BearView Thin Stewardship

Logging Feasibility Report

Millwright Beaver Land Management Project EA

Central Coast Ranger District

Siuslaw National Forest

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Summary

BearView Thin Stewardship is comprised of 9 thinning units. Current trees per acre range between 180 and 280 (TPA); based on stand-exam data. After thinning the units will have areas consisting 60 TPA. Stand exam information was used for estimated volumes. The total sale acreage is estimated at 255; total volume is estimated at 5,755MBF or 10,585 CCF. The project area is located in T. 12, 13 S., R. 11 W. Sections 1, 2, 26, 27, 35, 36.

Douglas-fir is the dominant species in all the units. As much as is feasible, hardwoods will not be felled in the units. No Pacific yew was observed during stand exams and logging systems analyses; if any Pacific yew is found during operations, none will be felled. Minimum DBH for trees to be harvested is 7 inches. Trees less than 7 inches will be protected where practical.

GIS was used to calculate the length for most roads and the acres for the units. A string box was used to determine the length for temporary roads (see Table 1.).

System road 5189 will generally require roadside brushing, grading, and additional rock.

Table 1. Estimated quantities for landings, tailtrees, intermediate supports and deadman anchors

*G = guyline anchor; T = tailhold anchor (cat tractor on existing landing is recommended)

Unit	Temporary Road Reopening (Feet)	New Temporary Road Building (Feet)	Number of Landings	Number of Tailtrees	Number of Intermediate Supports	Number of Special Anchors (G/T)*
1	2548	506	17	18	1	0
2	916	0	1	2	0	Eq. 1, G
3	2200	853	10	13	2	0
4	0	96	9	19	4	Eq. 1, G
5	904	0	3	8	0	0
8	0	0	1	0	0	0
9	2383	252	15	23	9	Eq. 1, G
10	1042	465	5	6	6	Eq. 1, G
11	1482	0	10	5	12	0
Total	11,475	2,172	71	94	34	Eq. 4, G

Note: Units 2 and 10 have landings that will require multi-stump guys anchors because of the smaller plantation behind the landing, there are stump anchors but one stump anchor per guyline will likely not suffice.

Resource Management Objectives

The stand prescriptions, unit layout, and 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.

Timber Characteristics

Refer to the cruise data for information about timber characteristics.

Recommended Logging Systems

A. Logging System Requirements

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

- Except during lateral yarding, the skyline must be capable of keeping the leading end of logs suspended above the ground during inhaul.

- Where yarding occurs across streams, the skyline system must be capable of keeping the entire length of logs fully suspended above streams during inhaul.

- Where the skyline passes through stream buffers, skyline corridors will be spaced so that no more than 20% of the existing canopy in the buffers will be removed in a given 1,000 foot reach of stream.

- Minimum skyline corridor spacing shall be 120 feet and maximum corridor width shall not exceed twelve (12) feet.

- 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.

B. Acceptable Yarding Equipment

The skyline system should be capable of transporting logs for a horizontal distance of up to 1,600 feet. A rigging length of up to 2,100 feet might be necessary to reach tailholds.

The skyline system must: (1), be capable of meeting the log suspension requirements stated above; (2), be capable of lateral yarding; and (3), be capable of being rigged in a multi-span configuration (Units 1, 3, 4, 9, 10, 11).

The carriage must be capable of maintaining a fixed position on the skyline, while lateral yarding up to 120 feet on either side of the skyline in some instances, and it must be capable of passing support jacks where intermediate supports are used.

Ground-based equipment must be able to provide suspension of the leading end of logs during skidding (units 1, 3, 4, 8, 9, 10, 11).

C. Logging System Specifications

Table 3 shows the specifications of the logging systems that were used in the analysis for this project. These systems are recommended because they are available, capable of meeting the resource management objectives and logging system requirements, reduce the number of intermediate supports needed, and are capable of doing the job economically.

