Timber Sale Appraisal
Clam Bake
Sale TL-341-2019-W00652-01

District: Tillamook **Date: March 13, 2019**

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$1,978,460.36	$363,212.50	$2,341,672.86
		Project Work:	($309,620.00)
		Advertised Value:	$2,032,052.86

Timber Sale Appraisal
Clam Bake
Sale TL-341-2019-W00652-01

"STEWARDSHIP IN FORESTRY"

District: Tillamook **Date: March 13, 2019**

Timber Description

Location: Portions of Section 2, 11, and 12, T2N, R9W, W.M., Tillamook County, Oregon.

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	16	0	95
Western Hemlock / Fir	19	0	95
Sitka Spruce	23	0	95
Red Cedar	36	0	95
Alder (Red)	15	0	90

Volume by Grade	2S	3S & 4S 6"-11"	3S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	842	542	0	0	0	0	0	1,384
Western Hemlock / Fir	3,283	1,295	0	0	0	0	0	4,578
Sitka Spruce	164	89	0	0	0	0	0	253
Red Cedar	35	0	4	0	0	0	0	39
Alder (Red)	0	0	0	166	259	223	538	1,186
Total	4,324	1,926	4	166	259	223	538	7,440

Comments: Pond Values Used: September 2018
Region: Astoria, Forest Grove, and Tillamook

Pulp (Conifer and Hardwood) Price = $ 25/ MBF

BRAND AND PAINT ALLOWANCE = $2.00/ MBF
FUEL COST ALLOWANCE = $3.00/ Gallon
HAULING COST ALLOWANCE
Hauling cost equivalent to $950 daily truck cost

Other Costs with Profit and Risk to be added:
Snag creation: No snag creation required.

TOTAL Other Costs with profit and Risk to be added = None.

Other Costs with No Profit and Risk Added:

Non-project Road 1: $/340 station x 4+50 stations = $1,530
Non-project Swing Road A: $295/ station x 4+47 stations = $1,320
Non-project Swing Road B: $290/ station x 6+00 stations = $1,740
Swing Road A Logging Cost: 13.5 MBF/ac. x 25 ac. x $25/MBF = $8,438
Swing Road B Logging Cost: 40.2 MBF/ac. x 9 ac. x $25/MBF = $9,045
Swing Road C Logging Cost: 40.2 MBF/ac. x 10 ac. x $25/MBF = $10,050

Machine Cleaning: $1000/machine x 2 machines x 2 seasons = $4,000
Slash piling and sorting (Cable Ground): $1/ac x 182 ac. = $910
Heliport Construction: 12 hours machine loader time for slash moving @ $140/ hour = $1,680
Road blocking $50/block x 1 road and 2 swing roads = $150

Ditch Cleaning, Bank Sluff Removal and Deadman Tailhold:
Mobilization: two times – dump truck w/ tilt bed & small excavator: $890 x 2 = $1,780
Medium excavator (Cat 320 or equivalent): 40 hours @ $135/ hour = $5,400
Dump truck: 40 hours @ $90/ hour = $3,600

TOTAL Other Costs no Profit and Risk added = $49,643

ROAD MAINTENANCE:
Portions of Anderson Ridge Road, Cook Creek Road, Clammer Road, Firebreak 3 and East Foley Ridge Road.
Spot Rocking Area 1 and 2: 20cy/MMBF/mile x 6.2 MMBF x $5/CY x 6.0 mi. / 6,185 MBF = $0.60/MBF
Spot Rocking Area 3: 20 cy/MMBF/mile x 1.26 MMBF x $5/CY x 10.5 mi / 1,260 MBF = $1.05/MBF
Interim Grading: $1,150/ mile x 16.5 miles x 2 times / 7,445MBF = $5.09/MBF
Final Maintenance Grading: $1,500 x 16.5 miles/7,445 MBF = $3.32/MBF
Final Maintenance Compaction: $950/mile x 7.5 miles / 7445 MBF = $0.95/MBF
Total Road Maintenance: $11.01/MBF

District: Tillamook **Date: March 13, 2019**

Logging Conditions

Combination#: 1

Douglas - Fir	19.59%
Western Hemlock / Fir	37.15%
Sitka Spruce	23.72%
Red Cedar	40.85%
Alder (Red)	15.13%

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: 18 **bd. ft / load:** 4200
cost / mbf: $70.69
machines: Forwarder
Harvester

Combination#: 2

Douglas - Fir	8.06%
Western Hemlock / Fir	17.47%
Sitka Spruce	10.20%
Red Cedar	19.62%
Alder (Red)	5.75%

Logging System: Shovel **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: 16 **bd. ft / load:** 4200
cost / mbf: $79.52
machines: Forwarder
Harvester

Combination#: 3

Douglas - Fir	12.36%
Western Hemlock / Fir	23.18%
Sitka Spruce	15.64%
Red Cedar	23.92%
Alder (Red)	8.82%

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: 10 **bd. ft / load:** 4200
cost / mbf: $185.25
machines: Log Loader (A)
Forwarder
Harvester
Tower Yarder (Medium)

Combination#: 4

Douglas - Fir	59.98%
Western Hemlock / Fir	22.20%
Sitka Spruce	50.45%
Red Cedar	15.62%
Alder (Red)	70.30%

Logging System:	Cable: Large Tower >=70	**Process:**	Harvester Head Delimbing
yarding distance:	Long (1,500 ft)	**downhill yarding:**	No
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
loads / day:	7	**bd. ft / load:**	4200
cost / mbf:	$271.44		
machines:	Log Loader (A) Forwarder Harvester Tower Yarder (Large)		

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District: Tillamook **Date: March 13, 2019**

Logging Costs

Operating Seasons:	2.00	**Profit Risk:**	10%
Project Costs:	$309,620.00	**Other Costs (P/R):**	$0.00
Slash Disposal:	$0.00	**Other Costs:**	$49,643.00

Miles of Road

Road Maintenance: $11.01

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
Western Hemlock / Fir	$0.00	3.0	4.5
Sitka Spruce	$0.00	2.0	4.5
Red Cedar	$0.00	2.0	4.5
Alder (Red)	$0.00	3.0	4.5

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"STEWARDSHIP IN FORESTRY"

District: Tillamook **Date: March 13, 2019**

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
$205.98	$11.56	$1.18	$73.89	$0.00	$29.26	$0.00	$2.00	$6.67	$330.54
Western Hemlock / Fir									
$143.35	$11.56	$1.18	$73.89	$0.00	$23.00	$0.00	$2.00	$6.67	$261.65
Sitka Spruce									
$190.78	$11.56	$1.18	$110.84	$0.00	$31.44	$0.00	$2.00	$6.67	$354.47
Red Cedar									
$131.18	$11.56	$1.18	$110.84	$0.00	$25.48	$0.00	$2.00	$6.67	$288.91
Alder (Red)									
$222.43	$12.11	$1.18	$77.41	$0.00	$31.31	$0.00	$2.00	$6.67	$353.11

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$689.64	$359.10	$0.00
Western Hemlock / Fir	$0.00	$569.59	$307.94	$0.00
Sitka Spruce	$0.00	$522.70	$168.23	$0.00
Red Cedar	$0.00	$1,036.46	$747.55	$0.00
Alder (Red)	$0.00	$659.36	$306.25	$0.00

Timber Sale Appraisal
Clam Bake
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District: Tillamook **Date: March 13, 2019**

Summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	1,384	$359.10	$496,994.40
Western Hemlock / Fir	4,578	$307.94	$1,409,749.32
Sitka Spruce	253	$168.23	$42,562.19
Red Cedar	39	$747.55	$29,154.45
Alder (Red)	1,186	$306.25	$363,212.50

Gross Timber Sale Value

Recovery: $2,341,672.86

Prepared By: Harold Stevens **Phone:** 503-815-7044

"STEWARDSHIP IN FORESTRY"

PROJECT SUMMARY SHEET

Sale: Clam Bake

CONSTRUCTION

Point	C to D	2+10	stations =	$13,113.15
Point	E to F	3+65	stations =	$13,038.95
Point	U to V	42+70	stations =	$67,749.78
Point	W to X	8+65	stations =	$19,870.93
Point	Y to Z	4+60	stations =	$8,898.50
			SUBTOTAL CONSTRUCTION	**$122,671.31**

IMPROVEMENT

Point	A to B	442+25	stations =	$134,118.94
Point	G to H	18+80	stations =	$5,294.98
Point	I to J	24+95	stations =	$6,652.21
Point	K to L	6+90	stations =	$1,136.57
Point	M to N	0+00	stations =	$1,969.00
Point	Q to R	7+50	stations =	$1,016.25
Point	S to T	11+70	stations =	$9,278.45
			SUBTOTAL IMPROVEMENT	**$159,466.40**

RECONSTRUCTION

Point	E to F	3+80	stations =	$8,754.72
Point	O to P	3+00	stations =	$1,612.10
			SUBTOTAL RECONSTRUCTION	**$10,366.82**

SPECIAL PROJECTS

Stump Burning	$4,390.00
Point AA Stockpile	$7,235.00
SUBTOTAL SPECIAL PROJECTS	**$11,625.00**

MOVE IN **$5,490.47**

GRAND TOTAL **$309,620.00**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **A to B**

Construction -	0+00	stations	Improvement -	442+25	stations	Reconstruction -	0+00	stations
	0.00	miles		8.38	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Side cast	0.021	acres @	$860.00	per acre =	$18.06		
					TOTAL CLEARING AND GRUBBING		**$18.06**

IMPROVEMENT: EXCAVATION -

Pullback	68	cy. @	$2.00	per c.y.=	$136.00		
				TOTAL EXCAVATION			**$136.00**

IMPROVEMENT: ENDHAUL -

Pullback	293+85	to	295+40	68	cy. @	$1.69	per c.y.=	$114.92	
Spread & compact				68	cy. @	$0.50	per c.y.=	$34.00	
							TOTAL ENDHAUL		**$148.92**

CULVERTS - MATERIALS & INSTALLATION

Culverts									
	300	LF of 18"	$6,000.00		30	LF of 24"	$930.00		
Culvert Stakes & Markers									
	11	markers	$88.00						
								TOTAL CULVERTS	**$7,018.00**

