



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Double Exposure
Sale WO-341-2025-001172-03

District: West Oregon

Date: February 25, 2025

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,174,948.08	\$9,784.08	\$1,184,732.16
		Project Work:	(\$71,864.00)
		Advertised Value:	\$1,112,868.16



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Timber Description

Location:

Stand Stocking: 60%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	28	0	96
Alder (Red)	19	0	97

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	1,970	294	0	2,264
Alder (Red)	0	0	127	127
Total	1,970	294	127	2,391

Comments: Pond Values Used: Local Pond Values, January 2025

Western hemlock and other Conifers Stumpage Price = Pond value minus logging costs: \$207.39/MBF = \$525/MBF - \$317.61/MBF

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
\$882.39 MBF = \$1200/MBF - \$317.61/MBF

Bigleaf Maple and Other Hardwoods Stumpage Price = Hardwood Pulp price using a conversion factor of 10 ton/MBF: = \$3.00/ton x 10 tons/MBF = \$30/MBF

PULP (Conifer and Hardwood Price) = \$3.00/TON

Other Costs (with Profit and Risk to be added)

Artificial Tailhold Anchor:

D7 dozer move-in cost = \$950

Total Other Costs (with Profit and Risk to be added) = \$950

Other Costs (No Profit and Risk to be added):

Equipment Cleaning (Invasive Species): \$2500

Landing slash piling and firewood sorting: 8 Landings @ \$180/ Landing = \$1,080

Total Other Costs (No Profit and Risk) = \$3,580

ROAD MAINTENANCE

Move-in:(Grader, Roller) \$1,900

Final Road Maintenance: \$11,576.32

Total Road Maintenance: \$13,476.32/2,415 MBF = \$5.58/MBF

SLASH DISPOSAL:

Move-In: \$1,700

32 hrs for 18 acres @ \$175/hr = \$5,600

Total Slash Disposal = \$7,300



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Logging Conditions

Combination#: 1 Douglas - Fir 85.00%
 Alder (Red) 85.00%

Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Falling/Delimbing
yarding distance: Medium (800 ft) **downhill yarding:** No
tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 9 **bd. ft / load:** 4700
cost / mbf: \$188.61
machines: Log Loader (A)
 Tower Yarder (Medium)

Combination#: 2 Douglas - Fir 15.00%
 Alder (Red) 15.00%

Logging System: Shovel **Process:** Feller Buncher
yarding distance: Short (400 ft) **downhill yarding:** No
tree size: Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF
loads / day: 20 **bd. ft / load:** 4600
cost / mbf: \$108.70
machines: Feller Buncher w/ Delimber



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Logging Costs

Operating Seasons: 2.00	Profit Risk: 10%
Project Costs: \$71,864.00	Other Costs (P/R): \$950.00
Slash Disposal: \$7,300.00	Other Costs: \$3,580.00

Miles of Road

Road Maintenance: \$5.58

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	4.5
Alder (Red)	\$0.00	2.0	3.5



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Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$176.62	\$5.80	\$3.67	\$96.29	\$0.40	\$28.28	\$3.05	\$2.00	\$1.50	\$317.61
Alder (Red)									
\$176.62	\$5.75	\$3.67	\$183.93	\$0.40	\$37.04	\$3.05	\$2.00	\$1.50	\$413.96

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$836.58	\$518.97	\$0.00
Alder (Red)	\$0.00	\$491.00	\$77.04	\$0.00



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Summary

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	2,264	\$518.97	\$1,174,948.08
Alder (Red)	127	\$77.04	\$9,784.08

Gross Timber Sale Value

Recovery: \$1,184,732.16

Prepared By: Jeff Kuust

Phone: 541-929-9161

SUMMARY OF ALL PROJECT COSTS

Sale Name: Double Exposure

Date: February 2025

Time: 8:01

Project #1 - Road Improvement, Surface Rock Replacement and Maintenance

<u>Road Segment</u>	<u>Length</u>	<u>Cost</u>
1 to 2	89.3 sta	\$22,960
3 to 4	3.1 sta	\$4,277
5 to 6	7.9 sta	\$6,899
7 to 8	14.0 sta	\$23,489
9 to 10	33.2 sta	\$1,928
11 to 12	6.1 sta	\$63
13 to 14	5.3 sta	\$63
15 to 16	16.3 sta	\$4,308
TOTALS	175.2 sta	\$63,987

Project #2 - Roadside Brushing and Sod Removal

	<u>Length</u>	<u>Cost</u>
Brushing	2.1 mi	\$2,174
Sod and Brush Removal	2.1 mi	\$1,853
TOTAL		\$4,027

Project #3 - Move in

	<u>Cost</u>
Backhoe, C580 or equiv.	\$500
Dozer, D-6 or equiv.	\$950
Grader, Cat 14-G or equiv.	\$950
Vibratory roller	\$950
Road Brusher	\$500
TOTAL	\$3,850

GRAND TOTAL

\$71,864

Compiled by: Jeff Kuust

Date 02/26/2025

SUMMARY OF CONSTRUCTION COST

SALE Double Exposure Project # 1 LENGTH 89.3 sta
ROAD 1 to 2

EXCAVATION

Construct landing (Sta. 83+45)	1 landing	@	<u>Rate</u> \$480.00	/ldg	=	\$480
						TOTAL EXCAVATION = \$480

IMPROVEMENT

Re-open landing (Sta. 89+30) (w/ dozer)	0.5 hrs	@	<u>Rate</u> \$140.00	/hr	=	\$70
Shape surface (w/ grader)	89.3 sta	@	\$22.69	/sta	=	\$2,026
Process Rock (w/ grader)	89.3 sta	@	\$22.69	/sta	=	\$2,026
Compact surface (w/ roller)	89.3 sta	@	\$17.50	/sta	=	\$1,563
Process turnout rock (w/ dozer)	0.5 sta	@	\$22.69	/sta	=	\$11
Compact turnout rock (w/ roller)	0.5 sta	@	\$17.50	/sta	=	\$9
						TOTAL IMPROVEMENT = \$5,705

