Timber Sale Appraisal
BD Power
Sale FG-341-2023-W00942-01

District: Forest Grove

Date: November 23, 2022

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$1,941,649.86	$4,703.67	$1,946,353.53
		Project Work:	($129,925.00)
		Advertised Value:	$1,816,428.53

Timber Sale Appraisal
BD Power
Sale FG-341-2023-W00942-01

District: Forest Grove **Date: November 23, 2022**

Timber Description

Location:

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	21	0	98
Western Hemlock / Fir	28	0	98
Alder (Red)	15	0	95

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	2,442	627	0	3,069
Western Hemlock / Fir	689	91	0	780
Alder (Red)	0	0	27	27
Total	3,131	718	27	3,876

Comments: LOCAL POND VALUES, OCTOBER 2022

WESTERN REDCEDAR AND OTHER CEDARS:
STUMPAGE PRICE = POND VALUE - DOUG-FIR LOGGING COST
$950.12 = $1,291 - $340.88

BRANDING AND PAINTING ALLOWANCE = $2.00/MBF

FUEL COST ALLOWANCE = $5.00/GAL

HAULING COST ALLOWANCE = $1,200/DAY

OTHER COSTS (WITH PROFIT & RISK ADDED): N/A

OTHER COSTS (NO PROFIT & RISK ADDED):
EQUIPMENT CLEANING: 3 PIECES @ $1,000/PIECE = $3,000
MACHINE TIME TO PILE LANDING SLASH & SORT FIREWOOD:
30 HOURS X $150/HOUR = $4,500
MACHINE TIME TO BLOCK/WATERBAR ROADS AND SKID TRAILS:
20 HOURS X $150/HOUR = $3,000
TOTAL OTHER COSTS (NO P&R) = $10,500

SLASH TREATMENT: 20 ACRES X $250/ACRE = $5,000

ROAD MAINTENANCE (INCLUDES SPOT ROCKING, GRADING, & ROLLING):
MOVE IN: $2,223.19
GENERAL ROAD MAINT: 6.35 MILES @ $2,397.12/MILE = $15,221.71
TOTAL ROAD MAINTENANCE: $17,444.90/3,876 MBF = $4.50/MBF

Timber Sale Appraisal
BD Power
Sale FG-341-2023-W00942-01

District: Forest Grove **Date: November 23, 2022**

Logging Conditions

Combination#: 1

Douglas - Fir	63.00%
Western Hemlock / Fir	63.00%
Alder (Red)	63.00%

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

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

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 8 **bd. ft / load:** 4200

cost / mbf: $233.39

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

Combination#: 2

Douglas - Fir	37.00%
Western Hemlock / Fir	37.00%
Alder (Red)	37.00%

Logging System: Shovel **Process:** Harvester Head Delimbing

yarding distance: Short (400 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 9 **bd. ft / load:** 4200

cost / mbf: $141.38

machines: Forwarder
Harvester

Timber Sale Appraisal
BD Power
Sale FG-341-2023-W00942-01

District: Forest Grove **Date: November 23, 2022**

Logging Costs

Operating Seasons:	2.00	**Profit Risk:**	15%
Project Costs:	$129,925.00	**Other Costs (P/R):**	$0.00
Slash Disposal:	$5,000.00	**Other Costs:**	$10,500.00

Miles of Road **Road Maintenance:** $4.50

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	4.8
Western Hemlock / Fir	$0.00	2.0	4.0
Alder (Red)	$0.00	2.0	3.0

Timber Sale Appraisal
BD Power
Sale FG-341-2023-W00942-01

District: Forest Grove **Date: November 23, 2022**

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
$199.35	$4.59	$2.26	$85.00	$0.00	$43.68	$1.29	$2.00	$2.71	$340.88
Western Hemlock / Fir									
$199.35	$4.59	$2.26	$153.00	$0.00	$53.88	$1.29	$2.00	$2.71	$419.08
Alder (Red)									
$199.35	$4.73	$2.26	$210.00	$0.00	$62.45	$1.29	$2.00	$2.71	$484.79

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$913.42	$572.54	$0.00
Western Hemlock / Fir	$0.00	$655.65	$236.57	$0.00
Alder (Red)	$0.00	$659.00	$174.21	$0.00

Timber Sale Appraisal
BD Power
Sale FG-341-2023-W00942-01

District: Forest Grove **Date: November 23, 2022**

Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	$0.00	$0.00
Western Hemlock / Fir	0	$0.00	$0.00
Alder (Red)	0	$0.00	$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,069	$572.54	$1,757,125.26
Western Hemlock / Fir	780	$236.57	$184,524.60
Alder (Red)	27	$174.21	$4,703.67

Gross Timber Sale Value

Recovery: $1,946,353.53

Prepared By: MARK SAVAGE **Phone:** 503-359-7437

TIMBER SALE SUMMARY
BD Power
#FG-341-2023-W00942-01

1. **Location:** Portions of Sections 2, 3, & 11, T1N, R6W, W.M., Tillamook County, Oregon.

2. **Type of Sale:** This timber sale is 105 net acres of Modified Clearcut. The timber will be sold on a recovery basis at a sealed bid auction.

3. **Revenue Distribution:** 100% BOF; 100% Tillamook County (5600-80%, 902-20%).

4. **Sale Acreage:** Acres are net of stream buffers and road prisms. Acreage was determined using ESRI ArcGIS Pro software.

5. **Cruise**: The Timber Sale was cruised by ODF Cruisers in October of 2022. For more information, see Cruise Report.

6. **Timber Description:** The Timber Sale Area consists of a well-stocked, thinned 63 to 69-year-old stands of Douglas-fir with minor components of noble fir, western hemlock, and red alder. This timber stand has an average of 177 ft^2 of basal area and an average Douglas-fir DBH of 21 inches. The estimated average net Douglas-fir volume is approximately 29.2 MBF per acre.

