"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Double C
Sale 341-13-95

District: **Klamath/Lake** **Date:** **April 09, 2013**

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$264,046.90	$0.00	$264,046.90
		Project Work:	$(25,486.27)
		Advertised Value:	$238,560.63

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District: **Klamath/Lake** **Date:** **April 09, 2013**

timber description

Location: Portions of Sections 28 and 29, T37S, R12E, W.M., Klamath County, Oregon.

Stand Stocking: 40%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
White Fir	13	0	95

Volume by Grade	CR 14" -	CR 6" - 8	CR 8" - 1	Total
White Fir	32	720	743	1,495
Total	32	720	743	1,495

comments:

Pond Values Used: 1st Quarter Calander Year 2013.

Log Markets: Klamath Falls and Medford.

For appraisal purposes Ponderosa Pine volume is not included.
(approx. 5 MBF of Pondersoa Pine)

SCALING COST ALLOWANCE: = $5.00/MBF

FUEL COST ALLOWANCE: = $4.00/Gallon

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

Other Costs (with Profit & Risk to be added):
Log Branding & Painting: $1 x 1,495 = $1,495
Dust Abatement: $13,810
TOTAL Other Costs (with Profit & Risk to be added): $15,305

Other Costs (No Profit & Risk added):
Humming Bird Road Use Fee $1,509.95
TOTAL Other Costs (No Profit & Risk added) = $1,509.95

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District: **Klamath/Lake** **Date:** **April 09, 2013**

logging conditions

combination#: **1** White Fir 95.00%
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: 12.0 **bd. ft / load:** 4,000
cost / mbf: $69.18

machines:
Log Loader (B)
Stroke Delimber (B)
Feller Buncher w/ Delimber
Tire Skidder

combination#: **2** White Fir 5.00%
yarding distance: Medium (800 ft) **downhill yarding:** Yes
logging system: Track Skidder **Process**: Manual Falling/Delimbing
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 10.0 **bd. ft / load:** 4,200
cost / mbf: $81.10

machines:
Log Loader (B)
Track Skidder

"STEWARDSHIP IN FORESTRY"

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Double C
Sale 341-13-95

District: **Klamath/Lake** **Date:** **April 09, 2013**

logging costs

Operating Seasons:	1.00	**Profit Risk:**	12.00%
Project Costs:	$25,486.27	**Other Costs (P/R):**	$15,305.00
Slash Disposal:	$0.00	**Other Costs:**	$1,509.95

Miles of Road

Road Maintenance: $1.65

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	4.0

Local Pond Values

Date	Specie	Grade	Value
4/9/12	White Fir	CR 6" - 8"	$340.00
4/9/12	White Fir	CR 8" - 14"	$350.00
4/9/12	White Fir	CR 14" - 22"	$375.00

"STEWARDSHIP IN FORESTRY"

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Double C
Sale 341-13-95

District: **Klamath/Lake** **Date:** **April 09, 2013**

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
White Fir									
$69.78	$1.73	$2.93	$60.94	$10.24	$17.47	$0.00	$5.00	$1.01	$169.10

Specie	Amortization	Pond Value	Stumpage	Amortized
White Fir	$0.00	$345.72	$176.62	$0.00

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Double C
Sale 341-13-95

District: **Klamath/Lake** **Date:** **April 09, 2013**

summary

Amortized

Specie	MBF	Value	Total
White Fir	0	$0.00	$0.00

Unamortized

Specie	MBF	Value	Total
White Fir	1,495	$176.62	$264,046.90

Gross Timber Sale Value

Recovery: $264,046.90

Prepared by: Todd Clement **Phone:** 541-883-5681

Summary of Project Work

Double C
341-13-95

Project # 1:	Road Improvement	**$1,590.12**
Project # 2:	Fell, Yard and Pile Submerchantable Trees	**$17,298.75**
Project # 3:	Culvert Replacement	**$4,097.40**
Project # 4:	Road Brushing	**$2,500.00**

Total: $25,846.27

Double C

341-13-95

Other Costs

"STEWARDSHIP IN FORESTRY"

Road Maintenance

Move-in cost (grader):	$400.00
Number of Bladings	1
Number of Miles to be Bladed	9.8
Miles / Hour for equipment	0.5
Cost / Hour (grader with operator):	$105.50
Total Grading Hours:	19.6
Grading Cost:	$2,067.80
Total Cost:	**$2,467.80**
Cost / MBF	**$1.65**

Hummingbird Dr. (approximate 2.25 miles) to be bladed twice.

