



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cost Summary Haywire Sale 341-04-92

District: Klamath/Lake

Date: 4/5/04

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$212,434.47	\$0.00	\$212,434.47
		Project Work	(\$10,704.33)
		Advertised Value	\$201,730.14



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Timber Description Haywire Sale 341-04-92

District: Klamath/Lake

Location: T. 33S, R. 7E, NW 1/4 of Section 8, Klamath County

Date: 4/5/04

Stand Stocking: 20%

Species	Avg. DBH	Amortized%	Recovery%
White Fir	13	0	97
Sugar Pine	15	0	97
Ponderosa Pine	12	0	97
Lodgepole Pine	11	0	97

Volume by Grade	White Fir	Sugar Pine	Ponderosa Pine	Lodgepole Pine	Total
CR 8" - 14"	474	87	213	17	791
CR 14" - 22"	46	0	13	0	59
CR 6" - 8"	244	27	217	0	488
Total	764	114	443	17	1,338

Comments: Pond Values Used: 1st Quarter 2004.

Other Costs (P & R included):
 Dust Abatement: \$10,461.20
 Brand and Paint: \$3,600.00



Timber Sale Appraisal Logging Conditions Haywire Sale 341-04-92

"STEWARDSHIP IN FORESTRY"

Combination#: 1	White Fir	100.00%	
	Sugar Pine	100.00%	
	Ponderosa Pine	100.00%	
	Lodgepole Pine	100.00%	
Yarding Distance:	Medium (800 ft)		Downhill Yarding: Yes
Logging System:	Wheel Skidder		Process: Feller Buncher
Tree Size:	Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF		
Loads/Day:	12		Bd. Ft./Load: 3,700
Cost/MBF:	\$75.54		
Machines:	Feller Buncher w/ Delimber		
	Log Loader (B)		
	Stroke Delimber (B)		
	Tire Skidder		



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal

Logging Costs

Haywire

Sale 341-04-92

Date: 4/5/04

Operating Seasons: 2.0

Profit & Risk: 12%

Project Costs: \$10,704

Other Costs (P/R): \$14,061

Slash Disposal: \$0

Other Costs: \$0

Road Maintenance: \$0.71

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
White Fir	\$0.00	2.0	4.0
Sugar Pine	\$0.00	3.0	3.5
Ponderosa Pine	\$0.00	3.0	3.5
Lodgepole Pine	\$0.00	2.0	3.0

Local Pond Values

Date	Species	Grade	Value
4/5/04	White Fir	CR 8" - 14"	\$325.00
4/5/04	White Fir	CR 14" - 22"	\$340.00
4/5/04	White Fir	CR 22"+	\$340.00
4/5/04	White Fir	CR 6" - 8"	\$310.00
4/5/04	Sugar Pine	CR 8" - 14"	\$390.00
4/5/04	Sugar Pine	CR 14" - 22"	\$575.00
4/5/04	Sugar Pine	CR 22"+	\$595.00
4/5/04	Sugar Pine	CR 6" - 8"	\$290.00
4/5/04	Ponderosa Pine	CR 8" - 14"	\$355.00
4/5/04	Ponderosa Pine	CR 14" - 22"	\$525.00
4/5/04	Ponderosa Pine	CR 22"+	\$640.00
4/5/04	Ponderosa Pine	CR 6" - 8"	\$265.00
4/5/04	Lodgepole Pine	Camprun	\$290.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Logging Costs Breakdown Haywire Sale 341-04-92

Costs	White Fir	Sugar Pine	Ponderosa Pine	Lodgepole Pine
Logging	75.54	75.54	75.54	75.54
Road Maintenance	0.73	0.73	0.73	0.73
Fire Protection	4.05	4.05	4.05	4.05
Hauling	59.28	45.15	45.15	79.18
Other (P/R appl.)	10.51	10.51	10.51	10.51
Profit & Risk	18.01	16.32	16.32	20.40
Slash Disposal	0.00	0.00	0.00	0.00
Scaling	2.00	2.00	2.00	2.00
Other	0.00	0.00	0.00	0.00
Total	170.12	154.30	154.30	192.41

Amortization	0.00	0.00	0.00	0.00
Pond Value	321.11	366.32	315.90	270.00
Stumpage	150.99	212.02	161.60	77.59
Amortized	0.00	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Haywire Sale 341-04-92