Table 3. Recommended logging system specifications

Yarder	Madill 6150, SPCM
Tower height	50 feet
Skyline diameter/length/type	0.875 inches/2,000 feet/Swaged
Mainline diameter/length/type	0.625 inches/2,300 feet/Swaged
Haulback diameter/length/type	0.5 inches/4,300 feet/Swaged
Strawline diameter/length/type	N/A
Carriage	Eagle Eaglet; 1,200 pounds

Other equipment—Hardware for rigging tailtrees (2 sets) and intermediate supports (3 sets) and blocks and straps for (2 sets) multi-stump guyline anchors; crawler tractor for landing clearing; equipment for a guyline and tailhold anchors; a Yoader or Modified Loader; ground-based equipment for yarding logs on designated slopes of 30 percent or less; and a loader/shovel.

Logging Plan Narrative

This section discusses the logging and transportation plans for each unit (See Unit Summary Sheets).

A. General Information

- All unit boundaries are marked with blue-paper or aluminum tags and yellow ribbon.
- All landings are marked with yellow plastic tags, and solid blue and solid white ribbon.
- Minor clearing is required for some landings.
- Landings are located to minimize yarding over buffered streams 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 the **dry season on most temporary roads** because of the cost associated with the quantity of rock needed.
- There are a few streams and associated headwalls that exist within the units. These areas will be buffered and excluded form 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-shape 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; therefore, shorter log lengths will be required over these areas.
- Most of the units will require some loader/shovel logging along the roadway or on designated skid trails.

Skyline Profile Data and Payload Analyses (see Appendix A)

Profile and skyline payload analyses were conducted with SkylineXL_14. Adequate tree sizes are available for tailtrees and intermediate supports, using a rigging height of up to 40 feet (most profile analyses figured tailtrees and intermediate supports at a height of 20 and 30 feet), and a skyline diameters of 0.75 or 0.875 inches. Adequate payloads equate to three average logs or two long logs (whole-tree length, measured from the stump cut to a 5" top).

Equipment Access and Haul Route

The sale location and probable equipment access and haul routes are displayed on the vicinity map in the timber sale contract. No access or haul route problems are anticipated. The forest transportation planner has verified the following haul routes.

Log haul for all the units in this timber sale are planned to haul southwest on paved Forest Service Rd 5100 to LNC- 702 (Bay View road), west to HWY 101 and north to Toledo.

Appendix A

SkylineXL and Profile Data

Appendix B

Appraiser Information

Watershed—Beaver Creek and Elkhorn Creek Watersheds

Environmental Assessment- Millwright Beaver Landscape Management Project EA (August 2014) covers the sale area.

Survey monuments—see unit summary sheets and logging map.

Appendix C

Logging Plan Overlays for Aerial Photos

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	1	**Stand # :**	505087
Legal Location:	T. 13 S. R. 11 W; Sec. 2	Acres:	53
Photo Number:	1968-ETJ 2-254	Year of Origin:	1961
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin 02/2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 12.7 MBF/acre

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants	x		Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments		x	Water Systems		x
Improvements		x	Other	x	

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	non-system	130	Existing		K	5147		
B	non-system	528	Existing		L	5147		
C	non-system	375	Existing		N	5147		
D	non-system	270	New		M	5100		
E	non-system	236	New		O	5100		
F	non-system	374	Existing		P	5100		
G	non-system	544	Existing		Q	5100		
H	non-system	379	Existing					
I	non-system	218	Existing					
J	5147							

Notes

Invasives: English holly and scotch broom located during recon
Other: Located some trees near Temp Spur # 1 aluminum tags and numbered tags attached to trees
Note to Pre-Sale: Area below LND's C and D boundary should be on the slope break; do not include area below slope break towards live stream (GB area; too few acres to set-up yarder)

Logging Systems Information

Unit # 1

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	S	P	No	none	none	2 TT; 10, 20	No	
B	GB							
C	GB							
D	GB							
E	S, GB	P	No	none	none	2 TT; 20,30	No	
F	Y, GB	P	No	none	none	1 TT; 20	No	
G	GB							
H	Y, GB	P	No	none	none	none	No	
I	GB							
J	GB							
K	Y, GB	P	No	none	none	none	No	
L	S	P	No	none	1 IS; 20	2 TT; 20,30	No	
N	Y	M	No	none	none	2 TT; 10,30	No	
M	Y	P	No	none	none	1 TT; 10	No	
O	Y	P	No	none	none	2 TT; 10	No	
P	Y	P	No	none	none	3 TT; 10,15,3(	No	
Q	S	P	Yes	none	none	3 TT; 20,30	No	

