Timber Sale Appraisal
Hog Heaven

Sale FG-341-2023-W00884-01

District: Forest Grove **Date: August 09, 2022**

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$2,367,985.60	$7,780.98	$2,375,766.58
		Project Work:	($90,092.00)
		Advertised Value:	$2,285,674.58

Timber Sale Appraisal
Hog Heaven
Sale FG-341-2023-W00884-01

District: Forest Grove

Date: August 09, 2022

Timber Description

Location:

Stand Stocking: 20%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	20	0	98
Western Hemlock / Fir	19	0	98
Alder (Red)	18	0	95

Volume by Grade	2S	3S & 4S 6"-11"	Camprun	Total
Douglas - Fir	2,155	1,205	0	3,360
Western Hemlock / Fir	748	468	0	1,216
Alder (Red)	0	0	41	41
Total	2,903	1,673	41	4,617

Comments: LOCAL POND VALUES, JUNE 2022

WESTERN REDCEDAR AND OTHER CEDARS:
STUMPAGE PRICE = POND VALUE - DOUG-FIR LOGGING COST
$984.41 = $1,326 - $341.59

BIGLEAF MAPLE & OTHER HARDWOODS:
STUMPAGE PRICE = POND VALUE - DOUG-FIR LOGGING COST
$48.41 = $390 - $341.59

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: $2,658.99
GENERAL ROAD MAINT: 6.00 MILES @ $2,592.77/MILE = $15,556.62
TOTAL ROAD MAINTENANCE: $18,215.61/4,617 MBF = $3.94/MBF

Logging Conditions

Combination#: 1

Douglas - Fir	60.00%
Western Hemlock / Fir	60.00%
Alder (Red)	60.00%

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: 7 **bd. ft / load:** 4600

cost / mbf: $243.54

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

Combination#: 2

Douglas - Fir	40.00%
Western Hemlock / Fir	40.00%
Alder (Red)	40.00%

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:** 4600

cost / mbf: $129.08

machines: Forwarder
Harvester

Timber Sale Appraisal
Hog Heaven

Sale FG-341-2023-W00884-01

"STEWARDSHIP IN FORESTRY"

District: Forest Grove

Date: August 09, 2022

Logging Costs

Operating Seasons:	2.00	**Profit Risk:**	15%
Project Costs:	$90,092.00	**Other Costs (P/R):**	$0.00
Slash Disposal:	$5,000.00	**Other Costs:**	$10,500.00

Miles of Road

Road Maintenance: $3.94

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	4.6
Western Hemlock / Fir	$0.00	2.0	3.9
Alder (Red)	$0.00	2.0	3.0

Timber Sale Appraisal
Hog Heaven
Sale FG-341-2023-W00884-01

District: Forest Grove **Date: August 09, 2022**

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
$197.76	$4.02	$1.90	$88.70	$0.00	$43.86	$1.08	$2.00	$2.27	$341.59
Western Hemlock / Fir									
$197.76	$4.02	$1.90	$156.93	$0.00	$54.09	$1.08	$2.00	$2.27	$420.05
Alder (Red)									
$197.76	$4.14	$1.90	$210.00	$0.00	$62.07	$1.08	$2.00	$2.27	$481.22

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$938.88	$597.29	$0.00
Western Hemlock / Fir	$0.00	$717.00	$296.95	$0.00
Alder (Red)	$0.00	$671.00	$189.78	$0.00

Timber Sale Appraisal
Hog Heaven
Sale FG-341-2023-W00884-01

District: Forest Grove **Date: August 09, 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	3,360	$597.29	$2,006,894.40
Western Hemlock / Fir	1,216	$296.95	$361,091.20
Alder (Red)	41	$189.78	$7,780.98

Gross Timber Sale Value

Recovery: $2,375,766.58

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

VOLUME SUMMARY
(Shown in MBF)
Hog Heaven
#FG-341-2023-W00884-01
July 2022

TIMBER SALE AREA: Modified Clearcut (113 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	2,199	1,095	135	0	3,429
	Hidden D&B (2%)	(44)	(22)	(3)	(0)	(69)
	NET TOTAL	2,155	1,073	132	0	3,360
	% of Total	64	32	4	0	
Western hemlock	Cruise Volume	520	395	36	0	951
	Hidden D&B (2%)	(10)	(8)	(1)	(0)	(19)
	NET TOTAL	510	387	35	0	932
	% of Total	55	41	4	0	
Noble fir	Cruise Volume	243	37	10	0	290
	Hidden D&B (2%)	(5)	(1)	(0)	(0)	(6)
	NET TOTAL	238	36	10	0	284
	% of Total	84	13	3	0	
Red alder	Cruise Volume	0	0	0	43	43
	Hidden D&B (5%)	(0)	(0)	(0)	(2)	(2)
	NET TOTAL	0	0	0	41	41
	% of Total	0	0	0	100	

Douglas-fir	2,155	1,073	132	0	3,360
Western hemlock	510	387	35	0	932
Noble fir	238	36	10	0	284
Red alder	0	0	0	41	41
Total	2,903	1,496	177	41	**4,617**

PROJECT COST SUMMARY SHEET

Timber Sale: Hog Heaven
Sale Number: FG-341-2023-W00884-01

PROJECT NO. 1: ROCKED ROAD CONSTRUCTION

Road Segment	Length	Cost	10% Fuel Adjustment
A to B	3+80	$3,734.87	$4,108.36
E to F	5+00	$5,352.24	$5,887.46
	8+80 stations		
	0.17 miles		

