

Bixby Thin Stewardship Timber Sale

Logging Feasibility Report

Niagara Boulder Restoration EA

Tillamook and Yamhill Counties, Oregon

Hebo Ranger District

Siuslaw National Forest

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Sale Description

Bixby Thin Stewardship Timber Sale is a commercial thinning sale of 77 year old timber. The sale consists of 4 units for a total of approximately 195.15 acres to be treated. *Unit acres do not include road acres.* The sale area is located in section 13, T4S, R8W, W.M., Tillamook and Yamhill Counties, and sections 24, 25 and 26, T4S, R8W, W.M., Yamhill County, Oregon. The sale is located on Forest Service roads 8530, 8533, 1400 and 1404 and numerous spurs roads.

Douglas fir (*Pseudotsuga menziesii*) and red alder (*Alnus rubra*) are the dominant species in most units. Douglas fir will be the only cut species for this sale. As much as feasible big leaf maple will not be felled in the units. No Pacific yew was observed during stand exams, cruising and logging systems analyses. Any Pacific yew found during logging operations will not be felled. Minimum DBH for trees to be harvested is 7". Live trees less than 7" will be protected where practical.

The sale is designed to yard with skyline (74%) and ground-based (26%) systems.

There may be areas that will need multi-span configurations to yard the unit or portions of them. These are shown on yarding maps.

A yarder with a 50 foot tower, capable of lifting 20,000+ pounds and transporting logs at least 1,200 feet and a carriage with multi-span and slackpulling capabilities was used in the analysis.

Tail-trees are necessary on most skyline roads. Multiple stump anchors may be needed for some landing locations as they are located in younger stands. Existing trees may be too small and existing stumps too old to use.

Ground based yarding shall be limited to slopes of 30 percent or less and use designated skid trails. All designated skid trails must be approved by the sale administrator.

GIS was used to calculate the length for most roads and the acres for the units. A string box was used to determine length for temporary roads.

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Resource Management Objectives

The stand prescriptions, unit layout, logging and transportation plans will be designed to meet the following resource objectives:

- Speed the development of late-successional forest characteristics in managed stands by thinning these heavily stocked stands to maintain stand health, promote tree growth, and enhance stand diversity.
- Manage riparian reserves consistent with the Northwest Forest Plan's Aquatic Conservation Strategy.
- Protect water quality and fish habitat in all streams.
- Minimize soil disturbance during all phases of harvest activity.
- Protect T&E wildlife species by limiting operating seasons.

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Unit Logging Summary and Yarding Method

Sale Name: Bixby Thin Stewardship

Units: 45, 94, 105, 124

Skyline Based Units: 45, 94, 105, 124

Ground Based Units: 45, 95, 105, 124

Volume: 7.0 mmbf/, 11,900 ccf

Tower: 50 ft. (Madill 6150 SPCM used in analysis)

Carriage: Able to pass shackles and have slackpulling capabilities (Acme 20 used in analysis)

Tractor: Crawler tractor for landing clearing

Skidder/Yoader

Delimber

Loader/shovel

Tail tree hardware

Intermediate support rigging hardware

Chokers: Length 20 ft, diameter 5/8"

Line Capacities of Yarder and Proposed Carriage:

<u>Line</u>	<u>Diameter (in)</u>	<u>Drum Capacity</u>
Skyline	0.875	2,000 feet/EIPS
Mainline	0.625	2,300 feet/EIPS
Haulback	0.5	4,300 feet/EIPS
Strawline	n/a	
Guyline	0.625	300 feet/EIPS
Choker	5/8	
Carriage	Eagle Eaglet; 1,200 pounds	

<u>Yarding Labor</u>	<u>Number</u>
Hooktender	1
Rigging slinger	1
Choker setter w/radio	1
Choker setter	1
Yarder engineer	1
Loader operator	1
Delimber operator	1

Estimated daily yarding production: 15 mbf/day net log scale

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Estimated Yarding Distances

<u>Unit #</u>	<u>Average Yarding Distance (ft)</u>	<u>Maximum Yarding Distance (ft)</u>
45	475	967
94	293	740
105	363	988
124	431	920

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CT6.42# Contract Clauses

CT6.42# SPECIAL YARDING/SKIDDING METHODS. (1/93) Methods other than those specified may be approved. When appropriate, such approval shall include changes in current contract rates and Sale Area Map shall be revised.

