



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Cost Summary Quartz Creek Combination Sale 341-02-11

District: Astoria

Date: 7/9/01

	Conifer	Hardwood	Total
<b>Gross Timber Sale Value</b>	\$5,067,670.64	\$10,177.92	\$5,077,848.56
		<b>Project Work</b>	(\$778,102.00)
		<b>Advertised Value</b>	\$4,299,746.56



# Timber Sale Appraisal Timber Description Quartz Creek Combination Sale 341-02-11

"STEWARDSHIP IN FORESTRY"

**District:** Astoria

**Location:** Portions of Sections 13, 14, 15, 22, 23, and 24, T4N, R7W; W.M., Clatsop County, Oregon.

**Date:** 7/9/01

**Stand Stocking:** 100%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	17	0	97
Western Hemlock / Fir	15	0	97
Sitka Spruce	11	0	97
Red Cedar	11	0	97
Alder (Red)	16	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Red Cedar	Alder (Red)	Total
2S	6,742	1,583	0	0	0	8,325
3S	3,284	4,154	0	0	0	7,438
4S	566	673	7	1	32	1,279
<b>Total</b>	10,592	6,410	7	1	32	17,042

**Comments:** Pond Values Used: 2nd Quarter 2001

Log Markets: Mist, Clatskanine, Tillamook

Additional costs for Areas 1-4(Thinning) and Areas 5-7(Clearcut).

Costs with P&R:

100% branding and painting:  $\$2/\text{MBF} \times 17,042 = \$34,084$

Additional bucking cost for thinning areas:  $\$1/\text{MBF} \times 13,104 = \$13,104$

Total Cost w/P&R = \$47,188

Costs without P&R:

Pile slash at Area 6 cable landings @  $\$130/\text{landing} \times 3 \text{ landings} = \$390$

Excavator move-in/move out = \$500

Site-prep slash piling for Areas 5 & 6 - 71.3 hours @  $\$95/\text{hour} = \$6,773.50$

Total Non-P&R Costs = \$7,663.50



# Timber Sale Appraisal

## Logging Conditions

### Quartz Creek Combination

### Sale 341-02-11

"STEWARDSHIP IN FORESTRY"

<b>Combination#:</b> 1	Douglas - Fir	51.59%	
	Western Hemlock / Fir	47.61%	
<b>Yarding Distance:</b>	Medium (800 ft)		<b>Downhill Yarding</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70		<b>Process:</b> Manual Delimiting
<b>Tree Size:</b>	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
<b>Loads/Day:</b>	6		<b>Bd. Ft./Load:</b> 4,000
<b>Cost/MBF:</b>	\$138.19		
<b>Machines:</b>	Log Loader (A)		
	Tower Yarder (Medium)		
<b>Combination#:</b> 2	Douglas - Fir	27.78%	
	Western Hemlock / Fir	25.64%	
<b>Yarding Distance:</b>	Short (400 ft)		<b>Downhill Yarding</b> No
<b>Logging System:</b>	Track Skidder		<b>Process:</b> Manual Falling/Delimiting
<b>Tree Size:</b>	Mature / Partial Cut (900 Bft/tree), 3-5 logs/MBF		
<b>Loads/Day:</b>	8		<b>Bd. Ft./Load:</b> 4,000
<b>Cost/MBF:</b>	\$102.05		
<b>Machines:</b>	Log Loader (B)		
	Track Skidder		
<b>Combination#:</b> 3	Douglas - Fir	7.01%	
	Western Hemlock / Fir	9.10%	
	Sitka Spruce	34.00%	
	Red Cedar	34.00%	
	Alder (Red)	34.00%	
<b>Yarding Distance:</b>	Medium (800 ft)		<b>Downhill Yarding</b> No
<b>Logging System:</b>	Cable: Medium Tower >40 - <70		<b>Process:</b> Stroke Delimber
<b>Tree Size:</b>	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF		
<b>Loads/Day:</b>	10		<b>Bd. Ft./Load:</b> 4,500
<b>Cost/MBF:</b>	\$72.95		
<b>Machines:</b>	Log Loader (A)		
	Stroke Delimber (A)		
	Tower Yarder (Medium)		
<b>Combination#:</b> 4	Douglas - Fir	13.61%	
	Western Hemlock / Fir	17.66%	
	Sitka Spruce	66.00%	
	Red Cedar	66.00%	
	Alder (Red)	66.00%	