Total Rock =

972 cy	Pit-run

	Cost	10% Fuel Adjustment
Move-in =	$754.87	$830.35
TOTAL PROJECT COST =	**$9,841.98**	**$10,826.18**

PROJECT NO. 2: ROAD IMPROVEMENT

Road Segment	Length	Cost	10% Fuel Adjustment
G to H	108+20	$21,865.08	$24,051.59
I to J	65+70	$15,476.79	$17,024.47
K to L	36+80	$22,981.65	$25,279.81
	210+70 stations		
	3.99 miles		

Total Rock =

488 cy	1½" - 0
2,982 cy	Pit-run

	Cost	10% Fuel Adjustment
Move-in =	$5,011.08	$5,512.19
TOTAL PROJECT COST =	**$65,334.60**	**$71,868.06**

PROJECT NO. 3: DIRT ROAD CONSTRUCTION

Road Segment	Length	Cost	10% Fuel Adjustment
C to D	10+60	$3,859.00	$4,244.90
	10+60 stations		
	0.20 miles		

	Cost	10% Fuel Adjustment
Move-in =	$320.57	$352.62
TOTAL PROJECT COST =	**$4,179.57**	**$4,597.52**

PROJECT NO. 4: ROAD VACATING

Road Segment	Length	Cost	10% Fuel Adjustment
C to D	10+60	$603.25	$663.58
	10+60 stations		
	0.20 miles		

	Cost	10% Fuel Adjustment
Move-in =	$1,942.42	$2,136.66
TOTAL PROJECT COST =	**$2,545.67**	**$2,800.24**

TOTAL CREDITS = **$86,871.98**

10% FUEL ALLOWANCE ADJUSTMENT TOTAL = **$3,220.02**

TOTAL CREDITS WITH ADJUSTMENT = **$90,092.00**

SUMMARY OF CONSTRUCTION COST

Timber Sale: Hog Heaven | Sale Number: FG-341-2023-W00884-01

Road Segment: A to B | Construction: 3+80 stations, 0.07 miles

PROJECT NO. 1: ROCKED ROAD CONSTRUCTION

CONSTRUCTION

Clearing & grubbing (scatter)	0.44	ac @	$1,078.00	per ac =	$474.33
Balanced road construction	3.80	sta @	$110.00	per sta =	$418.00
Turnaround	1	ea @	$82.50	per ea =	$82.50
Landing	1	ea @	$314.00	per ea =	$314.00
Grade, ditch, & roll	3.80	sta @	$36.00	per sta =	$136.80

TOTAL CONSTRUCTION COSTS = $1,425.63

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Base rock	Pit-run	$3.08	$0.62	$1.22	247	$1,215.24
Turnaround	Pit-run	$3.08	$0.62	$1.22	20	$98.40
Landing	Pit-run	$3.08	$0.62	$1.22	180	$885.60
				Subtotal =	447	$2,199.24

Totals		
	All Rock =	447
	Pit-run	447

TOTAL ROCK COSTS = $2,199.24

EROSION CONTROL

Grass seed & fertilizer	0.22	ac @	$500.00	per ac =	$110.00

TOTAL EROSION CONTROL COSTS = $110.00

TOTAL PROJECT COST = $3,734.87

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Hog Heaven	Sale Number:	FG-341-2023-W00884-01
Road Segment:	C to D	Construction:	10+60 stations
			0.20 miles

PROJECT NO. 3: DIRT ROAD CONSTRUCTION

CONSTRUCTION						
Clearing & grubbing (scatter)	0.98	ac @	$1,078.00	per ac =	$1,056.44	
Balanced road construction	10.60	sta @	$110.00	per sta =	$1,166.00	
Turnout	1	ea @	$66.00	per ea =	$66.00	
Turnaround	1	ea @	$82.50	per ea =	$82.50	
Landing	1	ea @	$314.00	per ea =	$314.00	
Grade, ditch, & roll	10.60	sta @	$30.10	per sta =	$319.06	
					TOTAL CONSTRUCTION COSTS =	$3,004.00
CULVERTS						
Culverts and Bands						
18" Diameter	30	LF @	$20.00	per LF =	$600.00	
Markers & Stakes						
Culvert markers	1	ea @	$10.00	per ea =	$10.00	
					TOTAL CULVERT COSTS =	$610.00
ROCK						
EROSION CONTROL						
Grass seed & fertilizer	0.49	ac @	$500.00	per ac =	$245.00	
					TOTAL EROSION CONTROL COSTS =	$245.00
					TOTAL PROJECT COST =	$3,859.00

PROJECT NO. 4: ROAD VACATING

Construct tank trap	1	ea @	$55.00	per ea =	$55.00	
Rip dirt road surface	10.60	sta @	$25.00	per sta =	$265.00	
Rip & narrow landing	1	ea @	$150.00	per ea =	$150.00	
Remove existing culverts	1	ea @	$150.00	per ea =	$150.00	
					TOTAL PROJECT COST =	$620.00

SUMMARY OF CONSTRUCTION COST

Timber Sale: Hog Heaven — Sale Number: FG-341-2023-W00884-01

Road Segment: E to F — Construction: 5+00 stations, 0.09 miles

PROJECT NO. 1: ROCKED ROAD CONSTRUCTION

CONSTRUCTION

Clearing & grubbing (scatter)	0.58	ac @	$1,078.00	per ac =	$625.24
Balanced road construction	5.00	sta @	$110.00	per sta =	$550.00
Turnaround	1	ea @	$82.50	per ea =	$82.50
Landing	1	ea @	$314.00	per ea =	$314.00
Grade, ditch, & roll	5.00	sta @	$36.00	per sta =	$180.00

