.	640	Sub Total \$6,977.30

TOTAL ROCKING COSTS \$6,977.30

Move-In Calculations for Project Work not Involving Rocking/Pit Work

Sale: **Franken Fir**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
36.0	Pavement	30
5.4	Main Lines	7
5.6	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Drill & Compressor	\$624.55		\$46.00	0.00	0.00	0	\$0.00	\$624.55
1	Brush Cutter	\$607.20		\$4.00	0.00	0.00	0	\$0.00	\$607.20
1	Graders	\$678.86		\$3.65	0.00	0.00	0	\$0.00	\$678.86
1	Rollers (smooth/grid) & Compactors	\$486.45		\$5.00	0.00	0.00	0	\$0.00	\$486.45
1	Excavators (Med.)	\$736.03		\$35.50	0.00	0.00	0	\$0.00	\$736.03
1	Excavators (Large)	\$932.49	1	\$44.80	0.00	0.00	0	\$0.00	\$932.49
1	Tractor (D8)	\$872.29	2	\$15.10	0.00	0.00	0	\$0.00	\$872.29
2	Dump Truck (10 cy +)	\$394.59		\$2.85	0.00	0.00	0	\$0.00	\$394.59
1	Dump Truck (Off Hiway)	\$736.03	1	\$4.75	0.00	0.00	0	\$0.00	\$736.03
				TOTAL MOVE-IN COSTS:				\$6,068.49	



"STEWARDSHIP IN FORESTRY"

Franken Fir

Volume Summary

Area 1-Modified Clearcut				
779		97 acres		
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	17.030	1651.9	1%	1635
Hemlock	0.000	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	4.702	456.1	2%	447
TOTAL	21.73	2108		2082

Areas 2-Modified Clearcut				
780		42 acres		
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	19.507	819.3	1%	811
Hemlock	0.0	0	1%	0
Spruce	0.000	0	1%	0
Noble Fir	0.000	0	1%	0
Alder	3.242	136.2	2%	133
TOTAL	22.75	956		944

Areas 3-Modified Clearcut				
628		106 acres		
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	21.044	2231	1%	2209
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	1.385	147	2%	144
TOTAL	22.4	2378		2353



"STEWARDSHIP IN FORESTRY"

Franken Fir

Volume Summary

Areas 4, 5, & 6-Modified Clearcut				
837, 842, 843		48 acres		
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	17.416	836	1%	828
Hemlock	0.0	0	1%	0
Spruce	0.0	0	1%	0
Noble Fir	0.0	0	1%	0
Alder	3.116	150	2%	147
TOTAL	20.5	986.0		975



"STEWARDSHIP IN FORESTRY"

Franken Fir

Volume Summary

TOTAL SALE VOLUME		293	acres
SPECIES	Cruised Net (MBF)	Net Sale (MBF)	
Douglas-fir	5538	5483	
Hemlock	0	0	
Spruce	0	0	
Noble Fir	0	0	
Red Alder	889	871	
TOTAL	6427	6354	



OREGON DEPARTMENT OF FORESTRY CRUISE REPORT

Franken Fir

1. **Type of Sale**

Regeneration harvest

2. **Legal Description**

Portions of Sections 10, 11, 14, 15, and 23, T1N, R8W W.M., Tillamook County, Oregon.

3. **Sale Acreage**

Sale acreage was determined by GPS and orthophotographs along with GIS.

	ACRES	
	<u>Gross</u>	<u>Net</u>
Area 1 (Clearcut)	131	97
Area 2 (Clearcut)	49	42
Area 3 (Clearcut)	152	106
Area 4 (Clearcut)	13	10
Area 5 (Clearcut)	35	27
Area 6 (Clearcut)	19	11
Total	399	293

Gross Acres

Area within the Timber Sale Boundary signs

Net acres

Used for calculating the advertised volume.

Gross acres, less green tree retention, roads, Non-required thinning areas, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

4. **Cruising Procedures**

A. Cruise Method

The timber sale areas were cruised using variable plot sampling. Cruise plots for Areas 4, 5 & 6 have been combined due to the similarity of stand structure. For these areas, a total of 32 plots have been cruised for the 48 combined acres. Plot and cruise line spacing was 175' by 700' respectively throughout the timber sale area. Cruise lines for each area were aligned on different azimuths to provide uniform coverage. All conifers 8" DBH and greater containing 20 board feet and all hardwoods 10" DBH and greater containing 30 board feet were recorded on all plots. Species, DBH (to the nearest inch), merchantable bole length (to the nearest foot), form factor, and defect were recorded for all trees. Merchantable heights were recorded to 6" and 7" outside bark for conifers and hardwoods, respectively.

B. Plot size

Plot size varied by area and the BAF used was as follows: Area 1 — 33.61, Area 2 — 27.78, Area 3 — 33.61, and Area 4, 5 & 6 — 40. Point of tree observation was 4.0'.

C. Grading System

All trees were graded according to Columbia River Log Scaling and Grading Rules. Log lengths favored 40' lengths.

5. Computation Procedure

Plot data was entered into SuperAce for computation of basal area, advertised volume, volume summary, log stock table, and stand table for each species and type. Cruise volumes were grown forward to 2018 from original cruise date.

Net sale acreage was used for volume calculation.

Cruise Statistics (Board Foot Volumes)			
Area	Number of Plots	SE (%)	CV (%)
1	32	9.4	53.1
2	18	5.7	23.6
3	35	8.8	52
4, 5, & 6	32	11.4	64.3

6. Hidden Defect and Breakage

A 1% reduction was applied to conifers and a 2% reduction to hardwood volumes for hidden defect and breakage.

7. Timber Description

Burn: Area 1 was burned in 1933 (Tillamook Fire), 1939 (Saddle Mountain Fire), and again in 1945 (Wilson River/Salmonberry Fires); Areas 2, 3, and 4 were burned in 1933 and 1939 fires.

Seeded/Planted: Area 1 was seeded in 1956, Areas 2 and 3 were seeded in 1956 and portions were planted in 1962, and Area 4, 5, and 6 was seeded at various years between 1957 and 1974.

Alder spray: All areas exhibit signs of spray damage resulting in multiple tops. The area was sprayed for Alder in 1977. Previous management: Area 2 was partial cut in 1996 and 2002; portions of Area 3 were partial cut in 1996 and 2002 (35 acres)

Damage/defect: Bear kill and Swiss needle cast is present in all sale areas.

Sale Area	Species	DBH	Merchantable Bole Height (feet)	Merchantable top (inches inside bark)
1	Red Alder	14	57	6
	Douglas-fir	16	66	5
	Western hemlock	26	79	5
2	Red Alder	14	50	6
	Douglas-fir	16	68	5
3	Red Alder	15	48	6

	Douglas-fir	16	59	5
4, 5, & 6	Red Alder	13	37	6
	Douglas-fir	15	59	5

Above data derived from Statistics (type) report using SuperAce 2008, developed by Atterbury consultants, Inc.

8. **Cruiser /Dates**

Areas 1, 2, and 3 were cruised in 2016 by a contractor. Areas 4, 5, & 6 were cruised by ODF staff in 2016.