SURFACING

Surface rock (2" lift) (Sta. 0+00 to 18+90)	210 CY	<u>Size</u> 1½"-0"	@	<u>Rate</u> \$25.31	/CY	=	\$5,315
Spot rock (Sta. 18+90 to Pt. 9)	30 CY	3"-0"	@	\$23.96	/CY	=	\$719
Spot rock (Sta. 18+90 to Pt. 9)	120 CY	1½"-0"	@	\$25.31	/CY	=	\$3,037
Surface rock (2" lift) (Pt. 9 to Sta. 89+30)	220 CY	1½"-0"	@	\$25.31	/CY	=	\$5,568
Landing rock (Sta. 83+45, 89+30)	70 CY	Jaw-Run	@	\$22.95	/CY	=	\$1,607
Turnout rock (Sta. 56+00)	20 CY	3"-0"	@	\$23.96	/CY	=	\$479
						TOTAL ROCK COST = \$16,725	

SPECIAL PROJECTS

Clean out culverts (inlets and outlets)	2 culverts	@	<u>Rate</u> \$25	ea	=	\$50
						TOTAL SPECIAL PROJECTS COST = \$50

Compiled by:
Date:

Jeff Kuust
Feb 26, 2025

GRAND TOTAL =====> \$22,960

SUMMARY OF CONSTRUCTION COST

SALE	Double Exposure	Project #	1	LENGTH	3.1 sta
ROAD	3 to 4				

IMPROVEMENT

			<u>Rate</u>			
Re-open road and landing (w/ dozer)	3.1 sta	@	\$41.00	/sta	=	\$127
Shape subgrade (w/ grader)	3.1 sta	@	\$22.69	/sta	=	\$70
Compact subgrade (w/ roller)	3.1 sta	@	\$17.50	/sta	=	\$54
Process rock (w/ dozer)	3.1 sta	@	\$22.69	/sta	=	\$70
Compact surface (w/ roller)	3.1 sta	@	\$17.50	/sta	=	\$54
TOTAL IMPROVEMENT =						\$375

SURFACING

		<u>Size</u>		<u>Rate</u>		
Base rock (8" lift) (Sta. 0+00 to 3+10)	140 CY	Jaw-Run	@	\$22.95	/CY	= \$3,213
Landing rock (Sta. 3+10)	30 CY	Jaw-Run	@	\$22.95	/CY	= \$689
TOTAL ROCK COST =						\$3,902

Compiled by:	Jeff Kuust
Date:	Feb 26, 2025

GRAND TOTAL =====> \$4,277

SUMMARY OF CONSTRUCTION COST

SALE	Double Exposure	Project #	1	LENGTH	7.9 sta
ROAD	5 to 6				

EXCAVATION

Construct landing (Sta. 5+10)	1 landing	@	<u>Rate</u> \$480.00	/ldg =	\$480
TOTAL EXCAVATION =					\$480

IMPROVEMENT

Re-open road and landing (w/grader)	7.9 sta	@	<u>Rate</u> \$41.00	/sta =	\$324
Shape subgrade (w/ grader)	7.9 sta	@	\$22.69	/sta =	\$179
Compact subgrade (w/ roller)	7.9 sta	@	\$17.50	/sta =	\$138
Process rock (w/ grader)	7.9 sta	@	\$22.69	/sta =	\$179
Compact surface (w/ roller)	7.9 sta	@	\$17.50	/sta =	\$138
TOTAL IMPROVEMENT =					\$958

SURFACING

Base rock (4" lift) (Sta. 0+00 to 7+90)	180 CY	<u>Size</u> 3"-0"	@	<u>Rate</u> \$23.96	/CY =	\$4,313
Landing rock (Sta. 5+10 & Sta. 7+90)	50 CY	Jaw-Run	@	\$22.95	/CY =	\$1,148
TOTAL ROCK COST =					\$5,461	

Compiled by:	Jeff Kuust
Date:	Feb 26, 2025

GRAND TOTAL =====> \$6,899

SUMMARY OF CONSTRUCTION COST

SALE Double Exposure Project # 1 LENGTH 14.0 sta
ROAD 7 to 8

EXCAVATION

Remove tank trap (w/ backhoe)	0.5 hrs	@	<u>Rate</u> \$96.00	/hr =	\$48
TOTAL EXCAVATION =					\$48

IMPROVEMENT

Re-open road and landings (w/ dozer)	14.5 sta	@	<u>Rate</u> \$41.00	/sta =	\$595
Shape subgrade (w/ grader)	14.5 sta	@	\$22.69	/sta =	\$329
Compact subgrade (w/ roller)	14.5 sta	@	\$17.50	/sta =	\$254
Process base rock (w/ dozer)	14.0 sta	@	\$22.69	/sta =	\$318
Compact base rock (w/ roller)	14.0 sta	@	\$17.50	/sta =	\$245
Process surface rock (w/ grader)	14.0 sta	@	\$22.69	/sta =	\$318
Compact surface (w/ roller)	14.0 sta	@	\$17.50	/sta =	\$245
Process landing rock (w/ dozer)	0.5 sta	@	\$22.69	/sta =	\$11
Compact landing rock (w/ roller)	0.5 sta	@	\$17.50	/sta =	\$9
TOTAL IMPROVEMENT =					\$2,324

SURFACING

Base rock (8" lift) (Sta. 0+00 to 14+00)	620 CY	<u>Size</u> Jaw-Run	@	<u>Rate</u> \$22.95	/CY =	\$14,229
Surface rock (3" lift) (Sta. 0+00 to 14+00)	230 CY	3"-0"	@	\$23.96	/CY =	\$5,511
Landing rock (Sta. 6+80 & Sta. 14+00)	60 CY	Jaw-Run	@	\$22.95	/CY =	\$1,377
TOTAL ROCK COST =					\$21,117	

Compiled by: Jeff Kuust
Date: Feb 26, 2025

GRAND TOTAL =====> \$23,489

SUMMARY OF CONSTRUCTION COST

SALE	Double Exposure	Project #	1	LENGTH	33.2 sta
ROAD	9 to 10				

IMPROVEMENT

			<u>Rate</u>				
Re-open landing	0.5 hrs	@	\$125.00	/hr	=	\$63	
(w/ grader)							
Process rock	33.2 sta	@	\$22.69	/sta	=	\$753	
(w/ grader)							
Compact surface	33.2 sta	@	\$17.50	/sta	=	\$581	
(w/ roller)							
TOTAL IMPROVEMENT =							\$1,397