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:	450	Average Net Pound per Payload:	4000
Average Mainline Tension:	3500	Average Slope:	40
Maximum Tagline Needed:	none	Total Number of Corridors:	29
Maximum Yarding Distance:	1000	Total Number of Landings:	17

Notes

Profiles were analyzed using GIS and LIDAR data **
Ground Based Yarding Summary: GB
Acres: 23 Ave
Skidding Distance: 100' External Sidding Distance: 700'
Tractor/shovel log using existing skid trails when/where possible: Favorable and adverse skidding required ranging from 10-35% slope
Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%. Areas of
"tip & winch" or cable yarding where directional felling and using a shovel or endling with tractor to reach volume down to the road or landing. **
A haulback line may be required for yarding from LND A

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	2	**Stand # :**	505086
Legal Location:	T.13S., R11W. Sec. 2	Acres:	4
Photo Number:	1968 ETJ-2-254	Year of Origin:	1966
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 12.69

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants	x		Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments		x	Water Systems		x
Improvements		x	Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	non-system	916	Existing					

Notes

Invasives: Englinsh holly and H. blackberry on Temp Spur #1 accessing LND A

Logging Systems Information							Unit # 2	
Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	S	P	Yes	Eq. 1	none	2 TT; 15,20	No	

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:	350	Average Net Pound per Payload:	6100
Average Mainline Tension:	4800	Average Slope:	55
Maximum Tagline Needed:	none	Total Number of Corridors:	6
Maximum Yarding Distance:	450	Total Number of Landings:	1

Notes

LND A has a small plantation behind with small larger stumps with some soundness; tieback guys or equipment anchors may be necessary for a skyline yarder system Profiles were analyzed using GIS and LIDAR data **

Some tailholds/tailtrees are located outside of stand in Unit 3 and close to Unit 4 across the 5100 392

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	3	**Stand # :**	505083
Legal Location:	T. 12,13 S., R 11 W. Sec. 2, 35	Acres:	31
Photo Number:	1189-83	Year of Origin:	1967
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 13.83 MBF/acre

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants	x		Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments	x		Water Systems		x
Improvements		x	Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	non-system	500	Existing					
B	non-system	294	New					
C	non-system	311	Existing					
D	non-system	152	New					
E	non-system	385	Existing					
F	non-system	95	Existing					
G	non-system	143	Existing					
H	non-system	78	Existing					
I	non-system	688	Existing					
J	non-system	407	New					

Notes

Invasives: English holly located on spurs and in the unit

Survey Monument: Located brass cap east of LND A **

Notes: A field trip was taken with the district hydrologist and road transportation planner to look at Temp Spur # 3 to address water issues with the spur; hydrologist was comfortable with using the road based on transportation planner's reccommendations for work to be done to spur

Logging Systems Information

Unit # 3

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	S	P	No	none	none	1 TT; 15	No	
B	S	B	No	none	none	none	No	
C	Y, GB	P	No	none	1 IS; 20	2 TT; 10	No	
D	Y, GB	P	No	none	none	3 TT; 10,30	No	
E	Y	P	No	none	none	1 TT; 20	No	
F	S	P	No	none	1 IS; 20	2 TT; 30	No	
G	Y	P	No	none	none	2 TT; 20,30	No	
H	Y, GB	P	No	none	none	1 TT; 10	No	
I	Y, GB	P	No	none	none	none	No	
J	Y, GB	P	No	none	none	1 TT; 20	No	

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:	360	Average Net Pound per Payload:	9000
Average Mainline Tension:	5500	Average Slope:	45
Maximum Tagline Needed:	none	Total Number of Corridors:	25
Maximum Yarding Distance:	1000	Total Number of Landings:	10

