

**Cloverdale Thin**  
**Timber Sale**

**Logging Feasibility Report**

**North Nestucca EA**

**Hebo Ranger District**

**Siuslaw National Forest**

**Tillamook County, Oregon**

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# **Cloverdale Thin Timber Sale**

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## **Cloverdale Thin Timber Sale**

### **1. Sale Description:**

Cloverdale Thin Timber Sale is a commercial thinning sale containing approximately 190 acres. The sale area is located in sections 15, 16, 34 & 35, T4S, R10W, W.M., Tillamook County, Oregon. Forest Service roads 1107 and 1533 and numerous spur roads off them access the two units within the sale area. Road 1107 is gated and requires a key.

Douglas fir, western hemlock, red alder and Sitka spruce are the dominant species in most units. Directional felling may be required. 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 7.0". Trees less than 7.0" will be protected where practical.

The sale is designed to yard with skyline (59%) and ground-based (41%) systems.

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

A yarder that has a 50 foot tower height was chosen to run in skyline analysis. A carriage that has multi-span capability 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, the existing trees may be too small and the existing stumps may be too old to use.

A yarding system capable of lifting 20,000 pounds and transporting logs at least 1,200 feet to the landing area.

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.

Trimble GIS was used to calculate unit acres and meet Region 6 Acreage Determination Standards.

A string box was used to determine length for temporary roads.

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### **2. Resource Management Objectives:**

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

- Develop stand into late-successional habitat consistent with the Northwest Forest Plan and the Northern Coast Range Adaptive Management Area Late Successional Reserve Assessment.
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- 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.

## **Cloverdale Thin Timber Sale**

### **3. Unit Logging Summary and Yarding Method:**

Sale Name: Cloverdale Thin

Units: 233 & 333.

Ground Based Units: 233 & 333

Skyline Based Units: 233 & 333

Volume: 3,172 mmbf/ 6,089 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

Delimber

Loader/shovel

Tail tree hardware

Intermediate support rigging hardware

Chokers: Length 12', diameter ½"

Tagline: Length 100', diameter ½"

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#### **4. Line Capacities of Yarder and Proposed Carriage:**

<u>Line</u>	<u>Diameter</u>	<u>Drum Capacity</u>
Skyline	0.875	2,000 feet/EIPS
Mainline	0.625	2,300 feet/EIPS
Haulback	0.50	4,300 feet/EIPS
Strawline	n/a	
Guyline	0.625	300 feet/EIPS
Choker	0.50	
Carriage: Eagle Eaglet; 2,150 pounds		

### **Cloverdale Thin Timber Sale**

#### **5. Estimated Labor:**

<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
Landing chaser	1

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**6. Estimated daily yarding production:**

15 mbf/day net log scale

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**7. Estimated Yarding Distances:**

<u>Unit #</u>	<u>Average Yarding Distance</u>	<u>Maximum Yarding Distance</u>
233	257'	517'
333	394'	849'

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**8. Unit Summary:**

Stand/unit#	Sky Acreage	Ground Acreage	New Temp Road Length (ft)	Existing Temp Road Length (ft)	# Corridors Skyline/Groundbase	# Landings Skyline/Groundbase*
233	24	33	1,448'	5,581'	54/52	18
333	88	45	1,603'	4,838'	66/78	35
Totals	112	78	3,051'	10,419'	120/130	53

\*Multiple landings used for skyline/groundbase

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### **9. Payload Analysis Summary:**

Payload analysis calculations were based on a 0.875 diameter skyline cable and a 50 foot tower coupled with a carriage that can pass shackles and has lateral yarding capabilities.

In order to gain adequate deflection, tailtrees were used on most analyzed profiles. Additional lift can be gained in some cases by hanging across draws and up adjacent slopes.

The payload analysis was determined by using the SkylineXL 3.01 Profile Analysis program and standing skyline or multi-span skyline systems. Adequate tree sizes are available for tailtrees and intermediate supports using a rigging height of up to 30 feet. Adequate payloads equate to three average logs or two long logs (whole tree length, measured from stump cut to 6.0" top).

Net payloads to landing ranged from 3,335 lbs to 24,413 lbs.

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### **10. 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 100 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. An extra 75' of tagline may be needed on the end of the carriage choker.
10. Tractor assist may be required.

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#### **11. Logging Plan Narrative:**

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

All landings are marked with yellow tags and florescent pink flagging.

All temporary spurs (existing and new) are marked with yellow tags and solid blue/white flagging.

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 perennial streams and headwalls that exist within the units. Theses 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. Intermittent streams within units will not be buffered.

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 log suspension during whole-tree yarding. Shorter log lengths will be required over these areas.

Swing yarding may occur if purchaser elects not to replace culverts on road 2-3. Volume originally intended for landings 2E, 2F and 2G will go to 2H.

Some ground-based logging is planned in units 233 and 333. Most of the remaining units will require some loader/shovel logging along the roadway or on designated skid trails.