Amortized

	White Fir	Sugar Pine	Ponderosa Pine	Lodgepole Pine
MBF	0.00	0.00	0.00	0.00
Value	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00

Unamortized

	White Fir	Sugar Pine	Ponderosa Pine	Lodgepole Pine
MBF	764.00	114.00	443.00	17.00
Value	150.99	212.02	161.60	77.59
Total	115,356.36	24,170.28	71,588.80	1,319.03

Gross Timber Sale Value

Recovery \$212,434.47

Prepared by: Jason Pettigrew

Date: 4/5/04

District: Klamath/Lake

Phone: (541) 883-5681

Summary of Project Work

Haywire

341-04-92



"STEWARDSHIP IN FORESTRY"

Project # 1: Road Improvement \$ 651.93

New Construction 300'
Road Reconstruction 9900'

**Project # 2: Felling, yarding, and piling of
submerchantable trees and pulp wood** \$ 9,840.18

Project # 3: Road Closures \$ 212.22

Total: \$ 10,704.33

Haywire

341-04-92
Additional Costs Sheet



"STEWARDSHIP IN FORESTRY"

Road Maintenance									
Move-in cost (grader):	\$	241.00							
Number of Bladings		1							
Number of Miles to be Bladed		4.85							
Miles / Hour for equipment		0.5							
Cost / Hour:	\$	73.25							
Total Grading Hours:		9.7							
Grading Cost:	\$	710.53							
Total Cost:	\$	951.53							
Cost / MBF	\$	0.71							
Dust Abatement									
PP	443,000	BF	33%	Average Load	3500	BF	127	# of Loads	
WF	764,000	BF	57%	Average Load	4000	BF	191	# of Loads	
SP	114,000	BF	8.5%	Average Load	3500	BF	33	# of Loads	
LP	17,000		1%	Average Load	3000		6	# of Loads	
Total:	1,338,000	BF					Total Loads	355.8	
							Rounded Total	356	
Assume:	5	Trucks/Day							
	2	Trips / Day			36	Hauling Days			
	10	Loads Per Day			5	Hours / Day			
					\$ 57.24	Cost / Hour			
					180	Total Hours			
					\$ 10,303.20	Dust Abatement Cost			
					\$ 158.00	Move-In for Water Truck			
					\$ 10,461.20	Total Cost			
					\$ 7.82	Cost / MBF			
Knot Bumper and Branding					Additional Costs with P&R				
36	Hauling Days					Dust Abatement	\$	10,461.20	
10	Hours / Day					Knot Bumping & Branding	\$	3,600.00	
\$ 10.00	Cost / Hour					Total Cost	\$	14,061.20	
\$ 3,600.00	Total Cost					Cost / MBF	\$	10.51	
\$ 2.69	Cost / MBF								

Haywire

341-04-92
Additional Costs Sheet



"STEWARDSHIP IN FORESTRY"

Project #1 Road Construction/Improvement							
		Move-in cost Cat	\$				370.00
New Construction							
	Points	Distance (feet)	Feet / Hour	Hours	Cost / Hour (Cat)	Cost	
<i>Shape to drain</i>	F to G	300	300	1	70.74	\$ 70.74	
						\$ 70.74	
Road Improvement							
	Points	Distance (feet)	Feet / Hour	Hours	Cost / Hour	Cost	
<i>Shape to drain</i>	A to B	2000	2000	1.0	\$ 73.25	\$ 73.25	
<i>Shape to drain</i>	B to C	1400	1000	1.4	\$ 73.25	\$ 102.55	
<i>Shape to drain</i>	C to D	2100	1000	2.1	\$ 73.25	\$ 153.83	
<i>Shape to drain</i>	D to E	2600	1000	2.6	\$ 73.25	\$ 190.45	
<i>Shape to drain</i>	E to C	1800	1000	1.8	\$ 73.25	\$ 131.85	
		9900			8.9 Total Cost	\$ 651.93	

Haywire

341-04-92
Additional Costs Sheet



"STEWARDSHIP IN FORESTRY"