TOTAL CONSTRUCTION COSTS = $1,751.74

CULVERTS

Culverts and Bands					
18" Diameter	30	LF @	$20.00	per LF =	$600.00
Markers & Stakes					
Culvert markers	1	ea @	$10.00	per ea =	$10.00

TOTAL CULVERT COSTS = $610.00

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Base rock	Pit-run	$3.08	$1.12	$1.22	325	$1,761.50
Turnaround	Pit-run	$3.08	$1.12	$1.22	20	$108.40
Landing	Pit-run	$3.08	$1.12	$1.22	180	$975.60
				Subtotal =	525	$2,845.50

Totals		
	All Rock =	525
	Pit-run	525

TOTAL ROCK COSTS = $2,845.50

EROSION CONTROL

Grass seed & fertilizer	0.29	ac @	$500.00	per ac =	$145.00

TOTAL EROSION CONTROL COSTS = $145.00

TOTAL PROJECT COST = $5,352.24

SUMMARY OF CONSTRUCTION COST

Timber Sale: Hog Heaven — Sale Number: FG-341-2023-W00884-01

Road Segment: G to H — Improvement: 108+20 stations

2.05 miles

PROJECT NO. 2: ROAD IMPROVEMENT

IMPROVEMENT

Clearing & grubbing (scatter)	1.25	ac @	$1,078.00	per acre =	$1,347.50
Roadside brushing	1.26	mi @	$1,164.29	per mi =	$1,467.00
Clean ditch & scatter waste material	108.20	sta @	$60.00	per sta =	$6,492.00
Clean culvert inlet & outlet, scatter waste	6	ea @	$25.00	per ea =	$150.00
Cutslope layback					
Excavate & load	192	cy @	$3.40	per cy =	$652.80
Haul	250	cy @	$0.90	per cy =	$224.64
Shape and compact waste material	250	cy @	$0.30	per cy =	$74.88
Develop Waste Area	1	ea @	$110.00	per ea =	$110.00
Improve turnout	4	ea @	$33.00	per ea =	$132.00
Improve turnaround	1	ea @	$41.25	per ea =	$41.25
Grade, ditch, & roll	108.20	sta @	$36.00	per sta =	$3,895.20

TOTAL IMPROVEMENT COSTS = $14,587.27

CULVERTS

Culverts and Bands					
18" Diameter	30	LF @	$20.00	per LF =	$600.00
Markers & Stakes					
Culvert markers	6	ea @	$10.00	per ea =	$60.00
Additional Installation Cost					
Repair culevrt flume	2	hrs @	$40.00	per hr =	$80.00

TOTAL CULVERT COSTS = $740.00

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Subgrade rock						
Bedding and backfill	1½" - 0	$3.18	$7.78	$0.50	24	$275.04
				Subtotal =	24	$275.04
Surfacing rock						
Spot rock	1½" - 0	$3.18	$7.78	$1.22	100	$1,218.00
Surfacing rock	1½" - 0	$3.18	$7.78	$1.22	312	$3,800.16
Junction	1½" - 0	$3.18	$7.78	$1.22	12	$146.16
Turnout	1½" - 0	$3.18	$7.78	$1.22	28	$341.04
Turnaround	1½" - 0	$3.18	$7.78	$1.22	12	$146.16
				Subtotal =	464	$5,651.52

Totals		
	All Rock =	488
	1½" - 0	488

TOTAL ROCK COSTS = $5,926.56

EROSION CONTROL

Grass seed & fertilizer	1.25	ac @	$425.00	per ac =	$531.25
Straw mulch bale	8	ea @	$10.00	per ea =	$80.00

TOTAL EROSION CONTROL COSTS = $611.25

TOTAL PROJECT COST = $21,865.08

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Hog Heaven	Sale Number:	FG-341-2023-W00884-01
Road Segment:	I to J	Improvement:	65+70 stations
			1.24 miles

PROJECT NO. 2: ROAD IMPROVEMENT

IMPROVEMENT

Clearing & grubbing (scatter)	0.76	ac @	$1,078.00	per acre =	$819.28
Roadside brushing	1.24	mi @	$1,100.00	per mi =	$1,368.75
Clean ditch & scatter waste material	65.70	sta @	$60.00	per sta =	$3,942.00
Clean culvert inlet & outlet, scatter waste	6	ea @	$25.00	per ea =	$150.00
Cutslope layback					
Excavate & load	435	cy @	$1.90	per cy =	$826.50
Haul	566	cy @	$3.40	per cy =	$1,922.70
Shape and compact waste material	566	cy @	$0.30	per cy =	$169.65
Develop Waste Area	1	ea @	$110.00	per ea =	$110.00
Construct settling pond	8	ea @	$25.00	per ea =	$200.00
Improve turnout	3	ea @	$33.00	per ea =	$99.00
Improve turnaround	1	ea @	$41.25	per ea =	$41.25
Improve roadside landing	1	ea @	$82.50	per ea =	$82.50
Grade, ditch, & roll	65.70	sta @	$36.00	per sta =	$2,365.20

TOTAL IMPROVEMENT COSTS = $12,096.83

CULVERTS

Markers & Stakes					
Culvert markers	7	ea @	$10.00	per ea =	$70.00

TOTAL CULVERT COSTS = $70.00

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Spot rock	Pit-run	$3.08	$1.66	$1.22	250	$1,490.00
Junction	Pit-run	$3.08	$1.66	$1.22	24	$143.04
Turnout	Pit-run	$3.08	$1.66	$1.22	87	$518.52
Turnaround	Pit-run	$3.08	$1.66	$1.22	20	$119.20
Roadside landing	Pit-run	$3.08	$1.66	$1.22	95	$566.20
				Subtotal =	476	$2,836.96