"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Logging Costs Quartz Creek Combination Sale 341-02-11

Date: 7/9/01

Operating Seasons: 3.0

Profit & Risk: 16%

Project Costs: \$778,102

Other Costs (P/R): \$47,188

Slash Disposal: \$0

Other Costs: \$7,664

Miles of Road			
Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Road Maintenance: \$3.25

### Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	3.0	4.5
Western Hemlock / Fir	\$0.00	3.0	4.0
Sitka Spruce	\$0.00	3.0	4.0
Red Cedar	\$0.00	3.0	4.0
Alder (Red)	\$0.00	3.0	3.5



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Logging Costs Breakdown Quartz Creek Combination Sale 341-02-11

<b>Costs</b>	<b>Douglas - Fir</b>	<b>Western Hemlock / Fir</b>	<b>Sitka Spruce</b>	<b>Red Cedar</b>	<b>Alder (Red)</b>
<b>Logging</b>	111.78	107.70	58.85	58.85	58.85
<b>Road Maintenance</b>	3.35	3.35	3.35	3.35	3.42
<b>Fire Protection</b>	0.48	0.48	0.48	0.48	0.48
<b>Hauling</b>	35.15	39.54	39.54	39.54	46.11
<b>Other (P/R appl.)</b>	2.77	2.77	2.77	2.77	2.77
<b>Profit &amp; Risk</b>	24.56	24.61	16.80	16.80	17.86
<b>Slash Disposal</b>	0.00	0.00	0.00	0.00	0.00
<b>Scaling</b>	2.00	2.00	2.00	2.00	2.00
<b>Other</b>	0.45	0.45	0.45	0.45	0.45
<b>Total</b>	180.54	180.90	124.24	124.24	131.94

<b>Amortization</b>	0.00	0.00	0.00	0.00	0.00
<b>Pond Value</b>	559.07	345.68	305.00	900.00	450.00
<b>Stumpage</b>	378.53	164.78	180.76	775.76	318.06
<b>Amortized</b>	0.00	0.00	0.00	0.00	0.00



"STEWARDSHIP IN FORESTRY"

# Timber Sale Appraisal Summary

## Quartz Creek Combination Sale 341-02-11

**Amortized**

	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Red Cedar	Alder (Red)
<b>MBF</b>	0.00	0.00	0.00	0.00	0.00
<b>Value</b>	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	0.00	0.00	0.00	0.00	0.00

**Unamortized**

	Douglas - Fir	Western Hemlock / Fir	Sitka Spruce	Red Cedar	Alder (Red)
<b>MBF</b>	10,592.00	6,410.00	7.00	1.00	32.00
<b>Value</b>	378.53	164.78	180.76	775.76	318.06
<b>Total</b>	4,009,389.76	1,056,239.80	1,265.32	775.76	10,177.92

### Gross Timber Sale Value

**Recovery \$5,077,848.56**

Prepared by: Ty Williams

Date: 7/9/01

District: Astoria

Phone: (503) 325-2810



**SUMMARY OF ALL PROJECT COSTS**

**SALE NAME:** QUARTZ CREEK COMBINATION

**NEW CONSTRUCTION: PROJECT NO. 1**

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
1A-1B, 1C-1D, 1C-1O	475.55	\$386,352
1E-1F, 1G-1H, 1I-1J,		
1K-1L, 1M-1N, 2A-2B,		
2C-2D, 2E-2F, 2G-2J,		
2I-2H, 2K-2L, 2M-2N,		
3A-3B, 3C-3D, 3E-3F,		
3G-3H, 3I-3J, 4A-4B,		
4C-4D, 4E-4F, 4G-4H,		
4I-4V, 4K-4L, 4M-4N,		
4O-4P, 4Q-4R, 4S-4T,		
4U-4J, 4W-4X, 4Y-4Z,		
4AA-4BB, 4CC-4DD,		
4EE-4FF, 6A-6B, 6C-6D		
<b>TOTALS</b>	<b>475.6</b>	<b>\$386,352</b>