ROCK

17+55 to	277+30	5,810	cy. of	Crushed	@	$17.11	per c.y.=	$99,409.10	
15+80 to	16+55	60	cy. of	Crushed	@	$17.14	per c.y.=	$1,028.40	
Culvert Backfill	As Needed	165	cy. of	Crushed	@	$14.69	per c.y.=	$2,423.85	
Landing Rock	217+75	30	cy. of	Pitrun	@	$9.11	per c.y.=	$273.30	
Landing Rock	431+80	60	cy. of	Pitrun	@	$11.04	per c.y.=	$662.40	
Landing Rock	437+80	60	cy. of	Pitrun	@	$11.15	per c.y.=	$669.00	
Landing Rock	441+85	60	cy. of	Pitrun	@	$11.23	per c.y.=	$673.80	
Energy Dissipator	5yds/culvert	35	cy. of	Riprap	@	$19.91	per c.y.=	$696.85	
Outslope Rock	328+50	40	cy. of	Crushed	@	$10.00	per c.y.=	$400.00	
Spot Patch	As Needed	200	cy. of	Crushed	@	$18.08	per c.y.=	$3,616.00	
Junction Rock	0+00	50	cy. of	Crushed	@	$19.00	per c.y.=	$950.00	
Turnarounds	137+15/163+35	110	cy. of	Pitrun	@	$10.63	per c.y.=	$1,169.30	
								TOTAL ROCK	**$111,972.00**

SPECIAL PROJECTS

Ditching-No Endhaul	8.95	stations @	$80.00	per station	$716.00	
Ditching-Endhaul	6.55	stations @	$130.00	per station	$851.50	
Construct waste areas -	15.00	hours @	$180.00	per hour	$2,700.00	
Construct Truck Turnaround at 163+35 -	4.00	hours @	$350.00	per hour	$1,400.00	
Construct Landings	10.00	hours @	$180.00	per hour	$1,800.00	
Ditching-Specified Amounts					$3,250.00	
Grade and shape road -	44.23	stations @	$22.00	per station	$973.06	
Roll subgrade w/ vibratory roller prior to rocking -	0.00	stations @	$17.50	per station	$0.00	
Remove culverts from state lands	1.00	@	$257.40	total	$257.40	
Grass seed and fertilize -	5.00	acres @	$560.00	per acre	$2,800.00	
Mulching -	0.100	acres @	$780.00	per acre	$78.00	
				TOTAL SPECIAL PROJECTS		**$14,825.96**

GRAND TOTAL **$134,118.94**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **C to D**

Construction -	2+10	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.04	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Endahul Waste		
0+00		2+10	12%			$113	$8,000	=	$8,237.30
								TOTAL	**$8,237.30**

ROCK

0+00	to	2+10	150	cy. of	Pitrun	@	$12.24	per c.y.=	$1,836.00	
Junction Rock		0+00	30	cy. of	Crushed	@	$16.83	per c.y.=	$504.90	
Landing Rock		2+10	100	cy. of	Pitrun	@	$10.76	per c.y.=	$1,076.00	
									TOTAL ROCK	**$3,416.90**

SPECIAL PROJECTS

Excavate Minimum 70ft Landing	8.00	hours @	$165.00	per hour	$1,320.00	
Grade and shape road -	2.10	stations @	$22.00	per station	$46.20	
Roll subgrade w/ vibratory roller prior to rocking -	2.10	stations @	$17.50	per station	$36.75	
Grass seed and fertilize -	0.10	acres @	$560.00	per acre	$56.00	
				TOTAL SPECIAL PROJECTS		**$1,458.95**

GRAND TOTAL **$13,113.15**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **E to F**

Construction -	3+65	stations	Improvement -	0+00	stations	Reconstruction -	3+80	stations
	0.07	miles		0.00	miles		0.07	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Endahul Waste		
3+80		7+45	10%			$113	$7,500	=	$7,912.45
								TOTAL	**$7,912.45**

RECONSTRUCTION: CLEARING AND GRUBBING -

Widening	0.039	acres @	$860.00	per acre =	$33.54	
Scattering	0.100	acres @	$1,275.00	per acre =	$127.50	
				TOTAL CLEARING AND GRUBBING		**$161.04**

RECONSTRUCTION: EXCAVATION -

Road Earthwork	3.80	sta. @	$10.00	per sta. =	$38.00	
Widening	410	cy. @	$2.00	per c.y.=	$820.00	
				TOTAL EXCAVATION		**$858.00**

RECONSTRUCTION: ENDHAUL -

Widening	0+00	to	0+85	410	cy. @	$5.35	per c.y.=	$2,193.50
Spread & compact				410	cy. @	$0.50	per c.y.=	$205.00
							TOTAL ENDHAUL	**$2,398.50**

CULVERTS - MATERIALS & INSTALLATION

Culverts		
50	LF of 18"	$1,000.00
Culvert Stakes & Markers		
1	markers	$8.00
	TOTAL CULVERTS	**$1,008.00**

ROCK

0+00	to	3+80	200	cy. of	Pitrun	@	$12.09	per c.y.=	$2,418.00	
3+80	to	7+45	260	cy. of	Pitrun	@	$10.66	per c.y.=	$2,771.60	
Junction Rock		0+00	30	cy. of	Crushed	@	$16.83	per c.y.=	$504.90	
Junction Rock		0+00	50	cy. of	Pitrun	@	$10.55	per c.y.=	$527.50	
Landing Rock		7+45	100	cy. of	Pitrun	@	$10.99	per c.y.=	$1,099.00	
								TOTAL ROCK		**$7,321.00**

SPECIAL PROJECTS

Clear existing road	2.00	hours @	$165.00	per hour	$330.00
Excavate Minimum 70ft Landing	8.00	hours @	$165.00	per hour	$1,320.00
Grade and shape road -	7.45	stations @	$22.00	per station	$163.90
Roll subgrade w/ vibratory roller prior to rocking -	7.45	stations @	$17.50	per station	$130.38
Grass seed and fertilize -	0.34	acres @	$560.00	per acre	$190.40
				TOTAL SPECIAL PROJECTS	**$2,134.68**

GRAND TOTAL **$21,793.67**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **G to H**

Construction -	0+00	stations	Improvement -	18+80	stations	Reconstruction -	0+00	stations
	0.00	miles		0.36	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -							
Side cast	0.052	acres @	$860.00	per acre =	$44.72		
Widening	0.016	acres @	$860.00	per acre =	$13.76		
				TOTAL CLEARING AND GRUBBING			**$58.48**
IMPROVEMENT: EXCAVATION -							
Road Earthwork	18.80	sta. @	$10.00	per sta. =	$188.00		
Pullback	605	cy. @	$2.00	per c.y.=	$1,210.00		
Widening	68	cy. @	$9.50	per c.y.=	$646.00		
				TOTAL	**EXCAVATION**		**$2,044.00**
IMPROVEMENT: ENDHAUL -							
Pullback 14+65 to 18+45	605	cy. @	$2.20	per c.y.=	$1,331.00		
Widening 15+30 to 16+30	68	cy. @	$2.15	per c.y.=	$146.20		
Spread & compact	673	cy. @	$0.50	per c.y.=	$336.50		
					TOTAL ENDHAUL		**$1,813.70**
ROCK							
Spot Patch As Needed 30 cy. of Crushed		@	$13.90	per c.y.=	$417.00		
					TOTAL ROCK		**$417.00**
SPECIAL PROJECTS							
Waste Area Preparation	1.00	hours @	$180.00	per hour	$180.00		
Grade and shape road -	18.80	stations @	$22.00	per station	$413.60		
Roll subgrade w/ vibratory roller prior to rocking -	18.80	stations @	$17.50	per station	$329.00		
Grass seed and fertilize -	0.07	acres @	$560.00	per acre	$39.20		
				TOTAL SPECIAL PROJECTS			**$961.80**
				GRAND TOTAL			**$5,294.98**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **I to J**

Construction -	0+00	stations	Improvement -	24+95	stations	Reconstruction -	0+00	stations
	0.00	miles		0.47	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Side cast	0.019	acres @	$860.00	per acre =	$16.34		
Widening	0.098	acres @	$860.00	per acre =	$84.28		
				TOTAL CLEARING AND GRUBBING			**$100.62**

IMPROVEMENT: EXCAVATION -

Pullback	61	cy. @	$2.00	per c.y.=	$122.00		
Widening	512	cy. @	$2.00	per c.y.=	$1,024.00		
				TOTAL	**EXCAVATION**		**$1,146.00**

IMPROVEMENT: ENDHAUL -

Pullback	21+75	to	22+95	61	cy. @	$1.13	per c.y.=	$68.93	
Widening	22+50	to	24+20	512	cy. @	$1.13	per c.y.=	$578.56	
Spread & compact				573	cy. @	$0.50	per c.y.=	$286.50	
								TOTAL ENDHAUL	**$933.99**

ROCK

Spot Patch	As Needed	50	cy. of	Crushed	@	$13.64	per c.y.=	$682.00
Landing Rock	0+00	100	cy. of	Pitrun	@	$9.58	per c.y.=	$958.00
Landing Rock	6+20	50	cy. of	Pitrun	@	$10.00	per c.y.=	$500.00
Landing Rock	8+20	100	cy. of	Pitrun	@	$10.49	per c.y.=	$1,049.00
Landing Rock	11+20	100	cy. of	Pitrun	@	$10.09	per c.y.=	$1,009.00
Road Widening	22+50	20	cy. of	Pitrun	@	$10.32	per c.y.=	$206.40
							TOTAL	**ROCK**	**$4,404.40**

SPECIAL PROJECTS

Grass seed and fertilize -	0.12	acres @	$560.00	per acre	$67.20		
				TOTAL	**SPECIAL**	**PROJECTS**	**$67.20**

GRAND TOTAL **$6,652.21**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **K to L**

Construction -	0+00	stations	Improvement -	6+90	stations	Reconstruction -	0+00	stations
	0.00	miles		0.13	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Widening				0.027	acres @	$860.00	per acre =	$23.22
							TOTAL CLEARING AND GRUBBING	**$23.22**

IMPROVEMENT: EXCAVATION -

Widening				70	cy. @	$2.00	per c.y.=	$140.00
							TOTAL EXCAVATION	**$140.00**

IMPROVEMENT: ENDHAUL -

Widening	6+30	to	6+90	70	cy. @	$1.74	per c.y.=	$121.80	
Spread & compact				70	cy. @	$0.50	per c.y.=	$35.00	
								TOTAL ENDHAUL	**$156.80**

ROCK

Junction Rock	0+00	10	cy. of	Pitrun	@	$9.20	per c.y.=	$92.00	
Junction Rock	6+90	50	cy. of	Pitrun	@	$9.04	per c.y.=	$452.00	
								TOTAL ROCK	**$544.00**

SPECIAL PROJECTS

Grade and shape road -				6.90	stations @	$22.00	per station	$151.80	
Roll subgrade w/ vibratory roller prior to rocking -				6.90	stations @	$17.50	per station	$120.75	
								TOTAL SPECIAL PROJECTS	**$272.55**

GRAND TOTAL **$1,136.57**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **M to N**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

ROCK

Spot Patch	Point M	50	cy. of	Crushed	@	$19.69	per c.y.=	$984.50	
Spot Patch	Point N	50	cy. of	Crushed	@	$19.69	per c.y.=	$984.50	
								TOTAL ROCK	**$1,969.00**
							GRAND TOTAL		**$1,969.00**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **O to P**