Totals	All Rock =	476
	Pit-run	476

TOTAL ROCK COSTS = $2,836.96

EROSION CONTROL

Grass seed & fertilizer	0.76	ac @	$425.00	per ac =	$323.00
Straw mulch bale	15	ea @	$10.00	per ea =	$150.00

TOTAL EROSION CONTROL COSTS = $473.00

TOTAL PROJECT COST = $15,476.79

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Hog Heaven	Sale Number:	FG-341-2023-W00884-01
Road Segment:	K to L	Improvement:	36+80 stations
			0.70 miles

PROJECT NO. 2: ROAD IMPROVEMENT

IMPROVEMENT

Clearing & grubbing (scatter)	0.43	ac @	$1,078.00	per acre =	$463.54
Roadside brushing	0.70	mi @	$1,100.00	per mi =	$766.67
Clean ditch & scatter waste material	36.80	sta @	$60.00	per sta =	$2,208.00
Clean culvert inlet & outlet, scatter waste	2	ea @	$25.00	per ea =	$50.00
Improve turnout	2	ea @	$33.00	per ea =	$66.00
Improve turnaround	1	ea @	$41.25	per ea =	$41.25
Approach to landing	1.60	sta @	$690.00	per sta =	$1,104.00
Improve landing	2	ea @	$157.00	per ea =	$314.00
Grade, ditch, & roll	36.80	sta @	$36.00	per sta =	$1,324.80

TOTAL IMPROVEMENT COSTS = $6,338.26

ROCK

	Rock Size	Base Cost $/cy	Haul Cost $/cy	Placement/ Processing Cost $/cy	Total CY	Rock Cost
Surfacing rock						
Surfacing rock	Pit-run	$3.08	$1.22	$1.22	2,392	$13,203.84
Junction	Pit-run	$3.08	$1.22	$1.22	48	$264.96
Turnout	Pit-run	$3.08	$1.22	$1.22	58	$320.16
Turnaround	Pit-run	$3.08	$1.22	$1.22	20	$110.40
Approach to landing	Pit-run	$3.08	$1.22	$1.22	104	$574.08
Landing	Pit-run	$3.08	$1.22	$1.22	360	$1,987.20
				Subtotal =	2,982	$16,460.64

Totals		
	All Rock =	2,982
	Pit-run	2,982

TOTAL ROCK COSTS = $16,460.64

EROSION CONTROL

Grass seed & fertilizer	0.43	ac @	$425.00	per ac =	$182.75

TOTAL EROSION CONTROL COSTS = $182.75

TOTAL PROJECT COST = $22,981.65

SUMMARY OF CONSTRUCTION COST

Timber Sale: Hog Heaven Sale Number: FG-341-2023-W00884-01

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

Equipment	Total
Grader	$942.42
Roller (smooth/grid) & Compactor	$565.46
Excavator (Large) - Equipment Cleaning	$1,942.42
Dozer (Large) - Equipment Cleaning	$1,987.00
Dump Truck (10cy +)	$649.22

TOTAL MOVE-IN COSTS = $6,086.52

PROJECT No. 4 MOVE-IN, WITHIN AREA MOVE, & CLEANING COSTS

Equipment	Total
Excavator (Large) - Equipment Cleaning	$1,942.42

TOTAL MOVE-IN COSTS = $1,942.42

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Hog Heaven
Sale Number: FG-341-2023-W00884-01
Quarry Name: Idiot Creek Quarry

Pit-run: 3,954 cy (truck measure)
Total truck yardage: 3,954 cy
Total in place yardage: 3,042 cy

Swell: 130%
Compaction: 116%

Move-in & Other Base Cost					
Move in excavator with cleaning					$1,803.99
Move in Dump Trucks					$316.57
Clean up quarry					$500.00
				Subtotal =	$2,620.56
				Per CY =	$0.66/cy
Pit-run Base Cost					
Rip rock	$2.10	/ cy x	3,042	cy =	$6,387.23
Load dump truck	$0.80	/ cy x	3,954	cy =	$3,163.20
				Subtotal =	$9,550.43
				Per CY =	$2.42/cy

Pit-run Base Cost = **$3.08/cy**

QUARRY DEVELOPMENT & CRUSHING COST SUMMARY

Timber Sale: Hog Heaven
Sale Number: FG-341-2023-W00884-01
Stockpile Name: Middle Larch Stockpile

1 1/2" - 0: 488 cy (truck measure)
Total truck yardage: 488 cy

Move-in					
Move in excavator					$843.15
Move in Dump Trucks					$317.59
				Subtotal =	$1,160.74
				Per CY =	$2.38/cy
1 1/2"-0 Base Cost					
Load dump truck	$0.80	/ cy x	488	cy =	$390.40
				Subtotal =	$390.40
				Per CY =	$0.80

1 1/2"-0 Cost = **$3.18/cy**

CRUISE REPORT
Hog Heaven
#FG-341-2023-W00884-01

1. LOCATION:

Portions of Sections 20 and 21, T2N, R6W, W.M., Tillamook County, Oregon.

2. CRUISE DESIGN:

The timber cruise was designed using an estimated coefficient of variation (CV) of 60%, average stand diameter of 20 inches, sampling error (SE) of 10% and a minimum of 100 grade trees.

3. SAMPLING METHOD:

The Timber Sale Area was cruised in July of 2022 with 35 variable radius grade plots using a 40 BAF prism. Plots were laid out on a 5 chain x 6 chain grid. Plots falling on or near existing roads or no-harvest areas were offset 1 chain.