**ROAD IMPROVEMENT: PROJECT NO. 1**

<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
I1-I2, I2-I3, I4-I5,	188.0	\$49,823
I5-I6, I7-I8		
<b>TOTALS</b>	<b>188.0</b>	<b>\$49,823</b>


**SPECIAL PROJECTS:**

	<u>Description</u>	<u>Cost</u>
	Road Maintenance (project work)	\$2,712
PROJECT NO. 2	Rock Crushing (59,014 CY)	\$328,713
PROJECT NO. 3	Test Drilling	\$5,240
<b>TOTALS</b>		<b>\$336,665</b>

**MOVE IN:**

	<u>Equipment</u>	<u>Cost</u>
	D-7 Dozer	\$560
	Dump Trucks (5)	\$610
	F E Loader	\$560
	Grader	\$540
	Skidder	\$520
	Vibratory Roller	\$540
	Water Truck	\$132
	Excavator X 2	\$1,800
<b>TOTAL</b>		<b>\$5,262</b>

**GRAND TOTAL \$778,102**

Compiled By: L. Freeman 

Date: 5/30/01

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## TIMBER CRUISE REPORT

### Quartz Creek Combination    FY 2001

**1. Sale Area Location: Areas 1, 2, 3, 4, 5, 6, and 7 (In-sale R/W) - Portions of Sections 13, 14, 15, 22, 23, and 24, T4N,R7W; W.M., Clatsop County, Oregon.**

**2. Fund Distribution:**

**Fund:**            BOF – 100%            **LCR: \$1,505.72**  
**Tax Code:**    100% 8-01.

**3. Sale Acreage by Area:**

Area	Treatment	Gross Acres	Non-Thinnable Acres	New R/W	Net Acres	Acreage Comp. Method
1	Commercial Thinning	267.0	-25.7	-15.3	226	GIS
2	Commercial Thinning	186.7	-7.5	-6.2	173	GIS
3	Commercial Thinning	244.8	-17.4	-7.4	220	GIS
4	Commercial Thinning	358.3	-8.8	-21.5	328	GIS
5	Clearcut	16.2	---	0.2	16	GIS
6	Clearcut	62.4	---	-1.4	61	GIS
7	In sale R/W	---	---	---	52	Length x Width
<b>Total</b>		<b>1135.4</b>	<b>-59.4</b>	<b>-52.0</b>	<b>1,076</b>	

**4. Cruisers and Cruise Dates:** Jon Long, Lanny Freeman, Tom Scoggins, Diana Logan, John Tillotson, Ty Williams, Dave Wolfgram, Ed Holloran, Kraig Kirkpatrick, Chuck Day, Becky Mittner, and Dave Beck. Cruised in April 2001.

**5. Cruise Method and Computation:** Areas 1, 3, and 4 were cruised using a 34 B.A.F, and plot spacing of 5 chains on transect lines. 82 plots were cruised on a 2:1 count to grade ratio, with the biggest and best trees selected for "leave" trees at a target residual basal area of 160 ft.<sup>2</sup>/ acre. (28 plots were measured and graded in Areas 1, 3, & 4.) Area 2 was cruised using a 34 B.A.F and a plot spacing of 5 chains on transect lines. 25 plots were cruised on a 1:1 count to grade ratio, with the biggest and best trees selected for "leave" trees at a target residual basal area of 120 ft.<sup>2</sup>/ acre. (12 plots were measured and graded in Area 2.) Areas 5 and 6 were cruised using a 40 B.A.F and a plot spacing of 5 chains by 8 chains. 20 plots were cruised, and all 20 of those were graded and measured. Area 7 R/W: The combined "take" and "leave" tree board foot volume per acre for Areas 1, 3, and 4 was expanded by the total right-of-way acres to determine the total board foot

volume. All cruisers used Corvallis MicroTechnology (CMT) data collectors, which were downloaded to the Atterbury Super A.C.E. program in the Astoria District office for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office as follows:

AREA	CRUISE	CRUISE TYPE
1, 3, 4	Thinning—Take	4N 7W 13—Type: TAKE
1, 3, 4	Thinning—Leave	4N 7W 13—Type: LEAV
1, 3, 4	Thinning—Master	4N 7W 13—Type: 0001
2	Thinning—Take	4N 7W 23—Type: TAKE
2	Thinning—Leave	4N 7W 23—Type: LEAV
2	Thinning—Master	4N 7W 23—Type: 0002
5, 6	Clearcut	4N 7W 15—Type: 0006
7	R/W	4N 7W 13—Type: R/W