Directional felling may be needed in several units. Extra tagline may be needed in areas that require directional felling.

Unit 233 contains (7) half acre "gaps". Largest Doug fir in middle of gap designated with a single band of orange tracer paint.

Unit 233 contains (2) one acre "gaps". Largest Doug fir in middle of gap designated with two bands of orange tracer paint.

Units 233 & 333 have survey monuments and bearing trees. These are designated with orange tracer paint, pink flags and identified on sale area maps.

Unit 333 has old homestead and is designated with blue tags, blue flags and orange paint.

Unit 233 has a (1) acre block painted in orange tracer paint to show DXP 24' +/- 25% variance prescription (75 leave trees/acre).

Unit 333 has a (1) acre block painted in orange tracer paint to show DXP 20' +/- 25% variance prescription (105 leave trees/acre).



### Logging Systems Information

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
2A	S	P				4 TT, 20		
2B	S	P				5 TT, 20		
2C	S, GB	P				4 TT, 20		
2D	S, GB	P				3 TT, 20		
2E	S, GB	P				6 TT, 20	Yes	60, 436
2F	GB							
2G	GB							
2H	S	P				10 TT, 20	Yes	15, 490
2I	S, GB	P				3 TT, 20		
2J	S, GB	P				3 TT, 20		
2K	S, GB	P				3 TT, 20		
2L	GB							
2M	S, GB	P				7 TT, 20		
2N	GB							
2O	GB							
2P	GB							
2Q	S	P				2 TT, 20		
2R	S	P				4 TT, 20		

Key: Logging System abbreviations are Skyline (S), Ground-Based (GB), Yoader (Y), Helicopter (H), or a combination of logging systems for each landing. Guyline anchor trees abbreviations are P for plantation, M for mature, and B for both. Special anchor abbreviations are Equipment (Eq), Deadmen (D), Earth (E), guyline (G) anchor, and tailhold (T). Abbreviations for intermediate supports (IS) and tailtree (TT).

#### Unit Totals and Averages

Average Yarding Distance:	<u>257'</u>	Average Net Pound per Payload:	<u>12,113 lbs</u>
Average Mainline Tension:	<u>9,088 lbs</u>	Average Slope:	<u>45%</u>
Maximum Tagline Needed:	<u>10'</u>	Total Number of Corridors:	<u>54</u>
Maximum Yarding Distance:	<u>517'</u>	Total Number of Landings:	<u>18</u>

#### Notes

General Information: Possible option to swing yard all volume to landings 2E, 2F and 2G to landing 2H and not replace 3 culverts on road 2-3.



### Logging Systems Information

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
3A-F	S,Y, GB	P				23* TT, 20	Yes	250, 580
3G/H	S,Y, GB	P				2 4*TT, 20	Yes	360, 582
3I/J	S,Y, GB	P				1 6*TT, 20		
3K	S,Y	P				TT, 20		
3L/M/N	S,Y, GB	P				5 11*TT, 20		
3O/P/Q/S	S,Y, GB	P				18*TT, 20		
3R	S,Y	P				6 TT, 20		
3T/U/V	GB							
3W/X/Y/Z	S,Y	P				8*TT, 20		
3AA	GB							
3AB	S,Y	P				4 TT, 20		
3AC	S,Y	P				5 TT, 20		
3AD	S,Y	P				6 TT, 20		
3AE	S,Y	P				6 TT, 20		
3AF	S,Y	P				2 TT, 20		
3AG	S,Y	P				4 TT, 20		
3AH	S,Y	P				3 TT, 20		
3AI	S,Y	P				2 TT, 20		

Key: Logging System abbreviations are Skyline (S), Ground-Based (GB), Yoader (Y), Helicopter (H), or a combination of logging systems for each landing. Guyline anchor trees abbreviations are P for plantation, M for mature, and B for both. Special anchor abbreviations are Equipment (Eq), Deadmen (D), Earth (E), guyline (G) anchor, and tailhold (T). Abbreviations for intermediate supports (IS) and tailtree (TT).

#### Unit Totals and Averages

Average Yarding Distance:	<u>375'</u>	Average Net Pound per Payload:	<u>7,283 lbs</u>
Average Mainline Tension:	<u>5,670 lbs</u>	Average Slope:	<u>55%</u>
Maximum Tagline Needed:	<u>10'</u>	Total Number of Corridors:	<u>126</u>
Maximum Yarding Distance:	<u>1,185'</u>	Total Number of Landings:	<u>20</u>

#### Notes

General Information: Total 35 landings. \* Landing A: 8 TT, B: 5 TT, C: 5 TT, D: 4 TT, E: 4 TT, F: 5 TT. \*Landing H; 4 TT. \*Landing I: 3 TT, J: 3 TT. \*Landing L; 4 TT, M: 4 TT, N: 3 TT. \*Landing O: 4 TT, P: 3 TT, Q: 6 TT, S: 5 TT. \*Landing W: 2 TT, X: 3 TT, Y: 3 TT, Z: 1 TT.