Notes

Note to Pre-Sale; when locating unit boundary leave the boundary on the slope break near LND E and G; this is a bench suitable for GB yarding

** Opportunity to log area below LND E from LND F if suitable equipment is used There is a mix of radial and parallel settings planned for this unit; reccommended based on landing locations. **

All profiles were analyzed with GIS and LIDAR data ***

Ground Based Yarding Summary: GB

Acres: 8 Ave Skidding Distance: 100' External Sidding Distance: 400' Tractor/shovel log using existing skid trails when/where possible: Favorable and adverse skidding required ranging from 10-35% slope

Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%.

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	4	**Stand # :**	505131
Legal Location:	T. 12, 13 S. R. 11 W. Sec. 1,2,35,36	Acres:	43
Photo Number:	1189-183	Year of Origin:	1967
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 12.69

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		
Invasive/Sensitive Plants		x	Heritage Sites		
Dump Sites		x	Meadows		
Survey Monuments	x		Water Systems		
Improvements		x	Other		

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	5100		Existing					
B	5100		Existing					
C	5100		Existing					
D	5100		Existing					
E	5100		Existing					
F	5100		Existing					
H	5100392		Existing					
I	non-system		Existing					
J	non-system	96	New					

Notes

Survey Monuments: Located bearing trees close to the 5100; was unable to locate brass cap
Note: Road length for LND I is calculated with Temp Spur #1 Unit 5

Logging Systems Information

Unit # 4

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	Y,GB	P	No	none	2 IS; 20,30	3 TT; 10,20,30	No	
B	Y	P	No	none	1 IS; 20	3 TT; 10, 20	No	
C	Y,GB	P	No	none	none	2 TT; 20, 30	No	
D	Y	P	No	none	none	1 TT; 20	No	
E	S	P	No	none	1 IS; 20	3 TT;20, 30	No	
F	S	P	No	none	none	3 TT;20, 40	No	
H	Y,GB	P	No	Eq. 1, G	none	3 TT; 20,30	No	
I	Y	P	No	none	none	1 TT; 10	No	
J	Y	P	No	none	none	none	No	

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:	300	Average Net Pound per Payload:	5000
Average Mainline Tension:	3500	Average Slope:	45
Maximum Tagline Needed:	none	Total Number of Corridors:	34
Maximum Yarding Distance:	1100	Total Number of Landings:	9

Notes

LND "F"- Alder pocket located below LND that will need to yard through All profiles were analyzed using GIS and LIDAR data **

Ground Based Yarding Summary: GB

Acres: 6 Ave

Skidding Distance: 120' External Sidding Distance: 300'

Tractor/shovel log using existing skid trails when/where possible :Mostly favorable skidding required ranging from 10-30% slope Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%. Areas of "tip & winch" or cable yarding where directional felling and using a shovel or endling with tractor to reach volume down to the road or landing.

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # : 5 **Stand # :** 503082

Legal Location: T. 12, 13 S. R. 11 W. Sec. 1, 36 Acres: 6

Photo Number: 1968 ETJ 2-254 Year of Origin: 1964

Unit Designation: DxD Residual TPA Post Harvest: CT-60 TPA

Recon by/Date: K. Wangerin February 2015

Volume Information

Source of volume estimate: Estimated Volume:

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants		x	Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments		x	Water Systems		x
Improvements		x	Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	non-system	225	Existing					
B	non-system	335	Existing					
C	non-system	344	Existing					

Notes

LND "I" of Unit 4 is located on Temp Spur #1 for Unit 5 It is possible to yard Unit 5 volume to LND J of Unit 4 if suitable equipment is used

Logging Systems Information

Unit # 5

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	Y	P	No	none	none	2 TT; 10	No	
B	Y	P	No	none	none	3 TT; 10,20	No	
C	Y	P	No	none	none	3 TT; 20,30	No	

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:	200	Average Net Pound per Payload:	7000
Average Mainline Tension:	7000	Average Slope:	55
Maximum Tagline Needed:	none	Total Number of Corridors:	9
Maximum Yarding Distance:	475	Total Number of Landings:	3