Project #2 Fell, Skid, & Pile Submerchantable Material

196	Total Subsawlog Volume MBF	48,000	PP Green Pulp (BF)
		5,000	SP Green Pulp (BF)
		2,000	WF Green Pulp (BF)
\$ 38.55	Fell & Skid / MBF	55,000	BF Green Pulp
\$ 6.45	Sort / MBF	141,000	BF Subsawlog Fixed Plot
\$ 45.00	Total / MBF	196,000	Total Board Feet
\$ 8,820.00	Total Cost		

Landing Cleanup (included with Project # 2)

7	Number of Landings		
	Shovel Time: 1	Hours / Landing	\$ 75.00 Cost/ Hour
	Cat Time: 1	Hours / Landing	\$ 70.74 Cost/ Hour
	Total Equipment Hours: 14		
	Total Cost: \$ 1,020.18		

Project # 3 Road Closures

3	Number of closure points (A,B,H)		
	1 Hours / Point (include travel)		
	Cost / Hour (Shovel)		
\$ 70.74	Cost / Hour (Cat)		
	3 Total Road Blocking Hours		
\$ 212.22	Total Cost		

Cost Summary

\$ 651.93	Project # 1 ~ Road Construction and Improvement
\$ 9,840.18	Project # 2 ~ Fell, Skid, & Pile Submerchantable Material
\$ 212.22	Project # 3 ~ Road Closures
\$ 10,704.33	Total Cost
	Dust Abatement \$ 10,461.20
	Knot Bumping & Branding \$ 3,600.00
	\$ 14,061.20

With Profit and Risk



Haywire

341-04-92
Cruise Report



"STEWARDSHIP IN FORESTRY"

SALE NAME: Haywire

LEGAL DESCRIPTION: Township 33S, Range 7E, NW ¼ of Section 8

BOUNDARY LINES:

Unit boundaries are posted with "Timber Sale Boundary" signs, marked with fluorescent orange paint and fluorescent orange flagging. Required new road construction is posted with orange "Right of Way Boundary" signs and marked with blue paint on cut trees.

FUND: 100% B.O.F.

ACREAGE: Total sale acreage is 152 acres.

Mapping was accomplished using a handheld Global Positioning System unit with the data run on the district Geographical Information System Program.

TREATMENT:

The entire timber sale is a selection cut that is leave tree marked with orange paint. Wildlife trees are designated with an orange "W".

CRUISE METHOD:

Variable Plot cruise with all the plots being measure plots. Fixed plot cruise for all submerchantable material (5.0" to 8.0"), with all plots being measure plots.

BASAL AREA FACTOR:

Area	BAF	Type Acreage
Entire Sale Area	14 BAF	152.0 acres

Full point plots taken, 1/50th acre fixed plots for submerchantable material (5.0" to 8.0" DBH)

PLOT DESIGNATION:

Plot centers were established at every plot. White flagging with the corresponding plot number was attached to the plot center and also to the nearest available tree branch.

SAMPLE SIZE CALCULATIONS:

Haywire Timber Sale			
	CV %	Desired SE %	Acres
Total Sale Area	54	12	152.0

$$\text{Number of Plots} = \frac{T^2 C^2}{A^2}$$

C = Coefficient of Variation in Percent (Taken from inventory data)

T = Number of Standard Errors

A = Desired Sampling Error for a sale of this size and value

$$\text{Total Sale Number of Plots: } \frac{(1)^2(54)^2}{12^2} = 20 \text{ Plots}$$

Measurements and Grading:

- DBH and Height were measured on all "in" trees in the plot.
- All plots were measure plots.
- Pulp volume and sawlog volume cruised.
- See attached species and grade tables for minimum requirements.
- All trees were graded using the segment system.
- Separate fixed plot cruise for all submerchantable material (5" to 8")

TREE HEIGHT:

All trees were measured to a fixed diameter outside bark. This height is usually taken as high up the bole as possible, where the cruiser can clearly see the bole, and the taper remains constant (usually 6 or 8 inches). The log segments are broken out and graded accordingly.

MINIMUM D.B.H.:

8.0" D.B.H. for sawlog volume. (Must have a minimum of 20 board feet.)

5.0" D.B.H. for pulp volume.

DIAMETER STANDARDS:

1" diameter class

BTR:

Standard ratios were used. See attached species tables.

FORM FACTOR:

Form factor was measured or estimated at 16' for each tree. Each tree was assigned its own FF.

FORM POINT:

All trees were sighted at D.B.H.

VOLUME COMPUTATION:

All cruise data was input and run at the district on Atterbury's Super Ace program.