9. **Revenue Distribution**

FDF: 100%

Tax Code: 5600

Deed Numbers: Deed #161—85%, Deed #138—15%

10. **Attachments**

Stand Table

Volume Summaries

Log Stock Tables

Logging Plan Map

11. **Stand and Log Stock Tables Species Key**

DL – Douglas-fir leave

DF – Douglas-fir take

NL – Noble fir leave

NF – Noble fir take

RL – Red alder leave

RA – Red alder take

RC – Western red cedar reserved

SL – Sitka spruce leave

SS – Sitka spruce take

WL – Western hemlock leave

WH – Western hemlock take

FI	TLOGSTVB																		
Log Stock Table - MBF																			
Project: FRAK_FIR																			
T01N R08W S14 TSALE										T01N R08W S14 TSAL									
Twp	Rge	Sec	Tract	Type		Acres	Plots	Sample Trees		Page	1								
01N	08W	14	779_A1	SALE		97.00	32	118		Date	2/13/2018								
										Time	2:55:32PM								
S Spp	So	Gr	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	CO	2	20		16		16	1.0								16			
DF	CO	2	28		17		17	1.0							17				
DF	CO	2	32		60		60	3.7					8		10	42			
DF	CO	2	36		20		20	1.2					20						
DF	CO	2	40		591	.6	587	35.6					319		175	94			
DF	CO	3	32		136		136	8.2			21	88	26						
DF	CO	3	40		597		597	36.1			167	207	223						
DF	CO	4	16		5		5	.3				5							
DF	CO	4	18		25		25	1.5		25									
DF	CO	4	19		2		2	.1			2								
DF	CO	4	20		14		14	.9		13	2								
DF	CO	4	21		6		6	.4		6									
DF	CO	4	22		14		14	.8		14									
DF	CO	4	23		4		4	.2		4									
DF	CO	4	24		9		9	.5		9									
DF	CO	4	26		19		19	1.2		19									
DF	CO	4	27		11		11	.7		11									
DF	CO	4	28		19		19	1.1		19									
DF	CO	4	30		9		9	.5		9									
DF	CO	4	31		2		2	.1		2									
DF	CO	4	32		6		6	.4		6									
DF	CO	4	33		9	7.1	8	.5		6	2								
DF	CO	4	35		5		5	.3		5									
DF	CO	4	36		4		4	.3		4									
DF	CO	4	37		10		10	.6		10									
DF	CO	4	38		13		13	.8		13									
DF	CO	4	40		33		33	2.0		33									
DF	Totals				1,656		1,652	61.9		207	194	301	250	347	202	152			
OC	*	*	32		528		528	100.0			528								
OC	Totals				528		528	19.8			528								
RA	H	2	24		19		19	4.1									19		
RA	H	2	30		15	5.6	14	3.1					14						
RA	H	2	32		29	2.8	28	6.2					12		16				
RA	H	2	40		18		18	3.9					18						
RA	H	3	32		14	3.2	13	2.9					5	8					
RA	H	3	40		50	4.2	48	10.5					48						
RA	H	4	19		8		8	1.8			8								
RA	H	4	21		11		11	2.3			11								
RA	H	4	22		5		5	1.2			5								
RA	H	4	25		3		3	.7			3								
RA	H	4	26		7		7	1.6			7								
RA	H	4	28		2		2	.5			2								
RA	H	4	29		2		2	.5			2								
RA	H	4	32		45	8.0	41	9.0				41							
RA	H	4	38		7	16.7	6	1.3			6								
RA	H	4	40		235	2.4	230	50.3			74	156							
RA	Totals				471	3.1	456	17.1			119	197	53	53	16		19		
WH	CO	2	40		26		26	84.4							12	14			

Log Stock Table - MBF
Project: FRAK_FIR

T01N R08W S14 TSALE

T01N R08W S14 TSAL

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	2
01N	08W	14	779_A1	SALE	97.00	32	118	Date	2/13/2018
								Time	2:55:32PM

Spp	T	S	So	Gr	Log	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+
WH		CO	3		40	3		3	11.2					3							
WH		CO	4		30	1		1	4.4			1									
WH Totals						31		31	1.2			1		3		12	14				
Total All Species						2,686		2,667	100.0		207	842	498	306	400	230	166	19			

FI		TSTNDSUM																Stand Table Summary													
																		Project		FRAK_FIR											
T01N R08W S14 TSALE																		T01N R08W S14 TSALE													
Twp		Rge		Sec		Tract		Type			Acres		Plots		Sample Trees		Page: 1														
01N		08W		14		779_A1		SALE			97.00		32		118		Date: 02/13/2011														
																	Time: 2:55:04PM														
S		Sample		Av					Average Log		Net		Net		Totals																
T		DBH		FF		Ht		Trees/			Net		Net		Tons																
Spc		Trees		16'		Tot		Acre			Cu.Ft.		Bd.Ft.		Cunits																
															MBF																
DF		9		80	59	4.312	1.94	4.37	8.3	31.1	1.03	36	136	100	35	13															
DF		10		87	87	6.985	3.88	10.63	9.5	48.4	2.87	101	514	278	98	50															
DF		11		86	84	8.659	5.81	11.71	12.4	49.3	4.13	145	577	400	141	56															
DF		12		84	89	12.126	9.69	19.68	13.9	54.4	7.81	274	1,071	758	266	104															
DF		13		86	86	12.399	11.63	25.15	13.4	53.6	9.61	337	1,347	933	327	131															
DF		14		82	79	7.127	7.75	12.65	15.3	51.8	5.51	193	656	534	187	64															
DF		15		87	90	3.104	3.88	6.30	19.2	77.8	3.45	121	490	335	117	47															
DF		16		87	89	8.185	11.63	16.60	21.4	86.4	10.14	356	1,435	984	345	139															
DF		17		88	102	8.459	13.56	17.16	28.7	113.3	14.03	492	1,944	1,361	477	189															
DF		18		87	109	5.389	9.69	12.03	29.5	117.8	10.12	355	1,417	982	344	137															
DF		19		87	95	2.902	5.81	5.89	34.5	129.6	5.78	203	763	561	197	74															
DF		20		86	94	1.746	3.88	3.54	37.9	137.4	3.83	134	487	371	130	47															
DF		21		86	103	7.127	17.44	15.26	40.4	153.3	17.57	617	2,340	1,705	598	227															
DF		22		86	94	2.165	5.81	4.39	42.9	152.1	5.36	188	668	520	183	65															
DF		23		83	93	2.641	7.75	4.69	51.2	174.8	6.83	240	819	663	233	79															
DF		24		85	98	1.819	5.81	3.07	58.6	236.4	5.14	180	727	498	175	71															
DF		25		85	120	1.118	3.88	2.83	58.6	246.8	4.73	166	699	459	161	68															
DF		26		85	111	1.033	3.88	2.62	57.9	232.3	4.32	152	608	419	147	59															
DF		28		83	114	.445	1.94	.90	76.0	368.1	1.96	69	333	190	67	32															
DF		Totals		86	91	97.741	135.64	179.47	24.3	94.9	124.23	4,359	17,030	12,050	4,228	1,652															
OC		8		87	64	2.939	1.06	2.94	17.2	74.1	1.26	51	218	123	49	21															
OC		18		50	17	.871	1.59	.87	87.0	374.9	1.89	76	327	184	74	32															
OC		24		50	16	.490	1.59	.49	154.7	666.6	1.89	76	327	184	74	32															
OC		27		80	17	.387	1.59	.39	195.8	843.6	1.89	76	327	184	74	32															
OC		30		50	17	.314	1.59	.31	241.8	1041.5	1.89	76	327	184	74	32															
OC		33		50	14	.276	1.59	.28	275.1	1185.0	1.89	76	327	184	74	32															
OC		34		50	21	.259	1.59	.26	292.5	1260.2	1.89	76	327	184	74	32															
OC		35		64	47	.488	3.18	.49	310.5	1337.7	3.79	152	653	368	147	63															
OC		36		50	16	.230	1.59	.23	329.1	1417.6	1.89	76	327	184	74	32															
OC		39		50	17	.195	1.59	.20	387.9	1671.0	1.89	76	327	184	74	32															
OC		40		50	47	.186	1.59	.19	408.6	1760.1	1.89	76	327	184	74	32															
OC		41		50	17	.176	1.59	.18	429.8	1851.5	1.89	76	327	184	74	32															
OC		44		82	17	.153	1.59	.15	496.7	2139.7	1.89	76	327	184	74	32															
OC		45		50	17	.146	1.59	.15	520.1	2240.4	1.89	76	327	184	74	32															
OC		48		50	63	.255	3.18	.26	593.4	2556.3	3.79	152	653	368	147	63															
OC		Totals		68	40	7.365	26.51	7.36	171.5	738.9	31.58	1,263	5,442	3,063	1,225	528															
RA		10		86	105	11.752	6.55	8.88	15.3	73.1	3.73	136	649	362	132	63															
RA		11		89	122	4.856	3.28	7.34	16.3	69.6	3.28	119	511	318	116	50															
RA		12		87	94	4.115	3.28	8.29	13.2	52.2	3.00	109	432	291	106	42															
RA		13		86	95	3.477	3.28	5.25	18.6	62.7	2.69	98	329	261	95	32															
RA		14		82	77	2.998	3.28	4.53	19.7	66.2	2.46	89	300	238	87	29															
RA		15		83	75	2.612	3.28	2.63	30.8	88.8	2.23	81	234	216	79	23															
RA		16		86	76	3.443	4.91	4.62	26.7	88.8	3.40	124	410	330	120	40															
RA		17		85	79	3.050	4.91	4.10	32.4	117.5	3.65	133	481	354	129	47															
RA		18		87	77	1.814	3.28	1.83	37.1	135.8	1.86	68	248	181	66	24															
RA		19		84	78	1.628	3.28	2.46	32.5	121.9	2.20	80	300	213	77	29															
RA		20		86	87	.735	1.64	1.48	40.0	141.0	1.63	59	209	158	57	20															
RA		21		76	57	.666	1.64	.67	63.4	125.3	1.17	43	84	113	41	8															
RA		23		83	76	.555	1.64	1.12	46.6	167.1	1.43	52	187	139	51	18															
RA		24		85	75	.510	1.64	.51	45.3	167.1	.64	23	86	62	23	8															
RA		26		87	91	.435	1.64	.88	55.2	276.8	1.33	48	242	129	47	24															

