



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Bear Minimum
Sale KL-341-2025-GF7623-01

District: Klamath/Lake

Date: June 28, 2024

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$188,668.02	\$0.00	\$188,668.02
		Project Work:	(\$170,666.35)
		Advertised Value:	\$18,001.67



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Date: June 28, 2024

Timber Description

Location:

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
White Fir	12	0	98
Ponderosa Pine	13	0	98
Lodgepole Pine	11	0	95

Volume by Grade	3S & 4S 6"-11"	6" - 11"	12"-15"	Camprun	Total
White Fir	670	0	0	0	670
Ponderosa Pine	0	163	74	0	237
Lodgepole Pine	0	0	0	2,382	2,382
Total	670	163	74	2,382	3,289

Comments: Pond Values Used: Local Pond Values, June 2024

Log Markets: Klamath Falls and Medford.

Other Costs (no Profit & Risk): None

Other Costs (with Profit & Risk to be added): None

ROAD MAINTENANCE

Move-in: \$400.00

General Road Maintenance: 9 miles x \$270 per mile x 1 bladings = \$2,430.00

Total Road Maintenance: \$2,830.00, \$0.86 per Mbf



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Logging Conditions

Combination#: 1	White Fir	100.00%
	Ponderosa Pine	100.00%
	Lodgepole Pine	100.00%
Logging System:	Wheel Skidder	Process: Feller Buncher
yarding distance:	Medium (800 ft)	downhill yarding: Yes
tree size:	Small / Thinning 10in (90 Bft/tree), 18-20 logs/MBF	
loads / day:	12.5	bd. ft / load: 4200
cost / mbf:	\$190.48	
machines:	Log Loader (B)	
	Stroke Delimber (B)	
	Feller Buncher w/ Delimber	
	Tire Skidder	



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Logging Costs

Operating Seasons: 1.00	Profit Risk: 8%
Project Costs: \$170,666.35	Other Costs (P/R): \$0.00
Slash Disposal: \$0.00	Other Costs: \$0.00

Miles of Road

Road Maintenance: \$0.86

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	3.0	4.5
Ponderosa Pine	\$0.00	5.0	4.5
Lodgepole Pine	\$0.00	5.0	4.3



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
White Fir									
\$190.48	\$0.88	\$1.33	\$94.44	\$0.00	\$22.97	\$0.00	\$2.00	\$0.00	\$312.10
Ponderosa Pine									
\$190.48	\$0.88	\$1.33	\$56.67	\$0.00	\$19.95	\$0.00	\$2.00	\$0.00	\$271.31
Lodgepole Pine									
\$190.48	\$0.90	\$1.33	\$61.05	\$0.00	\$20.30	\$0.00	\$2.00	\$0.00	\$276.06

Specie	Amortization	Pond Value	Stumpage	Amortized
White Fir	\$0.00	\$427.00	\$114.90	\$0.00
Ponderosa Pine	\$0.00	\$300.93	\$29.62	\$0.00
Lodgepole Pine	\$0.00	\$320.00	\$43.94	\$0.00



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Date: June 28, 2024

Summary

Amortized

Specie	MBF	Value	Total
White Fir	0	\$0.00	\$0.00
Ponderosa Pine	0	\$0.00	\$0.00
Lodgepole Pine	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
White Fir	670	\$114.90	\$76,983.00
Ponderosa Pine	237	\$29.62	\$7,019.94
Lodgepole Pine	2,382	\$43.94	\$104,665.08

Gross Timber Sale Value

Recovery: \$188,668.02

Prepared By: Chris Weekly

Phone: 541-883-5681

Bear Minimum

KL-341-2025-GF7623-01

Other Costs

Road Maintenance

Move-in cost (grader):	\$400.00
Number of Miles to be Bladed:	9
Number of Bladings:	1
Total Miles:	9
Miles/Hour for Equipment:	0.5
Cost/Hour (grader with operator):	\$135.00
Total Grading Hours:	18
Grading Cost:	<u>\$2,430.00</u>
Total Cost:	<u>\$2,830.00</u>
Cost/Mbf:	<u>\$0.86</u>

LP	2,382 Mbf	72%	Average Load	4.0 Mbf	No. of Loads	596
WF	670 Mbf	20%	Average Load	4.0 Mbf	No. of Loads	168
PP	237 Mbf	7%	Average Load	4.0 Mbf	No. of Loads	<u>59</u>
Total:	3,289 Mbf				Total Loads	822

