"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Cost Summary
Middle Green Thin
Sale 341-02-01

District: West Oregon **Date:** 1/22/02

	Conifer	Hardwood	Total
Gross Timber Sale Value	$263,407.50	$0.00	$263,407.50
		Project Work	($121,151.00)
		Advertised Value	$142,256.50

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Timber Description
Middle Green Thin
Sale 341-02-01

District: West Oregon

Location: Section 7, T10S, R7W, W.M.; Sections 1 & 12, T10S, R8W, W.M., Polk County; and Sections 12 & 13, T10S, R8W, W.M., Lincoln County

Date: 1/22/02 **Stand Stocking:** 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	12	0	96

Volume by Grade	Douglas - Fir	Total
2S	279	279
3S	703	703
4S	168	168
Total	1,150	1,150

Comments: Pond Values Used: 4th Quarter 2001

Other Costs With P&R:
Firewood Sort = $400
Down Wood Creation = $400
Snag Creation = $3,300
Machine Scarification = $2,050
Other Costs Without P&R:
Extra Scaling Costs = $2,300

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Logging Conditions
Middle Green Thin
Sale 341-02-01

Combination#: 1 Douglas - Fir 70.00%

Yarding Distance: Medium (800 ft) **Downhill Yarding** No

Logging System: Cable: Medium Tower >40 - <70 **Process:** Manual Delimbing

Tree Size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

Loads/Day: 5 **Bd. Ft./Load:** 3,700

Cost/MBF: $179.28

Machines:

Log Loader (A)

Tower Yarder (Medium)

Combination#: 2 Douglas - Fir 30.00%

Yarding Distance: Short (400 ft) **Downhill Yarding** No

Logging System: Track Skidder **Process:** Manual Falling/Delimbing

Tree Size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

Loads/Day: 6 **Bd. Ft./Load:** 3,500

Cost/MBF: $155.50

Machines:

Log Loader (B)

Track Skidder

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Logging Costs
Middle Green Thin
Sale 341-02-01

Date: 1/22/02

Operating Seasons: 1.0 **Profit & Risk:** 15%

Project Costs: $121,151 **Other Costs (P/R):** $6,150

Slash Disposal: $0 **Other Costs:** $2,300

Road Maintenance: $0.00

Miles of Road			
Dirt	**Rock (Contractor)**	**Rock (State)**	**Paved**
0.2	2.5	0.0	0.0

Hauling Costs

Species	$/MBF	Trips/Day	MBF/Load
Douglas - Fir	$0.00	3.0	3.5

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Logging Costs Breakdown
Middle Green Thin
Sale 341-02-01

Costs	Douglas - Fir
Logging	172.15
Road Maintenance	1.42
Fire Protection	2.36
Hauling	45.63
Other (P/R appl.)	5.35
Profit & Risk	34.04
Slash Disposal	0.00
Scaling	2.00
Other	2.00
Total	264.95

Amortization	0.00
Pond Value	494.00
Stumpage	229.05
Amortized	0.00

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Summary Middle Green Thin Sale 341-02-01

Amortized

	Douglas - Fir
MBF	0.00
Value	0.00
Total	0.00

Unamortized

	Douglas - Fir
MBF	1,150.00
Value	229.05
Total	263,407.50

Gross Timber Sale Value

Recovery $263,407.50

Prepared by: Nate Kennedy Date: 1/22/02

District: West Oregon Phone: (541) 929-3266

SUMMARY OF ALL PROJECT COSTS

Sale Name: Middle Green Thin **Date:** January 2002

Project #1 - New Construction

Road Segment		Length	Cost	
E1 to E2		2.0 sta	$317	
G1 to G2		2.5 sta	$2,449	
H to H1		2.7 sta	$2,654	
I to I1		7.6 sta	$6,848	
	TOTALS	14.8 sta		$12,268

Project #2 - Improvements

Road Segment		Length	Cost	
A to J		193.8 sta	$43,418	
F to F2		14.5 sta	$6,685	
G to G5		40.9 sta	$2,021	
Additional Grading	F1-F3 & G3-G4	22.2 sta	$174	
	TOTALS	271.4 sta		$52,298