7. **Topography and Logging Method:** Slopes within the Timber Sale Area range from 5% to 70% with variable aspects. The Timber Sale Area is 63% cable-based yarding and 37% ground-based yarding. The average cable corridor length is approximately 400 feet and the maximum is approximately 1,500 feet. The average horizontal skid trail length is approximately 300 feet and the maximum is approximately 600 feet.

8. **Access:** All access to the Timber Sale Area is on surfaced all-weather roads. From Forest Grove, travel 7 miles west on Highway 8 to its intersection with Highway 6. Turn left onto Highway 6 and proceed for approximately 10 miles to Beaverdam Road. Turn left onto Beaverdam Road and proceed for 5 miles to BD5 Road. Turn right onto BD5 Road and proceed for 0.7 miles to access the eastern portion of the Timber Sale Area.

9. **Projects:**

Project No. 1: Road Improvement	$34,908.04
Project No. 2: Fish Passage Structure	$95,016.96
Total Credit for all Projects	$129,925.00

PROJECT COST SUMMARY SHEET

Timber Sale: BD Power
Sale Number: FG-341-2023-W00942-01

PROJECT NO. 1: ROAD IMPROVEMENT

Road Segment	Length	Cost
A to B	114+70	$24,052.47
C to D	4+35	$2,469.45
E to F	3+10	$1,137.18
G to H	8+95	$2,306.25
	131+10 stations	
	2.48 miles	

Total Rock =

624 cy	1½" - 0
601 cy	Pit-run

Move-in = $1,769.23

TOTAL PROJECT COST = $31,734.58

TOTAL PROJECT COST W/ 10% FUEL ADJUSTMENT= **$34,908.04**

PROJECT NO. 2: FISH PASSAGE STRUCTURE

Point	Cost
I	$81,563.34

Total Rock =

365 cy	1½" - 0
110 cy	Select
65 cy	Pit-run
150 cy	Riprap

Move-in = $4,815.72

TOTAL PROJECT COST = $86,379.05

TOTAL PROJECT COST W/ 10% FUEL ADJUSTMENT= **$95,016.96**

TOTAL CREDITS = **$129,925.00**

SUMMARY OF CONSTRUCTION COST

Timber Sale: BD Power | Sale Number: FG-341-2023-W00942-01

Road Segment: A to B | Improvement: 114+70 stations; 2.17 miles

PROJECT NO. 1: ROAD IMPROVEMENT

IMPROVEMENT						
Clearing & grubbing (scatter)	1.32	ac @	$862.40	per acre =	$1,138.37	
Roadside brushing	2.17	mi @	$850.00	per mi =	$1,844.50	
Remove, re-install & refurbish gate	1	ea @	$2,500.00	per sea =	$3,500.00	
Clean ditch & scatter waste material	13.80	sta @	$60.00	per sta =	$828.00	
Clean culvert inlet & outlet, scatter waste	7	ea @	$25.00	per ea =	$175.00	
Construct turnout	1	ea @	$66.00	per ea =	$66.00	
Improve turnout	6	ea @	$33.00	per ea =	$198.00	
Construct turnaround	1	ea @	$82.50	per ea =	$82.50	
Construct turnaround/junction	1	ea @	$148.50	per ea =	$148.50	
Approach to landing (93+50)	1.20	sta @	$690.00	per sta =	$828.00	
Construct roadside landing (39+50)	1	ea @	$198.00	per ea =	$198.00	
Excavate, place & compact fill	80	cy @	$4.64	per cy =	$371.20	
Drift to construct roadside landing (100+25)	1	ea @	$378.00	per ea =	$378.00	
Construct roadside landing (103+45)	1	ea @	$198.00	per ea =	$198.00	
Excavate, place & compact fill	175	cy @	$4.64	per cy =	$812.00	
Improve landing	1	ea @	$157.00	per ea =	$157.00	
Construct waterbar	2	ea @	$27.50	per ea =	$55.00	
Construct tank trap	1	ea @	$55.00	per ea =	$55.00	
Grade, ditch, & roll	114.70	sta @	$36.00	per sta =	$4,129.20	
				TOTAL IMPROVEMENT COSTS =		$15,162.27

CULVERTS						
Culverts and Bands						
18" Diameter	30	LF @	$20.00	per LF =	$600.00	
Markers & Stakes						
Culvert markers	8	ea @	$10.00	per ea =	$80.00	
				TOTAL CULVERT COSTS =		$680.00

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	$1.80	$5.20	$1.22	24	$197.28
				Subtotal =	24	$197.28
Surfacing rock						
Spot Rock	1½" - 0	$1.80	$6.10	$1.22	300	$2,736.00
Approach to landing	Pit-run	$4.63	$3.94	$0.75	78	$726.96
Roadside landings	Pit-run	$4.63	$3.94	$0.75	285	$2,656.20
Junction	Pit-run	$4.63	$3.94	$0.75	48	$447.36
Landing	Pit-run	$4.63	$3.94	$0.75	95	$885.40
				Subtotal =	806	$7,451.92

Totals		
	All Rock =	830
	1½" - 0	324
	Pit-run	506

TOTAL ROCK COSTS = $7,649.20

EROSION CONTROL						
Grass seed & fertilizer	1.32	ac @	$425.00	per ac =	$561.00	
				TOTAL EROSION CONTROL COSTS =		$561.00