Construction -	0+00	stations	Improvement -	0+00	stations	Reconstruction -	3+00	stations
	0.00	miles		0.00	miles		0.06	miles

ROCK

Junction Rock	0+00		20	cy. of	Crushed		@	$15.68	per c.y.=	$313.60
									TOTAL ROCK	**$313.60**

SPECIAL PROJECTS

Construct Approach	5.00	hours @	$200.00	per hour	$1,000.00	
Remove Vegetative Material	1.00	hours @	$180.00	per hour	$180.00	
Grade and shape road -	3.00	stations @	$22.00	per station	$66.00	
Roll subgrade w/ vibratory roller prior to rocking -	3.00	stations @	$17.50	per station	$52.50	
				TOTAL SPECIAL PROJECTS		**$1,298.50**

GRAND TOTAL **$1,612.10**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **Q to R**

Construction -	0+00	stations	Improvement -	7+50	stations	Reconstruction -	0+00	stations
	0.00	miles		0.14	miles		0.00	miles

SPECIAL PROJECTS

Remove Vegetative Material	4.00	hours @	$180.00	per hour	$720.00	
Grade and shape road -	7.50	stations @	$22.00	per station	$165.00	
Roll subgrade w/ vibratory roller prior to rocking -	7.50	stations @	$17.50	per station	$131.25	
				TOTAL SPECIAL PROJECTS		**$1,016.25**
				GRAND TOTAL		**$1,016.25**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **S to T**

Construction -	0+00	stations	Improvement -	11+70	stations	Reconstruction -	0+00	stations
	0.00	miles		0.22	miles		0.00	miles

ROCK

0+00	to	11+70	630	cy. of	Pitrun	@	$10.68	per c.y.=	$6,728.40
Junction Rock		0+00	30	cy. of	Crushed	@	$18.28	per c.y.=	$548.40
Landing Rock		11+70	50	cy. of	Pitrun	@	$10.79	per c.y.=	$539.50
								TOTAL ROCK	**$7,816.30**

SPECIAL PROJECTS

Remove Vegetative Material	5.00	hours @	$200.00	per hour	$1,000.00	
Grade and shape road -	11.70	stations @	$22.00	per station	$257.40	
Roll subgrade w/ vibratory roller prior to rocking -	11.70	stations @	$17.50	per station	$204.75	
				TOTAL SPECIAL PROJECTS		**$1,462.15**

GRAND TOTAL **$9,278.45**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **U to V**

Construction -	42+70	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.81	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station			
0+00		1+95	62%	0.3	Ditch	$3,000	=	$5,850.00	
1+95		5+30	24%		Ditch	$228	=	$763.80	
5+30		6+80	66%	0.06	Ditch	$3,375	=	$5,062.50	
6+80		9+15	27%		Ditch	$274	=	$643.90	
9+15		11+35	12%		Ditch	$178	=	$391.60	
11+35		13+85	22%		Ditch	$228	=	$570.00	
13+85		18+82	42%		Ditch	$413	=	$2,052.61	
18+82		20+60	17%		Ditch	$189	=	$336.42	
20+60		22+70	44%		Ditch	$413	=	$867.30	
22+70		25+75	34%		Ditch	$320	=	$976.00	
25+75		28+15	17%		Ditch	$189	=	$453.60	
28+15		31+25	43%		Ditch	$413	=	$1,280.30	
31+25		34+10	19%		Ditch	$210	=	$598.50	
34+10		35+20	39%		Ditch	$320	=	$352.00	
35+20		37+50	11%		Ditch	$178	=	$409.40	
37+50		41+60	5%		Inslope	$93	=	$381.30	
41+60		42+70	15%		Ditch	$189	=	$207.90	
								TOTAL	**$21,197.13**

CULVERTS - MATERIALS & INSTALLATION

Culverts			
150	LF of 18"	$3,000.00	
Culvert Stakes & Markers			
5	markers	$40.00	
		TOTAL CULVERTS	**$3,040.00**

ROCK

0+00 to	42+80	3,220	cy. of	Pitrun	@	$10.89	per c.y.=	$35,065.80	
Junction Rock	0+00	20	cy. of	Pitrun	@	$10.20	per c.y.=	$204.00	
Landing Rock	42+70	100	cy. of	Pitrun	@	$11.38	per c.y.=	$1,138.00	
Energy Dissipator	5 yds/Culvert	25	cy. of	Riprap	@	$10.00	per c.y.=	$250.00	
Traction Rock	As Needed	120	cy. of	Crushed	@	$16.07	per c.y.=	$1,928.40	
								TOTAL ROCK	**$38,586.20**

SPECIAL PROJECTS

Construct Fills & Landings	8.00	hours @	$180.00	per hour	$1,440.00	
Grade and shape road -	42.70	stations @	$22.00	per station	$939.40	
Roll subgrade w/ vibratory roller prior to rocking -	42.70	stations @	$17.50	per station	$747.25	
Grass seed and fertilize -	3.20	acres @	$560.00	per acre	$1,792.00	
Mulching -	0.010	acres @	$780.00	per acre	$7.80	
				TOTAL SPECIAL PROJECTS		**$4,926.45**

GRAND TOTAL **$67,749.78**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **W to X**

Construction -	8+65	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.16	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station	Endahul Waste		
0+00		0+90	15%		Ditch	$189		=	$170.10
0+90		2+90	35%		Ditch	$320		=	$640.00
2+90		3+70	38%			$239	$4,900	=	$5,091.20
3+70		5+25	26%			$206		=	$319.30
5+25		6+30	47%			$342		=	$359.10
6+30		7+10	27%			$206		=	$164.80
7+10		8+05	10%			$113		=	$107.35
8+05		8+65	22%			$174		=	$104.40
								TOTAL	**$6,956.25**

CULVERTS - MATERIALS & INSTALLATION

Culverts								
60	LF of 18"	$1,200.00		60	LF of 24"	$1,860.00		
		$1,200.00				$1,860.00		
Culvert Stakes & Markers								
4	markers	$32.00						
							TOTAL CULVERTS	**$3,092.00**

ROCK

0+00 to	8+65	700	cy. of	Pitrun	@	$10.33	per c.y.=	$7,231.00	
Traction Rock	As Needed	10	cy. of	Crushed	@	$16.20	per c.y.=	$162.00	
Landing Rock	8+65	50	cy. of	Pitrun	@	$10.22	per c.y.=	$511.00	
Energy Dissipator	0+00	10	cy. of	Riprap	@	$9.55	per c.y.=	$95.50	
Junction Rock	0+00	30	cy. of	Pitrun	@	$9.55	per c.y.=	$286.50	
								TOTAL ROCK	**$8,286.00**

SPECIAL PROJECTS

Fill Construction	4.00	hours @	$180.00	per hour	$720.00	
Grade and shape road -	8.65	stations @	$22.00	per station	$190.30	
Roll subgrade w/ vibratory roller prior to rocking -	8.65	stations @	$17.50	per station	$151.38	
Grass seed and fertilize -	0.50	acres @	$560.00	per acre	$280.00	
Mulching -	0.250	acres @	$780.00	per acre	$195.00	
				TOTAL SPECIAL PROJECTS		**$1,536.68**
				GRAND TOTAL		**$19,870.93**

SUMMARY OF CONSTRUCTION COST

Sale: **Clam Bake** Road: **Y to Z**

Construction -	4+60	stations	Improvement -	0+00	stations	Reconstruction -	0+00	stations
	0.09	miles		0.00	miles		0.00	miles

CONSTRUCTION: CLEARING, GRUBBING, SCATTERING, EXCAVATION, COMPACTION, LOADING, END-HAULING AND SPREADING/COMPACTING AT WASTE AREA -

Station	to	Station	Avg. Sideslope	Avg. Dist. To W.A. (mi.)	Outslope/Ditch	Cost per Station			
0+00		1+80	16%			$134	=	$241.20	
1+80		2+20	25%			$206	=	$82.40	
2+20		2+60	25%			$206	=	$82.40	
2+60		3+45	40%			$303	=	$257.55	
3+45		4+35	29%			$206	=	$185.40	
4+35		4+60	8%			$93	=	$23.25	
							TOTAL		**$872.20**

CULVERTS - MATERIALS & INSTALLATION

Culverts							
30	LF of 18"	$600.00		0	LF of 24"	$0.00	
30	LF of 30"	$1,230.00		0	LF of 36"	$0.00	
Culvert Stakes & Markers							
2	markers	$16.00					
						TOTAL CULVERTS	**$1,846.00**

ROCK

0+00 to	4+60	390	cy. of	Pitrun	@	$11.38	per c.y.=	$4,438.20	
Landing Rock	4+60	50	cy. of	Pitrun	@	$11.25	per c.y.=	$562.50	
Junction Rock	0+00	30	cy. of	Pitrun	@	$11.30	per c.y.=	$339.00	
Energy Dissipator	1+50	5	cy. of	Riprap	@	$10.58	per c.y.=	$52.90	
							TOTAL ROCK		**$5,392.60**

SPECIAL PROJECTS

Fill Construction	2.00	hours @	$180.00	per hour	$360.00	
Grade and shape road -	4.60	stations @	$22.00	per station	$101.20	
Roll subgrade w/ vibratory roller prior to rocking -	4.60	stations @	$17.50	per station	$80.50	
Grass seed and fertilize -	0.30	acres @	$560.00	per acre	$168.00	
Mulching -	0.100	acres @	$780.00	per acre	$78.00	
				TOTAL SPECIAL PROJECTS		**$787.70**

GRAND TOTAL **$8,898.50**

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	FB3	Location:	Sec. 13, T2N, R9W, W.M.
Sale:	**Clam Bake**	Road:	860 c.y.
Swell:	1.40	Stockpile:	c.y.
Shirinkage	1.16	Total Truck Loads:	860 c.y.
Drill Pct.:	0%	In Place Total:	614 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.							$600.00
Rip Rock:	$3.00	/cu.yd.	x	614	cu.yds.	=	$1,842.00
Push Rock:	$1.00	/cu.yd.	x	860	cu.yds.	=	$860.00
Load Dump Truck:	$1.00	/cu.yd.	x	860	cu.yds.	=	$860.00
					Subtotal		$4,162.00
Move in Excavator	1	@	$832.14	=			$832.14
Move in Trucks	3	@	$212.90	=			$638.70
Move in Water Truck	1	@	$212.90	=			$212.90
Change Gradation							
					Subtotal		$1,683.74
					TOTAL PRODUCTION COSTS		$5,845.74

Base Cost= $6.80 Per Cu.Yd.