Project #3 - Replace stream crossing structure @ Pt C $43,521

Project #4 - Vacate road between Pts K to L $8,283

Project #5 - Post Harvest Activities
Landing patch rock and tank traps $2,743

Move in	Cost	On-site move	
Crawler tractor, D-7 or equiv.	$387		
Grader, Cat 14-G or equiv.	$241		
Dump truck, 10cy or equiv. (3)	$218		
Water Truck	$158		
Backhoe, Case 580 or equiv.	$241		
Vibratory roller	$241	$19	
Excavator, Cat 225 or equiv.	$533		
		TOTAL	$2,038

GRAND TOTAL **$121,151**

Compiled by C. Humcke Date 01/14/2002

TIMBER SALE SUMMARY

Sale Name: Middle Green Thin

Sale Type: Commercial thinning harvest; 142 acres net; recovery sale; 98% BOF and 2% CSL.

Sale Area: Portions of Section 7, T10S, R7W, & Sections, 1 and 12, T10S, R8W, W.M., Polk County; and Sections 12 and 13, T10S, R8W, W.M., Lincoln County.

Access: Access to the sale area from Philomath is proceed west 11 miles on Highway 20 to Blodgett. Turn right onto Summit Highway (Route 180) and go 7.4 miles to Nashville. Turn right onto Rock Creek road (County Road 410) and go 3 miles to Green Mountain road. Turn right and follow Green Mountain road approximately 2.5 miles to the south edge of the timber sale.

Boundaries: The timber sale area is posted with "Timber Sale Boundary" signs and fluorescent pink flagging. Portions of timber sale boundaries adjacent to property line are marked with fluorescent red paint in addition to signs and flagging. Where area boundaries are type breaks, the boundaries are not posted. Patch cut boundaries are marked with "Area Boundary" signs and blue/white candy-striped flagging. Boundaries of type F stream buffers are posted with "Buffer Zone" signs and fluorescent pink flagging. Boundaries of type N stream buffers are not posted.

Timber Description: Areas I and III through VII are one contiguous unit which is broken into 6 areas because of timber type differences and the need to have different prescriptions. Area II is separate from the other areas.

Area I This area is a 49 year old Douglas-fir type. The average diameter of trees to take is 14" and the average diameter of trees to leave is 20". The target residual basal area is 140 sq. ft./acre. There will also be 2 small patch cuts within the area.

Area II This area is a 29 year old Douglas-fir progeny site. The average diameter of trees to take is 10" and the average diameter of trees to leave is 12". The target residual basal area is 100 sq. ft./acre.

Area III This area is a 29 year old Douglas-fir progeny sites in which leave trees are marked with fluorescent red paint. The goal is to archive and preserve a cross-section of all family trees represented in the progeny site.

Area IV This area is a 33 year old Douglas fir plantation type. The average diameter of trees to take is 12" and the average diameter of trees to leave is 14". The target residual basal area is 100 sq. ft./acre.

Area V This area is a 49 year old Douglas-fir type. The average diameter of trees to take is 15" and the average diameter of trees to leave is 22". The target residual basal area is 140 sq. ft./acre. There will be 2 small patch cuts within the area.

Area VI This area is a 32 year old Douglas-fir plantation. The average diameter of trees to take is 10" and the average diameter of trees to leave is 13". The target residual basal area is 100 sq. ft./acre.

Area VII This area is a 34 year old Douglas-fir plantation. The average diameter of trees to take is 11" and the average diameter of trees to leave is 15". The target residual basal area is 120 sq.ft./acre.

Topography: The sale area generally lays across the top of a broad gentle ridge top with Tanglewood creek canyon in the south portion and a deep draw along the east edge. Slopes generally range from 10 - 40% along the ridge top. In the canyon and the draw, slopes generally range from 50 - 70%.

