

Surveyor Thin
Logging Feasibility Report

East

Alsea Watershed

Central Oregon Coast Ranger District

Siuslaw National Forest

Summary

Commercial thinning of 7 managed stands with the year of origin ranging from 1965 (unit #5, oldest) to 1981 (unit # 4 youngest) and divided into 7 thinning units. The residual trees left after logging operations, creation of “course woody debris” and snag creation are complete will range from 45 to 75 trees per acre (TPA). Acres estimates are based on GIS and are estimated to be approximately 164 acres thinned. All the units were cruised and the cruise volume to be removed is ???? MBF or ???? CCF.

The project area is located in T.13S., R.9 W., Sec. 9, 18, 21, 28

Douglas-fir is the dominant species in all the units, although some of the units have some Western Hemlock. Felling of hardwoods is only anticipated to occur minimally to insure the safety of operations. No Pacific Yew were observed during layout operations but should any exist on site, none are to be felled. Minimum DBH of trees to be harvested is 7”.

Temporary road to be reopened will total approximately 9,370 feet or 1.77 miles. “New” temporary roads will total approximately 1,000 feet or 0.19 miles. All temporary roads will be closed after operations are complete. No deadman anchors are planned **but “multi-stump anchors are planned for a couple of landings in unit 6 and 1 in unit 7.** Tailholding on opposite slopes (where line lengths and topography permit) is encouraged. Use of tailtrees and intermediate supports will frequently be necessary, as will some **downhill yarding.**

Field run profiles were run and analysis was done using SkylineXL_1.

Most system roads will require some form of treatment prior to use, such as waterbar removal, additional rock or roadside brushing.

The primary yarding system will be skyline yarding, although a ground based system is planned for portions of units 2, 4, and 5, as well as those areas that lend themselves to picking up logs adjacent to the road with a “loader” located in the road. Yoader yarding is planned to occur on portions of all units except units 2 and 5. A total of 22 skyline landings are planned for this sale, as well as 14 yoader landings and 2 ground based landings. Additional “ground based landings” are planned but will use the skyline landing locations and are not counted twice. Thirteen old grownover spurs will be “temporarily” reopened and 3 “new temporary” spurs will

be constructed to access landing locations. All “temp” spurs will be closed after logging operations are completed.

I. Resource Management Objectives

The silvicultural prescription, unit layout, and logging and transportation plans are designed to meet the following objectives:

- Speed stand 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 in all phases of harvest activity.
- Protect T & E species by limiting operating seasons

II. Timber Characteristics

All 7 units are plantations that were planted in the sixties through the early eighties and have had various precommercial activities within them. Portions of different units have different stocking levels and trees sizes as a result of not only different site characteristics but different precommercial activities.

The silvicultural prescription for the units is designed to leave a varying number of trees per acre after harvest activities ranging from 45 trees per acre (low end) to 75 trees per acre (high end). This is an over the “sale area” goal and will likely vary somewhat on an acre to acre basis. Gaps will also be left throughout the units and are identified on the ground as well as the sale area map.

III. Recommended System

A. Logging System requirements:

The following requirements are designed to meet the resource management objectives stated in section I.

1. Skyline logging system

- Except in lateral yarding, the yarding system must be capable of keeping the leading end of the logs suspended above the ground during the inhaul portion of the yarding cycle (single end suspension required)
- Except in lateral yarding, the yarding system must be capable of keeping the logs fully suspended above the ground during the inhaul portion of the yarding cycle (full suspension required).
- Where skyline corridors pass through stream buffers, skyline corridors will be spaced so that no more than 20% of the existing canopy will be removed within any given 1,000 feet of reach of the stream.
- The minimum corridor spacing will be 120 feet at the back end of where yarding occurs and the maximum skyline corridor width will be no more than 12 feet after harvest activities.