Road Segment	Haul Cost $/cu.yd.	Proc Cost $/cu.yd.	Base Cost. $/cu.yd.	Cost $/cu.yd.	Number Cu. Yds		ROCK COST
A to B Landing Rock (Pitrun)	2.74	1.50	6.80	11.04	60		$662.40
A to B Landing Rock (Pitrun)	2.85	1.50	6.80	11.15	60		$669.00
A to B Landing Rock (Pitrun)	2.93	1.50	6.80	11.23	60		$673.80
S to T 0 1170 (Pitrun)	2.38	1.50	6.80	10.68	630		$6,728.40
S to T Landing Rock (Pitrun)	2.49	1.50	6.80	10.79	50		$539.50
				Total C.Y.	860	Sub Total	$9,273.10
					TOTAL ROCKING COSTS		$9,273.10

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Pitrun	Location:	Sec. 2 & 3, T2N, R9W, W.M.		
Sale:	**Clam Bake**		Road:		5860 c.y.
Swell:	1.40		Stockpile:		c.y.
Shirinkage	1.16		Total Truck Loads:		5860 c.y.
Drill Pct.:	0%		In Place Total:		4186 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.							$4,440.00
Rip Rock:	$3.00	/cu.yd.	x	4186	cu.yds.	=	$12,558.00
Push Rock:	$1.00	/cu.yd.	x	5860	cu.yds.	=	$5,860.00
Load Crusher:	$1.00	/cu.yd.	x	5860	cu.yds.	=	$5,860.00
Load Dump Truck:	$1.00	/cu.yd.	x	5860	cu.yds.	=	$5,860.00
					Subtotal		$34,578.00

Move in D-8	1	@	$948.14	=		$948.14
Move in Excavator	1	@	$832.14	=		$832.14
Move in Trucks	4	@	$212.90	=		$851.60
Move in Water Truck	1	@	$212.90	=		$212.90
Change Gradation						
				Subtotal		$2,844.78
			TOTAL PRODUCTION COSTS			$37,422.78

Base Cost= $6.39 Per Cu.Yd.

Road Segment	Haul Cost $/cu.yd.	Proc Cost $/cu.yd.	Base Cost. $/cu.yd.	Cost $/cu.yd.	Number Cu. Yds		ROCK COST
C to D 0 210 (Pitrun)	2.65	3.20	6.39	12.24	150		$1,836.00
C to D Landing Rock (Pitrun)	2.67	1.70	6.39	10.76	100		$1,076.00
E to F 0 380 (Pitrun)	2.50	3.20	6.39	12.09	200		$2,418.00
E to F 380 745 (Pitrun)	2.57	1.70	6.39	10.66	260		$2,771.60
E to F Junction Rock (Pitrun)	2.46	1.70	6.39	10.55	50		$527.50
E to F Landing Rock (Pitrun)	2.60	2.00	6.39	10.99	100		$1,099.00
I to J Landing Rock (Pitrun)	1.49	1.70	6.39	9.58	100		$958.00
I to J Landing Rock (Pitrun)	1.61	2.00	6.39	10.00	50		$500.00
I to J Landing Rock (Pitrun)	1.65	2.45	6.39	10.49	100		$1,049.00
I to J Landing Rock (Pitrun)	1.70	2.00	6.39	10.09	100		$1,009.00
I to J Road Widening (Pitrun)	1.93	2.00	6.39	10.32	20		$206.40
U to V 0 4280 (Pitrun)	2.80	1.70	6.39	10.89	3220		$35,065.80
U to V Junction Rock (Pitrun)	2.11	1.70	6.39	10.20	20		$204.00
U to V Landing Rock (Pitrun)	3.49	1.50	6.39	11.38	100		$1,138.00
U to V Energy Dissipator (Riprap)	2.71	0.90	6.39	10.00	25		$250.00
W to X 0 865 (Pitrun)	2.24	1.70	6.39	10.33	700		$7,231.00
W to X Landing Rock (Pitrun)	2.33	1.50	6.39	10.22	50		$511.00
W to X Energy Dissipator (Riprap)	2.26	0.90	6.39	9.55	10		$95.50
W to X Junction Rock (Pitrun)	2.16	1.00	6.39	9.55	30		$286.50
Y to Z 0 460 (Pitrun)	3.29	1.70	6.39	11.38	390		$4,438.20
Y to Z Landing Rock (Pitrun)	3.36	1.50	6.39	11.25	50		$562.50
Y to Z Junction Rock (Pitrun)	3.21	1.70	6.39	11.30	30		$339.00
Y to Z Energy Dissipator (Riprap)	3.29	0.90	6.39	10.58	5		$52.90
				Total C.Y.	5860	Sub Total	$63,624.90

TOTAL ROCKING COSTS	$63,624.90

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	Bumper	Location:	Sec. 11, T2N, R9W, W.M.
Sale:	**Clam Bake**	Road:	7480 c.y.
Swell:	1.40	Stockpile:	c.y.
Shirinkage	1.16	Total Truck Loads:	7480 c.y.
Drill Pct.:	100%	In Place Total:	5343 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact. $400.00

Drill & Shoot:	$3.25	/cu.yd.	x	5343	cu.yds.	=	$17,364.75
Push Rock:	$1.00	/cu.yd.	x	7480	cu.yds.	=	$7,480.00
Load Crusher:	$1.00	/cu.yd.	x	7480	cu.yds.	=	$7,480.00
Crush Rock($4.50/cuyd included in Base Costs):	$0.00	/cu.yd.	x	7480	cu.yds.	=	$0.00
Load Dump Truck:	$1.00	/cu.yd.	x	7480	cu.yds.	=	$7,480.00
					Subtotal		$40,204.75

Move In/Set-up Crusher	1				$4,225.00
Move In and set up Drill and Compressor	1	@	$658.64	=	$658.64
Move in Roller and Compactor	1	@	$578.50	=	$578.50
Move in Grader	1	@	$626.19	=	$626.19
Move in Loader	1	@	$717.14	=	$717.14
				Subtotal	$6,805.47

TOTAL PRODUCTION COSTS	$47,010.22

Base Cost= $6.28 Per Cu.Yd.

Road Segment	Haul Cost $/cu.yd.	Proc Cost $/cu.yd.	Base Cost. $/cu.yd.	Cost $/cu.yd.	Number Cu. Yds		ROCK COST
A to B 1755 27730 (Crushed)	3.13	3.20	10.78	17.11	5810		$99,409.10
A to B 1580 1655 (Crushed)	3.16	3.20	10.78	17.14	60		$1,028.40
A to B Culvert Backfill (Crushed)	3.01	0.90	10.78	14.69	165		$2,423.85
A to B Landing Rock (Pitrun)	1.33	1.50	6.28	9.11	30		$273.30
A to B Energy Dissipator (Riprap)	12.73	0.90	6.28	19.91	35		$696.85
A to B Outslope Rock (Crushed)	3.02	0.70	6.28	10.00	40		$400.00
A to B Spot Patch (Crushed)	4.10	3.20	10.78	18.08	200		$3,616.00
A to B Junction Rock (Crushed)	5.02	3.20	10.78	19.00	50		$950.00
A to B Turnarounds (Pitrun)	2.85	1.50	6.28	10.63	110		$1,169.30
C to D Junction Rock (Crushed)	2.85	3.20	10.78	16.83	30		$504.90
E to F Junction Rock (Crushed)	2.85	3.20	10.78	16.83	30		$504.90
G to H Spot Patch (Crushed)	1.87	1.50	10.53	13.90	30		$417.00
I to J Spot Patch (Crushed)	1.61	1.50	10.53	13.64	50		$682.00
K to L Junction Rock (Pitrun)	1.42	1.50	6.28	9.20	10		$92.00
K to L Junction Rock (Pitrun)	1.26	1.50	6.28	9.04	50		$452.00
M to N Spot Patch (Crushed)	5.96	3.20	10.53	19.69	50		$984.50
M to N Spot Patch (Crushed)	5.96	3.20	10.53	19.69	50		$984.50
O to P Junction Rock (Crushed)	1.95	3.20	10.53	15.68	20		$313.60
S to T Junction Rock (Crushed)	4.55	3.20	10.53	18.28	30		$548.40
U to V Traction Rock (Crushed)	2.34	3.20	10.53	16.07	120		$1,928.40
W to X Traction Rock (Crushed)	2.22	3.20	10.78	16.20	10		$162.00
Point AA Stockpile	2.19	1.50	10.78	14.47	500		$7,235.00
				Total C.Y.	7480	Sub Total	$124,776.00

TOTAL ROCKING COSTS	$124,776.00

Move-In Calculations for Project Work not Involving Rocking/Pit Work

Sale: **Clam Bake**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
58.0	Pavement	30
4.0	Main Lines	7
0.0	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move ($/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Rollers (smooth/grid) & Compactors	$578.50		$5.00	0.00	8.38	8.38	$41.90	$620.40
1	Excavators (Large)	$832.14	1	$44.80	0.00	8.38	8.38	$375.42	$1,207.56
1	Tractors (D6)	$894.35	2	$7.10	0.00	0.00	0	$0.00	$894.35
1	Tractor (D8)	$948.14	2	$15.10	0.00	8.38	8.38	$126.54	$1,074.68
2	Dump Truck (Off Hiway)	$1,613.87	1	$4.75	0.00	8.38	8.38	$79.61	$1,693.48
					TOTAL MOVE-IN COSTS:				$5,490.47

OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT
Clam Bake

1. Type of Sale
Regeneration harvest, Recovery

2. Legal Description
Sections 2, 11, 12, and 13 T2N, R9W, W.M., Tillamook County, Oregon.

3. Sale Acreage
Sale acreage was determined by GPS and orthophotographs along with GIS.

	ACRES	
	Gross	Net
Area 1 (Modified Clearcut)	141	115
Area 2 (Modified Clearcut)	156	117
Area 3 (Modified Clearcut)	66	48

Gross Acres
Area within the Timber Sale Boundary signs

Net acres
Used for calculating the advertised volume.
Gross acres, less green tree retention, roads, Non-required thinning areas, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

4. Cruising Procedures

A. Cruise Method
All of the sale areas were cruised on a rectangular grid with 175’ between plots and 700’ between lines.

The timber sale areas were cruised using variable plot sampling. All conifers 8” DBH and greater and all hardwoods 10” DBH and greater were recorded on all plots. On even numbered plots tree species and number were recorded and on odd numbered plots species, diameter (inch), height, form factor, and sawmill grade were recorded. Heights were recorded to 6” and 7” outside bark for conifers and hardwoods, respectively. Merchantable heights were recorded to 6” and 7” outside bark for conifers and hardwoods, respectively.

B. Plot size
Point of observation was 4.0’. Form factor was measured at 16.0’.

Area	BAF
1	33.61
2	40.00
3	33.61

C. Grading System

All trees were graded according to Columbia River Log Scaling and Grading Rules. Log lengths favored 40' lengths.

5. Computation Procedure

Plot data was entered into SuperAce for computation of basal area, advertised volume, volume summary, log stock table, and stand table for each species and type. Cruise volumes were grown forward to 2019 from the cruise date. Plots landing in riparian management areas or areas excluded from the timber sale harvest areas were removed from computation procedures.