4. CRUISE RESULTS:

207 trees were measured and graded producing a sampling error of 8.9% on the Douglas-fir Basal Area and 16% on the western hemlock. The sampling error of Douglas-fir Net Board Foot Volume is 9.4% and 17.2% on the western hemlock Net Board Foot Volume.

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 Adrian Torres, Mark Savage, and Shamus Smith.

Prepared by: Shamus Smith 7-18-2022

Reviewed by: Mark Savage 7-18-2022
Date

TC PSTATS

PROJECT STATISTICS

PROJECT HOGHVN

PAGE 1
DATE 7/14/2022

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	06	20	00U1	00MC	113.00	35	211	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	35	211	6.0		
CRUISE	35	211	6.0	13,853	1.5
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	143	78.3	19.6	114	37.1	164.2	30,416	30,342	6,900	6,900
WHEMLOCK	50	33.9	17.6	93	13.6	57.1	8,456	8,413	2,110	2,110
NOB FIR	11	3.2	27.0	125	2.4	12.6	2,561	2,561	556	556
DF SNAG	4	5.3	12.5	79	1.3	4.6				
R ALDER	3	1.9	18.0	75	0.8	3.4	378	378	116	116
TOTAL	*211*	*122.6*	*19.0*	*106*	*55.5*	*241.9*	*41,812*	*41,695*	*9,681*	*9,681*

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	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	54.8	4.6	489	512	536			
WHEMLOCK	52.1	7.4	291	314	337			
NOB FIR	43.0	13.6	806	933	1,059			
DF SNAG								
R ALDER	63.0	43.6	145	257	369			
TOTAL	*63.5*	*4.4*	*453*	*474*	*495*	*161*	*40*	*18*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	50.8	4.2	111	116	121			
WHEMLOCK	49.3	7.0	73	79	84			
NOB FIR	38.7	12.2	176	200	224			
DF SNAG								
R ALDER	58.0	40.1	46	77	108			
TOTAL	*57.6*	*4.0*	*104*	*109*	*113*	*133*	*33*	*15*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	70.2	11.9	69	78	88			
WHEMLOCK	98.4	16.6	28	34	40			
NOB FIR	197.3	33.3	2	3	4			
DF SNAG	330.6	55.8	2	5	8			
R ALDER	591.6	99.9	0	2	4			
TOTAL	*49.6*	*8.4*	*112*	*123*	*133*	*98*	*25*	*11*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	52.8	8.9	150	164	179			
WHEMLOCK	95.0	16.0	48	57	66			
NOB FIR	185.4	31.3	9	13	17			
DF SNAG	282.5	47.7	2	5	7			
R ALDER	591.6	99.9	0	3	7			
TOTAL	*28.6*	*4.8*	*230*	*242*	*254*	*33*	*8*	*4*

PROJECT STATISTICS

PROJECT **HOGHVN**

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	06	20	00U1	00MC	113.00	35	211	S	W

CL 68.1	COEFF			**NET BF/ACRE**		# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	55.6	9.4	27,494	30,342	33,191			
WHEMLOCK	102.1	17.2	6,963	8,413	9,863			
NOB FIR	192.2	32.5	1,730	2,561	3,392			
DF SNAG								
R ALDER	591.6	99.9	0	378	755			
TOTAL	*32.1*	*5.4*	*39,433*	*41,695*	*43,957*	*41*	*10*	*5*

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
DOUG FIR	54.2	9.1	6,269	6,900	7,531			
WHEMLOCK	100.3	16.9	1,752	2,110	2,467			
NOB FIR	190.0	32.1	378	556	734			
DF SNAG								
R ALDER	591.6	99.9	0	116	232			
TOTAL	*29.7*	*5.0*	*9,195*	*9,681*	*10,167*	*35*	*9*	*4*

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T02N R06W S20 Ty00MC	113.00

Project: **HOGHVN**

Acres **113.00**

Page **1**
Date **7/14/2022**
Time **11:48:31AM**

			%						Percent of Net Board Foot Volume								Average Log				Logs
									Log Scale Dia.				Log Length								
	S	So Gr	Net	Bd. Ft. per Acre			Total										Ln	Dia	Bd	CF/	Per
Spp	T	rt ad	BdFt	Def%	Gross	Net	Net MBF		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	/Acre
DF		CU															8	19		0.00	.4
DF		2M	64	.4	19,528	19,458	2,199				64	36				100	40	15	343	1.83	56.7
DF		3M	32	.0	9,697	9,694	1,095			92	8				2	98	39	9	113	0.72	86.0
DF		4M	4		1,191	1,191	135			100			30	46		23	23	6	28	0.34	42.4
DF	**Totals**		73	.2	30,416	30,342	3,429			33	44	23	1	2	1	96	36	10	164	1.04	185.5
WH		CU															3	16		0.00	3.5
WH		2M	54	.6	4,630	4,604	520				82	18				100	40	14	291	1.67	15.8
WH		3M	42	.5	3,508	3,491	395			96	4				8	92	39	8	100	0.72	34.8
WH		4M	4		318	318	36			100			30	70			22	6	28	0.37	11.2
WH	**Totals**		20	.5	8,456	8,413	951			44	47	10	1	3	3	93	34	10	129	0.94	65.4
NF		CU															6	19		0.00	.4
NF		2M	84		2,153	2,153	243				31	69				100	40	17	503	2.52	4.3
NF		3M	12		323	323	37			65	35				9	91	38	10	146	1.07	2.2
NF		4M	4		85	85	10			100			23	41		36	25	6	33	0.52	2.6
NF	**Totals**		6		2,561	2,561	289			11	31	58	1	1	1	97	34	12	269	1.72	9.5
RA		CR	100		378	378	43			34	66				7	93	38	9	135	1.10	2.8
RA	**Totals**		1		378	378	43			34	66				7	93	38	9	135	1.10	2.8
Totals				0.3	41,812	41,695	4,712			34	44	22	1	2	1	96	35	10	158	1.04	263.1