SURFACING

		<u>Size</u>	<u>Rate</u>				
Patch rock	20 CY	1½"-0"	@	\$25.31	/CY	=	\$506
(Sta 13+70 and Sta. 20+30)							
TOTAL ROCK COST =							\$506

SPECIAL PROJECTS

			<u>Rate</u>				
Clean culvert inlet/outlet (Sta 20+30)	1 culvert	@	\$25	ea	=	\$25	
TOTAL SPECIAL PROJECTS COST =							\$25

Compiled by:
Date:

Jeff Kuust
Feb 26, 2025

GRAND TOTAL =====> \$1,928

SUMMARY OF CONSTRUCTION COST

SALE	Double Exposure	Project #	1	LENGTH	6.1 sta
ROAD	11 to 12				

IMPROVEMENT

Re-open landing (w/ grader)	0.5 hrs	@	<u>Rate</u> \$125.00	/hr	=	\$63
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TOTAL IMPROVEMENT = \$63

Compiled by:	Jeff Kuust
Date:	Feb 26, 2025

GRAND TOTAL =====> \$63

SUMMARY OF CONSTRUCTION COST

SALE	Double Exposure	Project #	1	LENGTH	5.3 sta
ROAD	13 to 14				

IMPROVEMENT

Re-open landing (w/ grader)	0.5 hrs	@	<u>Rate</u> \$125.00	/hr	=	\$63
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TOTAL IMPROVEMENT = \$63

Compiled by: Jeff Kuust
Date: Feb 26, 2025

GRAND TOTAL =====> \$63

SUMMARY OF CONSTRUCTION COST

SALE	Double Exposure	Project #	1	LENGTH	16.3 sta
ROAD	15 to 16				

IMPROVEMENT

			<u>Rate</u>			
Process surface (w/ grader)	16.3 sta	@	\$22.69	/sta	=	\$370
Re-open landing (w/ grader)	0.5 hrs	@	\$125.00	/hr	=	\$63
Process surface rock (w/ grader)	16.3 sta	@	\$22.69	/sta	=	\$370
Compact surface (w/ roller)	16.3 sta	@	\$17.50	/sta	=	\$285
TOTAL IMPROVEMENT =						\$1,088

SURFACING

		<u>Size</u>		<u>Rate</u>		
Spot Rock (Sta. 0+00 to 16+30)	100 CY	1½"-0"	@	\$25.31	/CY	= \$2,531
Landing rock (Sta. 16+30)	30 CY	Jaw-Run	@	\$22.95	/CY	= \$689
TOTAL ROCK COST =						\$3,220

Compiled by:	Jeff Kuust
Date:	Feb 26, 2025

GRAND TOTAL =====> \$4,308

SUMMARY OF BRUSHING COST

SALE Double Exposure Project # 2 LENGTH 2.07 Miles
ROAD All

LIGHT BRUSHING

			<u>Rate</u>				
Pt. 9 to Pt. 10	0.63 mi	@	\$880.00	/mi	=	\$554	
Pt. 15 to Pt. 16	0.31 mi	@	\$880.00	/mi	=	\$273	
Pt. 17 to Pt. 18	0.11 mi	@	\$880.00	/mi	=	\$97	
Pt. 19 to Pt. 20	0.16 mi	@	\$880.00	/mi	=	\$141	

TOTAL LENGTH = 1.21 mi

TOTAL LIGHT BRUSHING COST = \$1,065

MEDIUM BRUSHING

			<u>Rate</u>				
Pt. 3 to Pt. 4	0.06 mi	@	\$1,200.00	/mi	=	\$72	
Pt. 5 to Pt. 6	0.15 mi	@	\$1,200.00	/mi	=	\$180	
Pt. 7 to Pt. 8	0.27 mi	@	\$1,200.00	/mi	=	\$324	
Pt. 7 to Pt. 2	0.16 mi	@	\$1,200.00	/mi	=	\$192	

TOTAL LENGTH = 0.64 mi

TOTAL HEAVY BRUSHING COST = \$768

HEAVY BRUSHING

			<u>Rate</u>				
Pt. 11 to Pt. 12	0.12 mi	@	\$1,550.00	/mi	=	\$186	
Pt. 13 to Pt. 14	0.10 mi	@	\$1,550.00	/mi	=	\$155	

TOTAL LENGTH = 0.22 mi

TOTAL HEAVY BRUSHING COST = \$341

BRUSHING GRAND TOTAL =====> \$2,174

SOD AND DEBRIS REMOVAL

			<u>Rate</u>				
All brushing segments	2.07 mi	@	\$894.96	/mi	=	\$1,853	

TOTAL LENGTH = 2.07 mi

TOTAL SOD AND DEBRIS REMOVAL =====> \$1,853

Compiled by: Jeff Kuust
Date: Feb 26, 2025

SUMMARY OF MAINTENANCE COST

'Final log haul Maintenance Cost Estimate

(Costed in appraisal, not in project costs)

SALE

Double Exposure

Move-in	Grader	\$	950
	Vibratory Roller	\$	950

Road Segment	Length	Cost/Sta	Cost	Mileage
1 to 2	89.3 sta	\$40.19	\$3,588.97	1.69
3 to 4	3.1 sta	\$40.19	\$124.59	0.06
5 to 6	7.9 sta	\$40.19	\$317.50	0.15
7 to 8	14.0 sta	\$40.19	\$562.66	0.27
15 to 16	16.3 sta	\$40.19	\$655.10	0.31
Total	130.6		\$5,248.82	2.47

Maintenance Rock:

	Volume	Cost/CY	Cost
1½"-0"	250	\$25.31	\$6,327.50

Grand Total \$ 13,476.32

TS Volume 2,415 MBF

Cost / MBF = \$5.58

NOTES:

ROAD SEGMENT	1 to 2			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1 to 2		0+00 to 89+30			
				Volume (CY) per		Number of			
Surface rock	1 1/2"-0"	0+00 to 18+90	2	11	Station	18.9	Stations	210	284
Spot rock	1 1/2"-0"	18+90 to 69+10	n/a	10	Load	12	Loads	120	162
Spot rock	3"-0"	18+90 to 69+10	n/a	10	Load	3	Loads	30	41
Turnout rock	3"-0"	56+00	n/a	20	Turnout	1	Turnout	20	27
Surface rock	1 1/2"-0"	69+10 to 89+30	2	11	Station	20.2	Stations	220	297
Landing rock	Jaw-Run	83+45	n/a	40	Landing	1	Landing	40	54
Landing rock	Jaw-Run	89+30	n/a	30	Landing	1	Landing	30	41
Total Rock for Road Segment		1 to 2						670	905
ROAD SEGMENT	3 to 4			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (inches)	3 to 4		0+00 to 3+10			
				Volume (CY) per		Number of			
Base rock	Jaw-Run	0+00 to 3+10	8	44	Station	3.1	Stations	140	189
Landing rock	Jaw-Run	3+10	n/a	30	Landing	1	Landing	30	41
Total Rock for Road Segment		3 to 4						170	230
ROAD SEGMENT	5 to 6			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (inches)	5 to 6		0+00 to 7+90			
				Volume (CY) per		Number of			
Base rock	3"-0"	0+00 to 7+90	4	22	Station	7.9	Stations	180	243
Landing rock	Jaw-Run	5+10	n/a	20	Landing	1	Landing	20	27
Landing rock	Jaw-Run	7+90	n/a	30	Landing	1	Landing	30	41
Total Rock for Road Segment		5 to 6						230	311
ROAD SEGMENT	7 to 8			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (inches)	7 to 8		0+00 to 14+00			
				Volume (CY) per		Number of			
Base rock	Jaw-Run	0+00 to 14+00	8	44	Station	14	Stations	620	837
Surface rock	3"-0"	0+00 to 14+00	3	16.5	Station	14	Stations	230	311
Landing rock	Jaw-Run	6+80, 14+00	n/a	30	Landing	2	Landings	60	81
Total Rock for Road Segment		7 to 8						910	1229

[illegible]

Rock Haul Cost Computation

SALE NAME:	Double Exposure	DATE:	Feb 26, 2025
ROAD NAME:	Highway 20 Cutoff, Tower of Power	CLASS:	Medium
ROCK SOURCE:	Rickard		10 CY truck
Route:	Highway 20		

TIME Computation:

Road speed time factors:

1.	55 MPH		MRT	0.0 minutes
2.	50 MPH	28.2	MRT	33.8 minutes
3.	45 MPH		MRT	0.0 minutes
4.	40 MPH		MRT	0.0 minutes
5.	35 MPH		MRT	0.0 minutes
6.	30 MPH		MRT	0.0 minutes
7.	25 MPH		MRT	0.0 minutes
8.	20 MPH	1.7	MRT	5.1 minutes
9.	15 MPH	2.6	MRT	10.4 minutes
10.	10 MPH	0.4	MRT	2.4 minutes
11.	05 MPH		MRT	0.0 minutes

Dump or spread time per RT		0.50 minutes
Total hauling cycle time for this setting (100% efficiency)		52.20 minutes

Operator efficiency correction	0.85	61.41 minutes
Job efficiency correction	0.90	68.23 minutes

Truck capacity (CY)	10.00	6.82 min/CY
Loading time, delay time per CY		0.25 min/CY
TIME (minutes) per cubic yard		7.07 min/CY

COST per CY computation

Cost of truck and operator per hour	\$100.00 /hr.
Cost of truck and operator per minute	\$1.67 /min

Cost per CY	\$11.81 /CY
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Size	Cost/Yd (Pit)	Cost Delivered w/o processing
1½" - 0"	\$ 13.50	\$25.31
3" - 0"	\$ 12.15	\$23.96
Jaw-Run	\$ 11.14	\$22.95

TIMBER CRUISE REPORT

Double Exposure (WO-341-2025-W01172-03) FY 2025

1. **Sale Area Location:** Portions of Sections 15, 22, and 23, T11S, R08W, W.M., Lincoln, Oregon.

2. **Fund Distribution:**

a. **Fund** BOF 100%

3. **Sale Acreage by Area:**

Unit	Treatment	Gross Acres	Stream Buffers	Slope Buffer	Existing Roads	Green Tree Reserve Area	Net Sale Acres	Acreage Comp. Method
1	Clearcut	86	21	0	3	2	60	GIS
Total		86	21	0	3	2	60	GIS

4. **Cruisers and Cruise Dates:** The sale was cruised by Steven Irving and Isabelle Doan in October and November of 2024.

5. **Cruise Method and Computation:** The sale consists of one unit. Unit 1 is a clearcut that was cruised using variable radius plot sampling on a 4 x 4 chain grid using a 40 BAF prism factor. A total of 45 plots were taken in Unit 1 with 23 grade plots and 22 count plots.

Measure plots were measured for DBH, height, form factor, grade, and defect. Data was entered into the Atterbury SuperACE cruise program to determine stand statistics and net board foot volume. Additional volume was removed to account for hidden defect and breakage.

Digital ortho photos, Lidar data, and GPS data were used to map the boundaries for the sale, and ArcPro GIS was used to determine gross and net acreage.

6. **Measurement Standards:** Tree heights were measured to the nearest foot, to a top diameter of 5 inches inside bark or to 40% of dob at 16' form point. Diameters at breast height (DBH) were measured to the nearest inch, and a form point of 16 feet was used to calculate form factor. Form factors were measured or estimated on every tree. Most trees were graded in 40-foot log segments unless breakage, defect, or length to top of grade cruise diameter warranted otherwise.

7. **Timber Description:** Timber in Unit 1 includes 60 acres of predominately 83-year-old Douglas-fir with some scattered bigleaf maple and red alder. The average Douglas-fir to be removed is approximately 28 inches DBH, with an average height of 99 feet to a merchantable top. The average red alder is approximately 19 inches with an average height of 57 feet to a merchantable top. The average bigleaf maple is approximately 15 inches DBH, with an average height of 52 feet to a merchantable top. The average volume per acre to be harvested in the stocked areas of Unit 1 is approximately 40.3 MBF/Acre (net).

8. **Statistical Analysis and Stand Summary:** (See attached "Statistics").

Unit	Target CV	Target SE	Actual CV	Actual SE
1	55%	9%	39.1	5.8

Note: Statistics shown are for conifer and hardwood trees combined. Percentages are for net board foot volume.