Dust Abatement (Profit & Risk to be added in Appraisal)

WF	1495	MBF	Average Load	4000 BF	374 # of Loads
Total	1495			31	Hauling Days
				31	Possible # of Summer Haul
Assume:	4	Trucks/Day		5	Hours / Day
	3	Trips / Day		$88.00	Cost / Hour
	12	Loads Per Day		155	Total Hours
				$170.00	Move-In for Water Truck
				$13,640.00	Dust Abatement Cost
				$13,810.00	**Total Cost**
				$9.24	**Cost / MBF**

Brand & Paint (Profit and Risk to be added in Appraisal)

31	Hauling Days
1.5	Hours / Day
$24.00	Cost / Hour
$1,116	**Total Cost**
$0.75	**Cost / MBF**

Other Costs with Profit and Risk Included

$13,810.00	Total Cost for Dust Abatement	$9.24	per MBF
$1,116.00	Total Cost for Branding	$0.75	per MBF
$14,926.00	**Total Other Costs**	**$9.98**	**per MBF**

Other Costs without Profit and Risk Included

Hummingbird Road Use Fee	1.01	per MBF
	$1,509.95	**Total Road Use Fee**

Double C
341-13-95
Project Work

"STEWARDSHIP IN FORESTRY"

Project #1 Road Improvement

Move-in Cost Dozer $400.00

Road Improvement

Improvement	Points	Distance (feet)	Feet/Hour	Hours	Cost/Hour	Cost
Open/Clear/Shape	A to B	8,982	1,000	9.0	$132.50	$1,190.12
					Total	**$1,190.12**

Project #1 Cost Summary

Move in	$400.00
Open/Clear/Shape	$1,190.12
Project # 1 Total	**$1,590.12**

Project #2 Fell, Skid and Pile Submerchantable Material

Total Sub-Sawlog Volume	$269.00	MBF
Fell and Skid/MBF	$50.00	
Sort/MBF	$10.00	
Total	**$16,140.00**	
Total Cost Per/MBF	$10.80	

Landing Cleanup

9	Number of Landings						
	Shovel Time:	0.5	Hours / Landing	Cost / Hour	$125.00	Total Cost:	$562.50
	Cat Time:	0.5	Hours / Landing	Cost / Hour	$132.50	Total Cost:	$596.25
						Total Cost:	**$1,158.75**

Project #2 Summary

Total Fell, Skid and Pile Submerchantable Material	$16,140.00
Total Landing Cleanup	$1,158.75
Total Project #2	$17,298.75
Total Per/MBF	$11.57

Project #3 Culvert Replacement

Move in Cost Excavator $400.00

	Cost / Hour	*Hours*	*Cost*
Excavator	$ 120.00	8.0	$ 960.00
Operator	$ 26.50	8.0	$ 212.00
		Total Cost:	$ 1,172.00

Quote from J.W. Kerns, Klamath Falls, OR. 02/19/2013

24" x 54' Polyethylene Culvert	$1,349.30
18" x 24' Polyethylene Culvert	$459.60
10 tons 3/4- bedding rock (delivered)	$240.00
10 tons 1 1/2" surface rock (delivered)	$240.00
Grader to spread surface rock (3 hours)	$316.50
Labor for Culvert (4 hours * $30.00/hour)	$120.00
Culvert Disposal	$100.00
Water source (Fire Season)	$100.00
Total Cost for Culvert Repair:	$2,925.40

Project #3 Summary

Total Cost for Excavator	$1,172.00
Total Cost for Labor and Materials	$2,925.40
Total Cost for Project #3	$4,097.40
Total Cost/MBF	**$2.74**

Double C

341-13-95

Project Work

	Project #4 Road Brushing Summary
3.1	Miles of Brushing
25	Hours of Excavator time
$100.00	Move-in cost
$2,500.00	**Total Cost Project # 4**
$1.67	**per MBF**

	Cost Summary All Projects
$1,590.12	Project # 1 - Road Improvement
$17,298.75	Project # 2 - Fell, Skid and Pile Submerchantable Material and Landing Slash Piling
$4,097.40	Project #3 - Culvert Replacement
$2,500.00	Project #4 - Road Brushing
$25,486.27	**Total Project Work Cost**
$17.05	**per MBF**

Double C

341-13-95

Cruise Report

"STEWARDSHIP IN FORESTRY"

SALE NAME: Double C

LEGAL DESCRIPTION:

Township 37S, R12 E, Portions of Sections 28 and 29 W.M., Klamath County, Oregon.

