

Panther Thin Stewardship Timber Sale

Logging Feasibility Report

Salmon-Neskowin EA

Lincoln County, Oregon

Hebo Ranger District

Siuslaw National Forest

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Panther Thin Stewardship Timber Sale

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Panther Thin Stewardship Timber Sale

Sale Description

Panther Thin Stewardship Timber Sale is a commercial thinning sale with 40-50 year old timber. The sale consists of 6 harvest units with a total of approximately 237.44 acres. Unit acres do not include road acres for main 4 digit roads. The sale area is located in sections 21, 26, 27, T6S, R10W, W.M., Lincoln County, Oregon. The sale is located on Forest Service roads #1861 and 1888, and numerous spurs roads.

Douglas fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*) are the dominant species in all harvest units. Douglas fir, western hemlock, red alder (*Alnus rubra*) and Sitka spruce (*Picea sitchensis*) are the harvest species for this sale. As much as feasible big leaf maple will not be felled in the units. Pacific yew was not identified in any of the 8 harvest units during stand exams, cruising and logging systems analysis. Pacific yew found during logging operations will not be felled. Minimum DBH (diameter breast height) for trees to be harvested is 7 inches. Live trees less than 7 inches will be protected where practical.

Of the 237.44 total harvestable acres, 155.33 (65.4%) is designed as skyline operations and 82.11 (34.6%) is designed as ground-based operations.

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

Tail-tree anchors are necessary for most of the skyline corridors. Multiple stump guyline anchors may be needed for some landings located adjacent to younger stands. Intermediate support trees are necessary for several corridors.

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

ArcGIS (Ver. 10) along with Trimble GPS is used to calculate the harvest unit acres and existing road lengths. Temporary road lengths determined by stringbox.

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Resource Management Objectives

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

- Accelerate the development of late-successional forest characteristics in managed stands by thinning heavily stocked stands to maintain stand health, promote tree growth, and enhance stand diversity.
- Manage riparian reserves consistent with the Northwest Forest Plan and Aquatic Conservation Strategy measures.
- Protect water quality and fish habitat.
- Minimize soil disturbance during all phases of harvest activity.
- Protect T&E wildlife species by implementation of operating seasons.

Panther Thin Stewardship Timber Sale

Unit Logging Summary and Yarding Method

Sale Name: Panther Thin

Units: 20, 22, 25, 29, 30, 31

Skyline Based Units: 20, 22, 25, 29, 30, 31

Ground Based Units: 20, 22, 25, 29, 30, 31

Volume: 3.9 mmbf/, 7,731 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 12ft, diameter ½”

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	0.5	
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>
20	437	1,004
22	497	1,228
25	400	1,180
29	413	631
30	503	801
31	455	1,292

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Unit Summary

<u>Stand/unit#</u>	<u>Sky Acreage</u>	<u>Ground Acreage</u>	<u>New Temp Road Length (ft)</u>	<u>Existing Temp Road Length (ft)</u>	<u># Corridors Skyline</u>	<u># Landings Skyline/Groundbase*</u>
20	70.01	28.38	410'	1,773'	62	(Total 36) 30/6
22	26.87	9.23		723'	26	(Total 6) 6/6
25	18.20	14.70	48'	884'	17	(Total 14) 11/3
29	4.45	5.95		973'	10	(Total 5) 4/5
30	15.96	21.47		412'	17	(Total 15) 7/8
31	19.84	2.38	271'		18	(Total 9) 7/2
TOTALS	155.33	82.11	729'	4,765'	150	85

*Landings maybe used simultaneously for skyline and ground-base operations.

Panther Thin Stewardship Timber Sale

Payload Analysis Summary

Payload analysis calculations are 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, tailhold anchors 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 3.0 Profile Analysis program and a standing skyline system. Adequate tree sizes are available for tailhold 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" top).

Net payloads to landing ranged from 6,418 lbs to 16,839 lbs.

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CT6.42# Contract Provisions

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 of the log(s) 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 unit boundaries, 50 feet of tailhold trees, and 50 feet of tower position.
4. Skyline corridors will be spaced no closer than 125 feet or no greater than 150 feet at the tailhold tree. Where situations warrant changes to the corridor spacing, the Forest Service will review and make a determination on a case by case basis.
5. When skyline, haulback or other cable pass through areas of residual trees or reproduction, lines shall be pulled out of the residual trees or reproduction area prior to restringing the next skyline corridor.