9. Total Volume (MBF) by Species and Grade: (See attached volume report “Species, Sort Grade – Board Foot Volumes - Project”).

Unit	Species	Gross Cruise Volume	Cruised D & B	Cruised D & B (MBF)	Hidden D & B	Hidden D & B (MBF)	Net Sale Volume
1	Douglas-fir	2365	1.3%	(31)	3%	(70)	2264
	Red Alder	132	1.1%	(1)	3%	(4)	127
	Bigleaf Maple	25	-	-	3%	(1)	24
Totals		2522	1.3%	32	3%	75	2415

Unit	Species	Ave. DBH	Net Vol.	2-Saw	3-Saw	4-Saw	Camp Run
1	Douglas-fir	28	Grade %	87%	11%	2%	-
			2264	1970	249	45	-
	Red Alder	19	Grade %	-	-	-	100%
			127	-	-	-	127
	Bigleaf Maple	15	Grade %	-	-	-	100%
			24	-	-	-	24
Totals			2415	1970	249	45	151

Attachments: Cruise Design
Cruise Maps
Statistics
Species, Sort Grade – Board Foot Volumes
Stand Table Summary
Log Stock Table – MBF

Prepared by: Jeff Kuust

Date: 2/12/2025

Unit Forester: 
Cody Valencia

Date: 2/20/25

CRUISE DESIGN WEST OREGON DISTRICT

Sale Name: Double Exposure Area All

Harvest Type: MC

Net BF: 2,600,000

Approx. Cruise Acres: 65 Estimated CV% 55 /Acre SE% Objective 9 /Acre

Planned Sale Volume: 2.6 MMBF Estimated Sale Area Value/Acre: \$ 20,000

- A. **Cruise Goals:** (a) Grade minimum 100 conifer and hardwood trees:
 (b) Sample 45 cruise plots (23 grade: 22 count); (c) Other goals X Determine log grades for sale value; Determine take and leave tree species and sizes.

(Special cruising directions – leave trees etc.) Take plots as shown on map. Do not take plots in buffers.

DO NOT RECORD 12', 22' and 32' (for Hardwoods).

DO NOT RECORD 22' LENGTHS.

B. Cruise Design:

1. **Plot Cruises:** BAF 40 Full point
 Cruise Line Direction(s) 90, 270
 Cruise Line Spacing 4,264 (chains) (feet)
 Cruise Plot Spacing 4,264 (chains) (feet)
 Grade/Count Ratio 1:1

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods.
 Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
3. **Top Cruise Diameter (TCD):** Minimum top inside bark for conifer is 5", 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 6" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.
5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for

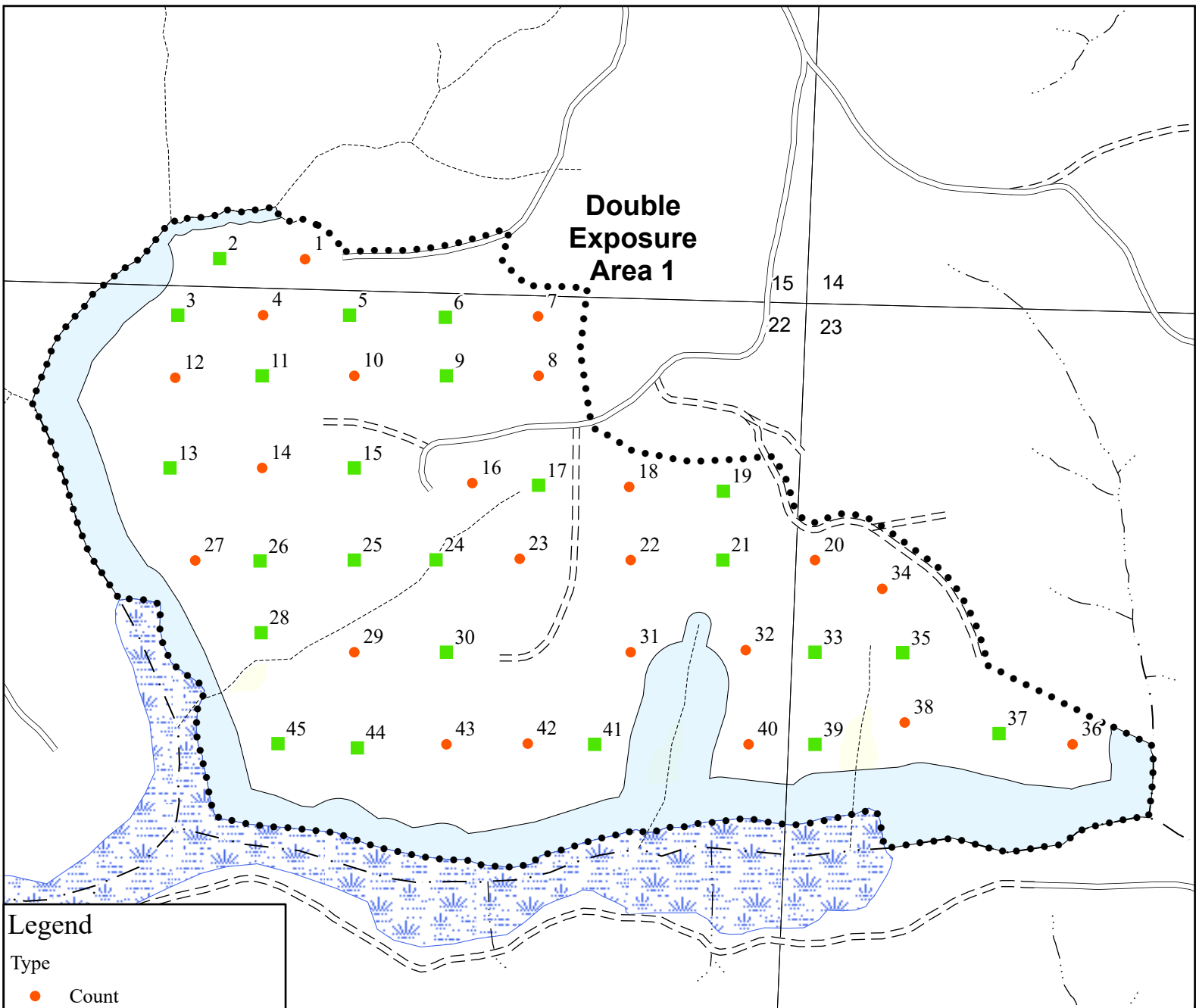
hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. log segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