B. Acceptable Yarding Equipment:

1. Skyline Logging System

- A skyline system capable of transporting logs for a horizontal distance of at least 1,300 feet. A rigging length of up to 1,810 feet may be necessary to reach tailholds.
- The skyline system must: (1) be capable of meeting log suspension requirements stated above; (2) be capable of lateral yarding up to 150 feet ; (3) be capable of operating in a multispan configuration.
- A carriage capable of maintaining a fixed position on the skyline while lateral yarding up to 150 feet to either side of the skyline and be capable of passing support jacks where intermediate supports are used.

C. Recommended Yarding System

Make	Linkbelt Crane
Tower Height	50'
Skyline Length / Diameter	3/4" swedge , 1650' on yarder – 160' long splice
Mainline Length / Diameter	9/16" EIPS, 1700', all on yarder
Haulback Length / Diameter	1/2" EIPS, 2,000', all on yarder
Strawline Length / Diameter	
Carriage / Make	Acme 15
Weight	1,250 Lbs.

Other Equipment – Hardware for rigging two tailtrees, two intermediate supports, one rubber tired skidder; a small landing tractor for clearing and constructing landings; a yoader or modified loader. Blocks and straps for 2 multi-stump guyline anchors.

Note: operational periods vary depending on the activity and location of the activity (i.e. road brushing, culvert replacement, construction, falling, yarding, log haul and other associated activities). To provide a clearer understanding of when these activities are allowed on a unit by unit basis, review the last page in this document

Unit # 1 (stand # 504019), ?? acres

Legal Description: T.13S., R.9W., Sec. 18

Year of Origin: 1966

Post Harvest Stocking (Trees Per Acre) 45

This unit lies adjacent to and on the south side of the 5264 road, in the headwaters of the west fork of the Scott Creek. Four of the eleven landings are located along or on the 5264 (landings A, B, C, and D), while landing E is located at the end of an 1,020' spur to be re-opened off of the 5264. The remaining six landings (F, G, H, I, J and K) are located along or off on "temp" spurs of the 5200-390. The temp spur servicing landing E is in pretty good shape and will not take a great deal of work to make it suitable for use, while the 990' temp spur servicing landings G, I, and K is in a little rougher shape, (a plugged culvert at a stream crossing and some cracking of the road bed) and will need a greater amount of work to make it suitable for haul.

The entire unit is designed to be yarded with a cable system with landings A, B, C, G, H, I, and J planned as "yoader" landings, while landings D, E, F, and K are planned as "skyline" landings. All are planned as "fan" settings, although it may not be necessary to have more than two or three roads from some of the landings. A small area of "**downhill**" yarding is planned from landing F, and walking a loader along the 390 spur and picking up trees felled downhill to the spur is also planned. The need for using **intermediate supports** is anticipated from landings D, E, G, I and K. Tailtrees will also be necessary from nearly all landings.

Analysis results of a couple of field run profiles indicates that it will be necessary to "**buck the trees flying through the buffer**" south of landing K, to meet suspension requirements. Analysis was based on both tree length (which was unable to suspend the buffered stream) and 40' logs (which did suspend the buffered stream).

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Unit # 2 (stand # 504036), ?? acres

Legal Description: T.13S., R.9W., Sec. 18

Year of Origin: 1966

Post Harvest Stocking (Trees Per Acre) 50

This unit lies downstream of unit one and is accessed by a 2,500' grownover spur off the 5285-368 road. This grownover spur is in good shape and will take little other than clearing to make it suitable for use. The primary spur ends at landing C, while two short spurs (220' existing for landing A and 120' to be constructed for landing B) will service these other two landings.

All three landings are planned as skyline "fan" settings. For the most part tailholds will be located outside the unit boundary, on opposing slopes, although it will be necessary to use tailtrees located along the unit boundary for some of the skyline roads. Also planned is a small area of "**downhill**" yarding, which will be accomplished from landing A. Although the general area of the landings is flat ground, the majority of the unit is steep, with no streams located inside the unit.