Net sale acreage was used for volume calculation.

Cruise Statistics (Board Foot Volumes)			
Area	Number of Plots	SE (%)	CV (%)
1	33	8.3	47.9
2	32	9.0	50.8
3	18	10.4	42.9
Total	83	9.2 (avg.)	47.2 (avg.)

6. Hidden Defect and Breakage

A 1% reduction was applied to conifers and a 2% reduction to hardwood volumes for hidden defect and breakage.

7. Timber Description

All three sale areas were burned in the 1933 Tillamook Fire and again with the 1945 Wilson River/Salmonberry Fire. Approximately 30 acres of red alder in Area 1 was sprayed, adjacent alder stands were also treated providing potential of more alder being treated in the sale areas. Timber sale areas two and three were thinned with Henry.com and Clam Junction Timber Sales, respectively. Areas two and three have partially thinned portions and a majority being unthinned, mixed conifer with hardwood elements. Area one is hardwood dominated but has a conifer stand on the lower western aspect.

The stand is comprised of multiple merchantable species, please see the table below:

Sale Area	Species	DBH	Merchantable Bole Height (feet)	Merchantable top (inches inside bark)
1	Red alder	14.8	42	6
1	Douglas-fir	14.0	44	5
1	Sitka Spruce	22.3	37	5
1	Western hemlock	24.2	52	5

1	Big leaf Maple	24.0	35	6
2	Western hemlock	19.4	74	5
2	Red alder	15.7	48	6
2	Douglas-fir	25.3	97	5
2	Sitka Spruce	23.8	61	5
2	Western red cedar	51.0	78	5
3	Western hemlock	18.6	58	5
3	Noble fir	25.3	96	5
3	Western red cedar	31.0	61	5

Above date derived from Statistics (type) report using SuperAce 2008, developed by Atterbury consultants, Inc.

8. Cruiser /Dates

The timber sale area was cruised by contracts in 2017.

9. Revenue Distribution

FDF 100%

Tax Code: 5600 – 16.9%
5601 – 83.4%

Deed Numbers: 15, 230

10. Attachments

Volume Summary

Stand Table

Log Stock Tables

Logging Plan

11. Stand and Log Stock Tables Species Key

WH – Western hemlock take
DF – Douglas-fir take
NF – Noble fir take
SS – Sitka Spruce take
RA – Red alder take
BM – Big leaf maple take
RC – Western red cedar
OC – Other conifer

FI TSTNDSUM

Stand Table Summary

Project **CLAMBAAK**

T02N R09W S02 TSALE

T02N R09W S02 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A1_GROW	SALE	115.00	33	84

Page: 1
Date: 12/05/2018
Time: 8:46:20AM

Spc	ST	DBH	Sample Trees	FF 16'	Av Ht Tot	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
RA		10		77	59	8.738	5.16	8.94	11.8	42.5	2.91	106	380	335	122	44
RA		11		75	54	4.815	3.44	4.92	13.8	40.6	1.87	68	200	216	78	23
RA		12		82	61	2.023	1.72	2.07	12.2	34.8	.69	25	72	80	29	8
RA		14		80	60	10.341	10.32	10.58	21.9	56.0	6.37	232	592	732	266	68
RA		15		85	65	14.861	17.19	19.76	22.4	67.7	12.17	442	1,338	1,399	509	154
RA		16		82	63	7.767	10.32	9.27	24.2	74.5	6.16	224	690	708	258	79
RA		17		83	65	3.413	5.16	4.65	28.8	81.1	3.68	134	377	424	154	43
RA		18		82	72	4.032	6.88	6.18	33.2	96.6	5.64	205	597	649	236	69
RA		19		77	60	7.192	13.75	11.95	24.0	79.3	7.90	287	948	909	331	109
RA		20		83	80	2.421	5.16	5.78	29.2	102.6	4.64	169	593	533	194	68
RA		21		83	67	.728	1.72	1.49	31.4	92.7	1.28	47	138	148	54	16
RA		22		80	64	1.321	3.44	2.03	40.8	123.6	2.27	83	250	261	95	29
RA		23		82	55	2.407	6.88	3.08	52.2	99.6	4.42	161	307	508	185	35
RA		Totals		81	62	70.060	91.12	90.69	24.1	71.5	60.01	2,182	6,483	6,901	2,509	746
DF		8		72	18	8.129	2.98	8.52	3.9	22.4	.94	33	191	109	38	22
DF		9		70	54	6.423	2.98	6.73	7.7	33.6	1.48	52	226	170	60	26
DF		11		85	80	4.300	2.98	4.50	15.9	67.2	2.03	71	303	234	82	35
DF		12		83	66	3.613	2.98	3.78	17.0	44.8	1.84	64	170	211	74	19
DF		13		85	91	3.079	2.98	6.45	14.6	61.6	2.68	94	397	308	108	46
DF		14		85	68	7.963	8.95	11.12	19.7	67.2	6.24	219	747	718	252	86
DF		15		85	72	4.625	5.97	9.69	15.8	61.6	4.38	154	597	503	177	69
DF		16		85	87	4.065	5.97	8.52	21.3	78.4	5.17	181	668	595	209	77
DF		19		84	84	1.441	2.98	3.02	33.2	117.6	2.86	100	355	329	115	41
DF		22		84	87	1.180	2.98	2.47	41.0	128.8	2.89	101	318	332	117	37
DF		23		84	84	1.075	2.98	2.25	43.0	128.8	2.76	97	290	317	111	33
DF		26		84	73	.832	2.98	.87	90.6	436.7	2.25	79	381	259	91	44
DF		27		82	84	.770	2.98	1.61	62.1	201.6	2.85	100	325	328	115	37
DF		41		84	125	.325	2.98	1.02	129.0	638.3	3.76	132	652	432	152	75
DF		Totals		80	64	47.820	53.72	70.56	21.0	79.6	42.13	1,478	5,619	4,845	1,700	646
SS		18		65	33	1.799	3.15	1.88	29.4	36.2	1.44	55	68	165	64	8
SS		21		75	55	1.300	3.15	1.36	60.5	84.4	2.14	82	115	246	95	13
SS		33		74	62	1.082	6.29	2.26	75.9	235.0	4.46	172	532	513	197	61
SS		Totals		70	48	4.181	12.59	5.50	56.2	129.8	8.04	309	714	925	356	82
WH		21		70	40	.758	1.84	.79	46.1	36.2	1.17	37	29	134	42	3
WH		23		70	73	.627	1.84	1.31	44.9	102.5	1.88	59	134	216	68	15
WH		28		83	82	.416	1.84	.87	75.6	259.2	2.10	66	225	242	76	26
WH		35		84	85	.279	1.84	.58	115.5	458.0	2.15	67	267	247	77	31
WH		Totals		74	64	2.079	7.34	3.55	64.2	184.3	7.30	228	655	840	262	75
BM		25		68	42	.609	2.07	.62	77.7	57.9	1.28	48	36	147	56	4
BM		Totals		68	42	.609	2.07	.62	77.7	57.9	1.28	48	36	147	56	4
Totals				80	63	124.749	166.84	170.92	24.8	79.0	118.77	4246	13,507	13,658	4,883	1,553

FI TLOGSTVB

Log Stock Table - MBF

Project: CLAMBAAK

T02N R09W S02 TSALE — **T02N R09W S02 TSAL**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A1_GROW	SALE	115.00	33	84

Page 1
Date 12/5/2018
Time 8:47:28AM

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+
RA		H	2	12	21		21	2.8						9		12				
RA		H	2	14	23		23	3.1								23				
RA		H	2	20	15		15	2.0						15						
RA		H	2	32	35	12.5	31	4.2						31						
RA		H	2	40	20		20	2.6						20						
RA		H	3	20	14		14	1.9					14							
RA		H	3	32	51	13.0	44	6.0					44							
RA		H	3	40	117	7.9	108	14.4					108							
RA		H	4	15	8		8	1.0			8									
RA		H	4	16	15		15	2.0			15									
RA		H	4	17	2		2	.3			2									
RA		H	4	18	7		7	1.0			7									
RA		H	4	19	2		2	.2			2									
RA		H	4	20	8		8	1.1			8									
RA		H	4	21	14	33.3	9	1.2			9									
RA		H	4	22	4		4	.5			4									
RA		H	4	27	4		4	.5			4									
RA		H	4	28	8		8	1.0			8									
RA		H	4	29	3	25.0	2	.3			2									
RA		H	4	30	34	19.8	27	3.7			27									
RA		H	4	31	14	25.0	11	1.4			11									
RA		H	4	32	61	8.7	56	7.4			5	51								
RA		H	4	33	23	20.0	19	2.5			19									
RA		H	4	34	12		12	1.6			12									
RA		H	4	35	35		35	4.7			35									
RA		H	4	36	5		5	.7			5									
RA		H	4	37	8		8	1.1			8									
RA		H	4	38	24		24	3.3			24									
RA		H	4	39	29	2.9	28	3.7			28									
RA		H	4	40	178	.8	176	23.6			123	53								
RA		Totals			794	6.1	746	48.0			366	104	166	74	35					
DF		CO	2	32	19		19	2.9								19				
DF		CO	2	34	44		44	6.8								44				
DF		CO	2	40	153	4.4	146	22.6						61	33			52		
DF		CO	3	22	4		4	.6					4							
DF		CO	3	32	88		88	13.7				88								
DF		CO	3	40	220	1.2	217	33.5			81	100	35							
DF		CO	4	15	22		22	3.4		22										
DF		CO	4	17	6		6	1.0		6										
DF		CO	4	19	14		14	2.1		14										
DF		CO	4	20	7		7	1.1		7										
DF		CO	4	21	6		6	1.0		6										
DF		CO	4	24	10		10	1.5		6	4									
DF		CO	4	25	26		26	4.0		26										
DF		CO	4	26	13		13	1.9		13										
DF		CO	4	28	5		5	.7		5										
DF		CO	4	40	19		19	3.0		19										
DF		Totals			656	1.5	646	41.6		124	86	189	39	61	33	63		52		
SS		CO	2	26	20	11.5	18	21.9								18				

FI TLOGSTVB

Log Stock Table - MBF

Project: CLAMBAAK

T02N R09W S02 TSALE — **T02N R09W S02 TSAL**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A1_GROW	SALE	115.00	33	84