Assume:

4 Trucks/Day
4 Trips/Day
<u>16 Loads per Day</u>
<u>51 Hauling Days</u>

Bear Minimum

KL-341-2025-GF7623-01

Project Costs

Project #1 Road Improvement

Improvement

Move in Cost Cat: \$500

	Points	Distance(ft)	Feet/Hour	Hours	Cost/Hour	Cost
Open/Clear/Shape	A to B	8873.10749	1000	8.87	\$150.00	\$1,330.97
Open/Clear/Shape	B to C	4415.47619	1000	4.42	\$150.00	\$662.32
Open/Clear/Shape	C to D	649.932472	1000	0.65	\$150.00	\$97.49
Open/Clear/Shape	C to E	6212.62349	1000	6.21	\$150.00	\$931.89
Open/Clear/Shape	F to G	9245.50094	1000	9.25	\$150.00	\$1,386.83
Open/Clear/Shape	H to I	3826.13156	1000	3.83	\$150.00	\$573.92
Open/Clear/Shape	J to K	7956.23416	1000	7.96	\$150.00	\$1,193.44
Open/Clear/Shape	L to M	6492.29916	1000	6.49	\$150.00	\$973.84
Open/Clear/Shape	N to O	2430.95854	1000	2.43	\$150.00	\$364.64
Open/Clear/Shape	P to Q	1934.07904	1000	1.93	\$150.00	\$290.11
Open/Clear/Shape	R to S	1503.19084	1000	1.50	\$150.00	\$225.48
Open/Clear/Shape	R to T	297.962667	1000	0.30	\$150.00	\$44.69
Open/Clear/Shape	U to V	1272.23646	1000	1.27	\$150.00	\$190.84
Open/Clear/Shape	W to X	747.751792	1000	0.75	\$150.00	\$112.16
Open/Clear/Shape	A to Z	13557.7947	1000	13.56	\$150.00	\$2,033.67
Open/Clear/Shape	2A to 2B	4714.99916	1000	4.71	\$150.00	\$707.25
Open/Clear/Shape	2C to 2D	15239.5498	1000	15.24	\$150.00	\$2,285.93
Open/Clear/Shape	2E to 2F	3788.283	1000	3.79	\$150.00	\$568.24
Open/Clear/Shape	2G to 2H	4335.28904	1000	4.34	\$150.00	\$650.29
Open/Clear/Shape	J to 2I	3818.95536	1000	3.82	\$150.00	\$572.84
Open/Clear/Shape	J to 2J	5301.45588	1000	5.30	\$150.00	\$795.22
Open/Clear/Shape	2K to 2L	5736.83738	1000	5.74	\$150.00	\$860.53
Open/Clear/Shape	2M to 2N	1901.32226	1000	1.90	\$150.00	\$285.20
Open/Clear/Shape	2O to 2P	2582.09262	1000	2.58	\$150.00	\$387.31
Open/Clear/Shape	2Q to 2R	2796.549	1000	2.80	\$150.00	\$419.48
Open/Clear/Shape	2N to 2Y	10013.4054	1000	10.01	\$150.00	\$1,502.01
Open/Clear/Shape	2P to 2S	1332.75012	1000	1.33	\$150.00	\$199.91
Open/Clear/Shape	2S to 2T	4012.07308	1000	4.01	\$150.00	\$601.81
Open/Clear/Shape	2U to 2V	917.351315	1000	0.92	\$150.00	\$137.60
Open/Clear/Shape	2W to 2X	605.85285	1000	0.61	\$150.00	\$90.88
Open/Clear/Shape	2Y to 2Z	1485.75346	1000	1.49	\$150.00	\$222.86
Open/Clear/Shape	3A to 3B	2378.72465	1000	2.38	\$150.00	\$356.81

Bear Minimum

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Project Costs

Project #1 Road Improvement

Open/Clear/Shape	2P to 2S	1332.75012	1000	1.33	\$150.00	\$199.91
Open/Clear/Shape	2S to 2T	4012.07308	1000	4.01	\$150.00	\$601.81
Open/Clear/Shape	2U to 2V	917.351315	1000	0.92	\$150.00	\$137.60
Open/Clear/Shape	2W to 2X	605.85285	1000	0.61	\$150.00	\$90.88
Open/Clear/Shape	2Y to 2Z	1485.75346	1000	1.49	\$150.00	\$222.86
Open/Clear/Shape	3A to 3B	2378.72465	1000	2.38	\$150.00	\$356.81
Total		151,109		151.11		\$22,666.35