- 6. Species, Sort, and Grade Codes:** A. Species: Record as DF (Douglas-fir); WH (Western hemlock); SS (Sitka Spruce); RC (Western red cedar); NF (Noble fir); SF (Silver fir); RA (Red alder); BM (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DFL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; K = Camp Run; 0 = Cull ;
Hardwoods: K = Camprun; #1 Sawmill = 12"+ scaling diameter; #2 Sawmill = 10" and 11"; #3 Sawmill = 8" and 9"; #4 Sawmill = 6" and 7"
- 7. Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.
- 8. Standard Field Procedures:** Plot Type Cruises: At each plot, tie red flagging above eye level near plot center and another red flagging around a sturdy wooden stake marking plot center. On red flagging, write the plot identification number. On "measure/grade" plots write the tree number and/or tree diameter on all measured trees (clockwise from the line direction) in yellow paint.
- 9. Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back), Compass, Cruise Cards or Data Recorder, Cruise Design, Cruise Map, Red Flagging, Yellow Paint.
- 10. Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Steven Irving

Approved by: _____

Date: 10/31/2024



Legend

Type

- Count
- Measure
- ... Timber Sale Boundary
- Stream Buffer
- No Harvest - Inner Gorge
- Wetlands
- Type F Stream
- Type N Stream
- Unknown Stream
- Highway
- County Road
- Surfaced Road
- Unsurfaced Road

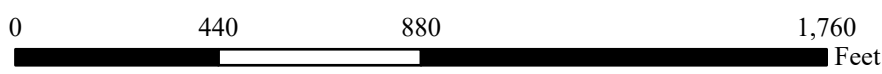
CRUISE MAP

DOUBLE EXPOSURE
PORTIONS OF SECTIONS 15, 22 and 23, T11S, R08W, W.M.,
LINCOLN COUNTY, OREGON

BAF: 40
Cruise Line Bearing: 90 and 270
Line Spacing: 4x4 Chains
Mark DBH with yellow paint
Mark plot center with red flagging

	GROSS	NET
AREA	ACRES	ACRES
1 (MC)	86	65

Scale
1:5,000



TC TSTATS				STATISTICS				PAGE	1
				PROJECT	DOUBLE E			DATE	2/25/2025
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
11S	08W	22	UNIT 1	00MC	60.00	45	206	1	W
				TREES	ESTIMATED				
				PER PLOT	TOTAL				
					TREES				

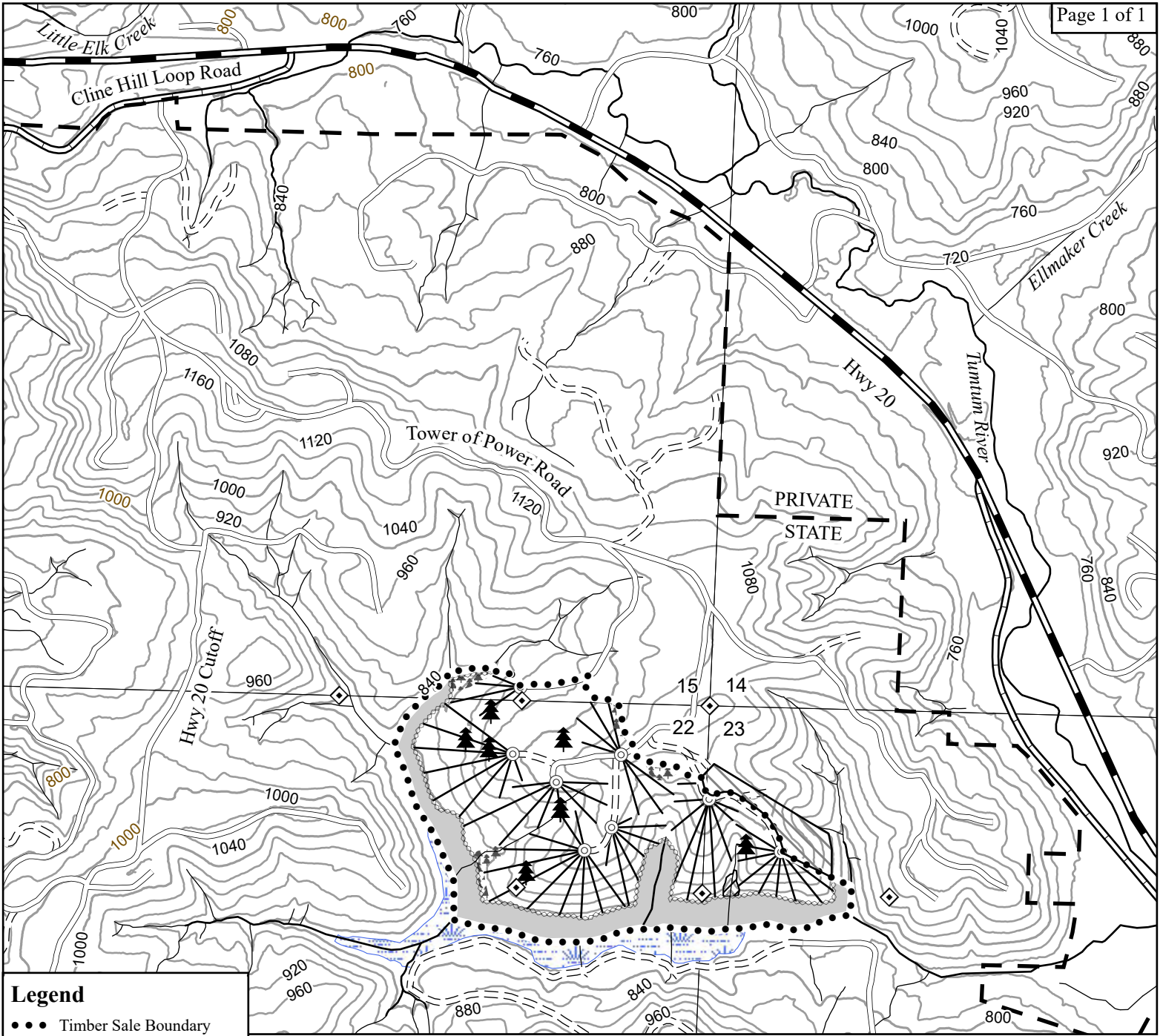
TC TSTATS				STATISTICS				PAGE	2
				PROJECT	DOUBLE E			DATE	2/25/2025
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
11S	08W	22	UNIT 1	00MC	60.00	45	206	1	W
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DF		48.7	7.3	7,430	8,011	8,591			
R ALDER		203.1	30.2	481	689	898			
D-WILDLI		260.4	38.8	170	278	386			
BL MAPLE		346.4	51.6	69	143	217			
TOTAL		36.1	5.4	8,632	9,121	9,611	52	13	6