TC	PSTNDSUM	Stand Table Summary	Page	1
			Date:	7/14/2022
T02N R06W S20 Ty00MC 113.00		Project HOGHVN	Time:	11:48:32AM
		Acres 113.00	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.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
DF		8	1	84	87	4.640	1.62	4.64	9.3	60.0	1.23	43	278	139	49	31
DF		13	3	87	100	3.720	3.43	7.44	15.0	65.0	3.18	111	484	359	126	55
DF		14	3	88	105	3.207	3.43	6.41	18.8	83.3	3.44	121	535	388	136	60
DF		15	8	87	107	7.695	9.44	15.39	24.1	115.3	10.57	371	1,775	1,195	419	201
DF		16	9	88	109	7.367	10.29	14.73	26.0	111.7	10.92	383	1,645	1,234	433	186
DF		17	9	88	116	6.525	10.29	13.05	30.4	125.0	11.31	397	1,631	1,278	448	184
DF		18	8	88	112	5.174	9.14	12.29	28.5	114.2	9.99	351	1,403	1,129	396	159
DF		19	7	89	119	4.063	8.00	11.03	29.9	124.2	9.38	329	1,370	1,060	372	155
DF		20	17	88	120	8.905	19.43	23.05	35.3	148.2	23.17	813	3,415	2,619	919	386
DF		21	7	87	118	3.326	8.00	8.55	38.2	158.9	9.32	327	1,359	1,053	370	154
DF		22	13	87	126	5.628	14.86	16.45	39.5	177.1	18.53	650	2,914	2,093	735	329
DF		23	9	87	123	3.565	10.29	10.30	41.8	185.4	12.26	430	1,909	1,385	486	216
DF		24	10	87	129	3.638	11.43	10.19	50.4	219.6	14.62	513	2,237	1,652	580	253
DF		25	4	87	131	1.341	4.57	4.02	51.5	228.3	5.91	207	919	667	234	104
DF		26	12	87	131	3.720	13.71	10.54	59.5	267.6	17.87	627	2,821	2,019	708	319
DF		27	3	89	134	.862	3.43	2.59	63.0	295.6	4.65	163	765	525	184	86
DF		28	7	87	139	1.871	8.00	5.61	69.3	325.2	11.09	389	1,825	1,253	440	206
DF		29	6	85	129	1.495	6.86	4.24	74.2	337.1	8.96	314	1,428	1,012	355	161
DF		30	3	85	127	.698	3.43	2.10	72.3	324.4	4.32	152	680	488	171	77
DF		31	2	86	126	.436	2.29	1.31	79.1	361.7	2.95	104	473	333	117	53
DF		32	1	83	132	.205	1.14	.61	83.2	366.7	1.46	51	225	164	58	25
DF		34	1	85	132	.181	1.14	.54	98.8	463.3	1.53	54	252	173	61	28
DF		Totals	143	87	116	78.262	164.21	185.08	37.3	163.9	196.65	6,900	30,342	22,221	7,797	3,429
WH		9	1	84	51	2.587	1.14	2.59	6.5	30.0	.54	17	78	61	19	9
WH		10	1	86	62	2.095	1.14	2.10	12.6	50.0	.85	26	105	96	30	12
WH		13	2	89	79	2.480	2.29	3.72	16.9	60.0	2.02	63	223	228	71	25
WH		14	1	93	103	1.069	1.14	2.14	21.0	100.0	1.44	45	214	162	51	24
WH		15	2	92	88	1.863	2.29	3.73	19.5	77.5	2.32	73	289	262	82	33
WH		16	5	90	107	4.093	5.71	8.19	27.8	118.0	7.29	228	966	824	258	109
WH		17	7	87	94	5.075	8.00	9.43	29.7	116.9	8.95	280	1,102	1,012	316	125
WH		18	3	87	100	1.940	3.43	3.88	34.7	130.0	4.31	135	504	487	152	57
WH		19	4	90	100	2.322	4.57	4.64	38.3	148.8	5.69	178	691	643	201	78
WH		20	5	87	101	2.619	5.71	5.24	42.0	158.0	7.04	220	828	796	249	94
WH		21	5	87	105	2.376	5.71	5.23	44.1	172.7	7.37	230	903	833	260	102
WH		22	6	85	107	2.598	6.86	4.76	49.0	196.4	7.46	233	935	843	264	106
WH		23	1	84	85	.396	1.14	.79	49.0	165.0	1.24	39	131	140	44	15
WH		24	4	87	114	1.455	4.57	3.64	54.8	237.0	6.37	199	862	720	225	97
WH		25	1	83	114	.335	1.14	.67	73.8	305.0	1.58	50	205	179	56	23
WH		26	1	86	111	.310	1.14	.62	77.7	340.0	1.54	48	211	174	54	24
WH		28	1	84	110	.267	1.14	.53	86.7	315.0	1.48	46	168	168	52	19
WH		Totals	50	88	93	33.880	57.14	61.88	34.1	136.0	67.51	2,110	8,413	7,628	2,384	951
NF		21	1	87	121	.475	1.14	1.43	33.2	143.3	1.14	47	204	128	54	23
NF		22	1	90	112	.433	1.14	.87	43.7	180.0	.91	38	156	103	43	18
NF		23	1	88	131	.396	1.14	1.19	44.0	203.3	1.26	52	242	142	59	27
NF		26	1	86	133	.310	1.14	.93	58.0	253.3	1.29	54	236	146	61	27
NF		27	1	90	120	.287	1.14	.86	58.1	266.7	1.20	50	230	136	57	26
NF		28	1	90	129	.267	1.14	.80	67.0	323.3	1.29	54	259	146	61	29
NF		30	2	86	125	.466	2.29	1.40	73.3	336.7	2.46	102	470	278	116	53
NF		33	1	88	134	.192	1.14	.58	94.0	463.3	1.30	54	267	147	61	30
NF		34	1	85	122	.181	1.14	.54	92.7	420.0	1.21	50	228	137	57	26
NF		36	1	88	132	.162	1.14	.49	110.5	553.3	1.29	54	268	145	61	30