FI		TSTNDSUM													Stand Table Summary																	
															Project			FRAK_FIR														
T01N R08W S14 TSALE															T01N R08W S14 TSALE																	
Twp		Rge		Sec		Tract		Type			Acres		Plots		Sample Trees			Page:		2												
01N		08W		14		779_A1		SALE			97.00		32		118			Date:		02/13/2011												
															Time:		2:55:04PM															
S Spc	T	Sample		FF 16'	Av Ht 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																		
		DBH	Trees						Net	Net				Tons	Cunits	MBF																
RA		Totals		86	93	42.645	47.50	54.57	23.1	86.2	34.69	1,261	4,702	3,365	1,224	456																
WH		24		85	86	.327	1.06	.66	56.6	211.4	1.20	37	140	116	36	14																
WH		29		82	111	.224	1.06	.45	97.7	396.4	1.42	44	180	137	43	17																
WH		Totals		84	96	.550	2.12	1.11	73.3	286.6	2.61	82	319	254	79	31																
Totals				85	89	148.301	211.77	242.52	28.7	113.4	193.11	6965	27,493	18,732	6,756	2,667																

FI TLOGSTVB				Log Stock Table - MBF																		
				Project: FRAK_FIR																		
T01N R08W S14 TSALE										T01N R08W S14 TSAL												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1													
01N	08W	14	780_A2	SALE	42.00	18	71	Date	2/13/2018													
										Time	2:56:58PM											
Spp	T	S	So	Gr	Log	Gross	% Def	Net	% 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		*	*	*	32	21		21	2.5			21										
DF		CO	2	20		6		6	.7					6								
DF		CO	2	32		26		26	3.2					11			15					
DF		CO	2	40		274		274	33.4					156		39	79					
DF		CO	3	32		38		38	4.7			9	24	5								
DF		CO	3	34		2		2	.2			2										
DF		CO	3	40		356	.2	355	43.3			59	155	141								
DF		CO	4	16		1		1	.1			1										
DF		CO	4	17		2		2	.2		2											
DF		CO	4	18		8		8	1.0		8											
DF		CO	4	19		5		5	.7		4	1										
DF		CO	4	20		2		2	.2		2											
DF		CO	4	21		9		9	1.1		8	1										
DF		CO	4	23		5		5	.6		5											
DF		CO	4	24		3		3	.4		3											
DF		CO	4	25		2		2	.3		2											
DF		CO	4	26		4		4	.5		4											
DF		CO	4	27		5		5	.6		5											
DF		CO	4	28		5		5	.6		5											
DF		CO	4	32		11		11	1.3		11											
DF		CO	4	33		5		5	.6		5											
DF		CO	4	34		3		3	.4		3											
DF		CO	4	36		8		8	1.0		8											
DF		CO	4	37		5		5	.6		5											
DF		CO	4	40		15		15	1.8		15											
DF		Totals				820		819	72.0		96	93	179	146	172	39	94					
OC		*	*	*	32	166		166	100.0			166										
OC		Totals				166		166	14.6			166										
RA		H	2	40		11	4.2	10	7.5					10								
RA		H	3	40		63	3.2	61	45.1					61								
RA		H	4	17		2		2	1.5			2										
RA		H	4	18		1		1	.7			1										
RA		H	4	20		11	19.1	9	6.6			3	6									
RA		H	4	26		5		5	3.7			5										
RA		H	4	28		3		3	2.2			3										
RA		H	4	32		11	16.7	9	6.6			9										
RA		H	4	37		9		9	6.7			9										
RA		H	4	40		26		26	19.4			11	16									
RA		Totals				143	4.5	136	12.0			42	22	61	10							
SS		*	*	*	32	15		15	100.0			15										
SS		Totals				15		15	1.3			15										
GF		CO	4	32		1		1	100.0		1											
GF		Totals				1		1	.1		1											
Total All Species						1,145		1,138	100.0		96	317	201	208	182	39	94					

Stand Table Summary																
FI		TSTNDSUM														
Project FRAK_FIR																
T01N R08W S14 TSALE													T01N R08W S14 TSALE			
Twp	Rge	Sec	Tract	Type			Acres		Plots	Sample Trees			Page:	1		
01N	08W	14	780_A2	SALE			42.00		18	71			Date:	02/13/2011		
													Time:	2:56:09PM		
S Spc	T	Sample		FF	Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s		
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
DF		9		82	40	6.393	2.89	6.39	18.1	76.4	3.45	116	489	145	49	21
DF		10		88	112	5.179	2.89	10.48	8.3	41.3	2.48	87	433	104	37	18
DF		12		85	78	10.789	8.68	18.20	11.9	47.5	6.19	217	865	260	91	36
DF		13		86	73	3.064	2.89	6.20	11.5	46.5	2.03	71	288	85	30	12
DF		14		87	98	15.853	17.35	32.09	17.9	72.3	16.32	573	2,322	686	241	98
DF		15		86	83	16.112	20.25	32.61	18.1	69.4	16.77	589	2,263	705	247	95
DF		16		87	99	6.069	8.68	12.29	24.1	96.5	8.43	296	1,185	354	124	50
DF		17		87	92	5.376	8.68	10.88	26.7	105.1	8.27	290	1,143	347	122	48
DF		18		86	95	9.590	17.35	19.41	30.6	117.1	16.92	594	2,274	711	250	96
DF		19		87	104	5.738	11.57	13.07	32.1	122.9	11.94	419	1,606	502	176	67
DF		20		87	94	5.179	11.57	10.48	38.0	135.6	11.35	399	1,422	477	167	60
DF		21		86	97	5.872	14.46	9.51	43.5	158.9	11.78	414	1,511	495	174	63
DF		22		88	108	1.070	2.89	3.25	33.7	161.9	3.11	109	526	131	46	22
DF		23		85	97	.979	2.89	1.98	52.8	170.5	2.98	105	338	125	44	14
DF		24		86	108	1.798	5.78	4.55	41.9	181.9	5.43	191	828	228	80	35
DF		25		86	114	1.657	5.78	4.19	56.2	241.8	6.71	236	1,014	282	99	43
DF		26		83	114	.766	2.89	1.55	74.5	299.7	3.29	115	465	138	48	20
DF		27		87	116	.710	2.89	2.16	54.9	248.0	3.37	118	535	142	50	22
DF		Totals		86	90	102.194	150.39	199.31	24.8	97.9	140.82	4,941	19,507	5,914	2,075	819
OC		11		84	71	4.575	3.13	4.57	34.3	157.4	3.92	157	720	165	66	30
OC		37		49	17	.320	2.35	.32	367.5	1686.2	2.94	118	540	124	49	23
OC		42		70	17	.247	2.35	.25	476.6	2187.1	2.94	118	540	124	49	23
OC		45		50	44	.214	2.35	.21	548.9	2518.9	2.94	118	540	124	49	23
OC		51		75	32	.166	2.35	.17	708.9	3252.7	2.94	118	540	124	49	23
OC		66		80	58	.098	2.35	.10	1198.0	5497.1	2.94	118	540	124	49	23
OC		73		49	37	.080	2.35	.08	1469.9	6744.9	2.94	118	540	124	49	23
OC		Totals		79	63	5.701	17.23	5.70	151.4	694.8	21.58	863	3,961	906	363	166
RA		11		80	68	4.825	3.28	4.85	10.4	31.3	1.38	50	152	58	21	6
RA		12		81	67	8.109	6.55	8.16	18.7	57.3	4.20	153	468	177	64	20
RA		13		82	56	3.455	3.28	3.48	21.3	62.5	2.03	74	217	85	31	9
RA		14		87	90	2.979	3.28	5.99	18.8	73.0	3.10	113	437	130	47	18
RA		16		86	87	4.561	6.55	9.18	25.2	93.8	6.37	232	861	268	97	36
RA		17		87	89	2.020	3.28	4.06	28.7	109.4	3.21	117	445	135	49	19
RA		18		84	89	1.802	3.28	3.63	30.7	109.4	3.06	111	397	128	47	17
RA		24		80	71	1.014	3.28	2.04	49.7	130.3	2.79	101	266	117	43	11
RA		Totals		83	74	28.764	32.75	41.39	23.0	78.3	26.14	951	3,242	1,098	399	136
SS		17		87	21	.958	1.57	.96	81.9	376.0	2.04	78	360	86	33	15
SS		Totals		87	21	.958	1.57	.96	81.9	376.0	2.04	78	360	86	33	15
GF		21		86	108	.628	1.57	.63	15.3	31.5	.21	10	20	9	4	1
GF		Totals		86	108	.628	1.57	.63	15.3	31.5	0.21	10	20	9	4	1
Totals				85	85	138.245	203.51	247.99	27.6	109.2	190.79	6843	27,091	8,013	2,874	1,138