1. Except during lateral yarding, the yarding system must keep one end suspended above ground during in-haul.
2. The carriage shall be positioned such that during lateral yarding, logs are to be yarded away from stream courses.
3. Ground-lead yarding is permitted within 50 feet of payment unit boundaries, 50 feet of tail trees, and 50 feet of tower position.
4. Skyline roads will be spaced so as to cause the least amount of damage to the residual stand. This may require spacing from no closer than 125 feet or no further apart than 150 feet at back end of the road when radial roads are used. If parallel roads are to be used design the distance to be 200 feet center to center. Where situations warrant changes to this the Forest Service will determine if this can change on a case by case basis.
5. When skyline, haulback or other cable pass through areas of residual trees or reproduction more than 18 inches in height, lines shall be pulled out of the residual trees or reproduction area prior to restringing the next skyline road.
6. Skyline corridors shall be as narrow as possible but normally not exceed 12 feet in width.
7. Location of all skyline roads shall be agreed and approved prior to felling and or yarding.
8. Yarding across streams shall require logs to be fully suspended for 50 feet slope distance both sides of stream channel and or outside the buffered area.
9. A slackpulling carriage able to maintain a fixed position on the skyline during lateral yarding and can pass over intermediate supports. The carriage must be capable of lateral yarding up to 75 feet from skyline.
10. Tractor assist may be required.

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Logging Plan Narrative

All unit boundaries are marked with blue boundary tags, blue ribbon and orange tracer paint.

All native trees are marked with orange tracer paint (unit 45) or pink tracer paint (units 94, 105 and 124).

Gaps are marked with pink tags and orange tracer paint (unit 45) or pink tags and pink tracer paint (units 94, 105 and 124).

All landings and roads are marked with tags and solid blue/white ribbon.

Minor clearing is required for some landings.

Landings are located to minimize yarding over buffered stream and headwalls.

All roads and landings will be reviewed on the ground by a District hydrologist and the Forest transportation planner for the timber sale appraisal and contract.

Log hauling will be limited to **dry season on most temporary roads** because of cost associated with the quantity of rock needed.

There are streams and headwalls that exist within the units. These areas will be buffered and excluded from the units. Buffer boundaries will be marked on the ground to protect slope stability and water quality. Full log suspension is required over streams and headwalls.

Skyline landings generally use fan-shaped and parallel settings, with most turnroads using single-span configurations. Tailholding on opposing slopes is emphasized, where opportunities exist, to reduce the need for tailtrees and intermediate supports.

Where yarding will occur over streams, some areas may lack the deflection necessary to obtain full suspension of logs during whole-tree yarding. Shorter log lengths will be required over these areas.

Some ground-based logging is planned in units 45, 105 and 124. Most of the remaining units will require some loader/shovel logging along the roadway or on designated skid trails.

Survey monument in unit 105 designated with blue tags, blue flags and orange tracer paint.

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Non-Harvestable Road Acres

System road by unit

Acres = road length (ft) x road width (ft) / sq ft (acre)

Road width: 24 ft (average)

Acre: 43,560 sq ft

Unit 45

Rd# 8533-126: 1,373 ft

Rd# 8533-128: 702 ft

2,075 ft x 24 ft / 43,560 sq ft = **1.15 acres**

Unit 94

#94-1: 263 ft

#94-4: 124 ft

#94-3: 459 ft

Rd#1400: 461 ft

1,307 ft x 24 ft / 43,560 sq ft = **0.72 acres**

Unit 105

Rd#1404-113: 354 ft

Rd#1404-112: 842 ft

Rd#1404-111: 271 ft

Rd#1404: 5,405 ft

6,872 ft x 24 ft / 43,560 sq ft = **3.79 acres**

Unit 124

Rd#1400-144: 528 ft

Rd#1400: 1,379 ft

1,907 ft x 24 ft / 43,560 sq ft = **1.05 acres**

**Total Road Acres = 6.71
(Non-harvestable)**