Current downed wood amounts in decay classes one and two for Areas 5 and 6 were determined using 1/25 acre plots at each cruise plot. This information indicated that there is currently 139 CuFt/Acre in decay class one and two. Approximately 55 CuFt/Acre of cull material was cruised and will add to the downed wood amounts in class one and two. To meet the target of 650 CuFt/Acre of downed wood in decay class one and two for Areas 5 and 6, a contribution of 511 CuFt/Acre is required. Board foot volume to be subtracted from the cruise was determined by converting the cubic foot need using a factor of five board feet per cubic foot. It was determined that leaving 2,555 BF/Acre in these two units would meet the downed wood requirement. 2,555 BF/Acre was subtracted from the volume for conifer species at the following proportions: 2Saw – 25%, 3Saw – 25%, and 4Saw – 50%. The wildlife trees that were cruised were also subtracted from the cruise volume.

- 6. Timber Description: Areas 1, 2, 3, and 4** are commercial thinnings in 50 to 55 year old mixed conifer stands. The main species are Douglas-fir and western hemlock with a small component of Noble fir, red cedar, Sitka Spruce, and red alder. Approximately 106 trees/acre, 118ft<sup>2</sup> basal area/acre, and 13 MBF/acre will be harvested in Areas 1, 3, and 4, and approximately 100 trees/acre, 140 ft<sup>2</sup> basal area/acre, and 18 MBF/acre will be harvested in Area 2. The average “take” tree size in Areas 1, 3, and 4 is 14” dbh, and 48 feet to a merchantable top (6” d.i.b.). The average “take” tree size in Area 2 is 16” dbh, and 59 feet to a merchantable top. The residual stand in Areas 1, 3, and 4 will be thinned down to 150 ft<sup>2</sup> of basal area per acre (RD 33), and 120 ft<sup>2</sup> of basal area per acre (RD25) in Area 2.
- Areas 5 and 6** are clearcut harvest units. The timber description is similar to the thinning Areas 1, 3, and 4, but with more Phellinus root rot pockets. The average tree size is 17” dbh, and 66 feet to a merchantable top (6” d.i.b.). Approximately 30 MBF/acre will be harvested.
- Area 7 (in-sale R/W):** There is approximately 1,683 MBF in the in-sale right-of-way which is the same timber type.

### 7. Statistical Analysis and Stand Summary: Net BF/Acre

Area	Target CV%	Target SE%	Actual CV%	Actual SE%
Areas 1,3,4	40	10	32.6	3.6
Area 2	40	10	25.8	5.2
Areas 5,6	40	10	25.0	5.6

### 8. Cruised Timber Volumes and Grades (Total MBF of all sale areas)

Species	Avg. DBH	Net MBF	2 Saw	3 Saw	4 Saw	D&B MBF	Species %
Douglas-fir	17.3	10,592	6,742	3,284	566	178	62
Hem/Fir	14.9	6,410	1,583	4,154	673	35	33
S. Spruce	11	7	---	---	7	---	<1
Cedar	11	1	---	---	1	---	<1
Alder	16	32	---	---	32	---	<1
<b>Totals</b>		<b>17,042</b>	<b>8,325</b>	<b>7,438</b>	<b>1,279</b>		<b>100</b>