FI TLOGSTVB

Log Stock Table - MBF
Project: FRAK_FIR

T01N R08W S15 TSALE

T01N R08W S15 TSAL

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	2
01N	08W	15	628_A3	SALE	106.00	35	138	Date	2/16/2018
								Time	2:12:06PM

Spp	T	S	So	Gr	Log	Gross	%	Net	%	Net Volume by Scaling Diameter in Inches										
										MBF	Def	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15
SS Totals						24		24	.8			24								
Total All Species						2,981		2,960	100.0		326	898	335	467	368	208	282	76		

FI		TSTNDSUM														Stand Table Summary																	
																		Project		FRAK_FIR													
T01N R08W S15 TSALE																		T01N R08W S15 TSALE															
Twp		Rge		Sec		Tract		Type			Acres		Plots		Sample Trees		Page:		1														
01N		08W		15		628_A3		SALE			106.00		35		138		Date:		02/16/2011														
																	Time:		2:11:56PM														
S		Sample		FF		Ht		Trees/			BA/		Logs		Average Log		Net		Net		Totals												
T		DBH		Trees		16'		Tot		Acre			Acre			Acre			Net		Cu.Ft.		Bd.Ft.		Tons			Cunits		MBF			
Spc																	Cu.Ft.		Bd.Ft.		Acre		Cu.Ft.		Acre		Acre						
DF		8				80 17		4.779			1.71			4.78			14.5		61.6		2.06		69		295		218		73		31		
DF		9				84 87		11.328			5.12			15.28			7.8		36.2		3.39		119		552		359		126		59		
DF		10				84 66		15.292			8.54			15.47			11.0		37.2		4.86		171		575		515		181		61		
DF		11				86 81		12.638			8.54			20.46			10.3		46.5		6.00		211		951		636		223		101		
DF		12				86 77		10.620			8.54			17.19			12.6		47.8		6.15		216		821		652		229		87		
DF		13				84 72		9.049			8.54			14.65			14.6		50.4		6.09		214		738		646		227		78		
DF		14				84 79		6.242			6.83			9.47			19.3		68.9		5.22		183		652		553		194		69		
DF		15				86 84		8.156			10.25			16.50			18.5		69.7		8.68		305		1,151		920		323		122		
DF		16				87 91		5.974			8.54			12.09			21.1		79.5		7.27		255		961		770		270		102		
DF		17				86 89		7.408			11.95			13.92			26.7		103.3		10.57		371		1,438		1,121		393		152		
DF		18				86 94		10.384			18.78			21.97			28.7		105.5		17.95		630		2,318		1,903		668		246		
DF		19				86 96		8.472			17.08			16.29			35.5		128.3		16.47		578		2,090		1,746		613		221		
DF		20				85 93		3.823			8.54			8.51			33.6		114.6		8.14		286		975		863		303		103		
DF		21				84 89		5.548			13.66			10.53			40.7		144.6		12.19		428		1,522		1,292		454		161		
DF		22				85 100		1.896			5.12			3.84			49.7		177.3		5.44		191		680		576		202		72		
DF		23				78 93		3.469			10.25			6.43			49.2		167.1		9.01		316		1,076		956		335		114		
DF		24				82 102		1.593			5.12			3.76			50.4		183.0		5.40		190		688		572		201		73		
DF		25				84 115		2.447			8.54			5.94			56.7		235.0		9.60		337		1,396		1,017		357		148		
DF		26				84 111		.905			3.42			1.83			62.6		266.0		3.27		115		487		346		122		52		
DF		27				84 105		.420			1.71			.85			76.5		284.0		1.85		65		241		196		69		26		
DF		29				82 100		.364			1.71			.74			85.8		309.9		1.80		63		228		191		67		24		
DF		30				85 125		.340			1.71			1.03			73.6		323.6		2.16		76		334		229		80		35		
DF		31				85 111		.955			5.12			2.25			89.8		388.1		5.77		202		875		611		215		93		
DF		Totals				85 82		132.099			179.30			223.78			25.0		94.0		159.34		5,591		21,044		16,890		5,926		2,231		
OC		8				85 47		5.384			1.95			5.38			18.3		85.0		2.47		99		458		261		105		49		
OC		12				87 76		2.393			1.95			2.39			41.2		191.2		2.47		99		458		261		105		49		
OC		14				74 50		1.758			1.95			1.76			56.1		260.3		2.47		99		458		261		105		49		
OC		15				50 17		1.001			1.27			1.00			64.4		298.8		1.61		64		299		171		68		32		
OC		18				80 21		.695			1.27			.70			92.7		430.3		1.61		64		299		171		68		32		
OC		20				50 16		.563			1.27			.56			114.5		531.2		1.61		64		299		171		68		32		
OC		29				50 16		.862			3.82			.86			224.4		1041.1		4.84		193		898		513		205		95		
OC		37				50 17		.174			1.27			.17			370.9		1721.0		1.61		64		299		171		68		32		
OC		39				50 17		.156			1.27			.16			413.2		1917.6		1.61		64		299		171		68		32		
OC		40				50 21		.148			1.27			.15			435.3		2019.8		1.61		64		299		171		68		32		
OC		43				83 55		.128			1.27			.13			504.8		2342.5		1.61		64		299		171		68		32		
OC		45				70 44		.116			1.27			.12			554.0		2570.9		1.61		64		299		171		68		32		
OC		46				40 17		.111			1.27			.11			579.5		2689.1		1.61		64		299		171		68		32		
OC		50				65 21		.094			1.27			.09			687.1		3188.4		1.61		64		299		171		68		32		
OC		Totals				76 44		13.585			22.42			13.59			83.5		387.4		28.35		1,134		5,263		3,005		1,202		558		
RA		10				70 50		2.424			1.36			2.44			7.0		20.9		.47		17		51		50		18		5		
RA		11				85 121		2.003			1.36			2.02			11.2		62.8		.62		23		127		66		24		13		
RA		13				86 78		1.434			1.36			2.89			13.8		47.1		1.09		40		136		116		42		14		
RA		14				82 60		3.711			4.08			3.73			16.1		41.9		1.65		60		156		175		64		17		
RA		15				84 72		1.077			1.36			1.08			32.4		94.2		.97		35		102		102		37		11		
RA		16				84 69		2.841			4.08			2.86			35.4		90.7		2.78		101		259		295		107		27		
RA		18				84 65		1.496			2.72			1.51			34.1		94.2		1.41		51		142		149		54		15		
RA		19				85 81		1.343			2.72			2.70			24.2		96.9		1.80		65		262		190		69		28		
RA		23				88 67		.458			1.36			.92			37.6		162.3		.95		35		150		101		37		16		
RA		Totals				82 72		16.789			20.39			20.14			21.2		68.7		11.74		427		1,385		1,245		453		147		
SS		10				78 70		1.723			.97			1.72			28.6		132.8		1.28		49		229		136		52		24		

FI		TSTNDSUM												Stand Table Summary													
														Project		FRAK_FIR											
T01N R08W S15 TSALE														T01N R08W S15 TSALE													
Twp		Rge		Sec		Tract				Type		Acres		Plots		Sample Trees		Page:		2							
01N		08W		15		628_A3				SALE		106.00		35		138		Date:		02/16/2011							
																		Time:		2:11:56PM							
S Spc		T		Sample DBH		FF Trees		Av Ht Tot		Trees/ Acre		BA/ Acre		Logs Acre		Average Log		Net		Net		T o t a l s					
																Net		Net		Tons/ Acre					Cu.Ft. Acre		Bd.Ft. Acre
SS				Totals		78 70				1.723 .97 1.72				28.6 132.8				1.28 49 229				136 52 24					
Totals						84 78				164.196 223.08 259.24				27.8 107.7				200.71 7201 27,920				21,276 7,633 2,960					