TOTAL PROJECT COST = $24,052.47

SUMMARY OF CONSTRUCTION COST

Timber Sale: BD Power | Sale Number: FG-341-2023-W00942-01

Road Segment: C to D | Improvement: 4+35 stations

0.08 miles

PROJECT NO. 1: ROAD IMPROVEMENT

IMPROVEMENT						
Clearing & grubbing (scatter)	0.05	ac @	$862.40	per acre =	$43.12	
Roadside brushing	0.08	mi @	$850.00	per mi =	$68.00	
Construct roadside landing (1+95)	1	ea @	$198.00	per ea =	$198.00	
Excavate, place & compact fill	85	cy @	$4.64	per cy =	$394.40	
Improve landing	1	ea @	$157.00	per ea =	$157.00	
Grade, ditch, & roll	4.35	sta @	$36.00	per sta =	$156.60	
				TOTAL IMPROVEMENT COSTS =		$1,017.12

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Spot Rock	1½" - 0	$1.80	$6.10	$1.22	84	$766.08
Roadside landing	Pit-run	$4.63	$1.62	$0.75	95	$665.00
				Subtotal =	179	$1,431.08

Totals		
	All Rock =	179
	1½" - 0	84
	Pit-run	95

TOTAL ROCK COSTS = $1,431.08

EROSION CONTROL						
Grass seed & fertilizer	0.05	ac @	$425.00	per ac =	$21.25	
				TOTAL EROSION CONTROL COSTS =		$21.25

TOTAL PROJECT COST = $2,469.45

SUMMARY OF CONSTRUCTION COST

Timber Sale: BD Power | Sale Number: FG-341-2023-W00942-01

Road Segment: E to F | Improvement: 3+10 stations

0.06 miles

PROJECT NO. 1: ROAD IMPROVEMENT

IMPROVEMENT

Clearing & grubbing (scatter)	0.04	ac @	$862.40	per acre =	$34.50
Roadside brushing	0.06	mi @	$850.00	per mi =	$51.00
Improve landing	1	ea @	$157.00	per ea =	$157.00
Grade, ditch, & roll	3.10	sta @	$36.00	per sta =	$111.60

TOTAL IMPROVEMENT COSTS = $354.10

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Spot Rock	1½" - 0	$1.80	$6.10	$1.22	84	$766.08
				Subtotal =	84	$766.08

Totals		
	All Rock =	84
	1½" - 0	84

TOTAL ROCK COSTS = $766.08

EROSION CONTROL

Grass seed & fertilizer	0.04	ac @	$425.00	per ac =	$17.00

TOTAL EROSION CONTROL COSTS = $17.00

TOTAL PROJECT COST = $1,137.18

SUMMARY OF CONSTRUCTION COST

Timber Sale: BD Power | Sale Number: FG-341-2023-W00942-01

Road Segment: G to H | Improvement: 8+95 stations

0.17 miles

PROJECT NO. 1: ROAD IMPROVEMENT

IMPROVEMENT						
Clearing & grubbing (scatter)	0.11	ac @	$862.40	per acre =	$94.86	
Roadside brushing	0.17	mi @	$850.00	per mi =	$144.50	
Clean culvert inlet & outlet, scatter waste	1	ea @	$25.00	per ea =	$25.00	
Construct turnaround	1	ea @	$82.50	per ea =	$82.50	
Improve landing	1	ea @	$157.00	per ea =	$157.00	
Grade, ditch, & roll	8.95	sta @	$36.00	per sta =	$322.20	
				TOTAL IMPROVEMENT COSTS =		$826.06

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Turnaround	Pit-run	$4.63	$6.10	$0.75	20	$229.60
Spot Rock	1½" - 0	$1.80	$6.10	$1.22	132	$1,203.84
				Subtotal =	152	$1,433.44

Totals		
	All Rock =	152
	1½" - 0	132
	Pit-run	20

TOTAL ROCK COSTS = $1,433.44

EROSION CONTROL						
Grass seed & fertilizer	0.11	ac @	$425.00	per ac =	$46.75	
				TOTAL EROSION CONTROL COSTS =		$46.75

TOTAL PROJECT COST = $2,306.25

SUMMARY OF CONSTRUCTION COST

Timber Sale: BD Power Sale Number: FG-341-2023-W00942-01

Point: Point I

PROJECT NO. 2: FISH PASSAGE STRUCTURE

INSTALLATION & MATERIALS

EXCAVATION

Fill Excavation & Construction					
Salvage existing road surfacing	84	cy @	$2.14	per cy =	$179.42
Haul and stage salvage rock	97	cy @	$1.86	per cy =	$181.24
Excavate existing culvert & fill	1,125	cy @	$1.64	per cy =	$1,845.00
Channel Establishment- End haul	55	cy @	$1.51	per cy =	$83.05
Haul suitable material to staging area	1,305	cy @	$1.55	per cy =	$2,022.75
End-haul unsuitable material	213	cy @	$1.51	per cy =	$320.88
Load material @ staging area	1,305	cy @	$0.80	per cy =	$1,044.00
Haul fill material from staging area	1,305	cy @	$1.55	per cy =	$2,022.75
Place fill	1,305	cy @	$2.40	per cy =	$3,132.00
Compact fill	1,305	cy @	$0.50	per cy =	$652.50
Compact waste area	213	cy @	$0.30	per cy =	$63.75
Dewatering	7	days @	$150.00	per day =	$1,050.00
Grade, ditch, & roll	2.00	sta @	$36.00	per sta =	$72.00

TOTAL EXCAVATION COSTS = $12,669.34

FISH PASSAGE STRUCTURE - MATERIALS & ASSEMBLY

Engineering Design and Administration	$12,500.00
Fish Passage Structure - Materials & Installation	$46,064.40

TOTAL CULVERT COSTS= $58,564.40

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	$1.80	$3.78	$0.50	350	$2,128.00
Embedment	Select	$9.26	$1.62	$2.40	110	$1,460.80
Fill armor	Riprap	$5.43	$1.62	$1.60	150	$1,297.50
				Subtotal =	610	$4,886.30
Surfacing rock						
Base rock	Pit-run	$4.63	$1.62	$0.75	65	$455.00
Surfacing rock	1½" - 0	$1.80	$3.78	$1.22	15	$102.00
				Subtotal =	80	$557.00