Project #1 Summary

Move In Costs	\$500.00
Improvement Cost	\$22,666.35
Project # 1 Total	\$23,166.35
per Mbf	\$7.04

Project #2 Fell, Skid, and Pile Submerchantable Material

Total Sub-Sawlog Volume: 950 MBF

Fell and Skid/MBF:	\$75.00
Sort/MBF:	\$25.00
Total	\$95,000.00
per MBF	\$28.88

Landing Slash Piling

Number of Landings: 100

Shovel Time:	1 Hour per Landing	Cost per Hour: \$150.00	Total Cost	\$15,000.00
Cat Time:	1 Hour per Landing	Cost per Hour: \$150.00	Total Cost	\$15,000.00
Total				\$30,000.00
per MBF				\$9.12

Bear Minimum
KL-341-2025-GF7623-01
Project Costs

Project #2 Summary

Fell, Skid, Pile Submerchantable Material	\$95,000.00
Landing Slash Piling	<u>\$30,000.00</u>
Total Cost	<u>\$125,000.00</u>
per Mbf	\$38.01

Project #3 Waterbarring

Skid Trail Waterbarring

75	Number of Landings
2	Hours per Landing
<u>\$150.00</u>	Cost per Hour (Cat)
\$22,500.00	Total
\$6.84	per Mbf

Project #3 Summary

Waterbarring:	<u>\$22,500.00</u>
Total:	<u>\$22,500.00</u>
per Mbf:	\$6.84

Cost Summary All Projects

Project No.1 - Road Improvement	\$23,166.35
Project No.2 - Fell, Skid, and Pile Submerchantable Material	\$125,000.00
Project No.3 - Waterbarring	\$22,500.00
Total Cost	<u>\$170,666.35</u>
per Mbf	\$51.89

Bear Minimum - GNA
KL-341-2025-GF7623-01
Cruise Report



SALE NAME: Bear Minimum - GNA

LEGAL DESCRIPTION:

Located in Section(s) 21, 22, 23, 24, 25, 26, 27, 28 and 29 of T25S, R11E, Willamette Meridian, Klamath County, Oregon

BOUNDARY LINES:

Unit boundaries are unmarked.

ACREAGE:

Gross Sale Acreage:	2,576 Acres
Exclusion Acreage:	646 Acres
Net Sale Acreage:	1,930 Acres

Mapping was accomplished using Avenza pdf Maps with the data processed through ArcMap.

TREATMENT:

The Timber Sale is a purchaser select, partial cut harvest.

CRUISE METHOD:

Variable plot cruise with a ratio of two count plot for every measure plot. Fixed plot cruise for sub-merchantable material was 5 – 9 inch DBH for all species.

BASAL AREA FACTOR:

A basal area factor of 10 was used for all variable cruise plots. Fixed plots were cruised at $\frac{1}{50}$ of an acre

PLOT DESIGNATION:

Plot centers were established at every plot with pink flag wire stakes with the corresponding plot number. Blue and white striped flagging was attached to the nearest available tree branch.

SAMPLE SIZE CALCULATIONS:

AREA	CV%	DESIRED SE%	ACRES
Area 1	100%	12%	1,930

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

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

$$N = \frac{(1)^2(100)^2}{(12)^2} = 69 \text{ plots}$$

Measurements and Grading:

- Ratio of two count plot for every measure plot.
- DBH and Height were measured on all “in” trees for measure plots.
- Pulp volume and sawlog volume cruised.
- All trees were graded using the segment system.
- Nested fixed plot cruise for all submerchantable material (5” to 9” DBH).

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:

5.0" DBH.

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 DBH.

VOLUME COMPUTATION:

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

FINAL CRUISE RESULTS:

CV%	SE%	ACRES
71.9	9.1	1,930

TIMBER DESCRIPTION

SAWLOG VOLUME:

This volume was obtained from the variable plot cruise. All material graded camprun. See grade table for minimum standards.

TOTAL SAWLOG VOLUME

Species	Ave. DBH	Acres	Gross Vol/Acre (bf)	Net Vol/Acre (bf)	Net Sale Vol (Mbf)
Lodgepole pine	11.0	1,930	1,270	1,234	2,382
White fir	11.6	1,930	347	347	670
Ponderosa pine	13.2	1,930	126	123	237
		Total	1,743	1,704	3,289

TOTAL NET SAWLOG VOLUME: 3,289MBF

GREEN PULP VOLUME:

This volume was obtained by combining material from the fixed plot cruise with non-saw material from the variable plot cruise.