FI	TLOGSTVB										Log Stock Table - MBF											
										Project: FRAK_FIR												
T01N R08W S11 TSALE										T01N R08W S11 TSAL												
Twp	Rge	Sec	Tract	Type		Acres	Plots	Sample Trees		Page	1											
01N	08W	11	AREA_4	SALE		10.00	32	86		Date	2/26/2018											
										Time	3:48:31PM											
Spp	S	So	Gr	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		CO	2	32		16	3.6	16	9.0					2		5	9					
DF		CO	2	36		3		3	1.6						3							
DF		CO	2	40		52	3.9	50	28.5						25	19	4	2				
DF		CO	3	32		2		2	1.0			1	1									
DF		CO	3	40		66	1.6	65	37.5			15	16	33	2							
DF		CO	4	12		0		0	.1		0											
DF		CO	4	13		0		0	.1		0											
DF		CO	4	14		0		0	.2		0											
DF		CO	4	15		2		2	1.1		0					2						
DF		CO	4	16		0		0	.2		0											
DF		CO	4	17		0		0	.1			0										
DF		CO	4	18		0		0	.1		0											
DF		CO	4	19		1		1	.8		1											
DF		CO	4	22		1		1	.5		0			1								
DF		CO	4	23		2		2	1.1		2											
DF		CO	4	25		2		2	1.3		2											
DF		CO	4	26		1		1	.3		1											
DF		CO	4	28		4		4	2.5		4											
DF		CO	4	30		3		3	1.7		0						3					
DF		CO	4	32		3		3	1.9		3	1										
DF		CO	4	33		2		2	1.4		2											
DF		CO	4	36		3		3	1.7		1		2									
DF		CO	4	38		1		1	.7		1											
DF		CO	4	39		1		1	.6		1											
DF		CO	4	40		11	3.2	10	6.0		2	3	6									
DF		Totals				178	2.2	174	68.3		22	19	25	33	32	25	15	2				
OC		*	*	32		34		34	74.8			34										
OC		CO	2	40		5		5	11.6						5							
OC		CO	3	32		1		1	2.0					1								
OC		CO	3	40		4	32.0	3	6.3						2	1						
OC		CO	4	25		1		1	1.4		0	0										
OC		CO	4	26		1	27.3	1	1.3					1								
OC		CO	4	28		0	33.3	0	.3		0											
OC		CO	4	33		0		0	.6		0											
OC		CO	4	34		0		0	.6		0											
OC		CO	4	40		1		1	1.2			1										
OC		Totals				48	3.5	46	18.1		1	35		2	2	7						
RA		H	3	20		4		4	11.4					2	2							
RA		H	3	21		2		2	5.7					2								
RA		H	3	22		2		2	6.6					2								
RA		H	3	32		2	7.1	2	6.5					2								
RA		H	3	40		2		2	6.7					2								
RA		H	4	12		0		0	1.5			0										
RA		H	4	14		1		1	2.7			1										
RA		H	4	16		0		0	1.5			0										
RA		H	4	17		2		2	6.7			2										
RA		H	4	19		1		1	2.5			1										
RA		H	4	20		3		3	8.3			1	1									

FI TLOGSTVB				Log Stock Table - MBF																																			
				Project:				FRAK_FIR																															
T01N R08W S11 TSALE										T01N R08W S11 TSAL																													
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		Page		2																					
01N		08W		11		AREA_4		SALE		10.00		32		86		Date		2/26/2018																					
																Time		3:48:31PM																					
S		So Gr		Log		Gross		%		Net		%		Net Volume by Scaling Diameter in Inches																									
Spp		T		rt de		Len		MBF		Def		MBF		Spc		2-3		4-5		6-7		8-9		10-11		12-13		14-15		16-19		20-23		24-29		30-39		40+	
RA		H		4		23		1				1		4.5						1																			
RA		H		4		24		2				2		7.1				1		1																			
RA		H		4		32		2				2		5.7						2																			
RA		H		4		40		7				7		22.8				4		3																			
RA				Totals				31				31		12.2				11		8		10		2															
OH		*		*		32		4				4		100.0				4																					
OH				Totals				4				4		1.4				4																					
Total All Species						261		2.2		255		100.0		23		69		34		45		35		32		15		2											

FI		Stand Table Summary														
Project FRAK_FIR																
T01N R08W S11 TSALE												T01N R08W S11 TSALE				
Twp	Rge	Sec	Tract	Type			Acres		Plots	Sample Trees			Page:	1		
01N	08W	11	AREA_4	SALE			10.00		32	86			Date:	02/26/2011		
												Time:	3:47:10PM			
S Spc	T	Sample		FF	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s		
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre			
DF		8		84	53	7.101	2.60	7.26	5.3	32.0	1.09	38	232	11	4	2
DF		9		86	44	11.222	5.19	11.48	6.5	26.6	2.11	74	306	21	7	3
DF		10		89	52	4.545	2.60	4.65	9.7	32.0	1.28	45	149	13	4	1
DF		11		86	65	11.268	7.79	11.52	14.3	56.8	4.68	164	655	47	16	7
DF		12		81	84	6.312	5.19	9.68	15.5	53.3	4.28	150	516	43	15	5
DF		13		89	72	2.689	2.60	5.50	12.4	47.9	1.95	68	264	20	7	3
DF		14		84	93	6.956	7.79	11.86	21.0	74.6	7.09	249	884	71	25	9
DF		15		85	97	6.060	7.79	12.39	21.6	85.2	7.64	268	1,056	76	27	11
DF		16		81	85	8.876	12.98	14.53	27.1	85.2	11.23	394	1,238	112	39	12
DF		17		82	93	6.290	10.38	12.87	26.8	95.9	9.84	345	1,233	98	35	12
DF		18		85	103	8.416	15.57	20.08	27.9	104.2	15.98	561	2,093	160	56	21
DF		19		86	82	2.518	5.19	3.86	33.9	145.6	3.73	131	562	37	13	6
DF		20		83	109	2.272	5.19	5.81	32.6	117.2	5.41	190	681	54	19	7
DF		21		84	108	6.183	15.57	15.81	37.9	141.3	17.07	599	2,234	171	60	22
DF		23		87	111	5.634	15.57	14.41	41.9	172.5	17.19	603	2,485	172	60	25
DF		24		78	99	1.718	5.19	4.39	39.4	151.2	4.94	173	664	49	17	7
DF		25		85	114	2.367	7.79	7.26	42.4	181.1	8.78	308	1,315	88	31	13
DF		26		84	103	.727	2.60	1.49	63.3	223.7	2.68	94	333	27	9	3
DF		29		83	73	.580	2.60	.59	104.4	511.2	1.76	62	303	18	6	3
DF		35		86	102	.393	2.60	.80	119.4	266.3	2.74	96	214	27	10	2
DF		Totals		84	82	102.129	142.74	176.25	26.2	98.8	131.49	4,614	17,416	1,315	461	174
OC		15		70	33	1.118	1.28	1.12	59.1	280.4	1.67	66	314	17	7	3
OC		17		82	47	2.782	4.17	1.42	10.7	32.8	.37	15	47	4	2	0
OC		18		76	39	.758	1.28	.76	87.2	413.4	1.67	66	314	17	7	3
OC		22		86	110	.808	2.09	1.65	48.4	191.5	1.96	80	316	20	8	3
OC		24		82	116	1.346	4.17	3.44	51.1	166.3	4.32	176	572	43	18	6
OC		25		81	50	1.237	4.17	1.26	41.6	43.8	1.29	53	55	13	5	1
OC		26		86	106	.570	2.09	1.16	38.4	147.7	1.10	45	172	11	4	2
OC		37		65	30	.395	3.00	.39	391.0	1854.0	3.89	154	732	39	15	7
OC		47		73	36	.253	3.00	.25	611.0	2896.9	3.89	154	732	39	15	7
OC		50		85	59	.190	2.57	.19	695.2	3296.0	3.33	132	627	33	13	6
OC		62		37	20	.142	3.00	.14	1086.2	5150.1	3.89	154	732	39	15	7
OC		Totals		79	63	9.599	30.81	11.79	92.9	391.0	27.38	1,095	4,610	274	110	46
RA		10		84	41	4.569	2.63	4.62	7.3	32.5	.93	34	150	9	3	2
RA		11		89	103	3.776	2.63	7.64	11.5	48.8	2.42	88	373	24	9	4
RA		12		80	34	6.346	5.26	6.42	9.6	27.1	1.69	62	174	17	6	2
RA		13		83	70	8.111	7.90	13.67	13.4	47.7	5.05	184	652	51	18	7
RA		14		84	68	9.325	10.53	16.50	15.4	58.9	6.99	254	972	70	25	10
RA		16		92	47	1.785	2.63	1.81	28.2	97.6	1.40	51	176	14	5	2
RA		18		86	64	1.410	2.63	2.85	24.4	86.8	1.91	70	247	19	7	2
RA		20		89	60	1.266	2.63	1.28	48.8	162.7	1.72	62	208	17	6	2
RA		21		76	45	1.142	2.63	2.31	20.7	70.5	1.31	48	163	13	5	2
RA		Totals		84	61	37.730	39.48	57.10	14.9	54.6	23.42	852	3,116	234	85	31
OH		10		80	81	2.216	1.28	2.22	26.9	159.4	1.64	60	353	16	6	4
OH		Totals		80	81	2.216	1.28	2.22	26.9	159.4	1.64	60	353	16	6	4
Totals				84	75	151.673	214.30	247.36	26.8	103.1	183.93	6620	25,495	1,839	662	255