Streams: In the south portion of the timber sale, Area VII has Tanglewood creek, a type F stream flowing through the middle of the unit. A variable width buffer was posted ranging from 25 - 60' wide on each side. The buffer width was dependent on aspect and slope as well as location of trees. Within most areas, some type N streams originate within and pass through the timber sale. All timber within 25' horizontal distance on either side of the type N stream is reserved from harvest.

Reserve Trees: Within Areas II, IV, VI, and VII, all hardwoods and conifers other than Douglas-fir are reserved. Outside of patch cuts in Areas I and V, all hardwoods and conifer species other than Douglas-fir are reserved. Within patch cuts in Areas I and V, only trees marked with fluorescent red paint are reserved. Within Area III, conifers marked with fluorescent red paint and all hardwoods are reserved.
After yarding is completed, trees will be felled in Areas I and V for down wood. The required number will be 1 26"-32" dbh tree per acre or 2 18"-24" dbh trees per acre.
After yarding is completed, one tree per acre will be topped for snag creation in Areas I and V.

T & E Surveys: The timber sale area has been surveyed to protocol for northern spotted owls and marbled murrelets as of summer, 2001. There were no detections for northern spotted owls. Due to detections of marbled murrelets in the summer of 2001, a Marbled Murrelet Management Area has been established along the northeast edge of the timber sale adjacent to Areas I through IV.

Logging Methods: Approximately 70% of the sale area will need to be cable yarded and the remaining 30% can be tractor yarded.

Projects:
No. 1: 0.3 miles new construction
No. 2: 5.1 miles road improvement
No. 3: replace stream crossing structure
No. 4: vacate 1.1 miles road
No. 5: landing patch rock and tank trap dirt roads post harvest

Other Requirements: Firewood sorting on all landing sites accessible by rock road. Tree felling for large woody debris; snag creation; and site preparation.

Cruise Summary:

Volumes in MBF ***Gross Acres = 167 *Net Acres = 142**

Area	Gross Acres	Net Acres	Species	Gross Volume	Net Volume	% Hidden D &B	Final Adjusted Volume
I & V	58	55	Douglas-fir	681	666	2%	653
II, III, IV, VI, & VII	109	87	Douglas-fir	511	508	2%	497

TOTAL DOUGLAS FIR = 1,150

Grades by %

Area(s)	Species	2 Saw	3 Saw	4 Saw
I & V	Douglas-fir	40	51	9
II, III, IV, VI, & VII	Douglas-fir	3	75	22

*Sale volume was calculated using net acres. Net and gross acres were determined using GIS orthophotos. Net acres represent a reduction of gross acres to account for roads, streams, and nonthinnable areas.

Cruise Methods: The timber sale was cruised using variable radius plots with a 20 BAF prism.

Areas I and V: A 2 chain X 2 chain grid was laid out to sample both areas. On plots that fell in thinning areas, all conifer trees were counted, then thinned from below to the residual stocking specified for each area. Hardwoods were ignored. On plots that fell in patch cut areas, all unmarked trees were counted. A 100 BAF prism was used to choose which Douglas-fir take trees would be measured for volume and grade. A total of 146 Douglas-fir trees were measured and graded on 130 plots. The SE for this cruise area was 7.62%.

Areas II, III, IV, VI, & VII: A 2 chain X 3 chain grid was laid out to sample all areas. At each plot, all conifer trees were counted, then thinned from below to the residual stocking specified for each area. A 62.5 BAF prism was used to choose which Douglas-fir take trees would be measured for volume and grade. A total of 178 Douglas-fir trees were measured and graded on 144 plots. The SE for this cruise area was 6.72%.

Tree Form: Form point is at 16 feet. Form factor for each measured Douglas-fir was determined by using a relaskop and the formula of number of bars at form point divided by number of bars at DBH.

Measurement Standards: Heights were measured to the nearest foot to a top cruise diameter of 7 inches outside bark or 40% of form point diameter, whichever was greater. Diameters were measured at breast height to the nearest inch.

Grading System: All trees were graded in 40 foot segments unless breakage, defect, or length to top grade cruise diameter warranted otherwise.