Unit # 3 (stand # 504028), ?? acres

Legal Description: T.13S., R.9W., Sec. 21

Year of Origin: 1966

Post Harvest Stocking (Trees Per Acre) 50

This unit is the northwest unit of several connecting stands. It generally faces east and has gentle to moderate slopes. The existing "planned" haul route enters / exits along the west boundary of this unit and traverses private land (Weyerhaeuser) of which all the planned haul for units 3 thru 7 is planned.

One existing spur will be re-opened for approximately 260' to provide access to both the planned landings (A and B). These two landings are located on an old large landing area that has been used to large amounts of road waste and has regenerated with red alder. Access, egress for haul could work from either direction, alignment with the final haul road location should determine which direction the short temp spur approaches the haul road.

Landing A is planned as a "yoader" landing and will service the northern portion of the unit, while landing B is designed as a skyline landing. The southwest portion of the unit lies to the west of and above the haul route, and is "**downhill**" yarding. This necessitates the need of a haulback. A few tailtrees will be necessary from both landings, but generally the greatest number of skyline roads will anchor east of the small buffered stream to the east and tie off to stumps.

Unit # 4 (stand # 504027), ?? acres

Legal Description: T.13S., R.9W., Sec. 21

Year of Origin: 1981

Post Harvest Stocking (Trees Per Acre) 70 / 55

This unit lies east of unit 3 and west of unit 5 and generally lies on gentle ground. The 5285-384 road runs down it nearly its full length and ends at landing B (the last 250' of which is covered with road waste debris). A small buffered stream separates this unit from unit 3.

Three landings are planned for this unit, landing A, located at the end of a 250' spur is the northwest landing and designed to "yoader" yard the ground not suitable for tractor yarding. Landing B, located at the end of the 5285-384 spur is covered with road waste debris. Landing B is designed to be a "tractor landing for this unit, as well as a portion of unit 5. Landing C is located on the 5285-384 at the jct. with the spur into landings A and B of unit 5 and will serve as a tractor landing for both this unit and a small portion of unit 5.

Unit # 5 (stand # 504030), ?? acres

Legal Description: T.13S., R.9W., Sec. 21

Year of Origin: 1965

Post Harvest Stocking (Trees Per Acre) 45

This unit lies between and adjacent to units 4 and 6. Much of the unit is over gentle ground, although the southern portion covers moderate to steep ground. The unit is divided into two separate pieces by a buffered stream. A "new" temp spur 780' in length will be constructed in the northern piece to service landings A and B. This spur is over gentle ground and will be easily constructed. In the southern piece a 400' temp spur will be re-opened to service landing C, it is in good shape and will take little other than clearing to make it suitable for use

The northern portion of the unit (mostly gentle ground) is planned to be "tractor" yarded to 4 landings, with landing B of unit 4 receiving the northernmost portion of this unit, while landings A and B of this unit, will handle the most of the tractor yarding and a small amount going to landing C of unit 4 (located at the jct. of the 780' temp spur and the 384 spur). Landing B is also designed as a "skyline" landing and will service the ground to steep for tractor yarding. This will likely involve the use of tailtrees on nearly all skyline roads. Landing C is located at the end of an old grownover spur 400' in length. It is designed as a "skyline" landing and will service the majority of the southern piece of this unit. The very southern finger of this unit will be yarded to landing B of unit 6. This landing is located where the road intercepts the ridge dividing unit 5 and 6 and will yard portions of both units.

Unit # 6 (stand # 504034), ?? acres

Legal Description: T.13S., R.9W., Sec. 21 & 28

Year of Origin: 1979

Post Harvest Stocking (Trees Per Acre) 75

This unit is divided into 3 separate pieces, with the northern piece serviced by landings B, M, C and D, while the western piece will be serviced by landings E, F, G, H and I; and the southern piece being serviced by landings J, K and L. This unit has numerous buffered small streams creating a number of fingers, which in turn determine placement of landing locations to align with the fingers.