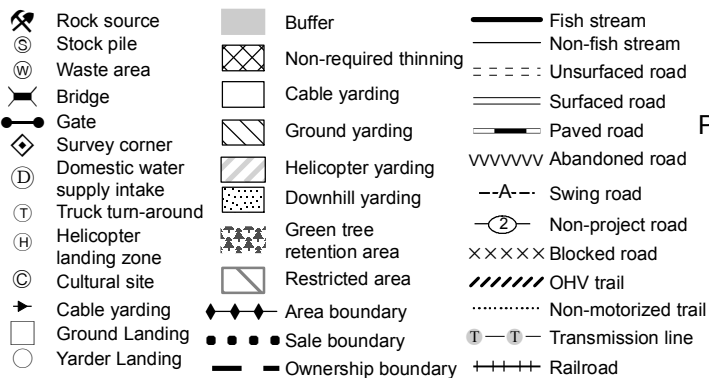
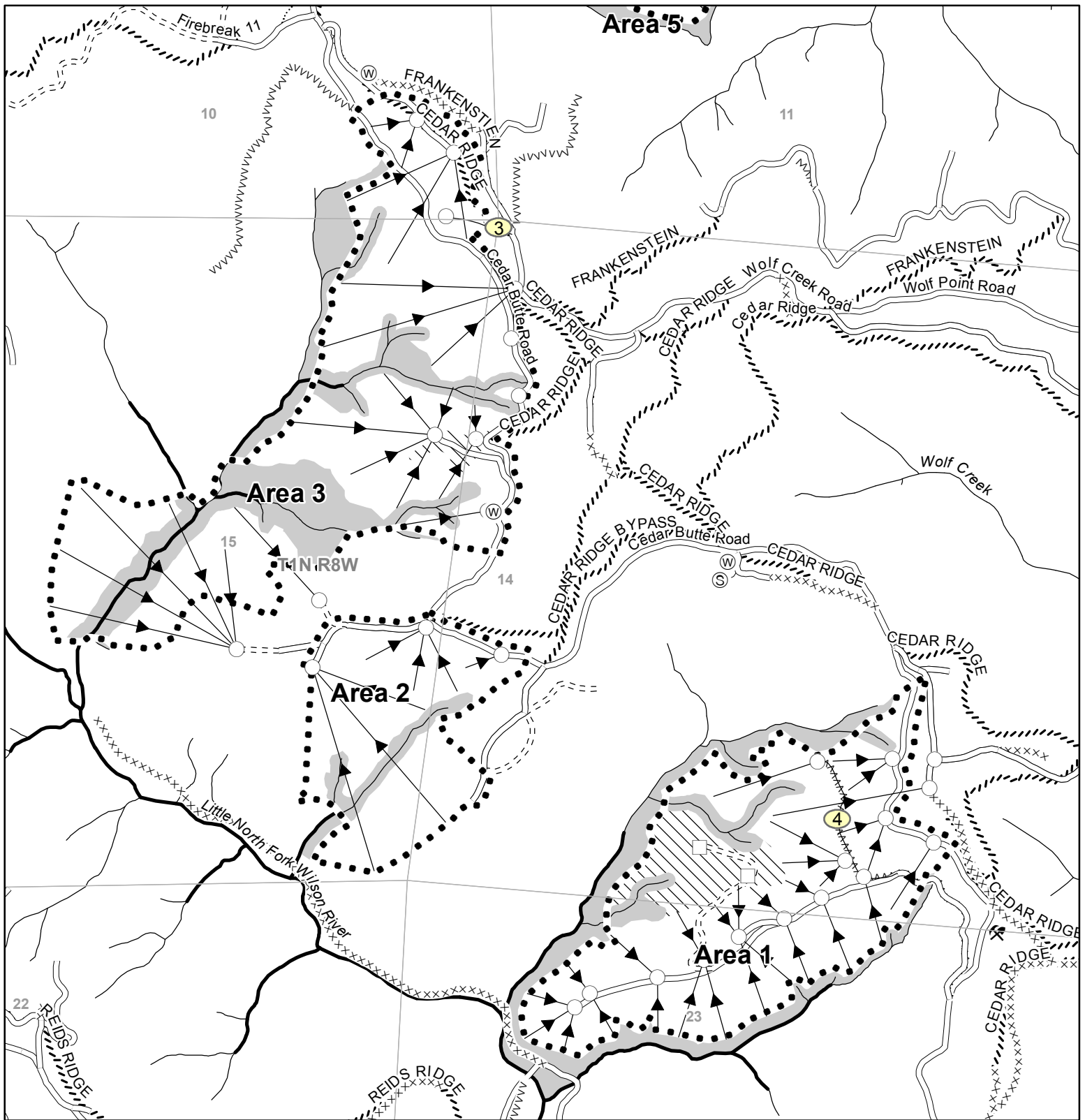
FI	TLOGSTVB										Log Stock Table - MBF										
										Project: FRAK_FIR											
T01N R08W S11 TSALE										T01N R08W S11 TSAL											
Twp	Rge	Sec	Tract	Type		Acres	Plots	Sample Trees		Page	1										
01N	08W	11	AREA_4	SALE		27.00	32	86		Date	2/26/2018										
										Time	3:49:54PM										
Spp	T	S	So	Gr	Log	Gross	% Def	Net	% 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		CO	2		32	44	3.6	42	9.0					7	12	23					
DF		CO	2		36	7		7	1.6					7							
DF		CO	2		40	140	3.9	134	28.5					67	52	11	5				
DF		CO	3		32	5		5	1.0			2	3								
DF		CO	3		40	179	1.6	176	37.5			40	43	88	5						
DF		CO	4		12	0		0	.1		0										
DF		CO	4		13	0		0	.1		0										
DF		CO	4		14	1		1	.2		1										
DF		CO	4		15	5		5	1.1		1				4						
DF		CO	4		16	1		1	.2		1										
DF		CO	4		17	0		0	.1			0									
DF		CO	4		18	1		1	.1		1										
DF		CO	4		19	4		4	.8		4										
DF		CO	4		22	3		3	.5		1			2							
DF		CO	4		23	5		5	1.1		5										
DF		CO	4		25	6		6	1.3		6										
DF		CO	4		26	1		1	.3		1										
DF		CO	4		28	12		12	2.5		12										
DF		CO	4		30	8		8	1.7		1						7				
DF		CO	4		32	9		9	1.9		8	2									
DF		CO	4		33	7		7	1.4		7										
DF		CO	4		36	8		8	1.7		2		6								
DF		CO	4		38	3		3	.7		3										
DF		CO	4		39	3		3	.6		3										
DF		CO	4		40	29	3.2	28	6.0		4	7	17								
DF		Totals				481	2.2	470	68.3		60	51	68	90	86	69	41	5			
OC		*	*		32	93		93	74.8			93									
OC		CO	2		40	14		14	11.6						14						
OC		CO	3		32	2		2	2.0					2							
OC		CO	3		40	11	32.0	8	6.3						4	4					
OC		CO	4		25	2		2	1.4		1	1									
OC		CO	4		26	2	27.3	2	1.3					2							
OC		CO	4		28	1	33.3	0	.3		0										
OC		CO	4		33	1		1	.6		1										
OC		CO	4		34	1		1	.6		1										
OC		CO	4		40	1		1	1.2			1									
OC		Totals				129	3.5	124	18.1		3	95		4	4	18					
RA		H	3		20	10		10	11.4					6	4						
RA		H	3		21	5		5	5.7					5							
RA		H	3		22	6		6	6.6					6							
RA		H	3		32	6	7.1	5	6.5					5							
RA		H	3		40	6		6	6.7					6							
RA		H	4		12	1		1	1.5			1									
RA		H	4		14	2		2	2.7			2									
RA		H	4		16	1		1	1.5			1									
RA		H	4		17	6		6	6.7			6									
RA		H	4		19	2		2	2.5			2									
RA		H	4		20	7		7	8.3			3	4								

FI TLOGSTVB				Log Stock Table - MBF																
				Project: FRAK_FIR																
T01N R08W S11 TSALE												T01N R08W S11 TSAL								
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	2											
01N	08W	11	AREA_4	SALE	27.00	32	86	Date	2/26/2018											
								Time	3:49:54PM											
S Spp	So T	Gr rt	Log de 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	H	4	23	4		4	4.5				4									
RA	H	4	24	6		6	7.1			3	3									
RA	H	4	32	5		5	5.7				5									
RA	H	4	40	19		19	22.8			12	7									
RA Totals				85		84	12.2			30	23	27	4							
OH	*	*	32	10		10	100.0			10										
OH Totals				10		10	1.4			10										
Total All Species				704	2.2	688	100.0		63	186	91	121	94	87	41	5				