Utilization Standards: A minimum log segment of 6 inches in diameter (inside bark) by 12 feet in length was used. Only trees 8 inches DBH and 17 feet in length and larger were cruised.

Hidden Defect and Breakage: A hidden D & B of 2% was applied to the net cruised volume of Douglas-fir.

Computation Procedures: All cruise data were recorded on plot cards and entered into the State Lands computer at the Philomath office. All Big BAF computations were done at the Philomath office by the district Cruise Specialist. For the Big BAF cruise, SuperAce was used to determine basal area per acre and Star-Bar to determine V-BAR and volume per acre by grade.

Cruisers/Dates: The sale area was cruised by Borg, Foucht, Kennedy, and McMinds in July and August 2000.

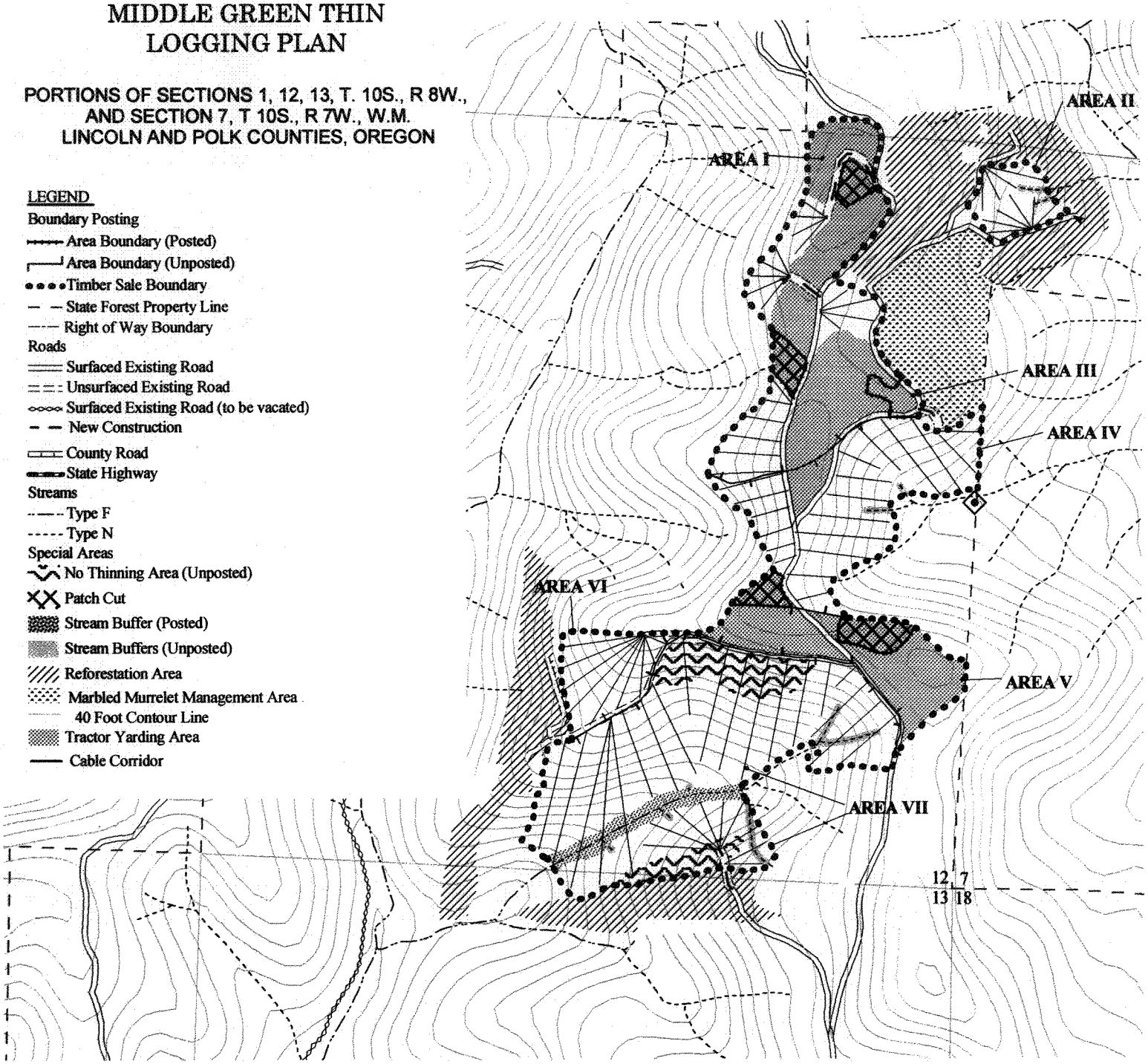
Signatures:

Cruise Specialist _____

Unit Forester _____

MIDDLE GREEN THIN LOGGING PLAN

PORTIONS OF SECTIONS 1, 12, 13, T. 10S., R 8W.,
AND SECTION 7, T 10S., R 7W., W.M.
LINCOLN AND POLK COUNTIES, OREGON



LEGEND

Boundary Posting
- Area Boundary (Posted)
- Area Boundary (Unposted)
- Timber Sale Boundary
- State Forest Property Line
- Right of Way Boundary

Roads
- Surfaced Existing Road
- Unsurfaced Existing Road
- Surfaced Existing Road (to be vacated)
- New Construction
- County Road
- State Highway

Streams
- Type F
- Type N

Special Areas
- No Thinning Area (Unposted)
- Patch Cut
- Stream Buffer (Posted)
- Stream Buffers (Unposted)
- Reforestation Area
- Marbled Murrelet Management Area
- 40 Foot Contour Line
- Tractor Yarding Area
- Cable Corridor

NOTICE

This logging plan was used to appraise the logging cost and is provided for information only. The Department of Forestry does not warrant that this plan represents the best or safest way to harvest .

SCALE
1 : 12,000
1 INCH = 1,000 FEET

1000 0 1000 2000 Feet

N

AREA	NET TRACTOR YARDING ACRES	NET CABLE YARDING ACRES
I	25	13
II	0	5
III	1	0
IV	2	25
V	17	0
VI	0	8
VII	0	46
TOTAL	45	97

WRITTEN PLAN

Sale Name: Middle Green Thin

Location: Portions of Section 13, T10S, R8W, W.M., Lincoln County, Oregon

Landowner: Oregon Department of Forestry, 24533 Alsea Highway, Philomath, Oregon.

Contract Purchaser: _____

Notification Number: _____

Protected Resources:

Headwaters of the Little Yaquina River, a small type F fisheries resource. A "written plan" is required for any activity within 100 feet of any type F streams, and for fills over 15 feet.

Situation:

An existing culvert structure located approximately 1.3 miles up the Green Mountain Road off Nashville / Logsdon County Road blocks fish passage and is in a deteriorating condition. The culvert needs to be replaced. As a part of this replacement work, the new culvert is designed to allow fish passage through this structure in accordance with current FPA guidelines. Also, some development of the streambed will be conducted for an upstream distance of 25 feet from the culvert inlet. The work is planned to enhance fisheries habitat. Further detailed work specifications for this project are shown/described in the attached cross section diagram.

Drainage Area and Culvert Design:

Current FPA guidelines were used to design the structure. The drainage area is 192 acres. The 50-year peak flow for this drainage is 200 cfs per square mile. Therefore, the 50-year flow for this stream crossing is 60 cfs. Current FPA guidelines require that a culvert with a minimum opening of 12.6 ft^2 is necessary to pass the 50-year peak flow. However, because the culvert is designed to be countersunk, the culvert size was increased (from 12.6 ft^2 to 28.3 ft^2), resulting in a 72inch diameter round culvert. This will allow for ample water flow inside the culvert and allow additional space for rock and debris to accumulate on the bottom of the culvert. The culvert design includes a 1 1/2:1 step beveled inlet opening to improve culvert efficiency. A 12 gauge, 72-inch diameter (round) aluminized steel culvert will be installed.