CRUISERS: John Pellissier & Jason Pettigrew

FINAL CRUISE RESULTS:

Haywire Timber Sale			
	CV %	SE %	Acres
Total Sale Area	47.2	10.5	152.0

TIMBER DESCRIPTION

	Species	Average DBH	Net Volume (MBF)
Total Sale Area Variable Plot	White Fir	13.4	764
	Sugar Pine	15.5	114
	Ponderosa Pine	12.4	443
	Lodgepole Pine	10.8	17
			1338
		Total MBF	1338

(Volumes taken from Species, Sort Grade -Board Foot Volumes Report)

GREEN PULP VOLUME

This volume was obtained from the variable plot cruise (>8" DBH) and the fixed plot cruise (5.0"-8.0"). All material was graded green pulp. See grade table for minimum standards. The summary for green pulp listed below includes all types for the timber sale.

	Species	Green Pulp Volume (MBF)
Total Sale Area Variable	White Fir	42
	Ponderosa Pine	76
	Sugar Pine	23
		Total: 141 MBF

(Volumes taken from Species, Sort Grade -Board Foot Volumes Report)

	Species	Green Pulp Volume (MBF)
Total Sale Area Fixed	White Fir	2
	Ponderosa Pine	48
	Sugar Pine	5
		Total: 55 MBF

Total Green Pulp Volume: 196 MBF

TC PSTATS		PROJECT STATISTICS					PAGE 1			
		PROJECT HAYWIRE					DATE 3/19/2004			
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES			
33S	7E	8	VARIABLE	226	152.00	20	146			
				TREES	ESTIMATED		PERCENT			
				PER PLOT	TOTAL		SAMPLE			
					TREES		TREES			
TOTAL	20	146	7.3							
CRUISE	20	146	7.3	16,891			9			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
P PINE	66	56.0	12.4	32		46.8	3,263	3,229	802	802
WHITE F	60	43.2	13.4	40	8	42.3	5,148	5,039	1,142	1,142
SUG PINE	18	9.7	15.5	38		12.6	820	782	213	213
LP PINE	2	2.2	10.8	34		1.4	114	114	32	32
TOTAL	146	111.1	13.0	36		103.1	9,344	9,165	2,189	2,189
SD:	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
P PINE	171.3	14.2	34	40	45					
WHITE F	170.9	14.1	66	77	88					
SUG PINE	341.0	28.2	11	15	19					
LP PINE	898.1	74.3	0	1	1					
TOTAL	91.5	7.6	122	132	142	335	84	37		
SD:	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
P PINE	158.6	13.1	8	10	11					
WHITE F	161.9	13.4	15	17	19					
SUG PINE	327.3	27.1	3	4	5					
LP PINE	958.5	79.3	0	0	0					
TOTAL	79.7	6.6	29	31	33	254	63	28		
SD:	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
P PINE	94.7	21.2	44	56	68					
WHITE F	72.0	16.1	36	43	50					
SUG PINE	127.9	28.6	7	10	12					
LP PINE	338.3	75.6	1	2	4					
TOTAL	53.5	12.0	98	111	124	114	29	13		
SD:	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
P PINE	89.1	19.9	37	47	56					
WHITE F	68.5	15.3	36	42	49					
SUG PINE	113.4	25.4	9	13	16					
LP PINE	307.8	68.8	0	1	2					
TOTAL	43.5	9.7	93	103	113	76	19	8		
SD:	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
P PINE	95.9	21.5	2,537	3,229	3,922					
WHITE F	76.6	17.1	4,177	5,039	5,902					
SUG PINE	125.4	28.0	563	782	1,001					
LP PINE	310.1	69.3	35	114	192					
TOTAL	47.2	10.5	8,198	9,165	10,131	89	22	10		
SD:	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
1	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15		
P PINE	94.7	21.2	632	802	971					
WHITE F	73.9	16.5	953	1,142	1,331					
SUG PINE	119.1	26.6	156	213	270					
LP PINE	309.6	69.2	10	32	54					
TOTAL	44.8	10.0	1,970	2,189	2,408	80	20	9		

TC TLOGSTVB

Log Stock Table - MBF
Project: HAYWIRE

T33S R7E S8 T226

T33S R7E S8 T226

Twp Rge Sec Tract Type Acres Plots Sample Trees
 33S 7E 8 VARIABLE 226 152.00 20 146