FI		Stand Table Summary														
Project FRAK_FIR																
T01N R08W S11 TSALE												T01N R08W S11 TSALE				
Twp	Rge	Sec	Tract	Type			Acres		Plots	Sample Trees			Page:	1		
01N	08W	11	AREA_4	SALE			27.00		32	86			Date:	02/26/2011		
												Time:	3:49:16PM			
S Spc	T	Sample		FF	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s		
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre			
DF		8		84	53	7.101	2.60	7.26	5.3	32.0	1.09	38	232	29	10	6
DF		9		86	44	11.222	5.19	11.48	6.5	26.6	2.11	74	306	57	20	8
DF		10		89	52	4.545	2.60	4.65	9.7	32.0	1.28	45	149	35	12	4
DF		11		86	65	11.268	7.79	11.52	14.3	56.8	4.68	164	655	126	44	18
DF		12		81	84	6.312	5.19	9.68	15.5	53.3	4.28	150	516	116	41	14
DF		13		89	72	2.689	2.60	5.50	12.4	47.9	1.95	68	264	53	18	7
DF		14		84	93	6.956	7.79	11.86	21.0	74.6	7.09	249	884	191	67	24
DF		15		85	97	6.060	7.79	12.39	21.6	85.2	7.64	268	1,056	206	72	29
DF		16		81	85	8.876	12.98	14.53	27.1	85.2	11.23	394	1,238	303	106	33
DF		17		82	93	6.290	10.38	12.87	26.8	95.9	9.84	345	1,233	266	93	33
DF		18		85	103	8.416	15.57	20.08	27.9	104.2	15.98	561	2,093	431	151	57
DF		19		86	82	2.518	5.19	3.86	33.9	145.6	3.73	131	562	101	35	15
DF		20		83	109	2.272	5.19	5.81	32.6	117.2	5.41	190	681	146	51	18
DF		21		84	108	6.183	15.57	15.81	37.9	141.3	17.07	599	2,234	461	162	60
DF		23		87	111	5.634	15.57	14.41	41.9	172.5	17.19	603	2,485	464	163	67
DF		24		78	99	1.718	5.19	4.39	39.4	151.2	4.94	173	664	133	47	18
DF		25		85	114	2.367	7.79	7.26	42.4	181.1	8.78	308	1,315	237	83	36
DF		26		84	103	.727	2.60	1.49	63.3	223.7	2.68	94	333	72	25	9
DF		29		83	73	.580	2.60	.59	104.4	511.2	1.76	62	303	48	17	8
DF		35		86	102	.393	2.60	.80	119.4	266.3	2.74	96	214	74	26	6
DF		Totals		84	82	102.129	142.74	176.25	26.2	98.8	131.49	4,614	17,416	3,550	1,246	470
OC		15		70	33	1.118	1.28	1.12	59.1	280.4	1.67	66	314	45	18	8
OC		17		82	47	2.782	4.17	1.42	10.7	32.8	.37	15	47	10	4	1
OC		18		76	39	.758	1.28	.76	87.2	413.4	1.67	66	314	45	18	8
OC		22		86	110	.808	2.09	1.65	48.4	191.5	1.96	80	316	53	22	9
OC		24		82	116	1.346	4.17	3.44	51.1	166.3	4.32	176	572	117	47	15
OC		25		81	50	1.237	4.17	1.26	41.6	43.8	1.29	53	55	35	14	1
OC		26		86	106	.570	2.09	1.16	38.4	147.7	1.10	45	172	30	12	5
OC		37		65	30	.395	3.00	.39	391.0	1854.0	3.89	154	732	105	42	20
OC		47		73	36	.253	3.00	.25	611.0	2896.9	3.89	154	732	105	42	20
OC		50		85	59	.190	2.57	.19	695.2	3296.0	3.33	132	627	90	36	17
OC		62		37	20	.142	3.00	.14	1086.2	5150.1	3.89	154	732	105	42	20
OC		Totals		79	63	9.599	30.81	11.79	92.9	391.0	27.38	1,095	4,610	739	296	124
RA		10		84	41	4.569	2.63	4.62	7.3	32.5	.93	34	150	25	9	4
RA		11		89	103	3.776	2.63	7.64	11.5	48.8	2.42	88	373	65	24	10
RA		12		80	34	6.346	5.26	6.42	9.6	27.1	1.69	62	174	46	17	5
RA		13		83	70	8.111	7.90	13.67	13.4	47.7	5.05	184	652	136	50	18
RA		14		84	68	9.325	10.53	16.50	15.4	58.9	6.99	254	972	189	69	26
RA		16		92	47	1.785	2.63	1.81	28.2	97.6	1.40	51	176	38	14	5
RA		18		86	64	1.410	2.63	2.85	24.4	86.8	1.91	70	247	52	19	7
RA		20		89	60	1.266	2.63	1.28	48.8	162.7	1.72	62	208	46	17	6
RA		21		76	45	1.142	2.63	2.31	20.7	70.5	1.31	48	163	35	13	4
RA		Totals		84	61	37.730	39.48	57.10	14.9	54.6	23.42	852	3,116	632	230	84
OH		10		80	81	2.216	1.28	2.22	26.9	159.4	1.64	60	353	44	16	10
OH		Totals		80	81	2.216	1.28	2.22	26.9	159.4	1.64	60	353	44	16	10
Totals				84	75	151.673	214.30	247.36	26.8	103.1	183.93	6620	25,495	4,966	1,787	688

FI TLOGSTVB				Log Stock Table - MBF																																			
				Project:				FRAK_FIR																															
T01N R08W S11 TSALE										T01N R08W S11 TSAL																													
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		Page		2																					
01N		08W		11		AREA_4		SALE		11.00		32		86		Date		2/26/2018																					
																Time		3:51:15PM																					
S		So Gr		Log		Gross		%		Net		%		Net Volume by Scaling Diameter in Inches																									
Spp		T		rt de		Len		MBF		Def		MBF		Spc		2-3		4-5		6-7		8-9		10-11		12-13		14-15		16-19		20-23		24-29		30-39		40+	
RA		H		4		23		2				2		4.5						2																			
RA		H		4		24		2				2		7.1				1		1																			
RA		H		4		32		2				2		5.7						2																			
RA		H		4		40		8				8		22.8				5		3																			
RA				Totals				34				34		12.2				12		9		11		2															
OH		*		*		32		4				4		100.0				4																					
OH				Totals				4				4		1.4				4																					
Total All Species						287		2.2		280		100.0		26		76		37		49		38		35		17		2											