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page		1				
				Project: DOUBLE E										Date		2/25/2025				
														Time		10:13:05AM				
T11S R08W S22 T00MC										T11S R08W S22 T00MC										
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt		
11S		08W		22		UNIT 1		00MC		60.00		45		103		1		W		
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln Dia Bd CF/ Ft In Ft Lf				
DF	DO	2M	87	1.4	34,650	34,180	2,051	0	11	89	0	1	2	97	39	20	687	3.36	49.7	
DF	DO	3M	11	.6	4,100	4,074	244	67	28	5	0	14	24	61	34	10	143	1.22	28.5	
DF	DO	4M	2		643	643	39	25	63	12	33	37	24	6	23	7	35	0.52	18.3	
DF	Totals		90	1.3	39,393	38,897	2,334	0	8	12	79	1	3	4	92	35	15	403	2.39	96.6
RA	DO	CR	100	1.1	2,201	2,177	131	2	43	30	25	6	6	12	76	30	9	111	1.18	19.7
RA	Totals		5	1.1	2,201	2,177	131	2	43	30	25	6	6	12	76	30	9	111	1.18	19.7
DFW	DO	2M	44	2.7	693	675	40			100				100	40	35	2275	9.96	.3	
DFW	DO	3M	55	5.1	861	817	49		4	96		6	4	91	37	29	1519	7.95	.5	
DFW	DO	4M	1		14	14	1			100	100				16	21	300	3.81	.0	
DFW	Totals		4	4.0	1,569	1,506	90		2	98	1	3	2	94	37	30	1707	8.59	.9	
BM	DO	CR	100		418	418	25	100			10			90	32	7	70	0.74	6.0	
BM	Totals		1		418	418	25	100			10			90	32	7	70	0.74	6.0	
Type Totals				1.3	43,580	42,997	2,580	0	11	13	76	1	3	5	91	34	13	349	2.19	123.1

TC TSTNDSUM				Stand Table Summary											
				Project		DOUBLE E									
T11S R08W S22 T00MC										T11S R08W S22 T00MC					
Twp	Rge	Sec	Tract	Type			Acres		Plots	Sample Trees			Page: 1		
11S	08W	22	UNIT 1	00MC			60.00		45	103			Date: 02/25/201		
														Time: 10:14:35AM	
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s		
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits
DF		9	1	86	59	3.932	1.74	3.93	9.0	30.0		35	118	21	7
DF		15	1	87	67	1.415	1.74	2.83	17.5	55.0		50	156	30	9
DF		17	1	86	102	1.102	1.74	3.31	21.3	80.0		71	264	42	16
DF		18	1	86	115	.983	1.74	2.95	26.3	93.3		78	275	47	17
DF		19	1	88	99	.882	1.74	1.76	38.5	120.0		68	212	41	13
DF		20	1	91	109	.796	1.74	2.39	33.7	133.3		80	318	48	19
DF		22	2	87	124	1.316	3.47	3.95	42.0	171.7		166	678	99	41
DF		24	4	88	124	2.212	6.95	6.63	50.8	214.2		337	1,421	202	85
DF		25	4	87	131	2.038	6.95	6.11	58.1	248.3		355	1,518	213	91
DF		26	3	88	139	1.413	5.21	4.24	62.6	282.2		265	1,197	159	72
DF		27	2	87	141	.874	3.47	2.62	71.3	316.7		187	830	112	50
DF		28	2	87	140	.812	3.47	2.44	74.3	325.0		181	792	109	48
DF		29	3	88	143	1.136	5.21	3.41	83.6	396.7		285	1,352	171	81
DF		30	5	88	144	1.769	8.68	5.31	90.6	432.0		481	2,293	289	138
DF		31	7	88	139	2.320	12.16	6.96	92.8	441.9		646	3,075	388	185
DF		32	6	88	152	1.866	10.42	5.91	100.5	495.8		594	2,930	356	176
DF		33	6	87	143	1.755	10.42	5.26	106.0	507.8		558	2,673	335	160
DF		34	10	88	149	2.755	17.37	8.26	117.7	596.0		972	4,926	583	296
DF		35	6	89	144	1.560	10.42	4.68	122.8	637.2		575	2,982	345	179
DF		36	2	89	155	.491	3.47	1.47	132.5	683.3		195	1,007	117	60
DF		37	4	88	151	.930	6.95	2.79	130.8	692.5		365	1,933	219	116
DF		38	8	88	148	1.764	13.90	5.51	137.9	724.4		760	3,994	456	240
DF		41	2	90	158	.379	3.47	1.33	157.6	882.9		209	1,171	125	70
DF		45	1	90	163	.157	1.74	.63	162.2	905.0		102	569	61	34
DF		46	2	89	160	.301	3.47	1.05	196.9	1098.6		207	1,157	124	69
DF		47	1	86	150	.144	1.74	.43	188.3	1036.7		81	448	49	27
DF		50	1	91	156	.127	1.74	.38	277.7	1590.0		106	608	64	36
DF	Totals		87	88	126	35.230	151.11	96.56	83.0	402.8		8,011	38,897	4,806	2,334
RA	15	1	86	83	1.932	2.37	3.86	22.5	65.0		87	251	52	15	
RA	16	1	86	82	1.698	2.37	3.40	26.0	85.0		88	289	53	17	
RA	17	1	87	38	1.504	2.37	1.50	26.0	50.0		39	75	23	5	
RA	19	1	87	67	1.204	2.37	2.41	31.5	100.0		76	241	46	14	
RA	20	2	87	78	2.173	4.74	4.35	39.3	122.5		171	532	102	32	
RA	21	1	86	60	.985	2.37	1.97	34.5	100.0		68	197	41	12	
RA	26	1	87	69	.643	2.37	1.29	57.0	200.0		73	257	44	15	
RA	31	1	87	82	.452	2.37	.90	96.5	370.0		87	335	52	20	
RA	Totals		9	87	70	10.591	21.33	19.68	35.0	110.6		689	2,177	414	131
DFW	45	1	90	150	.097	1.07	.29	205.7	1113.3		60	323	36	19	
DFW	61	1	87	166	.053	1.07	.16	408.3	2240.0		64	353	39	21	
DFW	62	1	87	142	.051	1.07	.15	377.3	2093.3		58	320	35	19	
DFW	64	1	88	155	.048	1.07	.14	282.0	1676.7		40	240	24	14	
DFW	65	1	85	142	.046	1.07	.14	406.0	1946.7		56	270	34	16	
DFW	Totals		5	88	151	.294	5.33	.88	315.5	1706.9		278	1,506	167	90
BM	14	1	86	86	2.079	2.22	4.16	20.5	70.0		85	291	51	17	
BM	15	1	87	56	1.811	2.22	1.81	32.0	70.0		58	127	35	8	
BM	Totals		2	86	72	3.890	4.44	5.97	24.0	70.0		143	418	86	25
Totals			103	87	110	50.004	182.22	123.09	74.1	349.3		9121	42,997	5,473	2,580