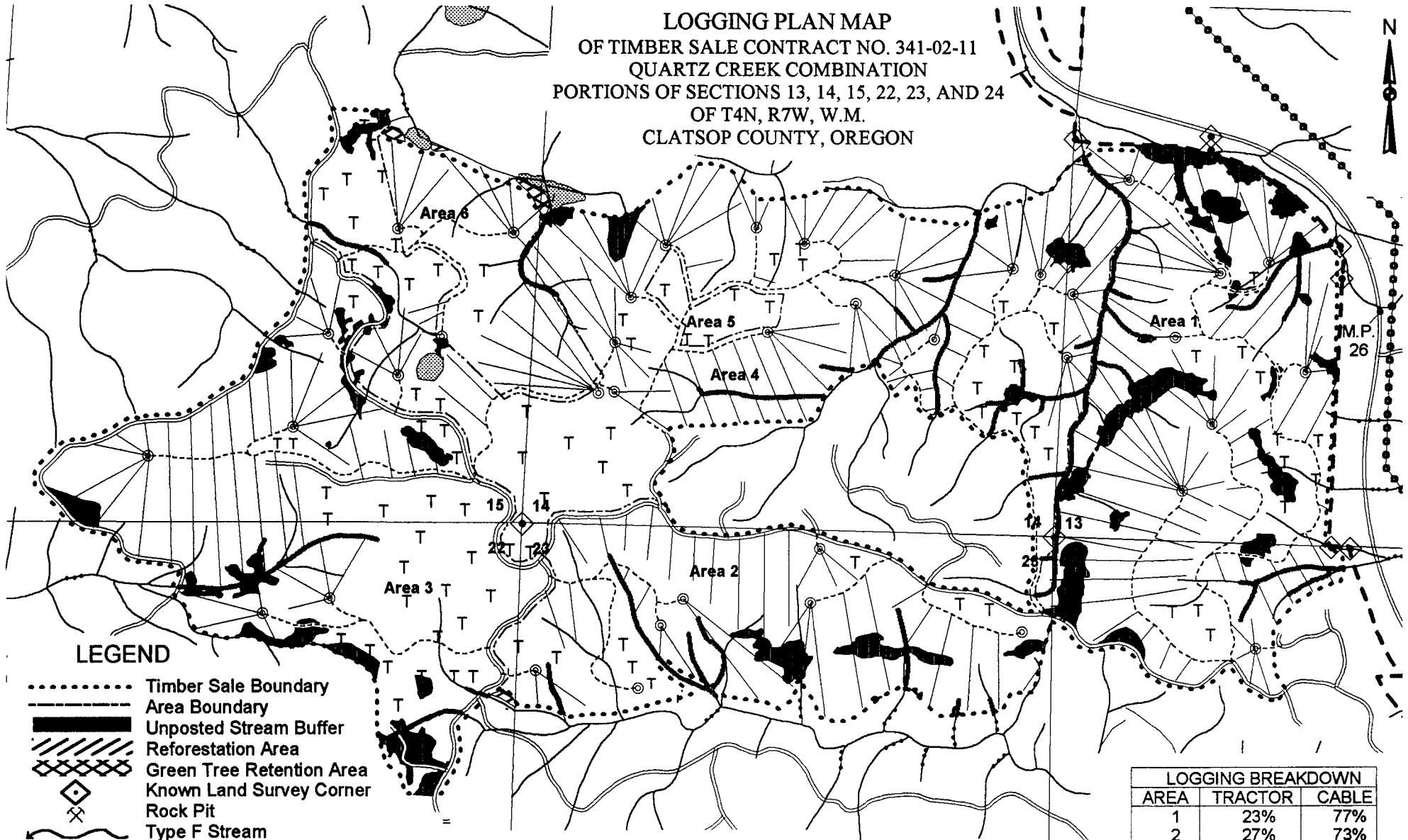
### 9. Approvals:

Prepared by: J. Long Date: 4/11/01  
 Approved by: Ron Zilli Date: 5/11/01  
 Unit Forester

- Attachments: A) Cruise design and maps (7 pages)  
 B) Volume & Grade Reports (5 pages)  
 C) Statistics Report (9 pages)  
 D) Stand Table Report (3 pages)  
 E) Cruise & Downed Wood Contribution Totals (1 Page)

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**LOGGING PLAN MAP**  
**OF TIMBER SALE CONTRACT NO. 341-02-11**  
**QUARTZ CREEK COMBINATION**  
**PORTIONS OF SECTIONS 13, 14, 15, 22, 23, AND 24**  
**OF T4N, R7W, W.M.**  
**CLATSOP COUNTY, OREGON**