FI		Stand Table Summary															
Project FRAK_FIR																	
T01N R08W S11 TSALE												T01N R08W S11 TSALE					
Twp	Rge	Sec	Tract	Type			Acres		Plots	Sample Trees			Page:	1			
01N	08W	11	AREA_4	SALE			11.00		32	86			Date:	02/26/2011			
												Time:	3:50:45PM				
S Spc	T	Sample		FF	Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s			
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre				Acre
DF		8			84	53	7.101	2.60	7.26	5.3	32.0	1.09	38	232	12	4	3
DF		9			86	44	11.222	5.19	11.48	6.5	26.6	2.11	74	306	23	8	3
DF		10			89	52	4.545	2.60	4.65	9.7	32.0	1.28	45	149	14	5	2
DF		11			86	65	11.268	7.79	11.52	14.3	56.8	4.68	164	655	51	18	7
DF		12			81	84	6.312	5.19	9.68	15.5	53.3	4.28	150	516	47	17	6
DF		13			89	72	2.689	2.60	5.50	12.4	47.9	1.95	68	264	21	8	3
DF		14			84	93	6.956	7.79	11.86	21.0	74.6	7.09	249	884	78	27	10
DF		15			85	97	6.060	7.79	12.39	21.6	85.2	7.64	268	1,056	84	29	12
DF		16			81	85	8.876	12.98	14.53	27.1	85.2	11.23	394	1,238	124	43	14
DF		17			82	93	6.290	10.38	12.87	26.8	95.9	9.84	345	1,233	108	38	14
DF		18			85	103	8.416	15.57	20.08	27.9	104.2	15.98	561	2,093	176	62	23
DF		19			86	82	2.518	5.19	3.86	33.9	145.6	3.73	131	562	41	14	6
DF		20			83	109	2.272	5.19	5.81	32.6	117.2	5.41	190	681	59	21	7
DF		21			84	108	6.183	15.57	15.81	37.9	141.3	17.07	599	2,234	188	66	25
DF		23			87	111	5.634	15.57	14.41	41.9	172.5	17.19	603	2,485	189	66	27
DF		24			78	99	1.718	5.19	4.39	39.4	151.2	4.94	173	664	54	19	7
DF		25			85	114	2.367	7.79	7.26	42.4	181.1	8.78	308	1,315	97	34	14
DF		26			84	103	.727	2.60	1.49	63.3	223.7	2.68	94	333	30	10	4
DF		29			83	73	.580	2.60	.59	104.4	511.2	1.76	62	303	19	7	3
DF		35			86	102	.393	2.60	.80	119.4	266.3	2.74	96	214	30	11	2
DF		Totals			84	82	102.129	142.74	176.25	26.2	98.8	131.49	4,614	17,416	1,446	507	192
OC		15			70	33	1.118	1.28	1.12	59.1	280.4	1.67	66	314	18	7	3
OC		17			82	47	2.782	4.17	1.42	10.7	32.8	.37	15	47	4	2	1
OC		18			76	39	.758	1.28	.76	87.2	413.4	1.67	66	314	18	7	3
OC		22			86	110	.808	2.09	1.65	48.4	191.5	1.96	80	316	22	9	3
OC		24			82	116	1.346	4.17	3.44	51.1	166.3	4.32	176	572	48	19	6
OC		25			81	50	1.237	4.17	1.26	41.6	43.8	1.29	53	55	14	6	1
OC		26			86	106	.570	2.09	1.16	38.4	147.7	1.10	45	172	12	5	2
OC		37			65	30	.395	3.00	.39	391.0	1854.0	3.89	154	732	43	17	8
OC		47			73	36	.253	3.00	.25	611.0	2896.9	3.89	154	732	43	17	8
OC		50			85	59	.190	2.57	.19	695.2	3296.0	3.33	132	627	37	15	7
OC		62			37	20	.142	3.00	.14	1086.2	5150.1	3.89	154	732	43	17	8
OC		Totals			79	63	9.599	30.81	11.79	92.9	391.0	27.38	1,095	4,610	301	120	51
RA		10			84	41	4.569	2.63	4.62	7.3	32.5	.93	34	150	10	4	2
RA		11			89	103	3.776	2.63	7.64	11.5	48.8	2.42	88	373	27	10	4
RA		12			80	34	6.346	5.26	6.42	9.6	27.1	1.69	62	174	19	7	2
RA		13			83	70	8.111	7.90	13.67	13.4	47.7	5.05	184	652	56	20	7
RA		14			84	68	9.325	10.53	16.50	15.4	58.9	6.99	254	972	77	28	11
RA		16			92	47	1.785	2.63	1.81	28.2	97.6	1.40	51	176	15	6	2
RA		18			86	64	1.410	2.63	2.85	24.4	86.8	1.91	70	247	21	8	3
RA		20			89	60	1.266	2.63	1.28	48.8	162.7	1.72	62	208	19	7	2
RA		21			76	45	1.142	2.63	2.31	20.7	70.5	1.31	48	163	14	5	2
RA		Totals			84	61	37.730	39.48	57.10	14.9	54.6	23.42	852	3,116	258	94	34
OH		10			80	81	2.216	1.28	2.22	26.9	159.4	1.64	60	353	18	7	4
OH		Totals			80	81	2.216	1.28	2.22	26.9	159.4	1.64	60	353	18	7	4
Totals					84	75	151.673	214.30	247.36	26.8	103.1	183.93	6620	25,495	2,023	728	280



LOGGING PLAN
 Timber Sale Contract No. 341-18-103
 FRANKEN FIR
 Portions of Sections 10, 11, 14, 15, & 23
 T1N, R8W, W.M.,
 Tillamook County, Oregon

Tillamook District GIS

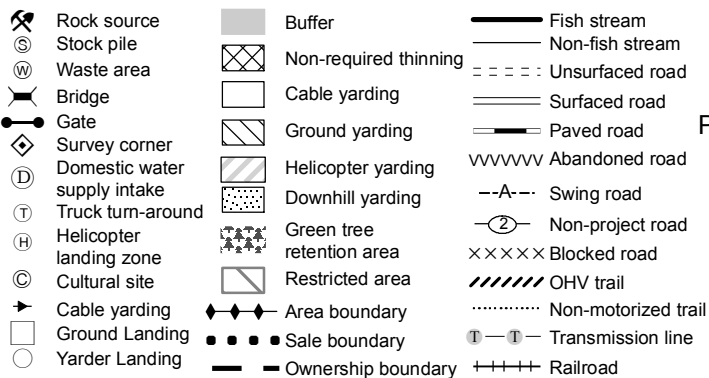
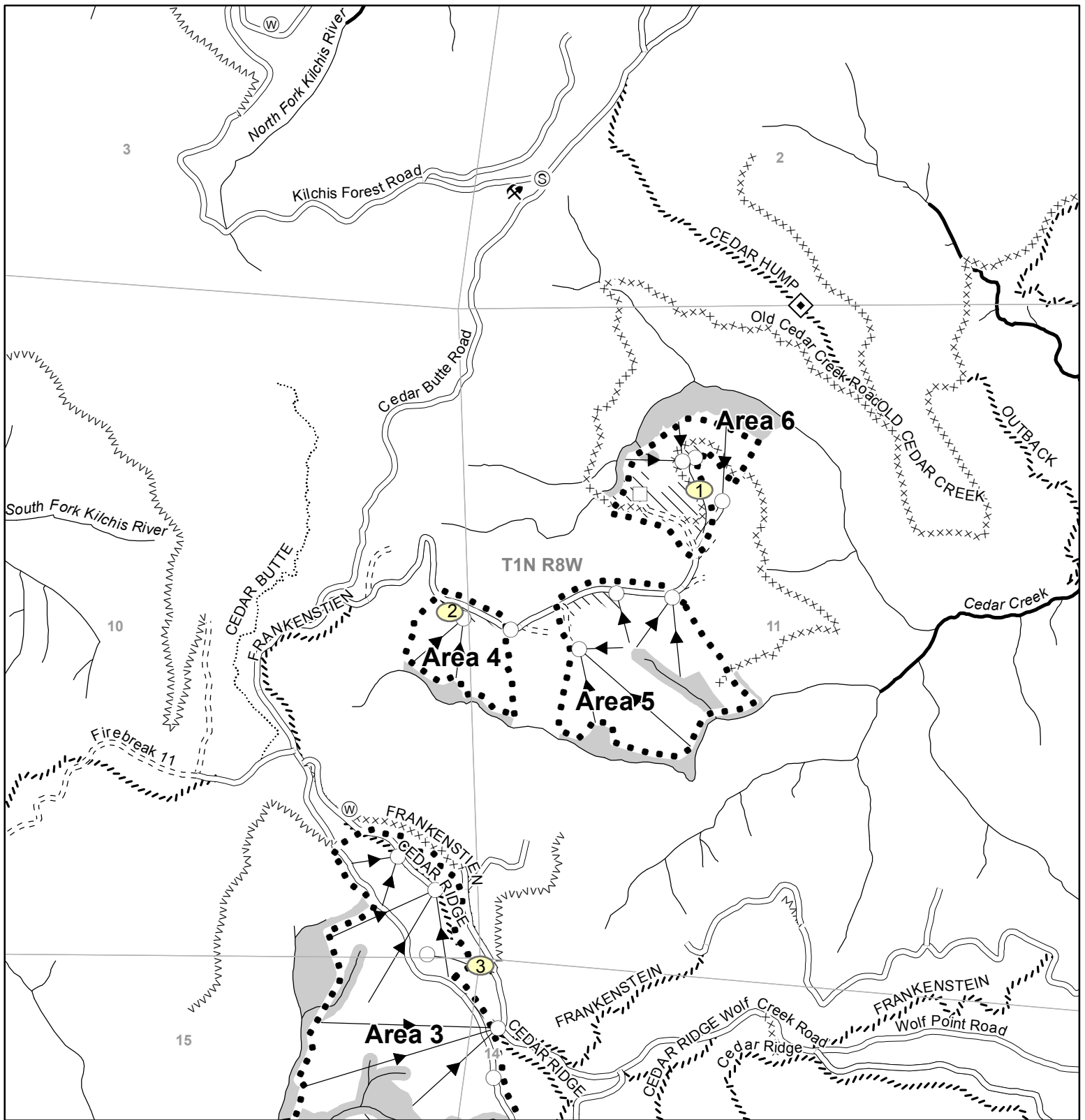
2/21/2018

This product is for informational use and may not have been prepared or suitable for legal, engineering, or surveying purposes.

1,000 0 1,000 Feet

Area	Type of Operation	Acres	
		Gross	Net
1	Modified Clearcut	131	97
2	Modified Clearcut	49	42
3	Modified Clearcut	152	106
4	Modified Clearcut	13	10
5	Modified Clearcut	35	27
6	Modified Clearcut	19	11
Total		399	293



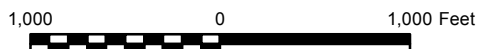


LOGGING PLAN
Timber Sale Contract No. 341-18-103
FRANKEN FIR
Portions of Sections 10, 11, 14, 15, & 23
T1N, R8W, W.M.,
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2/21/2018

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Area	Type of Operation	Acres	
		Gross	Net
1	Modified Clearcut	131	97
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3	Modified Clearcut	152	106
4	Modified Clearcut	13	10
5	Modified Clearcut	35	27
6	Modified Clearcut	19	11
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