All material was graded green pulp, see grade table for minimum standards.

FIXED PLOT CRUISE

Species	Acres	Vol/Acre (bf)	Sale Vol (Mbf)
Lodgepole pine	1930	211	407
White fir	1930	118	228
Ponderosa pine	1930	9	17
Total		338	652

VARIABLE PLOT CRUISE

Species	Acres	Vol/Acre (bf)	Sale Vol (Mbf)
Lodgepole pine	1930	154	297
White fir	1930	0	0
Ponderosa pine	1930	0	0
Total		154	297

TOTAL GREEN PULP VOLUME: 950 Mbf

T025 R011 S23 TVAR2	T025 R011 S23 TVAR2
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
025 011 23 GNA VAR2 1930.00 64 55 1	E

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	Dia	Bd	CF/Lf			
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
LP	CR	CR	88	2.8	1,270	1,234	2,381	100				31	31	38		24	7	44	0.51		28.4	
LP	CR	GP	12		154	154	297	13	87	100								14	6	18	0.38	8.4
LP	Totals		75	2.5	1,424	1,388	2,679	1	99			39	27	34		21	7	38	0.49		36.7	
WF	CR	CR	100		347	347	671	100				38	27	34		23	8	45	0.55		7.6	
WF	Totals		19		347	347	671	100				38	27	34		23	8	45	0.55		7.6	
PP	CR	CR	100	2.6	126	123	238	69	31	40				60		22	8	58	0.66		2.1	
PP	Totals		7	2.6	126	123	238	69	31	40				60		22	8	58	0.66		2.1	
Type Totals				2.1	1,898	1,859	3,587	1	97	2		39	26	36		21	7	40	0.51		46.5	

STATISTICS
PROJECT BEARMIN

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
025	011	23	GNA	VAR2	1,930.00	64	187	1	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	64	187	2.9		
CRUISE	18	55	3.1	81,587	.1
DBH COUNT					
REFOREST					
COUNT	41	132	3.2		
BLANKS	5				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
LP PINE	37	32.7	11.0	28	6.5	21.7	1,424	1,388	381	381
WHITE F	13	7.6	11.6	29	1.7	5.6	347	347	94	94
P PINE	5	2.0	13.2	33	0.5	1.9	126	123	31	31
TOTAL	55	42.3	11.3	29	8.7	29.2	1,898	1,859	506	506

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.	INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10
LP PINE	61.5	10.1	44	49	54		
WHITE F	72.4	20.9	41	52	63		
P PINE	134.7	66.9	33	100	167		
TOTAL	91.8	12.4	47	54	61	337	84

CL: 68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.	INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10
LP PINE	54.5	9.0	12	13	15		
WHITE F	55.3	15.9	12	14	16		
P PINE	113.7	56.5	10	23	37		
TOTAL	72.4	9.7	13	14	16	209	52

CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.	INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10
LP PINE	93.1	11.6	29	33	36		
WHITE F	182.6	22.8	6	8	9		
P PINE	369.4	46.1	1	2	3		
TOTAL	76.4	9.5	38	42	46	233	58