BOUNDARY LINES:

Unit boundaries are posted with "Timber Sale Boundary" signs, marked with fluorescent orange paint and fluorescent orange flagging. Exclusion areas are flagged with fluorescent orange flagging.

FUND:

100% CSL

ACREAGE:

The timber sale was delineated into 2 types based on differences in stocking and volume. Road 830-00 was the approximate boundary between the types.

Area I, Type 407 179 Acres
Area II, Type 407 51 Acres
Approximate Total Sale Acreage: 230 Acres

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

TREATMENT:

The treatment in Area I is a diameter limit cut, with all unmarked white fir greater than 5.0 inches dbh and 50% or greater net sawlog volume to be cut. All white fir trees less than 5.0 inches dbh up to 15.0 inches dbh in groups with 4 more trees, with a live crown ratio of 60% and greater on the south side are reserved from cutting. Also all white fir trees greater than 30.0 inches dbh. A minimal amount of ponderosa pine is cut tree marked with blue paint, all other pine is reserved from cutting.

The treatment in Area II is a diameter limit cut, with all unmarked white fir trees greater than 10.0 inches dbh and 50% or greater net sawlog volume to be cut. All white fir trees less than 10.0 inches dbh, all white fir trees greater than 30.0 inches dbh, and all pine trees are reserved from cutting.

CRUISE METHOD:

Area I. Variable Plot cruise with all plots being measure plots.
Area I. Fixed Plot cruise for all submerchantable material (5.0" to 9.0") dbh.

Area II. Variable Plot cruise with all plots being measure plots.

BASAL AREA FACTOR:

Area	BAF	Type Acreage
Area I	10 BAF	179 acres
Area II	14 BAF	51 acres

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

SAMPLE SIZE CALCULATIONS:

Area	CV%	DESIRED SE%	ACRES
I	61	13	179
II	61	13	51

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

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

Total Sale Area $N = \frac{(1)^2(61)^2}{(13)^2} = 22$ Plots Took 25 Plots

Took 15 Plots in Area I
Took 10 Plots in Area II

Measurements and Grading:

- DBH and Height were measured on all "in" trees in the plot.
- All plots were measure plots
- See attached species and grade tables for minimum requirements.
- All trees were graded using the segment system.

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:

Area I: 9.0 inches DBH
Area II: 10.0 inches 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.

CRUISERS: Todd Clement, Jon Fitch, and Mike Dwyer, December 2012.

FINAL CRUISE RESULTS:

Area	CV%	SE%	ACRES
I	55	14.6	179
II	72	24	51
COMBINED	64	12.5	230

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	GROSS VOL (MBF)	NET VOL (MBF)
White Fir	13.2	1561	1495
Ponderosa Pine	15.5	5	5*

TOTAL NET SAWLOG VOLUME: 1495 MBF

*For Appraisal Purposes Ponderosa Pine Volumes not included

Submerchantable Material VOLUME:

This volume was obtained from the fixed plot cruise (5.0" – 9.0" DBH).

Species	Fixed Plot Vol.
White Fir	269

.

PROJECT STATISTICS

PROJECT DBLC

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
37S	12E	29	AREA1	0001	230.00	25	166	1	E
37S	12E	29	AREA2	0002					

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	25	166	6.6		
CRUISE	24	166	6.9	16,391	1.0
DBH COUNT					
REFOREST					
COUNT					
BLANKS	1				
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
WHITE F	165	70.9	13.2	42	18.5	67.4	6,789	6,498	1,537	1,537
PPINE	1	.4	15.5	42	0.1	.5	24	24	6	6
TOTAL	*166*	*71.3*	*13.2*	*42*	*18.7*	*67.9*	*6,813*	*6,521*	*1,544*	*1,544*

CONFIDENCE LIMITS OF THE SAMPLE

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

CL 68.1 SD: 1.0

SAMPLE TREES - BF

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
WHITE F	76.8	6.0	124	132	140			
PPINE								
TOTAL	*77.0*	*6.0*	*124*	*131*	*139*	*237*	*59*	*26*