Totals	
All Rock =	690
1½" - 0 =	365
Select =	110
Pit-run =	65
Riprap =	150

TOTAL ROCK COSTS = $10,329.60

EROSION CONTROL

Grass seed & fertilizer	0.64	ac @	$425.00	per ac =	$272.00
Straw Mulch Bale	10	ea @	$10.00	per ea =	$100.00
Bio-Bag	10	ea @	$5.00	per ea =	$50.00

TOTAL EROSION CONTROL COSTS = $422.00

TOTAL PROJECT COST = $81,563.34

SUMMARY OF CONSTRUCTION COST

Timber Sale: BD Power Sale Number: FG-341-2023-W00942-01

PROJECT No. 1 & 2 MOVE-IN, WITHIN AREA MOVE, & CLEANING COSTS

Equipment	Total
Brush Cutter	$598.85
Grader	$946.70
Roller (smooth/grid) & Compactor	$598.85
Excavator (Large) - Equipment Cleaning	$1,946.70
Dozer (Large) - Equipment Cleaning	$1,991.28
Dump Truck (10cy +)	$335.16
Water Truck (2,500 Gal)	$167.41
TOTAL MOVE-IN COSTS =	**$6,584.95**

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale:	BD Power
Sale Number:	FG-341-2023-W00942-01
Quarry Name:	BD5 Quarry

Pit-run:	686 cy	(truck measure)
Riprap:	150 cy	(truck measure)
Select:	110 cy	(truck measure)
Total truck yardage:	964 cy	
Total in place yardage:	900 cy	
Swell:	130%	
Compaction:	116%	

Move-in & Other Base Cost

Move in excavator with cleaning					$1,805.74
Clean up quarry					$250.00
				Subtotal =	$2,127.24
				Per CY =	$2.21/cy

Pit-run Base Cost

Rip rock	$2.10	/ cy x	528	cy =	$1,108.15
Load dump truck	$0.80	/ cy x	686	cy =	$548.80
				Subtotal =	$1,656.95
				Per CY =	$2.42/cy

Riprap Base Cost (24" - 12")

Rip rock	$2.10	/ cy x	115	cy =	$242.31
Load dump truck	$1.60	/ cy x	150	cy =	$240.00
				Subtotal =	$482.31
				Per CY =	$3.22/cy

Select Base Cost

Rip rock	$2.10	/ cy x	110	cy =	$231.00
Filter rock	$9.60	/ cy x	143	cy =	$1,372.80
Load dump truck	$0.80	/ cy x	143	cy =	$114.40
				Subtotal =	$1,718.20
				Per CY =	$12.02/cy

Select Base Cost =	**$12.02/cy**
Pit-run Base Cost =	**$4.63/cy**
Riprap Base Cost =	**$5.43/cy**

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale:	BD Power
Sale Number:	FG-341-2023-W00942-01
Stockpile Name:	Beaverdam 6 mile
1 1/2" - 0:	989 cy
Total truck yardage:	989 cy

Move-in					
Move in loader					$756.98
Move in Dump Trucks					$231.57
				Subtotal =	$988.55
				Per CY =	$1.00/cy
(1 1/2"-0) Base Cost					
Load dump truck	$0.80	/ cy x	989	cy =	$791.20
				Subtotal =	$791.20
				Per CY =	$0.80

1 1/2"-0 Cost = **$1.80/cy**

CRUISE REPORT
BD Power
#FG-341-2023-W00942-01

1. LOCATION:

Portions of Sections 2, 3, and 11, T1N, R6W, W.M., Tillamook County, Oregon.

2. CRUISE DESIGN:

The timber cruise was designed using an estimated coefficient of variation (CV) of 55%, average stand diameter of 18 inches, sampling error (SE) of 9% and a minimum of 100 grade trees.

3. SAMPLING METHOD:

The Timber Sale Area was cruised in October of 2022 with 38 variable radius grade plots using a 40 BAF prism. Plots were laid out on a 4 chain x 4.5 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

4. CRUISE RESULTS:

168 trees were measured and graded producing a sampling error of 7.2% on the Douglas-fir Basal Area. The sampling error of Douglas-fir Net Board Foot Volume was 7.4%.

5. TREE MEASUREMENT AND GRADING:

All sample trees were measured and graded following the Official Log Scaling and Grading Rules as adopted by the NW Log Rules Advisory Group. 40 foot segments were favored.

a) **Height Standards:** Total tree heights were measured to the nearest foot. Bole heights were calculated to a six-inch top.
b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.
c) **Form Factors:** Measured for each grade tree using a form point of 16 feet.

6. DATA PROCESSING:

a) **Volumes and Statistics:** Cruise estimates and sampling statistics were derived from SuperAce 2008 cruise software.
b) **Deductions:** The following percent volume deductions are by species to account for the hidden defect and breakage. For conifers two percent was deducted. For hardwoods five percent was deducted.