Page 2
 Date 3/19/2004
 Time 2:41:47PM

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
SP				Totals	125	4.6	119	8.5			32	11	54	13	9			
LP	CR	CR	27		10		10	55.8			10							
LP	CR	CR	40		8		8	44.2			8							
LP				Totals	17		17	1.2			17							
Total All Species					1,420	1.9	1,393	100.0	10	13	542	166	306	199	128	29		

Species, Sort Grade - Board Foot Volumes (Type)

Project: HAYWIRE

T33S R7E S8 T226

T33S R7E S8 T226

Twp Rge Sec Tract Type Acre Plots Sample Trees
33S 7E 8 VARIABLE 226 152.00 20 146

Spp	So	Gr	% 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 Ft	Bd Ft	CF/Lf	
								6-7	8-14	15-22	23+	12-20	21-30	31-35	36-99				
PP	CR	CR	90	1.1	2,949	2,916	443	50	48	3		18	13	56	13	22	88	0.98	33.0
PP	CR	GP	10		314	314	48	100				83	17			15	14	0.24	22.0
PP	Totals		35	1.0	3,263	3,229	491	55	43	2		24	14	51	12	19	59	0.75	55.1
WF	CR	CR	100	2.1	5,133	5,025	764	32	62	6		7	12	73	8	25	142	1.29	35.3
WF	CR	GP	0		14	14	2	100				100				12	5	0.26	2.8
WF	Totals		55	2.1	5,148	5,039	766	32	62	6		8	12	72	8	24	132	1.25	38.1
SP	CR	CR	96	4.8	787	750	114	24	76			17	20	53	10	20	96	1.30	7.8
SP	CR	GP	4		32	32	5	100				100				15	20	0.27	1.6
SP	Totals		9	4.6	820	782	119	27	73			21	19	51	10	19	83	1.16	9.4
LP	CR	CR	100		114	114	17	100				56		44		31	103	0.94	1.1
LP	Totals		1		114	114	17	100				56		44		31	103	0.94	1.1
Type Totals				1.9	9,344	9,165	1,393	41	55	4		14	14	62	10	21	88	1.00	103.7

Species Table Report

TblSpecies

Date: 4/16/03
Page: 1

Table Name: KL SPECIES

Cod	Abrv	Description	Bark Ratio	ASub Const	Form Factor	Wood Type	Component	Yield Table	Min Log Dia	Min Log Len	Max Log Len	Log Trim	Max Tree Dia	Max Tree Hgt.	BdFt Rule	CuFt Rule	Weight
1	PP	P PINE	.87	PP	.85	C	C	PP--EQUA--100	3	9	20	1.0	99	200	E	1	LB
2	WF	WHITE F	.94	NF	.87	C	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	LB
3	LP	LP PINE	.96	DF	.9	C	C	LP--EQUA--100	3	9	20	1.0	99	200	E	1	LB
5	SP	SUG PINE	.87	PP	.84	C	C	PP--EQUA--100	3	9	20	1.0	99	200	E	1	LB
6	IC	INCCED	.90	SS	.8	C	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	LB