Notes

All profiles were analyzed using GIS and LIDAR data ***

Radial settings have been analyzed for and are reccommended for this unit; opportunities will be limited for parallel sets due to limited landing locations

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	8	**Stand # :**	505080
Legal Location:	T.12S. R11W. Sec. 36	Acres:	1
Photo Number:	179-31	Year of Origin:	1963
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 12.69 MBF/acre

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants		x	Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments		x	Water Systems		x
Improvements		x	Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	5100		Existing					

Notes

Ground Based Yarding Summary:

GB Acres: 1

Ave Skidding Distance: 100' External Sidding Distance: 300'

Tractor/shovel log using existing skid trails when/where possible : Favorable and Adverse skidding required ranging from 10-30% slope

Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%.

Logging Systems Information							Unit # 8	
Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	GB	N/A	No	N/A	N/A	N/A	No	

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:
Average Mainline Tension:
Maximum Tagline Needed:
Maximum Yarding Distance:

Average Net Pound per Payload:
Average Slope:
Total Number of Corridors:
Total Number of Landings: 1

Notes

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	9	**Stand # :**	505079
Legal Location:	T.12S. R11W. Sec. 35, 36	Acres:	53
Photo Number:	179-31	Year of Origin:	1961
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 13.83

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants	x		Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments	x		Water Systems		x
Improvements			Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	5189		Existing		K	non-system	339	Existing
B	5189		Existing		L	5189		Existing
C	non-system	144	New		M	non-system	108	New
D	5189		Existing		N	5189		Existing
E	5189		Existing		O	5189		Existing
F	non-system	462	Existing					
G	non-system	450	Existing					
H	non-system	298	Existing					
I	non-system	697	Existing					
J	non-system	137	Existing					

Notes

Invasives: English holly located within unit Survey Monument: FS/PVT boundary marked with metal posts and yellow FS signs; After transition meeting it was determined that this line is old and that it is actually FS land behind this line aquired at some point. The signs are still in place but should be removed. Reccommend using radial pattern sets from the skyline LNDs over parallel sets due to location and limited availablity of landing locations. All profiles were analyzed using GIS and LIDAR data

Logging Systems Information

Unit # 9

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	GB							
B	GB							
C	Y,GB	P	No	none	none	1 TT; 30	No	
D	GB							
E	S	P	No	none	none	none	No	
F	Y	P	No	none	none	2 TT; 10	No	
G	S	P	No	none	none	2 TT; 10	No	
H	S	P	No	none	1 IS; 20	2 TT; 10,30	No	
I	S	P	No	none	2 IS; 20	1 TT; 30	No	
J	S	P	No	none	1 IS; 20	6 TT;10,20,30	No	
K	Y	P	No	Eq. 1, G	1 IS; 20	3 TT; 20,30	No	
L	GB							
M	Y	P	No	none	4 IS; 20,30	5 TT;20,30,40	No	
N	Y	P	No	none	none	none	No	
O	Y	M	No	none	none	1 TT; 40	No	

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:	400	Average Net Pound per Payload:	7000
Average Mainline Tension:	6500	Average Slope:	50
Maximum Tagline Needed:	none	Total Number of Corridors:	42
Maximum Yarding Distance:	700	Total Number of Landings:	15

Notes

Ground Based Yarding Summary:

GB Acres: 12

Ave Skidding Distance: 120' External Sidding Distance: 500'

Tractor/shovel log using existing skid trails when/where possible : Favorable and Adverse skidding required ranging from 10-35% slope

Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%.

Areas of "tip & winch" or cable yarding where directional felling and using a shovel or endling with tractor to reach volume down to the road or landing.