7. CRUISERS: The sale was cruised by ODF cruisers Kenton Burns, Adrian Torres, Mark Savage, and Colton Turner.

Prepared by: Mark Savage 10-13-2022

Reviewed by: Mark Savage 10-13-2022
Date

PROJECT STATISTICS

PROJECT BDPOW

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
01N	06	02	00U1	00MC	105.00	38	171	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	38	171	4.5		
CRUISE	38	171	4.5	7,119	2.4
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
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
DOUG FIR	134	56.5	21.4	118	30.5	141.1	29,969	29,825	6,351	6,351
DOUG FIR-S	3	1.3	21.1	17	0.7	3.2				
WHEMLOCK	17	5.0	25.5	113	3.5	17.9	4,012	4,009	828	828
NOB FIR	15	3.3	29.7	133	2.9	15.8	3,648	3,579	740	740
R ALDER	2	1.7	15.3	81	0.5	2.1	265	265	61	61
TOTAL	*171*	*67.8*	*22.1*	*115*	*38.3*	*180.0*	*37,893*	*37,678*	*7,981*	*7,981*

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
DOUG FIR	65.4	5.6	910	964	1,019			
DOUG FIR-S								
WHEMLOCK	55.7	13.9	990	1,150	1,310			
NOB FIR	52.3	14.0	1,263	1,468	1,673			
R ALDER	41.6	38.9	104	170	236			
TOTAL	*66.8*	*5.1*	*950*	*1,001*	*1,052*	*178*	*45*	*20*

CL 68.1 SD: 1.0

SAMPLE TREES - CF

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	59.6	5.1	190	200	210			
DOUG FIR-S								
WHEMLOCK	48.5	12.1	203	231	259			
NOB FIR	47.2	12.6	259	296	333			
R ALDER	43.3	40.5	23	39	55			
TOTAL	*61.0*	*4.7*	*196*	*206*	*216*	*148*	*37*	*16*

CL 68.1 SD: 1.0

TREES/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	104.9	17.0	47	57	66			
DOUG FIR-S	433.2	70.2	0	1	2			
WHEMLOCK	210.2	34.1	3	5	7			
NOB FIR	205.6	33.3	2	3	4			
R ALDER	616.4	99.9	0	2	3			
TOTAL	*91.4*	*14.8*	*58*	*68*	*78*	*334*	*83*	*37*

CL 68.1 SD: 1.0

BASAL AREA/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	44.6	7.2	131	141	151			
DOUG FIR-S	346.1	56.1	1	3	5			
WHEMLOCK	177.7	28.8	13	18	23			
NOB FIR	208.6	33.8	10	16	21			
R ALDER	616.4	99.9	0	2	4			
TOTAL	*36.4*	*5.9*	*169*	*180*	*191*	*53*	*13*	*6*

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
01N	06	02	00U1	00MC	105.00	38	171	S	W

CL 68.1 SD: 1.0

NET BF/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	45.7	7.4	27,614	29,825	32,037			
DOUG FIR-S								
WHEMLOCK	187.1	30.3	2,793	4,009	5,224			
NOB FIR	216.7	35.1	2,322	3,579	4,836			
R ALDER	616.4	99.9	0	265	530			
TOTAL	*38.9*	*6.3*	*35,305*	*37,678*	*40,051*	*60*	*15*	*7*

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
DOUG FIR	45.3	7.3	5,885	6,351	6,818			
DOUG FIR-S								
WHEMLOCK	182.0	29.5	584	828	1,073			
NOB FIR	213.4	34.6	484	740	996			
R ALDER	616.4	99.9	0	61	122			
TOTAL	*37.5*	*6.1*	*7,496*	*7,981*	*8,466*	*56*	*14*	*6*

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T01N R06W S02 Ty00MC 105.00

Project: **BDPOW**

Acres **105.00**

Page **1**

Date **10/7/2022**

Time **12:33:57PM**

Spp	S T	So Grt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU														19	15		0.00	3.0
DF		2M	79	.6	23,880	23,737	2,492			29	71		1	1	99	40	17	497	2.47	47.8
DF		3M	18		5,429	5,429	570		96	4			2	7	91	39	8	96	0.66	56.8
DF		4M	3		660	660	69		100			47	53			20	6	24	0.34	27.0
DF	**Totals**		79	.5	29,969	29,825	3,132		20	24	57	1	2	2	95	35	11	222	1.35	134.6
NF		CU														26	17		0.00	.4
NF		2M	89	2.1	3,280	3,212	337			21	79		4		96	40	19	642	3.16	5.0
NF		3M	10		335	335	35		100				9	3	88	37	8	106	0.86	3.2
NF		4M	1		32	32	3		100			27	73			20	7	33	0.49	1.0
NF	**Totals**		9	1.9	3,648	3,579	376		10	19	70	0	5	0	94	36	14	374	2.14	9.6
WH		CU														14	31		0.00	.1
WH		2M	87		3,490	3,490	366			21	79				100	40	18	606	2.86	5.8
WH		3M	11	.7	468	464	49		100				4	3	94	38	9	106	0.88	4.4
WH		4M	2		54	54	6		100			49	51			20	6	26	0.47	2.1
WH	**Totals**		11	.1	4,012	4,009	421		13	18	69	1	1	0	98	36	13	325	1.87	12.3
RA		R	100		265	265	28		100				10		90	28	8	80	0.66	3.3
RA	**Totals**		1		265	265	28		100				10		90	28	8	80	0.66	3.3
Totals				0.6	37,893	37,678	3,956		19	23	59	1	2	1	95	35	11	236	1.43	159.7