6. Skyline corridors shall be as narrow as possible but not to exceed 12 feet in width.
7. Location of all skyline corridors shall be agreed and approved by the Forest Service 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 must be able to maintain a fixed position on the skyline during lateral yarding and be able to pass over intermediate supports. The carriage must be capable of lateral yarding up to 75 feet from skyline corridor.
10. Tractor assist may be required on some temporary roads.

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Logging Plan Narrative

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

All leave trees and leave tree clumps are marked with orange tracer paint (units 25 & 29).

All landings and roads are marked with yellow plastic 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 by a District hydrologist and the Forest transportation planner.

Log haul will be limited to the **dry season period on most temporary roads**. Any changes must be approved by the Forest Service prior to hauling.

Streams and headwalls may exist within the harvest units. These areas are buffered and excluded from the harvest units. Buffer boundaries are 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.

Yarding over stream buffers or riparian areas without adequate deflection may require shorter log lengths to obtain full suspension of logs during whole-tree yarding.

Ground-based logging is planned in units 20, 22, 25, 29, 30 and 31. Most of the remaining units will require some loader/shovel logging along the roadway or on designated skid trails.

Survey boundary monuments in units 20, 22, 25 and 29 are designated with orange boundary markers. Bearing trees are marked with a red painted band and metal bearing tags.

Panther Thin STWD Unit Summary Sheet

Hebo Ranger District

General Information

Unit # : 20 **Stand # :** 302020
 Legal Location: S26/27, T6S, R10W, W.M., Lincoln Co., Oregon Acres: 98.39
 Photo Number: 35-11A 44/45 Residual TPA Post Harvest: n/a
 Silvicultural Prescription: DxD 15' Residual TPA Post DWD & Snags: n/a
 Recon by/Date: Matt Ruedy, September - October 2012

Volume Information

Source of volume estimate: Cruise Estimated Volume: 1,308 mbf

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	Existing or New		Landing	Road Type	Road Length	Existing or New
A,B	1861112		Existing		U,V	1861111		Existing
C,D	1861112		Existing		W,X	1861111		Existing
E,F	1861112		Existing		Y,Z	1861111		Existing
G,H	1861112		Existing		AA,BB	1861111		Existing
I,J	1861112		Existing		CC,DD	1861111		Existing
K,L	1861112		Existing		EE,FF	1861111		Existing
M,N	1861112		Existing		GG	non-system	734'	Existing
O,P	1861112		Existing		HH	non-system	326'	Existing
Q,R	1861111		Existing		II		201'	New
S,T	1861111		Existing		JJ		168'	New

Notes

Logging Systems Information

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A-P	S/GB/Y	P	Yes			TT, 20		
Q-Z	S/GB/Y	P	Yes			TT, 20		
AA	S/Y	P	Yes			TT, 20		
BB	S/Y	P	Yes			TT, 20		
CC	S/Y	P	Yes			TT, 20		
DD	S/Y	P	Yes			TT, 20	Yes	330, 605
EE	GB/Y	P	Yes			TT, 20		
FF	GB/Y	P	Yes			TT, 20		
GG	S/Y	P	Yes			TT, 20	Yes	135, 900
HH	S/Y	P	Yes			TT, 20		
II	S/Y	P	Yes			TT, 20		
JJ	S/Y	P	Yes			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>437'</u>	Average Net Pound per Payload:	<u>8,760 lbs</u>
Average Mainline Tension:	<u>5,924 lbs</u>	Average Slope:	<u>45%</u>
Maximum Tagline Needed:	<u>8'</u>	Total Number of Corridors:	<u>62</u>
Maximum Yarding Distance:	<u>1,004'</u>	Total Number of Landings:	

Notes

General Information: Total number of landings is 36.