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	10	**Stand # :**	505070
Legal Location:	T.12S. R11W. Sec. 26	Acres:	19
Photo Number:	0672-63	Year of Origin:	1969
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 13.83 MBF/acre

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants	x		Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments		x	Water Systems		x
Improvements		x	Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	non-system	223	Existing					
B	non-system	140	New					
C	non-system	325	New					
D	non-system	689	Existing					
E	non-system	130	Existing					

Notes

Invasives: English holly and H. blackberry located on Temp Spur #1 and Temp Spur #4
Temp Spur #1: Total Length: 2766'
Temp Spur #4: Total Length: 819'
All profiles were analyzed using GIS and LIDAR data; LND E had one profile ground truthed

Logging Systems Information							Unit # 10	
Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	S	B	No	none	1 IS; 20	none	No	
B	Y,GB	B	No	none	none	none	No	
C	Y,GB	P	No	none	2 IS; 20	2 TT; 20,30	No	
D	Y,GB	P	Yes	none	2 IS; 20,30	3 TT;20,30,40	No	
E	S	P	Yes	Eq. 1, G	1 IS; 30	1 TT; 40	Yes	350/1750

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:	400	Average Net Pound per Payload:	6000
Average Mainline Tension:	4400	Average Slope:	50
Maximum Tagline Needed:	none	Total Number of Corridors:	13
Maximum Yarding Distance:	1600	Total Number of Landings:	5

Notes

Ground Based Yarding Summary:

GB Acres: 2

Ave Skidding Distance: 120' External Sidding Distance: 400'

Tractor/shovel log using existing skid trails when/where possible : Favorable and Adverse skidding required ranging from 10-30% slope

Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%.

BearView Thin STWD Unit Summary Sheet

Central Coast Ranger District

General Information

Unit # :	11	**Stand # :**	505064
Legal Location:	T.12S. R11W. Sec. 26	Acres:	45
Photo Number:	0672-63	Year of Origin:	1970
Unit Designation:	DxP	Residual TPA Post Harvest:	CT-60 TPA
Recon by/Date:	K. Wangerin February 2015		

Volume Information

Source of volume estimate: Stand Exam Estimated Volume: 17.43 MBF/acre

Special Considerations

	Yes	No		Yes	No
Power Lines		x	Fences		x
Invasive/Sensitive Plants	x		Heritage Sites		x
Dump Sites		x	Meadows		x
Survey Monuments	x		Water Systems		x
Improvements		x	Other		x

Road and Landing Information

Landing	Road Type	Road Length	Road Status		Landing	Road Type	Road Length	Road Status
A	non-system	273	Existing					
B	non-system	163	Existing					
C	non-system	211	Existing					
D	non-system	525	Existing					
E	non-system	149	Existing					
F	5189							
G	5189							
H	5189							
I	non-system	161	Existing					
J	5189							

Notes

Invasives: English holly within unit

Monuments: Located 1/4 section corner brass cap

Temp Spur #1 total length: 1321'

Survey **

Logging Systems Information

Unit # 11

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	S	P	No	none	5 IS; 30	2 TT; 30,40	Yes	7/1800
B	S	P	No	none	4 IS; 30	1 TT; 40	No	
C	S, GB	P	No	none	1 IS; 20	none	No	
D	GB						No	
E	Y	P	No	none	none	1 TT; 20	No	
F	Y	P	No	none	none	none	No	
G	Y	P	No	none	2 IS; 20	1 TT; 20	No	
H	Y	P	No	none	none	none	No	
I	Y	P	No	none	none	none	Yes	42/990
J	Y	P	No	none	none	none	No	

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:	600	Average Net Pound per Payload:	8000
Average Mainline Tension:	6500	Average Slope:	55
Maximum Tagline Needed:	none	Total Number of Corridors:	22
Maximum Yarding Distance:	1200	Total Number of Landings:	10

Notes

Ground Based Yarding Summary:

GB Acres: 2

Ave Skidding Distance: 100' External Sidding Distance: 500'

Tractor/shovel log using existing skid trails when/where possible : Favorable and Adverse skidding required ranging from 10-30% slope

Some endlining may be required up to 75-100' between skidtrails to reach directionally felled timber or areas of slopes greater than 30%. Areas of "tip & winch" or cable yarding where directional felling and using a shovel or endling with tractor to reach volume down to the road or landing.