TC PSTNDSUM

Stand Table Summary

Page 1
Date: 10/7/2022

T01N R06W S02 Ty00MC 105.00

Project BDPOW
Acres 105.00

Time: 12:33:58PM
Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		8	1	88	81	3.016	1.05	3.02	5.1	30.0	.44	15	90	46	16	9
DF		9	1	88	82	2.383	1.05	2.38	9.3	50.0	.63	22	119	66	23	13
DF		10	1	87	80	1.930	1.05	1.93	12.8	60.0	.70	25	116	74	26	12
DF		11	2	88	91	3.190	2.11	4.79	11.3	46.7	1.54	54	223	162	57	23
DF		12	6	88	108	8.042	6.32	16.08	13.1	56.7	5.99	210	911	629	221	96
DF		14	4	87	109	3.939	4.21	7.88	18.9	83.8	4.24	149	660	446	156	69
DF		15	4	90	81	3.431	4.21	5.15	21.4	90.0	3.13	110	463	329	115	49
DF		16	1	92	133	.754	1.05	2.26	20.8	96.7	1.34	47	219	141	49	23
DF		17	1	84	103	.668	1.05	1.34	27.5	100.0	1.05	37	134	110	39	14
DF		18	3	89	115	1.787	3.16	3.57	31.7	128.3	3.23	113	459	339	119	48
DF		19	3	89	120	1.604	3.16	3.74	34.0	137.1	3.63	127	513	381	134	54
DF		20	3	89	118	1.447	3.16	3.86	34.2	146.3	3.76	132	565	395	139	59
DF		21	7	89	126	3.063	7.37	8.75	37.7	174.0	9.41	330	1,523	988	347	160
DF		22	1	83	116	.399	1.05	.80	51.3	190.0	1.17	41	152	122	43	16
DF		23	3	90	129	1.094	3.16	3.28	44.0	203.3	4.12	145	668	433	152	70
DF		24	10	83	125	3.351	10.53	8.71	51.8	233.1	12.87	451	2,030	1,351	474	213
DF		25	10	87	133	3.088	10.53	9.26	52.6	231.3	13.89	487	2,143	1,458	512	225
DF		26	5	88	128	1.427	5.26	4.00	59.7	270.0	6.80	239	1,079	714	251	113
DF		27	6	86	138	1.588	6.32	4.77	60.7	282.2	8.24	289	1,345	865	303	141
DF		28	2	87	146	.492	2.11	1.48	71.8	345.0	3.02	106	510	317	111	54
DF		29	7	86	143	1.606	7.37	4.82	75.2	354.8	10.32	362	1,710	1,084	380	180
DF		30	9	86	145	1.930	9.47	6.00	77.9	371.1	13.32	467	2,228	1,399	491	234
DF		31	6	86	145	1.205	6.32	3.82	81.1	383.7	8.82	309	1,464	926	325	154
DF		32	7	88	143	1.319	7.37	3.96	89.4	451.4	10.08	354	1,787	1,058	371	188
DF		33	5	85	150	.886	5.26	2.66	101.9	500.7	7.72	271	1,331	810	284	140
DF		34	7	85	146	1.169	7.37	4.01	92.3	459.2	10.54	370	1,840	1,107	388	193
DF		35	5	85	149	.788	5.26	2.36	110.3	560.7	7.43	261	1,325	780	274	139
DF		36	6	84	149	.894	6.32	2.83	112.4	554.2	9.07	318	1,568	952	334	165
DF		37	3	84	159	.423	3.16	1.41	117.0	608.0	4.70	165	857	494	173	90
DF		38	1	87	141	.134	1.05	.40	130.4	690.0	1.49	52	277	156	55	29
DF		39	1	84	167	.127	1.05	.51	112.3	600.0	1.62	57	305	171	60	32
DF		40	1	84	166	.121	1.05	.48	120.8	655.0	1.66	58	316	174	61	33
DF		41	1	84	134	.115	1.05	.34	143.0	720.0	1.40	49	248	147	52	26
DF		42	2	79	91	.219	2.11	.33	85.0	446.7	.79	28	147	83	29	15
DF		45	2	84	138	.191	2.11	.57	174.8	880.0	2.85	100	503	299	105	53
DF		Totals	137	87	116	57.818	144.21	131.54	48.3	226.7	181.02	6,351	29,825	19,007	6,669	3,132
WH		13	1	90	73	1.142	1.05	1.14	22.7	90.0	.83	26	103	87	27	11
WH		19	1	86	114	.535	1.05	1.07	40.8	155.0	1.40	44	166	147	46	17
WH		21	1	90	129	.438	1.05	1.31	37.5	180.0	1.58	49	236	165	52	25
WH		24	1	85	120	.335	1.05	1.01	45.4	190.0	1.46	46	191	153	48	20
WH		25	2	90	116	.618	2.11	1.85	52.2	241.7	3.10	97	448	325	102	47
WH		28	2	85	124	.492	2.11	1.48	66.9	300.0	3.16	99	443	332	104	47
WH		30	1	93	141	.214	1.05	.64	91.2	490.0	1.88	59	315	197	62	33
WH		31	1	93	129	.201	1.05	.60	92.2	486.7	1.78	56	293	187	58	31
WH		33	1	83	126	.177	1.05	.53	94.5	446.7	1.61	50	237	169	53	25
WH		34	2	85	132	.334	2.11	1.00	105.3	523.3	3.38	105	524	354	111	55
WH		35	1	94	138	.158	1.05	.47	122.3	716.7	1.85	58	339	194	61	36
WH		36	1	83	144	.149	1.05	.45	123.8	613.3	1.77	55	274	186	58	29
WH		38	1	89	142	.134	1.05	.40	143.6	776.7	1.84	58	311	193	60	33
WH		40	1	81	113	.121	1.05	.24	114.5	530.0	.88	28	128	93	29	13
WH		Totals	17	88	113	5.046	17.89	12.20	67.9	328.6	26.51	828	4,009	2,783	870	421
NF		17	1	86	108	.668	1.05	1.34	30.5	120.0	.98	41	160	103	43	17

TC PSTNDSUM

Stand Table Summary

Page 2
Date: 10/7/2022

T01N R06W S02 Ty00MC 105.00

Project BDPOW
Acres 105.00

Time: 12:33:58PM
Grown Year:

Spc	S T	DBH	Sample Trees	FF 16'	Tot Av Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
NF		21	1	91	130	.438	1.05	1.31	37.3	156.7	1.17	49	206	123	51	22
NF		27	1	90	130	.265	1.05	.79	61.7	293.3	1.18	49	233	124	51	24
NF		30	1	84	147	.214	1.05	.64	80.0	376.7	1.23	51	242	130	54	25
NF		31	2	87	132	.402	2.11	1.20	82.4	405.0	2.38	99	488	250	104	51
NF		32	1	88	137	.188	1.05	.57	88.3	406.7	1.20	50	230	126	52	24
NF		33	1	90	130	.177	1.05	.53	93.7	443.3	1.20	50	236	126	52	25
NF		34	2	85	143	.334	2.11	.83	104.9	516.0	2.10	88	431	221	92	45
NF		35	1	84	147	.158	1.05	.47	109.8	520.0	1.25	52	246	131	54	26
NF		39	1	84	153	.127	1.05	.38	141.0	740.0	1.29	54	282	135	56	30
NF		40	1	83	164	.121	1.05	.48	119.4	642.5	1.38	58	310	145	61	33
NF		41	1	84	156	.115	1.05	.34	154.6	800.0	1.28	53	276	134	56	29
NF		49	1	83	148	.080	1.05	.24	194.3	996.7	1.12	47	240	118	49	25
NF		Totals	15	87	133	3.286	15.79	9.14	80.9	391.4	17.76	740	3,579	1,865	777	376
RA		14	1	92	79	.985	1.05	1.97	13.6	60.0	.74	27	118	78	28	12
RA		17	1	92	84	.668	1.05	1.34	25.7	110.0	.94	34	147	99	36	15
RA		Totals	2	92	81	1.652	2.11	3.30	18.5	80.2	1.68	61	265	177	64	28
Totals			171	87	115	67.803	180.00	156.19	51.1	241.2	226.97	7,981	37,678	23,831	8,380	3,956

TC PLOGSTVB

Log Stock Table - MBF

T01N R06W S02 Ty00MC 105.00

Project: BDPOW
Acres 105.00

Page 1
Date 10/7/2022
Time 12:33:56PM

Spp	ST	Sort	Grade	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			2M	25	12		12	.4										12		
DF			2M	32	14		14	.5									14			
DF			2M	36	17		17	.5										17		
DF			2M	40	2,464		2,449	78.2						252	273	875	625	390	34	
DF			3M	26	2		2	.1				2								
DF			3M	28	5		5	.1			2	1	1							
DF			3M	30	2		2	.1				1	1							
DF			3M	32	2		2	.1			2									
DF			3M	34	38		38	1.2			35	2	2							
DF			3M	35	1		1	.0			1									
DF			3M	36	11		11	.4			8	3								
DF			3M	38	16		16	.5			13	3								
DF			3M	40	493		493	15.8			90	228	154		15	7				
DF			4M	12	4		4	.1			3	1	0							
DF			4M	14	3		3	.1			1	1								
DF			4M	16	4		4	.1			4									
DF			4M	18	4		4	.1			3	1								
DF			4M	20	18		18	.6			18									
DF			4M	22	15		15	.5			15	1								
DF			4M	24	3		3	.1			3									
DF			4M	26	4		4	.1			4									
DF			4M	28	6		6	.2			6									
DF			4M	30	7		7	.2			7									
DF		Totals			3,147		3,132	79.2			217	242	158	252	288	882	639	419	34	
NF			2M	30	14		14	3.7											14	
NF			2M	40	331	2.2	323	86.1						15	35	47	112	115		
NF			3M	26	1		1	.2				1								
NF			3M	28	1		1	.3			1									
NF			3M	30	1		1	.3			1									
NF			3M	32	1		1	.3			1									
NF			3M	38	4		4	1.1			4									
NF			3M	40	27		27	7.1			2	1	24							
NF			4M	12	0		0	.1				0								
NF			4M	16	1		1	.1				1								
NF			4M	22	1		1	.4			1									
NF			4M	24	1		1	.3			1									

TC PLOGSTVB

Log Stock Table - MBF

T01N R06W S02 Ty00MC 105.00

Project: BDPOW
Acres 105.00

Page 2
Date 10/7/2022
Time 12:33:56PM

Spp	ST	So rt	Gr de	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+
NF		Totals			383	1.9	376	9.5			12	3	24	15	35	47	112	115	14	
WH		2M		40	366		366	87.1						25	23	108	107	103		
WH		3M		26	1		1	.2				1								
WH		3M		30	1		1	.3			1									
WH		3M		32	1		1	.3				1								
WH		3M		36	1		1	.3				1								
WH		3M		38	3		3	.7			2	2								
WH		3M		40	41		41	9.8			4	14	24							
WH		4M		16	1		1	.2			1									
WH		4M		18	2		2	.5			2									
WH		4M		22	1		1	.2				1								
WH		4M		24	1		1	.3			1									
WH		4M		26	1		1	.2			1									
WH		Totals			421		421	10.6			11	19	24	25	23	108	107	103		
RA		R		22	3		3	10.1			3									
RA		R		40	25		25	89.9				12	13							
RA		Totals			28		28	.7			3	12	13							
Total		All Species			3,979		3,956	100.0			243	277	218	292	346	1037	858	637	48	