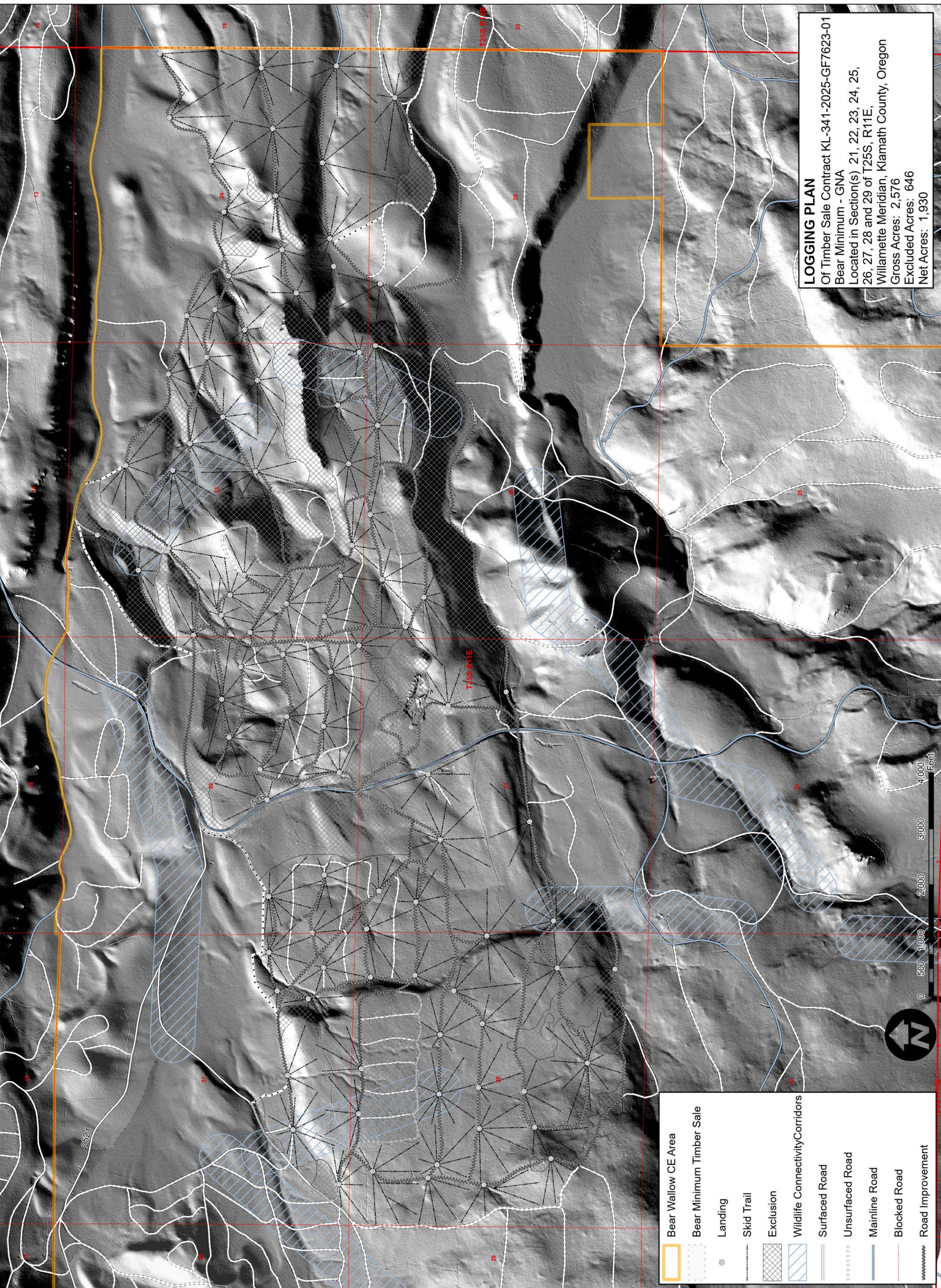
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.	INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10
LP PINE	91.6	11.4	19	22	24		
WHITE F	181.6	22.7	4	6	7		
P PINE	354.0	44.2	1	2	3		
TOTAL	72.5	9.1	27	29	32	210	52

CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.	INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10
LP PINE	92.5	11.5	1,228	1,388	1,548		
WHITE F	179.6	22.4	270	347	425		
P PINE	349.2	43.6	69	123	177		
TOTAL	71.9	9.0	1,692	1,859	2,025	207	52

CL: 68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.	INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10
LP PINE	92.1	11.5	337	381	425		
WHITE F	182.7	22.8	73	94	116		
P PINE	348.5	43.5	17	31	44		

STATISTICS
PROJECT BEARMIN

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
025	011	23	GNA	VAR2	1,930.00	64	187	1	E
CL: 68.1%		COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		72.4	9.0	461	506	552	209	52	23



LOGGING PLAN
 Of Timber Sale Contract KL-341-2025-GF7623-01
 Bear Minimum - GNA
 Located in Section(s) 21, 22, 23, 24, 25,
 26, 27, 28 and 29 of T25S, R11E,
 Willamette Meridian, Klamath County, Oregon
 Gross Acres: 2,576
 Excluded Acres: 646
 Net Acres: 1,930

-  Bear Wallow CE Area
-  Bear Minimum Timber Sale
-  Landing
-  Skid Trail
-  Exclusion
-  Wildlife Connectivity Corridors
-  Surfaced Road
-  Unsurfaced Road
-  Mainline Road
-  Blocked Road
-  Road Improvement