The 72-inch culvert to be used will be embedded to a depth of 28.8 inches. This will enable the channel width through the pipe to be approximately 70.8 inches. The bank full channel width is 5 ft. The projected natural stream gradient was calculated to be 3%. The culvert was then designed to be placed at a gradient of 3%. With 40% of the diameter embedded, the new culvert will accept a flow of 97.5 cfs. This exceeds the 50-year peak flow of 60 cfs.

Substrate material will be placed and/or deposited naturally inside of the culvert to simulate a natural streambed. The bedding for the culvert will be tamped with machinery to provide the pipe with a secure foundation. Due to the plunge pool created by the old structure, riprap rock will need to be placed at the outlet to help prevent further erosion and help maintain substrate material inside the pipe barrel. The inlet of the pipe will be beveled at 1 1/2:1 to improve efficiency.

Resource Protection Measures:

1) All in-stream work will be performed only during dry weather periods, low water stream flows and between August 1 and September 1, annually.

2) Riprap rock will be used to armor both the inlet and outlet fill slopes to minimize erosion.

3) Machine activity in stream channels will be minimized. All excavation and riprap rock placement will be performed using a minimum 1 1/2 cubic yard track mounted excavator.

4) Selected native earth materials free from woody debris will be used for backfilling. Fill material will be thoroughly compacted with specialized compaction equipment.

5) Excavated waste materials will be hauled to approved waste areas and left in a stable condition.

6) All bare soils and waste areas will be mulched to prevent erosion.

I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practices Act regarding the operations conducted within 100 feet of Type F streams and for fills over 15 feet.

_____

PURCHASER REPRESENTATIVE DATE

_____

STATE REPRESENTATIVE DATE

GREEN MOUNTAIN ROAD
STATION 70+38

CULVERT SPECIFICATIONS

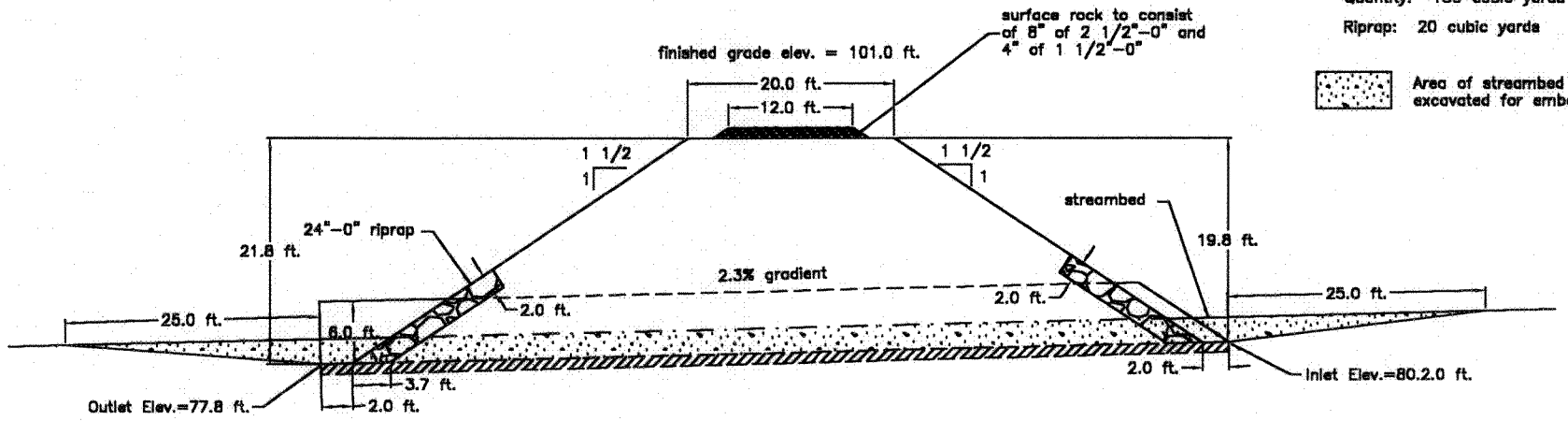
Length: 106 feet
Diameter: 72 inches
Inlet: 1 1/2 to 1
Material: 12 gage aluminized round pipe

BEDDING MATERIAL

Material: 3/4"–0"
Quantity: 150 cubic yards

Riprap: 20 cubic yards

Area of streambed to be excavated for embeding of pipe



NOTE: Outlet elevation is from a scewed length of 106 ft. at a gradient of 2.3%.