Page 2
Date 12/5/2018
Time 8:47:28AM

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+
SS		CO	2	32	38		38	45.8								38				
SS		CO	3	40	13		13	16.0			13									
SS		CO	4	16	2		2	2.9				2								
SS		CO	4	20	3		3	3.8				3								
SS		CO	4	24	8		8	9.5			8									
SS		Totals			84	2.8	82	5.3			21	5				56				
WH		CO	2	40	52	1.2	52	68.7								24	28			
WH		CO	3	26	2		2	3.2				2								
WH		CO	3	40	14		14	18.1					14							
WH		CO	4	16	2		2	2.4		2										
WH		CO	4	24	2		2	3.2			2									
WH		CO	4	32	3		3	4.4		3										
WH		Totals			76		75	4.8		5	2	2	14			24	28			
BM		H	4	34	4		4	100.0			4									
BM		Totals			4		4	.3			4									
Total All Species					1,614	3.8	1,553	100.0		129	479	301	219	135	68	142	28	52		

FI TSTNDSUM

Stand Table Summary

Project **CLAMBAAK**

T02N R09W S02 TSALE

T02N R09W S02 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A2_GROW	SALE	117.00	32	115

Page: 1
Date: 12/05/2018
Time: 8:58:17AM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	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
WH		10		82	78	11.893	6.91	16.27	11.0	47.4	5.74	179	771	671	210	90
WH		11		87	105	3.276	2.30	6.72	12.5	50.2	2.69	84	338	315	98	39
WH		12		90	108	2.753	2.30	5.65	14.9	66.9	2.70	84	378	316	99	44
WH		13		82	88	4.692	4.60	7.22	20.1	66.9	4.63	145	483	542	169	57
WH		14		83	86	8.091	9.21	14.53	20.9	74.9	9.69	303	1,088	1,134	355	127
WH		15		85	98	1.762	2.30	3.62	22.8	72.5	2.64	83	262	309	97	31
WH		17		87	115	3.097	4.60	6.36	31.4	133.9	6.39	200	851	748	234	100
WH		18		85	102	5.487	9.21	11.26	33.0	128.3	11.87	371	1,445	1,388	434	169
WH		19		86	98	6.118	11.51	13.81	32.2	121.7	14.23	445	1,681	1,665	520	197
WH		20		88	113	1.098	2.30	3.38	30.3	130.2	3.28	102	440	383	120	51
WH		21		85	109	2.973	6.91	8.13	36.6	149.2	9.53	298	1,214	1,115	348	142
WH		22		87	104	6.293	16.12	13.83	48.9	195.6	21.62	676	2,706	2,530	791	317
WH		24		85	96	2.248	6.91	6.15	42.8	185.5	8.42	263	1,141	985	308	133
WH		25		88	103	1.377	4.60	2.82	67.0	265.0	6.05	189	748	708	221	88
WH		26		80	102	.634	2.30	.63	163.1	654.0	3.42	103	415	401	121	49
WH		27		87	123	1.759	6.91	4.81	67.6	304.0	10.41	325	1,463	1,218	381	171
WH		28		86	117	2.175	9.21	6.14	67.7	301.2	13.28	415	1,849	1,554	486	216
WH		29		85	121	1.011	4.60	3.11	64.6	304.9	6.43	201	949	752	235	111
WH		30		86	129	.471	2.30	1.45	77.4	368.2	3.59	112	534	420	131	62
WH		31		86	133	.440	2.30	1.36	78.9	420.2	3.42	107	570	400	125	67
WH		32		86	109	.413	2.30	.85	115.6	524.4	3.13	98	444	366	114	52
WH		33		86	124	.774	4.60	2.38	88.1	457.4	6.71	210	1,090	785	246	128
WH		34		85	116	.364	2.30	1.12	92.3	435.1	3.31	103	488	387	121	57
WH		35		79	116	.686	4.60	1.76	106.2	468.6	5.98	187	824	699	219	96
WH		36		85	127	.647	4.60	1.66	119.2	593.5	6.33	198	985	740	232	115
WH		37		82	104	.612	4.60	1.57	116.1	515.4	5.83	182	809	682	213	95
WH		38		82	117	.290	2.30	.59	145.8	697.3	2.77	87	414	324	101	48
WH		41		85	120	.248	2.30	.76	139.2	717.7	3.40	106	547	397	124	64
WH		43		80	136	.225	2.30	.69	167.1	780.9	3.70	116	540	432	135	63
WH		44		82	121	.429	4.60	1.32	161.6	788.4	6.82	213	1,041	798	249	122
WH		45		82	134	.205	2.30	.63	185.3	877.6	3.74	117	553	437	137	65
WH		48		83	144	.179	2.30	.55	205.0	1108.2	3.62	113	612	424	133	72
WH		56		85	121	.136	2.30	.42	212.2	1212.3	2.84	89	507	332	104	59
WH		Totals		85	99	72.857	158.85	151.57	42.9	185.9	208.19	6,506	28,182	24,358	7,612	3,297
DF		20		87	107	2.570	5.78	5.28	42.2	160.7	6.35	223	848	743	261	99
DF		21		87	119	1.166	2.89	3.59	34.2	153.6	3.50	123	552	410	144	65
DF		23		88	131	.972	2.89	2.99	44.7	207.1	3.81	134	620	446	157	73
DF		24		87	106	.893	2.89	1.83	62.1	251.8	3.24	114	462	379	133	54
DF		26		85	115	.760	2.89	2.34	51.8	225.0	3.46	121	527	405	142	62
DF		27		87	132	.705	2.89	2.17	62.9	282.1	3.90	137	613	456	160	72
DF		32		88	128	.502	2.89	1.55	85.7	421.4	3.78	132	652	442	155	76
DF		34		88	155	.472	2.89	1.45	110.3	592.8	4.57	160	862	535	188	101
DF		36		84	114	.420	2.89	1.29	94.4	450.0	3.48	122	582	407	143	68
DF		38		85	136	.376	2.89	1.16	119.6	607.1	3.94	138	702	461	162	82
DF		Totals		87	119	8.835	31.81	23.67	59.4	271.3	40.04	1,405	6,420	4,685	1,644	751
RA		11		81	82	7.660	5.47	7.76	18.3	67.8	3.89	142	526	456	166	62
RA		12		84	63	3.218	2.74	3.26	17.3	56.5	1.55	56	184	181	66	22
RA		14		84	74	2.742	2.74	2.78	26.0	79.1	1.99	72	220	232	84	26
RA		15		84	68	4.729	5.47	4.79	30.1	84.8	3.97	144	406	464	169	48
RA		16		84	71	2.060	2.74	4.17	17.6	50.9	2.02	73	212	236	86	25
RA		17		83	68	3.621	5.47	5.50	28.7	82.9	4.35	158	456	509	185	53

FI TSTNDSUM

Stand Table Summary

Project **CLAMBAAK**

T02N R09W S02 TSALE

T02N R09W S02 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A2_GROW	SALE	117.00	32	115

Date: 12/05/2018

Time: 8:58:17AM

Spc	ST	DBH	Sample Trees	FF 16'	Av Ht Tot	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
RA		19		87	67	4.291	8.21	7.25	31.5	97.2	6.29	229	704	735	267	82
RA		23		72	59	.958	2.74	.97	78.3	113.0	2.09	76	110	244	89	13
RA		25		85	79	.805	2.74	1.63	57.5	209.1	2.58	94	341	301	110	40
RA		27		86	71	.686	2.74	1.39	60.3	231.7	2.30	84	322	269	98	38
RA		28		78	76	.636	2.74	1.29	61.2	186.5	2.17	79	240	253	92	28
RA		30		85	70	.551	2.74	1.12	73.7	220.4	2.26	82	246	265	96	29
RA		Totals		83	72	31.955	46.51	41.90	30.8	94.7	35.44	1,289	3,968	4,146	1,508	464
SS		19		85	70	2.702	5.08	5.54	25.7	89.3	3.70	142	495	433	167	58
SS		48		82	124	.396	5.08	1.22	200.4	810.7	6.35	244	989	743	286	116
SS		Totals		85	77	3.098	10.17	6.76	57.2	219.4	10.06	387	1,484	1,177	453	174
RC		53		70	103	.084	1.27	.26	165.0	699.1	1.00	43	181	117	50	21
RC		Totals		70	103	.084	1.27	.26	165.0	699.1	1.00	43	181	117	50	21
Totals				84	93	116.830	248.61	224.16	43.0	179.5	294.73	9629	40,234	34,483	11,266	4,707

FI TLOGSTVB

Log Stock Table - MBF

Project: CLAMBAAK

T02N R09W S02 TSALE — **T02N R09W S02 TSAL**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A2_GROW	SALE	117.00	32	115

Page 1
Date 12/5/2018
Time 9:02:00AM

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+
WH		*	*	32	49		49	1.5			49									
WH		CO	2	16	36	8.3	33	1.0										21	12	
WH		CO	2	18	3		3	.1						3						
WH		CO	2	20	49		49	1.5								23	26			
WH		CO	2	24	61		61	1.8						4			26		31	
WH		CO	2	25	3		3	.1						3						
WH		CO	2	26	33		33	1.0										33		
WH		CO	2	30	41		41	1.2										41		
WH		CO	2	32	70		70	2.1						25	14	16	16			
WH		CO	2	33	5		5	.2							5					
WH		CO	2	40	2,008	1.0	1,987	60.3						318	391	641	266	289	83	
WH		CO	3	16	2		2	.1					2							
WH		CO	3	19	5		5	.1				2	2							
WH		CO	3	22	3	11.1	3	.1					3							
WH		CO	3	27	7		7	.2				7								
WH		CO	3	32	90		90	2.7				64	26							
WH		CO	3	33	5		5	.1				5								
WH		CO	3	34	5		5	.2				5								
WH		CO	3	36	4		4	.1			4									
WH		CO	3	39	5		5	.1			5									
WH		CO	3	40	620	1.2	612	18.6			183	192	231			7				
WH		CO	4	12	19		19	.6										19		
WH		CO	4	16	8		8	.2		8										
WH		CO	4	17	3		3	.1		3										
WH		CO	4	18	4		4	.1		2	2									
WH		CO	4	19	11		11	.3		11										
WH		CO	4	20	3		3	.1		3										
WH		CO	4	21	7		7	.2			4	3								
WH		CO	4	23	15		15	.5		12	3									
WH		CO	4	24	6		6	.2			6									
WH		CO	4	25	16		16	.5		16										
WH		CO	4	27	16		16	.5		16										
WH		CO	4	30	6		6	.2		6										
WH		CO	4	31	18		18	.6		18										
WH		CO	4	32	9		9	.3		9										
WH		CO	4	33	18		18	.6		18										
WH		CO	4	34	5		5	.2		5										
WH		CO	4	35	26		26	.8		26										
WH		CO	4	36	5		5	.1		5										
WH		CO	4	37	4		4	.1		4										
WH		CO	4	38	5		5	.1		5										
WH		CO	4	40	22		22	.7		22										
WH		Totals			3,329		3,297	70.0		188	256	278	264	352	410	687	333	402	126	
DF		CO	2	32	15		15	2.0							15					
DF		CO	2	40	632	1.0	626	83.3						96	62	245	105	117		
DF		CO	3	19	3		3	.4				3								
DF		CO	3	25	4		4	.6					4							
DF		CO	3	32	32		32	4.2					32							
DF		CO	3	40	56		56	7.4			30	7	19							
DF		CO	4	17	5		5	.7			3	2								