TC		TLOGSTVB		Log Stock Table - MBF																
				Project: DOUBLE E																
T11S R08W S22 T00MC												T11S R08W S22 T00M								
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1											
11S	08W	22	UNIT 1	00MC	60.00	45	103	Date	2/25/2025											
										Time	10:15:46AM									
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+
DF	DO	2M	18		10		10	.4									10			
DF	DO	2M	24		12		12	.5											12	
DF	DO	2M	32		25	2.6	24	1.0								14		10		
DF	DO	2M	34		11	.9	10	.4						2		8				
DF	DO	2M	36		34		34	1.5						2		17		15		
DF	DO	2M	38		40	1.9	39	1.7							7	23	10			
DF	DO	2M	40		1,948	1.4	1,921	82.3					3	29	94	494	512	661	128	
DF	DO	3M	12		1		1	.0						1						
DF	DO	3M	24		6	6.1	5	.2				3	3							
DF	DO	3M	26		5		5	.2					3	2						
DF	DO	3M	28		12	1.2	12	.5				1	4	2	5					
DF	DO	3M	30		12		12	.5				5	8							
DF	DO	3M	32		41	.3	41	1.7				11	15	6		8				
DF	DO	3M	34		19		19	.8				7	12							
DF	DO	3M	36		28		28	1.2				13	15							
DF	DO	3M	38		33	1.1	32	1.4			3		13	10		6				
DF	DO	3M	40		89	.7	89	3.8				7	40	21	8	12				
DF	DO	4M	12		4		4	.2			1			1	1					
DF	DO	4M	14		1		1	.1			1									
DF	DO	4M	16		1		1	.0			1									
DF	DO	4M	18		1		1	.0			1									
DF	DO	4M	20		6		6	.2		1	2	3								
DF	DO	4M	21		1		1	.1		1										
DF	DO	4M	24		6		6	.3			3	2	2							
DF	DO	4M	26		3		3	.1			1	1								
DF	DO	4M	28		4		4	.2				4								
DF	DO	4M	32		9		9	.4		7				2						
DF	DO	4M	36		2		2	.1				2								
DF	Totals				2,364	1.3	2,334	90.5		10	13	60	118	79	114	582	531	686	140	
RA	DO	CR	12		1		1	1.1			1									
RA	DO	CR	15		1		1	.9		1										
RA	DO	CR	16		1		1	1.0			1									
RA	DO	CR	20		4		4	3.3			4									
RA	DO	CR	28		2		2	1.5			2									
RA	DO	CR	29		1		1	.9		1										
RA	DO	CR	30		5		5	3.5			5									
RA	DO	CR	32		16	1.7	15	11.8			1					14				
RA	DO	CR	36		11		11	8.1						11						
RA	DO	CR	40		90	1.3	89	67.9				13	28	29			19			
RA	Totals				132	1.1	131	5.1		2	15	13	28	39		14	19			
DFW	DO	2M	40		42	2.7	40	44.8									6	11	23	
DFW	DO	3M	30		3	9.2	3	3.0									3			
DFW	DO	3M	32		2		2	2.1							2					
DFW	DO	3M	40		47	5.1	44	49.1									3	4	18	20
DFW	DO	4M	16		1		1	1.0									1			
DFW	Totals				94	4.0	90	3.5							2	7	10	29	43	
BM	DO	CR	18		2		2	10.0			2									
BM	DO	CR	40		23		23	90.0			8	15								

TC TLOGSTVB				Log Stock Table - MBF Project: DOUBLE E																
T11S R08W S22 T00MC												T11S R08W S22 T00M								
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	2											
11S	08W	22	UNIT 1	00MC	60.00	45	103	Date	2/25/2025											
								Time	10:15:46AM											
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+
BM Totals				25		25	1.0			10		15								
Total All Species				2,615	1.3	2,580	100.0	12		38		88	146	119	114	599	557	696	169	43



Legend

- Timber Sale Boundary
- Ownership
- ▨ Stream Buffer
- ▨ Wetland
- ▨ Slope Buffer
- ▲▲▲ Green Tree Retention Area
- ▨ Reforestation Area
- Highway
- County Road
- Surfaced Road
- Unsurfaced Road
- Type F Stream
- Type N Stream
- Cable Corridor
- ◇ Land Survey Monument
- ▲ Upland Wildlife Tree
- ◎ Landing

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. WO-341-2025-W01172-03
 DOUBLE EXPOSURE
 PORTIONS OF SECTIONS 15, 22 and 23, T11S, R08W, W.M.,
 LINCOLN COUNTY, OREGON

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 or be suitable for legal, engineering or survey purposes. Users
 of this information should review or consult the primary data and
 information sources to ascertain the usability of this information.

	CABLE AREA ACRES	TRACTOR ACRES
1	51	9
Total	51	9

Scale
 1:12,000