10.0 ft.
Scale

OREGON DEPARTMENT OF FORESTRY

WRITTEN PLAN

Sale Name: Middle Green Thin

Location: Portions of Sections 13, 24, T10S, R8W, W.M., Lincoln County, Oregon

Landowner: Oregon Department of Forestry, 24533 Alsea Highway, Philomath, Oregon.

Contract Purchaser: _____

Notification Number: _____

Protected Resources

This written plan is prepared to comply with the requirements for a written plan as provided for by the Forest Practices Act. The plan outlines measures to be taken to comply with the Forest Practices Act requirements for protection of small Type F streams as specified by law.

Situation

The South Fork Rock Creek Road (Point K to L, Station 0+00 to Station 56+20) will be vacated due to its deteriorating condition. Some of the work sites are within 100 feet of South Fork Rock Creek. Some of the fills being removed may eventually fail and affect South Fork Rock Creek. The road-vacating project requires sidecast pullback, and the removal of culverts and associated fill material. The sidecast pullback also involves the removal of some trees that are growing on the fill slopes.

Resource Protection Measures:

1) Work will be performed only during dry weather periods, low water stream flows and between July 1 and September 15, annually.

2) Machine activity in stream channels will be minimized. All excavation will be performed using a minimum 1 ½ cubic-yard track-mounted excavator.

3) Excavated waste materials will be placed in stable locations along the existing road against the cut bank, compacted, and shaped to the existing ground slope.

4) All bare soils will be mulched with straw mulch approved by STATE. Applied mulch shall be a minimum of 3 inches deep and provide a uniform cover.

5) Straw bales will be used at each removal site in order to minimize sediment delivery into South Fork Rock Creek. Bales will be placed downstream from the work area.

I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practices Act regarding the operations conducted within 100 feet of Type F streams. I agree to the protection measures listed on this plan:

PURCHASER REPRESENTATIVE DATE

STATE REPRESENTATIVE DATE

WRITTEN PLAN

Sale Name: Middle Green Thin

Location: Portion of Sections 12 and 13, T10S, R8W, W.M., Lincoln County

Landowner: Oregon Department of Forestry, 24533 Alsea Highway, Philomath, Oregon.

Contract Purchaser: _____

Notification Number: _____

Protected Resources:

Tanglewood Creek, a small type F fisheries resource. The Forest Practices Act requires that a written plan be prepared for any activity within 100 feet of any type F stream. The plan outlines measures to be taken to comply with the Forest Practices Act requirements for protection of small Type F streams as specified by law.

Situation

Tanglewood Creek runs through the middle of Area VII of Middle Green Thin timber sale. A variable width stream buffer ranging from 25' - 60' wide was posted on both sides of the stream. A small portion in the southwest corner of Area VII will need to be downhill logged then flown across to the north side of Tanglewood creek To gain sufficient deflection for cable logging within other portions of the unit, it will be necessary to have tailholds on either side of Tanglewood Creek.

Resource Protection Measures

A. When yarding cables pass over Tanglewood Creek, necessary measures shall be taken to protect the streamside vegetation. These measures include but are not limited to the following: pull cables out of the streamside vegetation prior to rigging the next yarding road; do not lower the skyline into the streamside vegetation during the yarding cycle; skyline roads over Tanglewood Creek shall be a minimum of 100 feet apart; and natural openings shall be used for skyline corridors, unless otherwise approved by the STATE.

B. When yarding logs across Tanglewood Creek, necessary measures in addition to those listed in section A shall be taken to protect the streamside vegetation. These additional measures include but are not limited to the following: logs shall be fully suspended when being yarded across Tanglewood Creek and brushy vegetation adjacent to the stream.

_____

PURCHASER REPRESENTATIVE DATE

_____

STATE REPRESENTATIVE DATE