FI TLOGSTVB

Log Stock Table - MBF

Project: CLAMBAAK

T02N R09W S02 TSALE — **T02N R09W S02 TSAL**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	02	A2_GROW	SALE	117.00	32	115

Page 2
Date 12/5/2018
Time 9:02:00AM

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		CO	4	22	3		3	.4		3										
DF		CO	4	24	4		4	.5			4									
DF		CO	4	26	4		4	.5		4										
DF		Totals			757		751	16.0		7	36	13	55	96	77	245	105	117		
RA		H	2	20	26	20.0	20	4.4								20				
RA		H	2	30	37	7.5	34	7.3								34				
RA		H	2	40	68	6.4	64	13.8							37	27				
RA		H	3	30	32		32	6.8					32							
RA		H	3	40	69	5.6	65	14.0					65							
RA		H	4	17	6		6	1.2			6									
RA		H	4	19	1		1	.3			1									
RA		H	4	21	11	16.7	10	2.1			10									
RA		H	4	25	3		3	.7			3									
RA		H	4	26	7		7	1.6			7									
RA		H	4	29	4		4	.8			4									
RA		H	4	30	22		22	4.6			22									
RA		H	4	32	25	22.2	19	4.2				19								
RA		H	4	33	10	20.0	8	1.7			8									
RA		H	4	38	31		31	6.6			31									
RA		H	4	40	147	5.5	139	30.0			93	46								
RA		Totals			498	6.7	464	9.9			184	65	97		37	82				
SS		CO	3	23	7	28.6	5	3.1						5						
SS		CO	3	32	86	6.8	80	46.3					51				30			
SS		CO	3	40	98	17.4	81	46.5											81	
SS		CO	4	22	7		7	4.2		7										
SS		Totals			199	12.6	174	3.7		7			51	5			30		81	
RC		CO	2	26	13		13	61.2											13	
RC		CO	3	17	1		1	6.4							1					
RC		CO	3	32	7		7	32.4									7			
RC		Totals			21		21	.4							1		7		13	
Total All Species					4,803	2.0	4,707	100.0		202	476	355	466	453	526	1014	475	519	220	

FI TSTNDSUM

Stand Table Summary

Project **CLAMBAAK**

T02N R09W S12 TSALE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	12	A3_GROW	SALE	48.00	18	68

T02N R09W S12 TSALE

Page: 1
Date: 12/05/2018
Time: 9:11:53AM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	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
WH		8		70	57	7.845	2.93	8.00	6.5	21.8	1.66	52	175	80	25	8
WH		9		75	80	6.199	2.93	6.32	13.8	43.6	2.80	87	276	134	42	13
WH		10		65	47	5.021	2.93	5.12	9.3	21.8	1.53	48	112	74	23	5
WH		11		86	63	4.150	2.93	4.23	17.0	43.6	2.30	72	185	111	35	9
WH		13		86	70	2.971	2.93	6.06	13.1	49.1	2.53	79	297	122	38	14
WH		14		78	67	5.123	5.86	7.84	21.0	65.4	5.27	165	513	253	79	25
WH		16		81	60	8.926	11.72	11.38	25.9	65.4	9.44	295	745	453	142	36
WH		17		79	55	3.923	5.86	6.00	23.6	61.8	4.53	141	371	217	68	18
WH		18		82	88	6.949	11.72	10.64	35.5	134.5	12.09	378	1,430	580	181	69
WH		19		85	91	4.649	8.79	11.07	27.7	109.0	9.80	306	1,207	470	147	58
WH		20		87	95	1.391	2.93	2.84	38.2	119.9	3.47	109	340	167	52	16
WH		21		87	101	1.255	2.93	2.56	45.1	163.5	3.69	115	419	177	55	20
WH		22		86	90	4.554	11.72	9.29	45.9	158.1	13.66	427	1,469	656	205	71
WH		23		84	91	4.150	11.72	8.47	49.1	174.4	13.31	416	1,477	639	200	71
WH		24		85	90	5.695	17.58	11.62	55.7	204.4	20.71	647	2,376	994	311	114
WH		25		83	101	3.487	11.72	7.12	64.2	244.0	14.61	456	1,736	701	219	83
WH		26		86	103	3.213	11.72	6.56	71.3	283.5	14.96	468	1,859	718	224	89
WH		27		86	112	1.486	5.86	3.79	69.6	296.6	8.44	264	1,124	405	127	54
WH		29		85	89	1.281	5.86	2.61	82.7	302.6	6.92	216	791	332	104	38
WH		30		82	98	1.194	5.86	3.65	57.8	250.8	6.77	211	917	325	101	44
WH		31		84	104	1.116	5.86	2.28	97.9	403.4	7.13	223	919	342	107	44
WH		32		83	108	1.045	5.86	3.20	75.8	341.6	7.76	242	1,093	372	116	52
WH		33		85	98	.490	2.93	1.00	110.8	452.5	3.55	111	453	170	53	22
WH		34		85	113	1.383	8.79	4.23	89.9	420.4	12.19	381	1,780	585	183	85
WH		35		85	90	.434	2.93	.89	121.8	507.0	3.45	108	449	166	52	22
WH		37		84	124	.387	2.93	1.19	117.8	585.1	4.47	140	694	215	67	33
WH		39		83	113	.348	2.93	1.06	111.3	592.4	3.79	118	631	182	57	30
WH		Totals		81	79	88.666	178.72	149.04	42.1	159.9	200.84	6,276	23,835	9,640	3,013	1,144
NF		23		89	115	.957	2.88	2.93	42.4	190.9	2.98	124	559	143	60	27
NF		25		85	92	.879	2.88	1.79	56.9	233.3	2.45	102	418	118	49	20
NF		28		89	123	.694	2.88	2.13	62.0	293.4	3.16	132	624	152	63	30
NF		29		89	134	.646	2.88	1.98	72.0	353.4	3.42	142	699	164	68	34
NF		Totals		88	114	3.175	11.52	8.83	56.7	260.6	12.01	500	2,300	576	240	110
RC		32		77	76	.685	3.84	1.40	74.1	272.6	2.44	104	381	117	50	18
RC		Totals		77	76	.685	3.84	1.40	74.1	272.6	2.44	104	381	117	50	18
Totals				81	80	92.527	194.08	159.27	43.2	166.5	215.29	6880	26,516	10,334	3,303	1,273

FI TLOGSTVB

Log Stock Table - MBF

Project: CLAMBAAK

T02N R09W S12 TSALE — **T02N R09W S12 TSAL**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	12	A3_GROW	SALE	48.00	18	68

Page 1
Date 12/5/2018
Time 9:11:54AM

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+
WH		CO	2	18	4	11.1	4	.3						4						
WH		CO	2	20	31		31	2.7								5		12	14	
WH		CO	2	24	24		24	2.1						12		12				
WH		CO	2	26	16	16.7	14	1.2											14	
WH		CO	2	30	39	6.1	37	3.2						20				17		
WH		CO	2	32	34	1.9	33	2.9						4		21	8			
WH		CO	2	40	687	.9	681	59.5						77		184	261	134	24	
WH		CO	3	18	1		1	.1					1							
WH		CO	3	20	1		1	.1				1								
WH		CO	3	21	1		1	.1				1								
WH		CO	3	30	2		2	.2					2							
WH		CO	3	32	13		13	1.2				13								
WH		CO	3	35	3		3	.2			3									
WH		CO	3	37	13	7.1	12	1.1					12							
WH		CO	3	40	184		184	16.1			42	70	72							
WH		CO	4	16	2		2	.2		2										
WH		CO	4	17	5		5	.4		4		1								
WH		CO	4	18	1		1	.1				1								
WH		CO	4	19	2		2	.2			1	1								
WH		CO	4	20	2		2	.1		2										
WH		CO	4	21	9		9	.8		8		1								
WH		CO	4	22	10		10	.9		10										
WH		CO	4	23	2		2	.2		2										
WH		CO	4	24	2		2	.2		2										
WH		CO	4	25	1		1	.1			1									
WH		CO	4	26	4		4	.4		4										
WH		CO	4	27	2		2	.1		2										
WH		CO	4	29	5		5	.4		5										
WH		CO	4	30	5		5	.4		5										
WH		CO	4	31	2		2	.2			2									
WH		CO	4	32	2		2	.2		2										
WH		CO	4	33	13		13	1.1		13										
WH		CO	4	36	3		3	.3		3										
WH		CO	4	37	2		2	.2		2										
WH		CO	4	38	13		13	1.2		13										
WH		CO	4	39	2		2	.2		2										
WH		CO	4	40	14		14	1.2		14										
WH		Totals			1,157	1.1	1,144	89.9		94	49	90	87	118	222	269	164	51		
NF		CO	2	30	16		16	14.5								16				
NF		CO	2	40	82	1.6	81	73.0						7	10	42	22			
NF		CO	3	29	2		2	1.5			2									
NF		CO	3	40	10		10	9.1				10								
NF		CO	4	16	1		1	.9		1										
NF		CO	4	20	1		1	1.0			1									
NF		Totals			112	1.2	110	8.7		1	3	10		7	10	57	22			
RC		CO	2	18	14		14	76.0									14			
RC		CO	3	40	4		4	24.0				4								
RC		Totals			18		18	1.4				4					14			

FI TLOGSTVB

Log Stock Table - MBF

Project: **CLAMBAAK**

T02N R09W S12 TSALE **T02N R09W S12 TSAL**

Page 2

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	09W	12	A3_GROW	SALE	48.00	18	68

Date 12/5/2018

Time 9:11:54AM

Spp	S T	So 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+
Total All Species				1,287	1.1	1,273	100.0		95	51	105	87	125	231	327	200	51		

"STEWARDSHIP IN FORESTRY"

Clam Bake

TL-341-2019-W00652-01

Volume Summary

Area 1-Modified Clearcut				
		115 acres		
SPECIES	Cruised Net MBF/ Acre	Cruised Net MBF	Hidden D&B	Net Sale MBF
Western hemlock	0.7	75	1%	74
Sitka Spruce	0.7	82	1%	81
Douglas-fir	5.6	646	1%	640
Red Alder	6.5	746	2%	731
Big Leaf Maple	0.03	4	2%	4
TOTAL	13.5	1553		1530

Area 2-Modified Clearcut				
		117 acres		
SPECIES	Cruised Net MBF/ Acre	Cruised Net MBF	Hidden D&B	Net Sale MBF
Western hemlock	28.18	3297	1%	3264
Douglas-fir	6.4	751	1%	743
Red Alder	4.0	464	2%	455
Sitka Spruce	1.5	174	1%	172
Western red cedar	0.2	21	1%	21
TOTAL	40.23	4707		4655