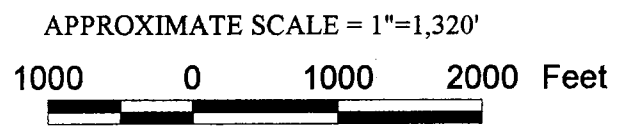
**LEGEND**

- ..... Timber Sale Boundary
- Area Boundary
- █ Unposted Stream Buffer
- ▨ Reforestation Area
- ▩ Green Tree Retention Area
- ◊ Known Land Survey Corner
- ⊗ Rock Pit
- ~ Type F Stream
- ~ Type N Stream
- == Surfaced Road
- == State Highway
- New Construction
- State Forest Property Line
- ⊙ Landings to Construct
- ..... Utility Lines
- █ Non-Thinnable Type
- ⚡ Cable Ground
- T Tractor Ground
- █ Pond

**APPROXIMATE NET ACREAGES**

AREA 1 (PC)	- 226
AREA 2 (PC)	- 173
AREA 3 (PC)	- 220
AREA 4 (PC)	- 328
AREA 5 (CC)	- 16
AREA 6 (CC)	- 61
AREA 7 (INSALE R/W)	- 52
<b>TOTAL</b>	<b>1076</b>

LOGGING BREAKDOWN		
AREA	TRACTOR	CABLE
1	23%	77%
2	27%	73%
3	46%	54%
4	41%	59%
5	100%	0%
6	28%	72%
7 (R/W)	100%	0%



**FOREST PRACTICES ACT "WRITTEN PLAN"**  
**For Harvest of Quartz Creek Combination 341-02-11**

**Landowner:** Oregon Department of Forestry  
92219 Hwy 202  
Astoria, OR 97103  
(503) 325-5451

**Protected Resources:**

Rock Creek, which is designated as a medium Type F stream, and is located along the southern boundary of Area 2, Section 23, T4N, R7W, W.M., Clatsop County, Oregon. Length of the affected stream requiring protection is approximately 4,600 feet.

**Specific Site Characteristics:**

Rock Creek: The streambed is approximately 12 feet wide, with moderate streambank slopes. Streamside vegetation is dominated by mature alder, with a significant component of conifer trees which are located above the flood plain.

**Tree and Vegetation Retention:**

Rock Creek: The FPA defines the RMA width of a medium, Type F stream at 70 feet. The timber sale boundary for Area 2 is posted an average of 100 feet from the stream.

**Practices:**

Directional felling will be required parallel to the stream to prevent trees from entering the aquatic area. No ground based logging equipment will be permitted inside the posted RMA. Cable corridors may be strung through the RMA and will be located no closer than 100' feet apart. Cable lines will not be lowered into the RMA during yarding.