T02N R06W S20 Ty00MC 113.00

Project HOGHVN
Acres 113.00

Time: 11:48:32AM
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.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
NF		Totals	11	88	125	3.170	12.57	9.08	61.2	282.2	13.34	556	2,561	1,508	628	289
RA		14	1	86	58	1.069	1.14	1.07	25.4	70.0	.75	27	75	84	31	8
RA		22	2	83	97	.866	2.29	1.73	51.2	175.0	2.44	89	303	276	100	34
RA		Totals	3	85	75	1.935	3.43	2.80	41.4	134.9	3.19	116	378	360	131	43
DFS		10	2	86	80	4.191	2.29									
DFS		17	1	86	93	.725	1.14									
DFS		22	1	86	41	.433	1.14									
DFS		Totals	4	86	79	5.349	4.57									
Totals			211	87	108	122.595	241.92	258.84	37.4	161.1	280.68	9,681	41,695	31,717	10,940	4,712

TC PLOGSTVB

Log Stock Table - MBF

T02N R06W S20 Ty00MC 113.00

Project: HOGHVN
Acres 113.00

Page 1
Date 7/14/2022
Time 11:48:30AM

Spp	S T	So Gr rt 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+
DF		2M	40	2,207		2,199	64.1						544	650	715	290			
DF		3M	32	12		12	.3			12									
DF		3M	34	13		13	.4			13									
DF		3M	36	26		26	.8			26									
DF		3M	38	2		2	.1			2									
DF		3M	40	1,042		1,042	30.4			161	314	483	83						
DF		4M	12	5		5	.2			5									
DF		4M	14	11		11	.3			11									
DF		4M	16	6		6	.2			6									
DF		4M	18	8		8	.2			8									
DF		4M	20	10		10	.3			10									
DF		4M	22	3		3	.1			3									
DF		4M	24	19		19	.6			19									
DF		4M	26	10		10	.3			10									
DF		4M	28	16		16	.5			16									
DF		4M	30	14		14	.4			14									
DF		4M	40	31		31	.9			31									
DF		Totals		3,437		3,429	72.8			349	314	483	628	650	715	290			
WH		2M	40	523		520	54.7						183	213	124				
WH		3M	32	4		4	.4			4									
WH		3M	34	29		29	3.1			29									
WH		3M	36	11		11	1.2			11									
WH		3M	38	27		27	2.8			27									
WH		3M	40	325		323	34.0			57	57	193	16						
WH		4M	12	1		1	.1			1									
WH		4M	14	1		1	.1			1									
WH		4M	16	5		5	.5			5									
WH		4M	18	2		2	.2			2									
WH		4M	20	3		3	.3			3									
WH		4M	22	2		2	.3			2									
WH		4M	24	9		9	.9			9									
WH		4M	26	3		3	.3			3									
WH		4M	30	11		11	1.1			11									
WH		Totals		956		951	20.2			164	57	193	200	213	124				
NF		2M	40	243		243	84.1						14	36	73	99	21		

Log Stock Table - MBF

T02N R06W S20 Ty00MC 113.00

Project: HOGHVN
Acres 113.00

Date 7/14/2022
Time 11:48:30AM

Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net 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+
								Net Volume by Scaling Diameter in Inches											
NF		3M	32	1		1	.5			1									
NF		3M	34	2		2	.7			2									
NF		3M	40	33		33	11.5				6	14	5	8					
NF		4M	14	1		1	.4			1									
NF		4M	18	1		1	.2			1									
NF		4M	20	1		1	.2			1									
NF		4M	24	2		2	.7			2									
NF		4M	28	2		2	.7			2									
NF		4M	40	3		3	1.2			3									
NF		Totals		289		289	6.1			13	6	14	20	43	73	99	21		
RA		CR	34	3		3	6.9			3									
RA		CR	36	3		3	6.9			3									
RA		CR	38	8		8	19.8			8									
RA		CR	40	28		28	66.4							28					
RA		Totals		43		43	.9			14				28					
Total		All Species		4,725		4,712	100.0			541	378	690	847	935	912	389	21		