Panther Thin STWD Unit Summary Sheet

Hebo Ranger District

General Information

Unit # : 22 **Stand # :** 302022
 Legal Location: S27, T6S, R10W, W.M., Lincoln Co., Oregon Acres: 36.1
 Photo Number: 35-11A-45 Residual TPA Post Harvest: n/a
 Silvicultural Prescription: DxD 15' Residual TPA Post DWD & Snags: n/a
 Recon by/Date: Matt Ruedy, September - October 2012

Volume Information

Source of volume estimate: Cruise Estimated Volume: 530 mf

Special Considerations

	Yes	No		Yes	No
Power Lines:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fences:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Invasive/Sensitive Plants:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heritage Sites:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dump Sites:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Meadows:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Survey Monuments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Water Systems:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Improvements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Road and Landing Information

Landing	Road Type	Road Length	Existing or New		Landing	Road Type	Road Length	Existing or New
A	1888111		Existing					
B	1888111		Existing					
C	1888111		Existing					
D	1888111		Existing					
E	1888111		Existing					
F	1888111		Existing					

Notes

Logging Systems Information

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
A	S/Y	P	Yes			TT, 20		
B	S/Y	P	Yes			TT, 20		
C	S/Y	P	Yes			TT, 20		
D	S/Y	P	Yes			TT, 20		
E	S/Y	P	Yes			TT, 20		
F	S/Y	P	Yes			TT, 20		
G	S/Y	P	Yes			TT, 20		
H	GB/Y	P	Yes			TT, 20		
I	GB/Y	P	Yes			TT, 20		
J	GB/Y	P	Yes			TT, 20		
K	GB/Y	P	Yes			TT, 20		
L	S/GB/Y	P	Yes			TT, 20		
M	S/GB/Y	P	Yes			TT, 20	Yes	125, 403
N	S/GB/Y	P	Yes			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>397'</u>	Average Net Pound per Payload:	<u>12,300 lbs</u>
Average Mainline Tension:	<u>3,090 lbs</u>	Average Slope:	<u>35%</u>
Maximum Tagline Needed:	<u>8'</u>	Total Number of Corridors:	<u>17</u>
Maximum Yarding Distance:	<u>1,180' (*)</u>	Total Number of Landings:	<u>14</u>

Notes

General Information: Unit has orange banded gap trees and gap clumps. (*)Long corridors from landing 25-I can probably be eliminated by using landings 25A,B,C. Average distance will be about 600'. Due to long skidding distances off landing 25M, a yoader could be walked farther down ridge with little ground damage.

Logging Systems Information

Landing	Logging System Type	Guyline Anchor Trees	Multiple Guy Anchors	Special Anchors	Intermediate Supports	Tailtrees	Logging Profiles Run and Azimuth/Length	
B	S/Y	P	Yes			TT, 20		
C	GB/Y	P	Yes			TT, 20	Yes	230, 675
D	GB/Y	P	Yes			TT, 20		
E	GB/Y	P	Yes			TT, 20		
F	GB/Y	P	Yes			TT, 20		
G	GB/Y	P	Yes			TT, 20		
H	GB/Y	P	Yes			TT, 20		
I	GB/Y	P	Yes			TT, 20		
J	GB/Y	P	Yes			TT, 20		
K	GB/Y	P	Yes			TT, 20		
L	S/GB/Y	P	Yes			TT, 20		
M	S/GB/Y	P	Yes			TT, 20		
N	S/GB/Y	P	Yes			TT, 20		
O	GB/Y	P	Yes			TT, 20	Yes	255,1,292
P	S/GB/Y	P	Yes			TT, 20		