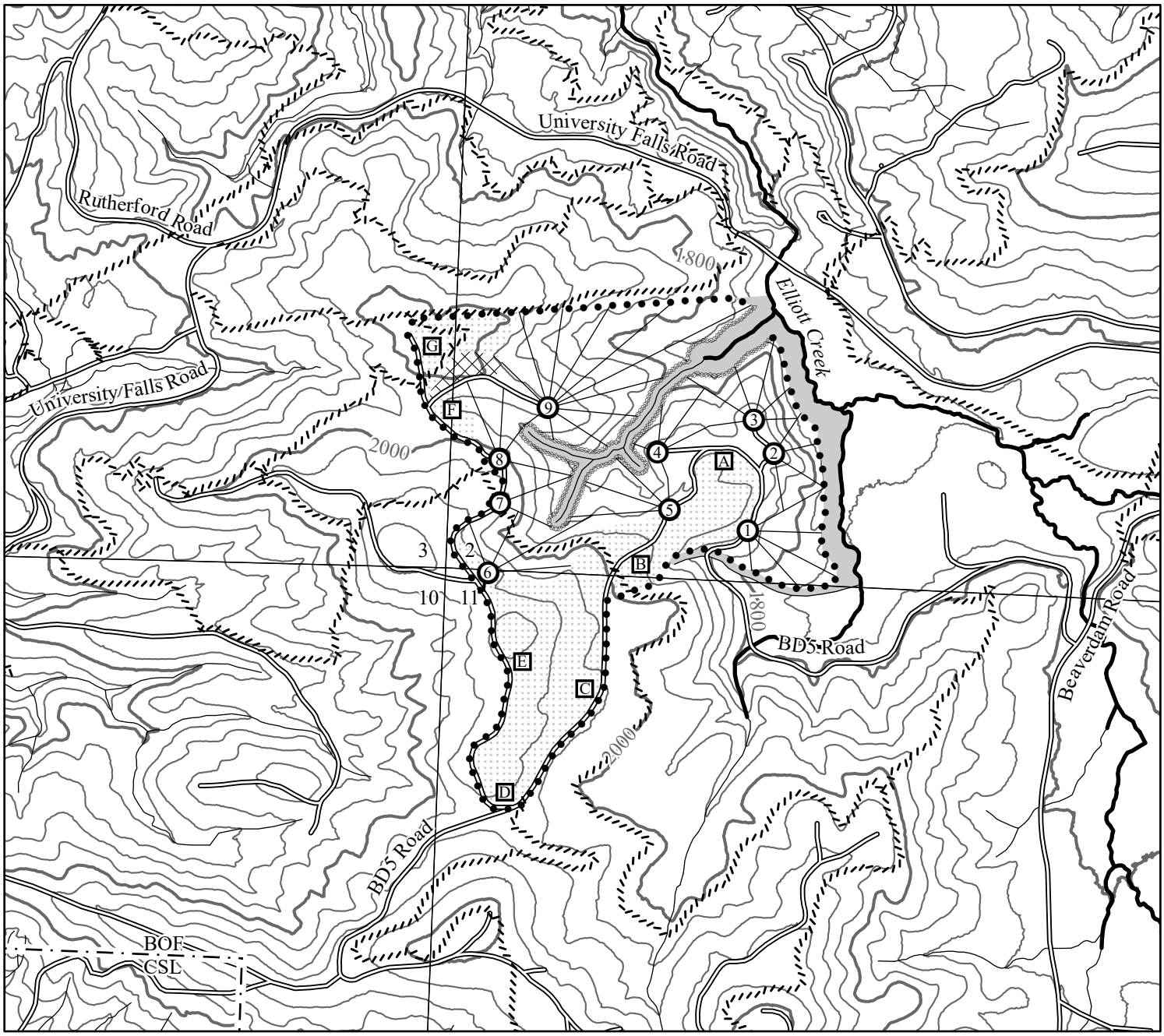
VOLUME SUMMARY
(Shown in MBF)
BD Power
FG-341-2023-W00942-01
October 2022

TIMBER SALE AREA: Modified Clearcut (105 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	Camprun	TOTAL
Douglas-fir	Cruise Volume	2,492	570	69	0	3,131
	Hidden D&B (2%)	(50)	(11)	(1)	(0)	(62)
	NET TOTAL	2,442	559	68	0	3,069
	% of Total	80	18	2	0	
Western hemlock	Cruise Volume	366	49	6	0	421
	Hidden D&B (2%)	(7)	(1)	(0)	(0)	(8)
	NET TOTAL	359	48	6	0	413
	% of Total	87	12	1	0	
Noble fir	Cruise Volume	337	35	3	0	375
	Hidden D&B (2%)	(7)	(1)	(0)	(0)	(8)
	NET TOTAL	330	34	3	0	367
	% of Total	90	9	1	0	
Red Alder	Cruise Volume	0	0	0	28	28
	Hidden D&B (5%)	(0)	(0)	(0)	(1)	(1)
	NET TOTAL	0	0	0	27	27
	% of Total	0	0	0	100	

SALE TOTAL

SPECIES	2 SAW	3 SAW	4 SAW	Camprun	TOTAL
Douglas-fir	2,442	559	68	0	3,069
Western hemlock	359	48	6	0	413
Noble fir	330	34	3	0	367
Red alder	0	0	0	27	27
Total	3,131	641	77	27	**3,876**



Legend

- Timber Sale Boundary
- Stream Buffer Boundary
- ODF Ownership Boundary
- No Harvest Area
- Surfaced Roads
- New Road Construction
- Recreation Trails
- Type-F Stream
- Type-N Stream
- Stream Buffer
- Cable Yarding Area
- Tractor Yarding Area
- Cable Landing
- Tractor Landing
- Section Lines
- 40 Foot Contour Band
- 200 Foot Contour Band

LOGGING PLAN

FOR TIMBER SALE CONTRACT #FG-341-2023-W00942-01
BD POWER
PORTIONS OF SECTIONS 2, 3 & 11, T1N, R6W, W.M.,
TILLAMOOK COUNTY, OREGON

N

Forest Grove District GIS
October, 2022
This product is for informational use and may not be suitable for legal, engineering, or surveying purposes.

1:12,000

1 inch = 1,000 feet

0 500 1,000 2,000
Feet

APROXIMATE NET ACRES

	TRACTOR	CABLE
TOTAL	39	66