Landings B, M, C and D are located on the 5285 road, and placement of the yarder to line up with the ridges is important for yarding purposes, this is especially true of landing M, where buffered live streams to either side create a narrow neck a short distance below the landing. Landing B is designed to yard portions of both unit 5 and unit 6. Landings M, and C will also act as tractor landings for that area lying to their north (north and west of the 5285).

Landing E is located near the jct. of an old spur which will service landings F and H and is designed to “**downhill**” yard a small area located north and above the 5285-368 spur. Landings F and H are located along an old grownover spur 630’ in length. This spur runs along the west boundary and ridge top of the unit and is in good shape, requiring little other than clearing to make it suitable for use. Both landings F and H are planned as “yoader” landings. Landings G and I are located along the 5285, are planned as skyline landings and will service the area to the east of the 5285. It will be necessary to use **intermediate supports** and tailtrees from landing G to get beyond the bench, while landing I sits on the point of a ridge and tailholds for skyline roads are mostly across the buffered stream.

Landings J is located at the end of a “new” 100’ temp spur off of the 5285-360. This new temp spur traverses over gentle ground for its short length. Landing K is an old landing location on the point of a ridge, adjacent to the 360 spur. Landing L is a new landing location on the 360 spur. It may be necessary to use either “multi-stump anchors or deadmen” for the back guylines for landing L.

Unit #7 (stand # 504068), ?? acres

Legal Description: T.13S., R.9W., Sec. 21 & 28

Year of Origin: 1979

Post Harvest Stocking (Trees Per Acre) 75

This unit lies on the south side of spur road 5285-360 and is generally a steep unit, dissected by two main draws . Four spur roads and five landings are planned for this unit. Landing A lies at the end of an old tractor road 490' in length and the highest point of the unit. It is located on a broad knob and it will be necessary to construct the landing. Landing B lies at the end of a 430' old grownover spur which is in good shape and will only need clearing to make it suitable for use. Landings C and D are located along or at the end of an old grownover spur 1,230' in length. This spur is generally in good shape but will need a little more work than just clearing to make it suitable for, as some minor slumping is evident. Landing E is located at the northeast corner and near the end of an old spur 410' in length. Both the spur and landing are in good shape and little other than clearing will be necessary to make them suitable for use. It may also be necessary to use a deadman or multiple stump guylines.

Landings A and D are designed as "yoader" landings, while landings B, C and E are designed as skyline landings. Analysis results of a field run profile indicate that it will be necessary to use **intermediate supports and tailtrees** for those skyline roads proceeding down the east finger from landing E. Those may be avoided by yarding the lower portion of the finger to landings C and D, but would involve yarding through the buffer. It may also be necessary to "extra wide" lateral yarding from the eastern most skyline road that extends to the bottom of the finger.

Unit # 8 (stand # 504057), 47 acres

Legal Description: T.13S., R.9W., Sec. 22 & 27

Year of Origin: 1966

Post Harvest Stocking (Trees Per Acre) 50

This is the northern unit in the sale and lies in the Scott creek drainage on the west side of the 3420. Ten landings are planned for this unit, with six of the ten being located in or adjacent to the 3420 (landings A, B, C, D, E and F). The remaining four landings are located along two old grownover spurs (one being 2,320 feet and the other being 240 feet, both of which are in good shape with not much work other than clearing necessary).

Landing A and H are planned as skyline landings, while landings B, C, D, E and F are planned as yoader landings "parallel settings" in road 3420 and landing J is also a yoader landing but planned as a "fan" setting at the west (lower end) of the long spur. Landing G and I will serve entirely as tractor landings, as will a portion of landing J be used as a tractor landing.

Tailtrees will be frequently necessary, and analysis of a field run profile from landing A indicates it will be necessary to use intermediate supports for those landings located along the 3420 (landings A thru F as well as possibly from some of the skyline roads off of landing H).

Multi- stump guyline anchors are to be appraised for landing A the skyline landing. The plantation to the east (back guys) is younger and one stump anchor per guyline will not likely suffice, hence multi-stump anchors for the back guys.