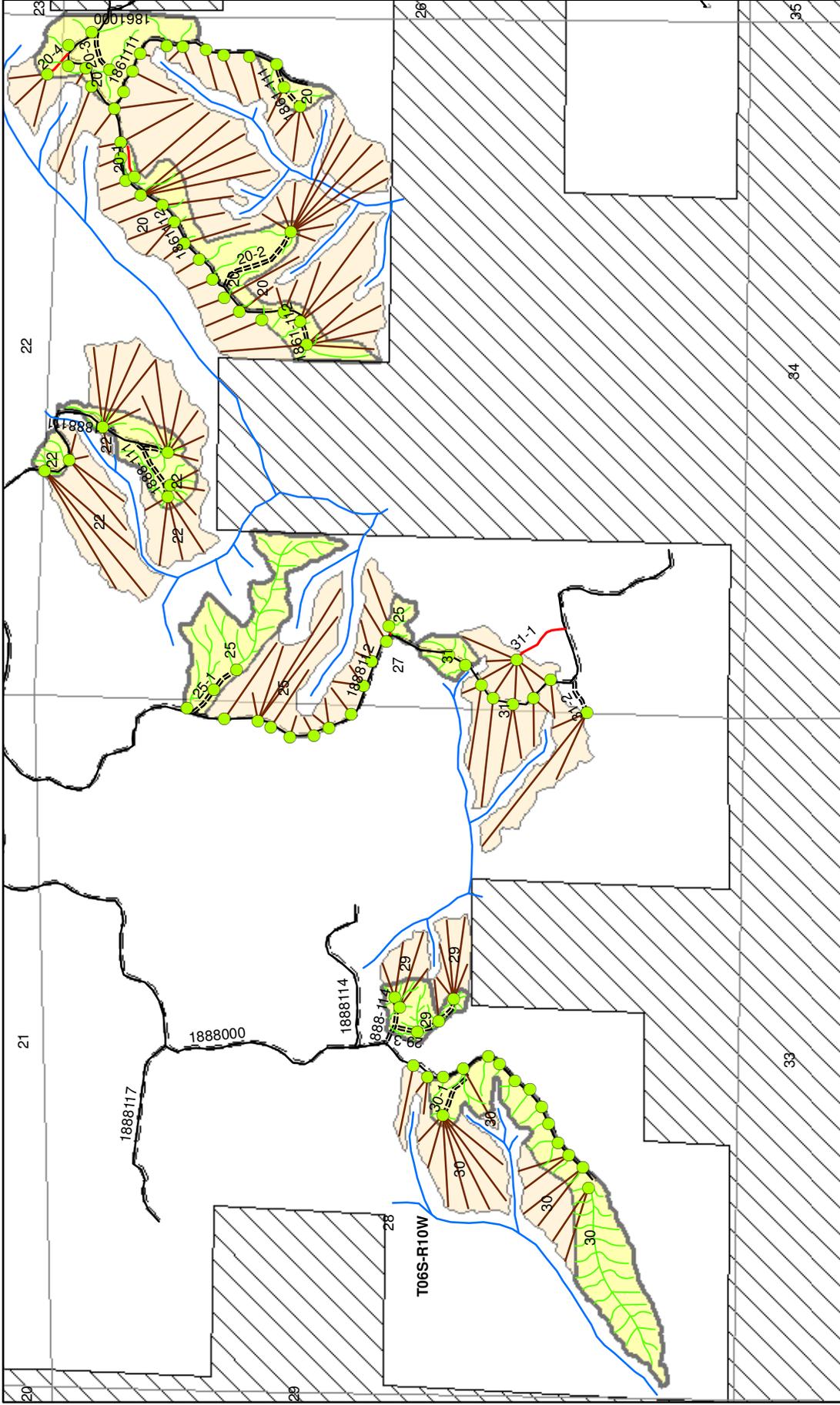
Key: Logging System abbreviations are Skyline (S), Ground-Based (GB), Yoader (Y), Helicopter (H), or a combination of logging systems for each landing. Guyline anchor trees abbreviations are P for plantation, M for mature, and B for both. Special anchor abbreviations are Equipment (Eq), Deadmen (D),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

Unit Totals and Averages

Average Yarding Distance:	<u>503'</u>	Average Net Pound per Payload:	<u>6,418 lbs</u>
Average Mainline Tension:	<u>4,793 lbs</u>	Average Slope:	<u>35%</u>
Maximum Tagline Needed:	<u>8,</u>	Total Number of Corridors:	<u>17</u>
Maximum Yarding Distance:	<u>801'</u>	Total Number of Landings:	<u>15</u>

Notes

General Information: Ground west of landing 30-O under 30% slope. Equipment can be walked out to minimize long skidding distances.



Panther Thin STWD Logging Systems Map

Legend

-  Panther Thin STWD New Temp Road
-  Panther Thin STWD Existing Roads
-  Panther Thin STWD actual stream
-  Groundbase system
-  Skyline system
-  Panther Thin STWD Landing
-  Panther Thin STWD Skidroads
-  Panther Thin STWD Corridor