VOLUME SUMMARY
(Shown in MBF)
Hog Heaven
#FG-341-2023-W00884-01
July 2022

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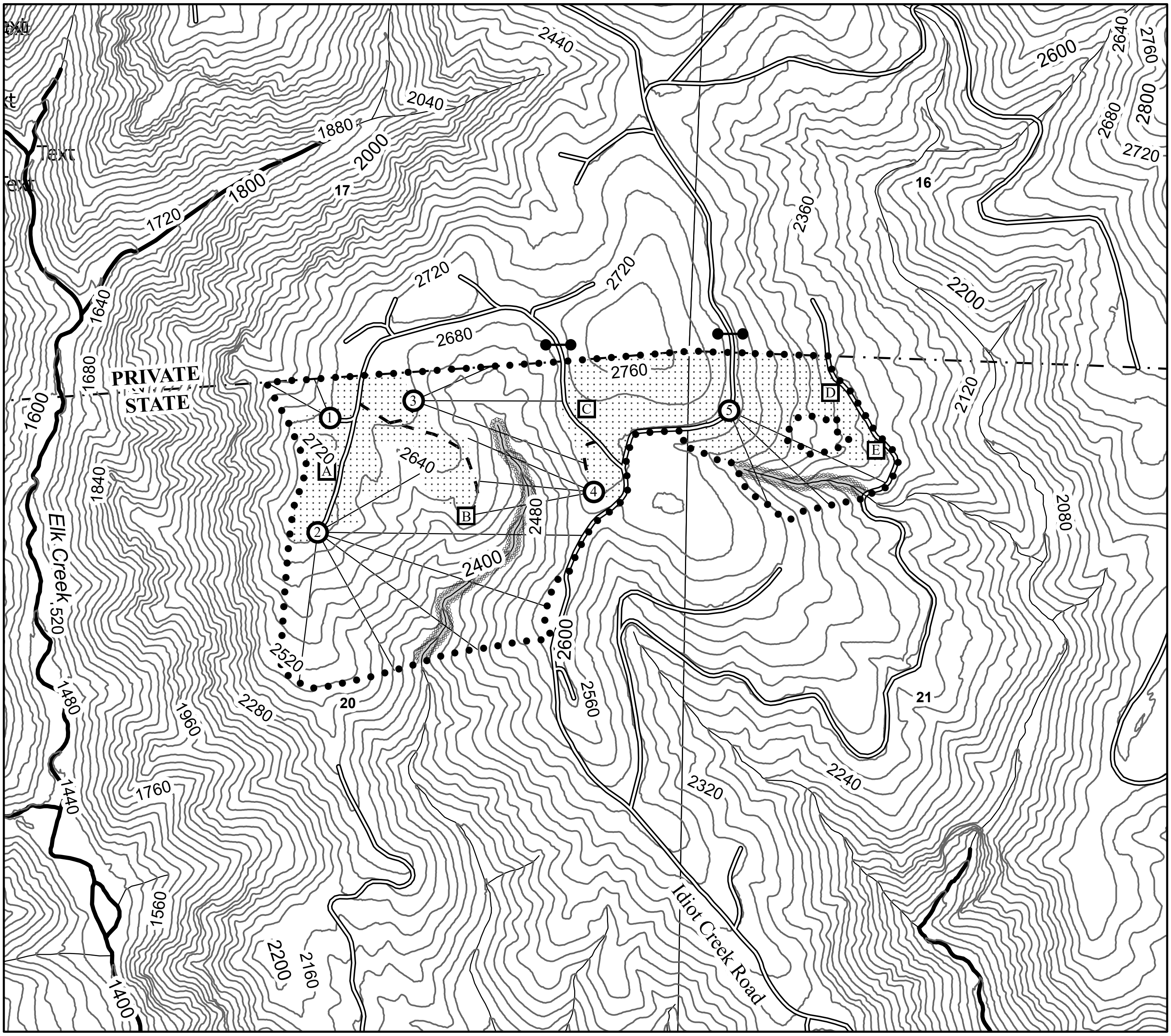
TIMBER SALE AREA: Modified Clearcut (113 ACRES)

SPECIES		2 SAW	3 SAW	4 SAW	CR	TOTAL
Douglas-fir	Cruise Volume	2,199	1,095	135	0	3,429
	Hidden D&B (2%)	(44)	(22)	(3)	(0)	(69)
	NET TOTAL	2,155	1,073	132	0	3,360
	% of Total	64	32	4	0	
Western hemlock	Cruise Volume	520	395	36	0	951
	Hidden D&B (2%)	(10)	(8)	(1)	(0)	(19)
	NET TOTAL	510	387	35	0	932
	% of Total	55	41	4	0	
Noble fir	Cruise Volume	243	37	10	0	290
	Hidden D&B (2%)	(5)	(1)	(0)	(0)	(6)
	NET TOTAL	238	36	10	0	284
	% of Total	84	13	3	0	
Red alder	Cruise Volume	0	0	0	43	43
	Hidden D&B (5%)	(0)	(0)	(0)	(2)	(2)
	NET TOTAL	0	0	0	41	41
	% of Total	0	0	0	100	

Douglas-fir	2,155	1,073	132	0	3,360
Western hemlock	510	387	35	0	932
Noble fir	238	36	10	0	284
Red alder	0	0	0	41	41
Total	2,903	1,496	177	41	**4,617**



LEGEND

- Timber Sale Boundary
- Stream Buffer Boundary
- ODF Ownership Boundary
- Surfaced Road
- New Road Construction
- Gate
- Cable Yarding Area
- Tractor Yarding Area
- Cable Landing
- Tractor Landing
- Type-F Stream
- Type-N Stream
- Stream Buffer
- Section Lines
- 40 Foot Contour Band
- 200 Foot Contour Band

LOGGING PLAN

FOR TIMBER SALE CONTRACT #FG-341-2023-W00884-01
HOG HEAVEN
PORTIONS OF SECTIONS 20 & 21, T2N, R6W, W.M.,
TILLAMOOK COUNTY, OREGON

Forest Grove District GIS
July, 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

N

APROXIMATE NET ACRES

	TRACTOR	CABLE
UNIT 1	45	68
TOTAL	45	68