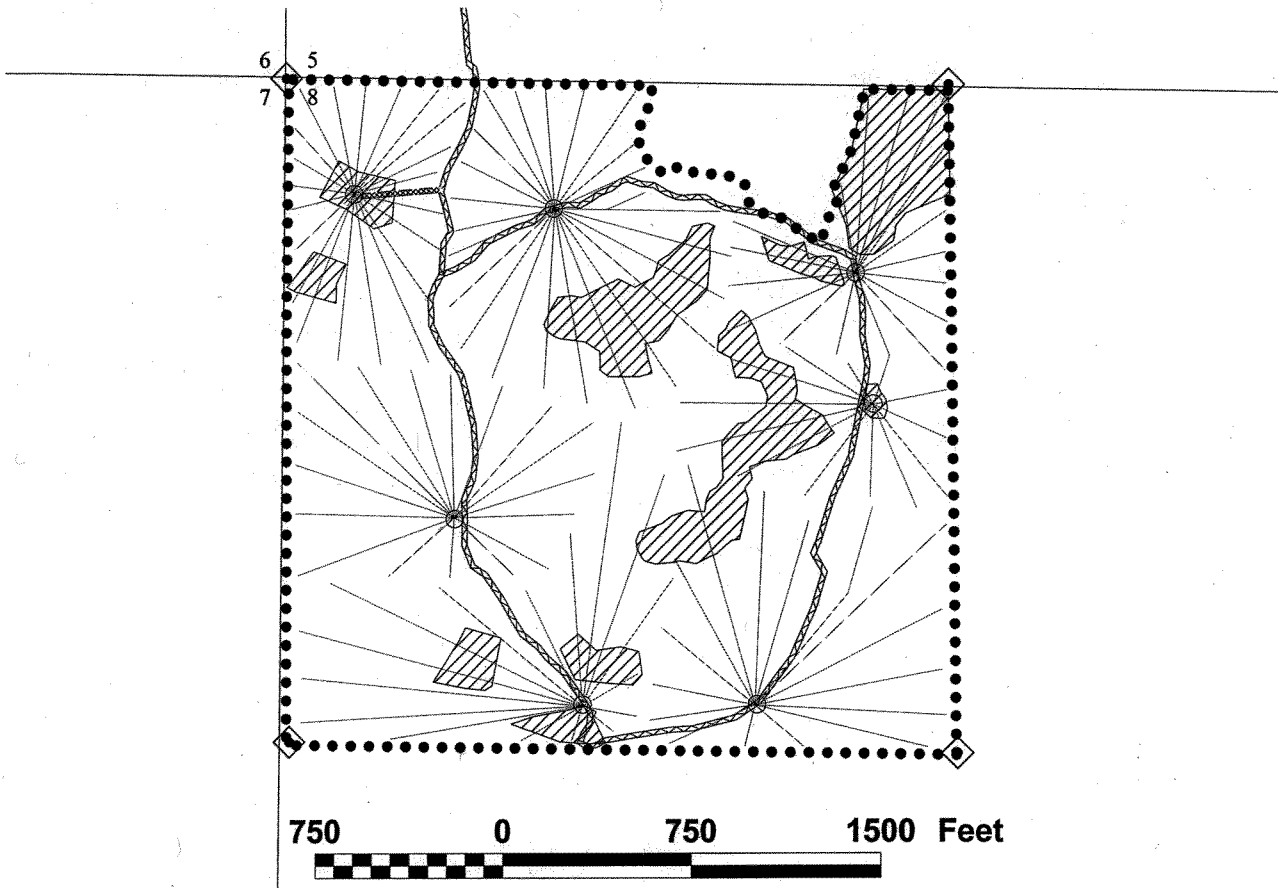
TblSortGrade

Sort/Grade Table

Table Name: KLAMATH









Date: 4/16/03

Sort	Grd	Abr	Desc	Fbr	Min Dia	Max Dia	Max Butt	Min Len	Max Len	Defect	Min Vol	Vol Type	Min Ring	Knot Size	Knot Freq	Str	Sap	Min Age	Lbs	Lbs Type	Cords	Corc Type
0		CU	CULL	G	1	0	0	1	0	0	0		0	0	0			0	0		0	
1		CR	CAMPRUN	G	6	0	0	10	0	0	0		0	0	0			0	0		0	
7		GP	GRNPULP	G	3	0	0	10	0	0	0		0	0	0			0	0		0	
8		DP	DEADPUL	G	3	0	0	10	0	0	0		0	0	0			0	0		0	
9		UT	UTILITY	G	8	0	0	12	0	0	0		0	0	0			0	0		0	
0		CU	CULL	G	0	0	0	0	0	0	0		0	0	0			0	0		0	
1		CR	CAMPRUN	G	1	0	0	1	0	0	0		0	0	0			0	0		0	



Scale
 1 : 9000
 1 inch = 750 feet

LEGEND

-  Unsurfaced Road (Construction Required)
-  Unsurfaced Road (Improvement Required)
-  Unsurfaced Roads
-  Timber Sale Boundary (Posted)
-  Section Line
-  Skid Trails
-  Landing
-  Group Selection Harvest



LOGGING PLAN
 OF TIMBER SALE CONTRACT 341-04-92
 HAYWIRE TIMBER SALE
 NW 1/4 OF SECTION 8, T 33S, R 7E, W.M.
 KLAMATH COUNTY, OREGON
 152 ACRES