CL 68.1 SD: 1.0

SAMPLE TREES - CF

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
WHITE F	65.3	5.1	28	30	31			
PPINE								
TOTAL	*65.4*	*5.1*	*28*	*29*	*31*	*171*	*43*	*19*

CL 68.1 SD: 1.0

TREES/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHITE F	72.1	14.7	60	71	81			
PPINE	500.0	102.1		0	1			
TOTAL	*71.4*	*14.6*	*61*	*71*	*82*	*212*	*53*	*24*

CL 68.1 SD: 1.0

BASAL AREA/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHITE F	64.8	13.2	58	67	76			
PPINE	500.0	102.1		1	1			
TOTAL	*63.9*	*13.0*	*59*	*68*	*77*	*170*	*43*	*19*

CL 68.1 SD: 1.0

NET BF/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHITE F	67.6	13.8	5,601	6,498	7,394			
PPINE	500.0	102.1		24	48			
TOTAL	*67.2*	*13.7*	*5,627*	*6,521*	*7,415*	*188*	*47*	*21*

CL 68.1 SD: 1.0

NET CUFT FT/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WHITE F	65.0	13.3	1,333	1,537	1,741			
PPINE	500.0	102.1		6	13			
TOTAL	*64.5*	*13.2*	*1,341*	*1,544*	*1,747*	*173*	*43*	*19*

TC PLOGSTVB

Log Stock Table - MBF

T37S R12E S29 Ty0001 179.00
T37S R12E S29 Ty0002 51.00

Project: DBLC
Acres 230.00

Page 1
Date 2/27/2013
Time 9:15:46AM

Spp	S T	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-8	9-10	11-12	13-14	15-16	17-19	20-21	22-29	30-39	40+
WF		CR	CR	17	152	5.6	144	9.6			107	18	16	4						
WF		CR	CR	26	161	7.9	148	9.9			106	32	10							
WF		CR	CR	34	1,249	3.7	1,203	80.5			507	250	327	88	2	30				
WF		Totals			1,561	4.3	1,494	99.6			720	300	352	91	2	30				
PP		CR	CR	17	5		5					5								
PP		Totals			5		5	.4				5								
Total		All Species			1,567	4.3	1,500				720	306	352	91	2	30				

Species Table Report

TblSpecies

Date: 02/27/2013

Table Name: SUNPASS

Code	Abrv	Description	Bark Ratio	ASubo Const	Form Factor	Wood Type	Comp-onent	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	PPINE	.87	PP	.85	P	C	PP--EQUA--100	3	9	20	1.0	99	200	E	1	4800
2	WF	WHITE F	.94	NF	.87	W	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	5000
3	LP	LP PINE	.96	DF	.9	P	C	LP--EQUA--100	3	9	20	1.0	99	200	E	1	4800
4	DF	DOUG-FIR	.92	DF	.87	D	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	5700
5	SP	SUG PINE	.87	PP	.84	P	C	PP--EQUA--100	3	9	20	1.0	99	200	E	1	4800
6	IC	INC CED	.90	SS	.80	C	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	4500
7	RF	SH FIR	.924	DF	.89	W	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	5000

TblSortGrade

Sort/Grade Table

Table Name: SUNPASS **Date:** 02/27/2013

Sort	Grd	Abr	Desc	Fbr	Min Dia	Max Dia	Max Butt	Min Len	Max Len	Defect	Min Vol	Vol Type	Min Rings	Knot Size	Knot Freq	Str	Sap	Min Age	Lbs	Lbs Type	Cords	Cords Type
	0	CU	CULL	G	1	0	0	1	99	0	0	M	0	0	0			0	0		0	
	1	CR	CAMPRU	G	6	0	0	10	99	0	0	M	0	0	0			0	0		0	
	7	GP	GRNPULP	G	3	0	0	10	99	0	0	M	0	0	0			0	0		0	
	8	DP	DEADPUL	G	3	0	0	10	99	0	0	M	0	0	0			0	0		0	
	9	UT	UTILITY	G	8	0	0	12	99	0	0	M	0	0	0			0	0		0	
0		CU	CULL	G	1	0	0	1	99	0	0	M	0	0	0			0	0		0	
1		CR	CAMPRU	G	1	0	0	1	99	0	0	M	0	0	0			0	0		0	

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-13-95
DOUBLE C
PORTIONS OF SECTION 28 AND 29, T37S, R12E, W.M.
KLAMATH COUNTY, OREGON