**Attachments:** Exhibit A

Submitted: \_\_\_\_\_  
Purchaser/Operator Contract Representative

Date: \_\_\_\_\_

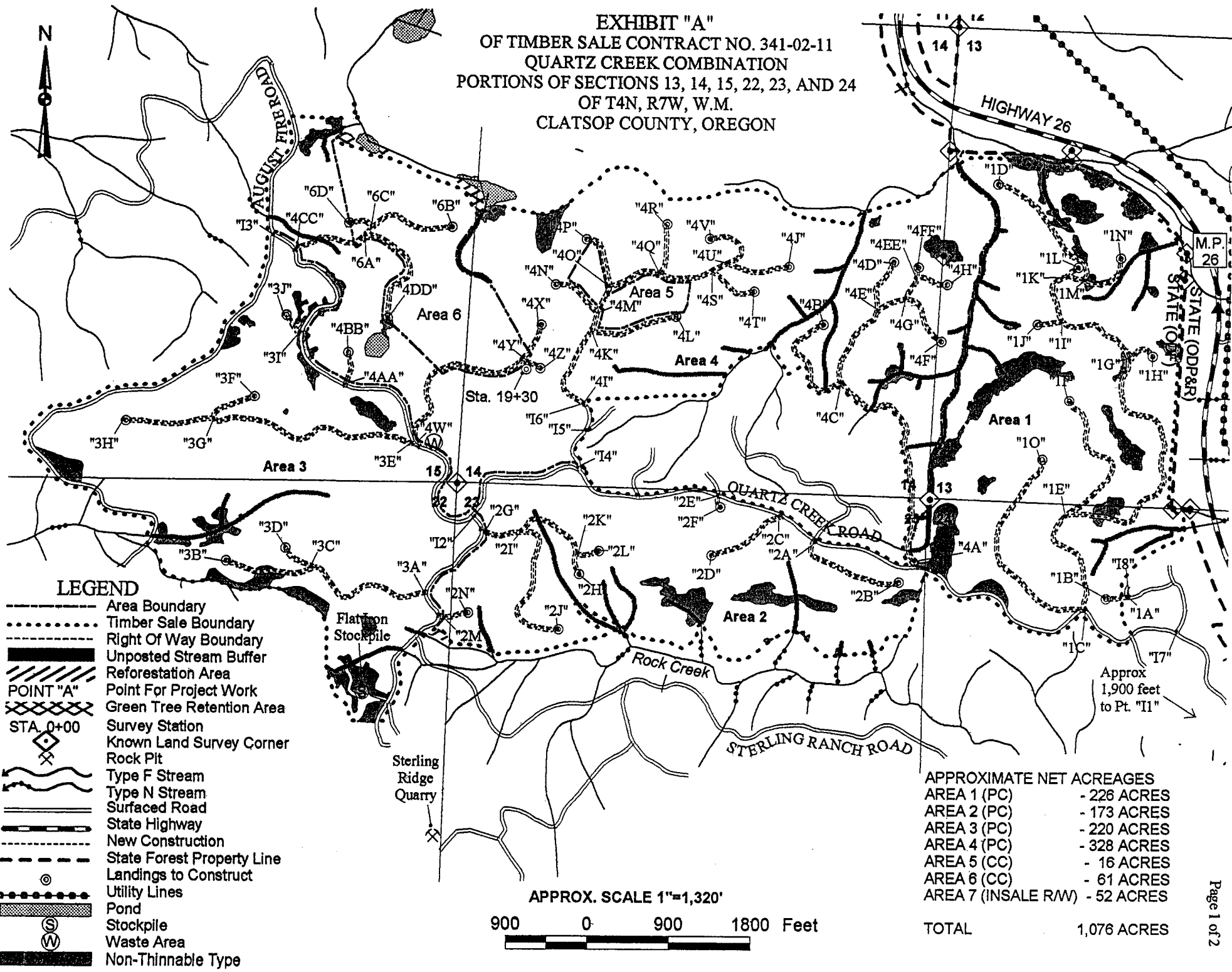
Approved: \_\_\_\_\_  
State Lands Forester

Date: \_\_\_\_\_

Approved: AW \_\_\_\_\_  
Forest Practices Forester

Date: \_\_\_\_\_

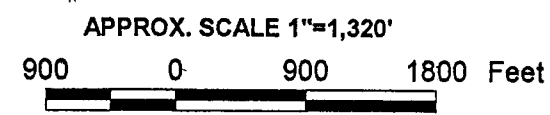
**EXHIBIT "A"**  
**OF TIMBER SALE CONTRACT NO. 341-02-11**  
**QUARTZ CREEK COMBINATION**  
**PORTIONS OF SECTIONS 13, 14, 15, 22, 23, AND 24**  
**OF T4N, R7W, W.M.**  
**CLATSOP COUNTY, OREGON**



- LEGEND**
- Area Boundary
  - ..... Timber Sale Boundary
  - - - - Right Of Way Boundary
  - ▨ Unposted Stream Buffer
  - ▨ Reforestation Area
  - POINT "A"
  - ▨ Green Tree Retention Area
  - STA. 0+00
  - ⊠ Known Land Survey Corner
  - ⊗ Rock Pit
  - ~ Type F Stream
  - ~ Type N Stream
  - ▬ Surfaced Road
  - ▬ State Highway
  - - - - New Construction
  - - - - State Forest Property Line
  - ⊙ Landings to Construct
  - Utility Lines
  - ▨ Pond
  - ⊙ Stockpile
  - ⊙ Waste Area
  - ▨ Non-Thinnable Type

**APPROXIMATE NET ACREAGES**

AREA 1 (PC)	- 226 ACRES
AREA 2 (PC)	- 173 ACRES
AREA 3 (PC)	- 220 ACRES
AREA 4 (PC)	- 328 ACRES
AREA 5 (CC)	- 16 ACRES
AREA 6 (CC)	- 61 ACRES
AREA 7 (INSALE RW)	- 52 ACRES
<b>TOTAL</b>	<b>1,076 ACRES</b>



Approx  
1,900 feet  
to Pt. "I1"