Area 3-Modified Clearcut				
		48 acres		
SPECIES	Cruised Net MBF/ Acre	Cruised Net MBF	Hidden D&B	Net Sale MBF
Western hemlock	23.8	1144	1%	1133
Noble Fir	2.3	110	1%	109
Red cedar	0.4	18	1%	18
TOTAL	26.5	1272		1259

TOTAL SALE VOLUME 280 acres		
SPECIES	Cruised Net (MBF)	Net Sale (MBF)
Western hemlock	4516	4470
Douglas-fir	1397	1383
Noble-fir	110	109

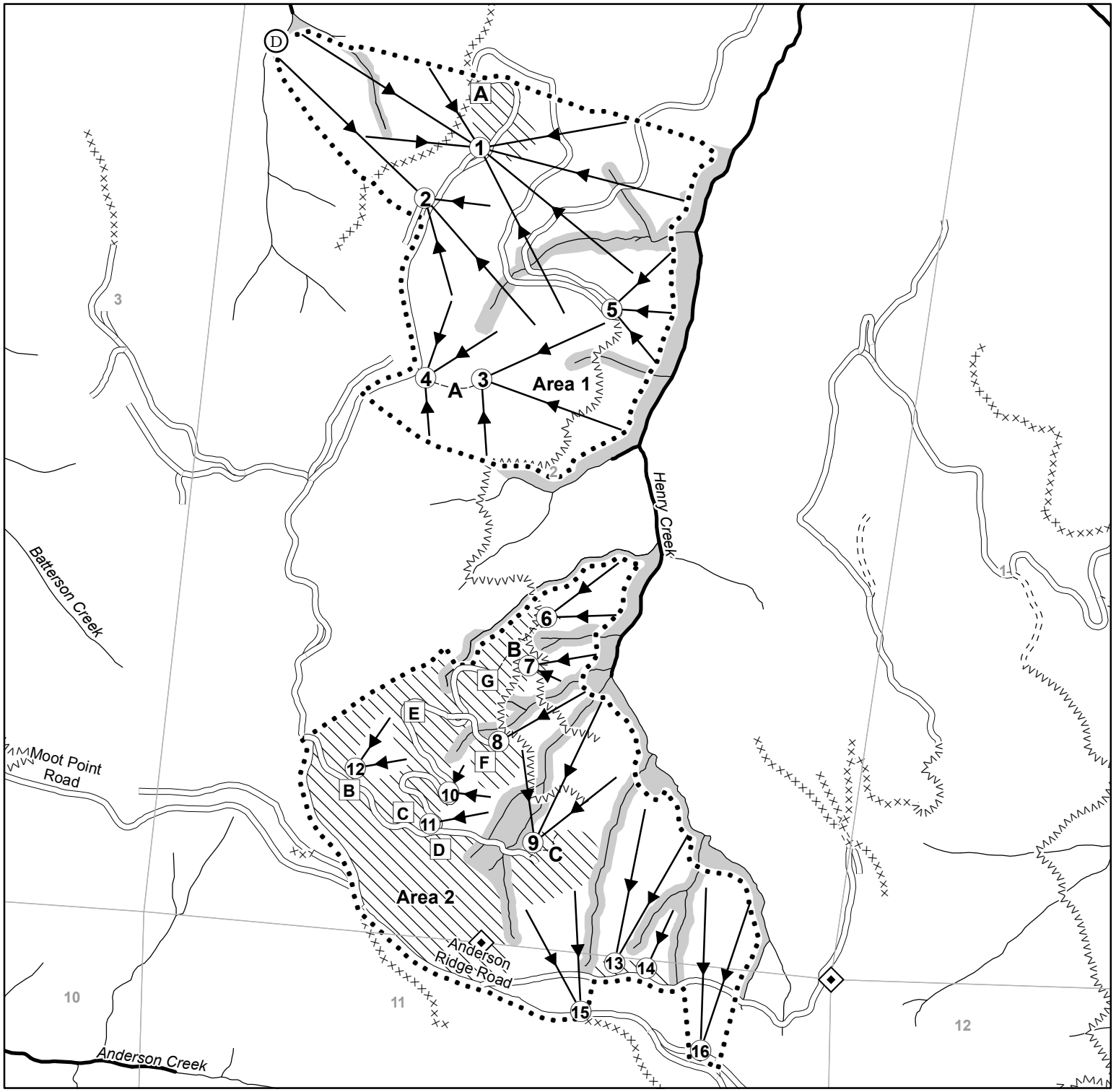
"STEWARDSHIP IN FORESTRY"

Clam Bake

TL-341-2019-W00652-01

Volume Summary

Red Alder	1210	1186
Western red cedar	39	39
Sitka Spruce	256	253
TOTAL	7528	7440



Rock source
Stock pile
Waste area
Bridge
Gate
Survey corner
Truck turn-around
Helicopter landing zone
Domestic Water Intake
Reforestation Area
Buffer
Non-required thinning
Cable yarding
Ground yarding
Downhill yarding
Green tree retention area

Area boundary
Sale boundary
Ownership boundary
Fish stream
Non-fish stream
Unsurfaced road
Surfaced road
Paved road
Abandoned road
Swing road
Non-project road
Blocked road
OHV trail
Non-motorized trail
Transmission line
Railroad
Cable yarding
Ground Landing
Yarder Landing

LOGGING PLAN

Timber Sale Contract No.
TL-341-2019-W00652
Clam Bake

Portions of Sections 2, 11, 12, and 13,
T2N, R9W, W.M.,
Tillamook County, Oregon

Area	Type of Operation	Acres Gross	Net
1	Modified Clearcut	141	115
2	Modified Clearcut	156	117
3	Modified Clearcut	66	48
Total		363	280

1,000 0 1,000 Feet

Tillamook District GIS
12/26/2018
This product is for informational use and may not have been prepared or suitable for legal, engineering, or surveying purposes.

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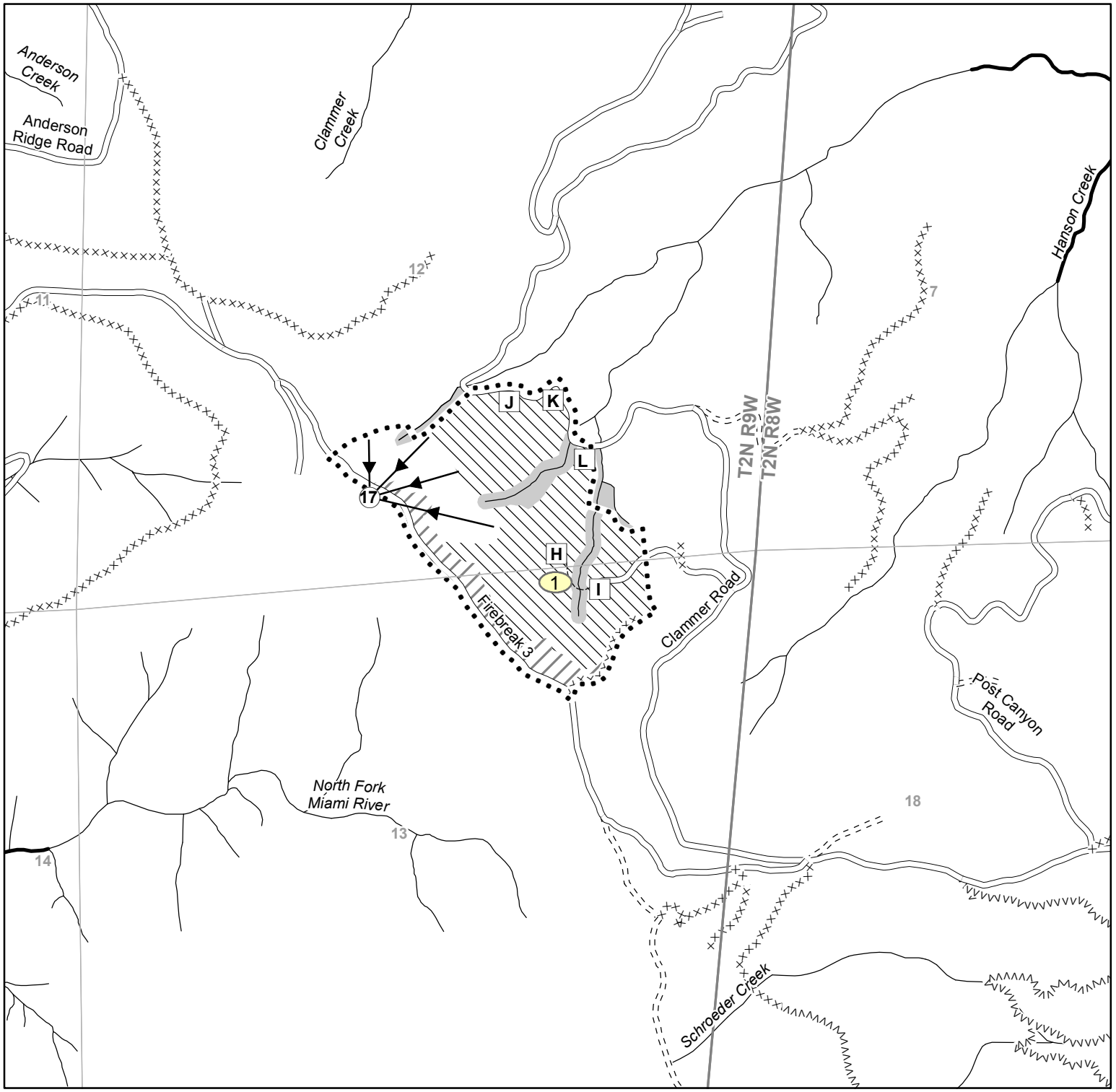

Rock source
Stock pile
Waste area
Bridge
Gate
Survey corner
Truck turn-around
Helicopter landing zone
Domestic Water Intake
Reforestation Area
Buffer
Non-required thinning
Cable yarding
Ground yarding
Downhill yarding
Green tree retention area

Area boundary
Sale boundary
Ownership boundary
Fish stream
Non-fish stream
Unsurfaced road
Surfaced road
Paved road
Abandoned road
Swing road
Non-project road
Blocked road
OHV trail
Non-motorized trail
Transmission line
Railroad
Cable yarding
Ground Landing
Yarder Landing

LOGGING PLAN

Timber Sale Contract No.
TL-341-2019-W00652
Clam Bake

Portions of Sections 2, 11, 12, and 13,
T2N, R9W, W.M.,
Tillamook County, Oregon

Area	Type of Operation	Acres Gross	Net
1	Modified Clearcut	141	115
2	Modified Clearcut	156	117
3	Modified Clearcut	66	48
Total		363	280

1,000 0 1,000 Feet

Tillamook District GIS
12/26/2018
This product is for informational use and may not have been prepared or suitable for legal, engineering, or surveying purposes.

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