



Oregon Department of Forestry

2600 State St Salem OR 97310

PART III: EXHIBITS

EXHIBIT B

TIMBER SALE OPERATIONS PLAN

(See page 2 for instructions)

Date Received by State: _____

(5) State Brand Information (Complete)

(1) Contract Number: TL-341-2020-W00288-01

(2) Sale Name: Beaver Nation

(3) Contract Expiration Date: 10/31/2022

(4) Purchaser Name: _____

(6) State Representatives:

Name	Circle One	Phone No.	Cell No.	Alt Phone
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			

(7) Purchaser Representatives:

Name	Circle One	Phone No.	Cell No.	Alt Phone
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			

(8) Name of Subcontractors and Start Dates:

Project No.	Subcontractor Name.	Start Date	Completion Date	Cell No.	Alt Phone

Subcontractor Name.

Start Date

Cell No.

Alt Phone

(9) Comments:

(10) Operations Map: Attach a copy of timber sale Exhibit A or other suitable map which plainly shows the items listed on the instruction sheet.



Oregon Department of Forestry

2600 State St Salem OR 97310

PART III: EXHIBITS

EXHIBIT B

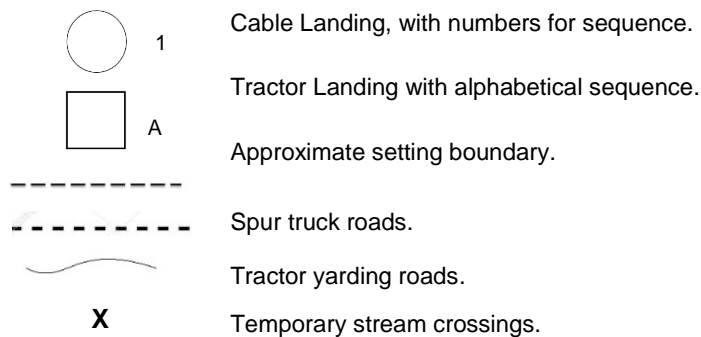
INSTRUCTION SHEET FOR OPERATIONS PLAN

SUBMIT ONE COPY OF PLAN STATE

Operations shall be limited to the work shown in the plan until a revised plan or supplemental plan is submitted covering additional work. Compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act. If STATE has prepared a required Forest Practices Act (FPA) "Written Plan" for operations, PURCHASER shall comply with all provisions of the Written Plan.

Explanation of Item No.(from Page 1)

- (5) All sales require you to use a brand furnished by STATE. If the State brand has not been assigned when the plan is submitted, it will be furnished and assigned later. Complete drawing. If more than one brand is assigned to the sale, complete both drawings.
- (6) The contract requires you to have a designated representative available on the sale area or work location who is authorized to receive in your behalf any notice or instruction given by STATE and to take action in regard to performance under the contract. If logging and project work is widely separated, a representative is required for each.
- (7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.
- (8) Show names of subcontractors to be used for any or all phases of the operations. If subcontractors are not Known, or are changed later, give notification to the STATE representative prior to commencement of work by subcontractor.
- (9) Show projected dates for commencement of both projects and logging. If projected dates need to be changed at a later date, notification must be given to the STATE representative by supplemental plan or otherwise, prior to commencement of such operations.
- (10) The STATE representative will furnish extra copies of Exhibit A of the contract for your use in preparing the operations map. The map shall use the following legend and show:
 1. Landing locations, approximate setting boundaries, and probable sequence of logging the settings. Number the settings in sequence.
 2. Locations of spur roads planned for construction, other than required by the timber sale contract. Provide spur road specifications
 3. Locations of proposed tractor yarding roads. Show if and how marked on the ground.
 4. Locations of temporary stream crossings.
 5. List the sequence of performing project work.
 6. Location of rock sources - attach pit development plans.




Oregon Department of Forestry

2600 State St Salem OR 97310

PART III: EXHIBITS

**EXHIBIT B
OPERATIONS PLAN**
Completion Timeline

Indicate on the appropriate timeline below, the dates by which you plan to complete the work as required under this contract. The purpose of this section is to develop a plan that will ensure you complete the work as required, and meet the interim completion date(s) and contract expiration date. This plan is incorporated and made a part of the contract. When, in the opinion of STATE, operations are not commencing in a manner that meets the intent of this plan, you may be placed in violation of contract and your operations suspended until an amended plan is submitted and approved by STATE.

Projects

Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____
Work Commences	25%	50%	75%	Projects Complete

Harvest & Other Requirements

Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____
Work Commences	25%	50%	75%	Sale Complete

The Federal Endangered Species Act (ESA) prohibits a person from taking any federally listed threatened or endangered species. Taking under the federal ESA may include alteration of habitat. STATE's approval of this plan does not certify that PURCHASER's operation under the plan is lawful under the federal ESA. As provided in the timber sale contract, PURCHASER's must comply with all applicable state, federal, and local laws.

PURCHASER's compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act.

APPROVED; Date: _____

 SUBMITTED BY:
PURCHASER

 STATE OF OREGON - DEPARTMENT OF
FORESTRY

Title _____

Title _____



Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE (WESTSIDE SCALE)
SCALING INSTRUCTIONS - LOCATION APPROVAL - BRAND INFORMATION
Tillamook - NWOA

(1) ORIGINAL REGISTRATION ☐ Date _____
REVISION NUMBER 000 ☐ Date _____
CANCELLATION ☐ Date _____

(2) TO: _____
(Third Party Scaling Organization)

(3) FROM: Tillamook Phone (503) 842-2545
(State Forestry District)
Address: 5005 THIRD ST
TILLAMOOK, OR 97141-2999

(4) PURCHASER: _____
Mailing Address: _____
Phone Number: _____

(5) MINIMUM SCALING SPECIFICATIONS	
SPECIES	MINIMUM NET VOLUME
Conifers	10
Hardwoods	10

*Apply minimum volume test to whole logs over 40' Westside

(6) WESTSIDE SCALE:
Use Region 6 actual taper rule. Logs over 40'.

(7) Weight Scale Sample ☐ YES ☒ NO

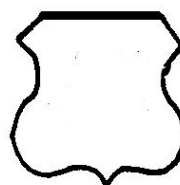
(8) APPROVED SCALING LOCATIONS (as shown on the ODF Approved Locations web-site)	Species	Yard	Truck	Weight

(9) SALE NAME: Beaver Nation
COUNTY: Tillamook

(10) STATE CONTRACT NUMBER:
TL-341-2020-W00288-01

(11) STATE BRAND REGISTRATION NUMBER:

(12) STATE BRAND INFORMATION:



(13) PAINT REQUIRED: YES ☒
COLOR: Orange

(14) SPECIAL REQUESTS (Check applicable)	
PEELABLE CULL (all species).....	<input checked="" type="checkbox"/>
NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE	<input checked="" type="checkbox"/>
ADD-BACK VOLUME - Deductions due to delay...	<input checked="" type="checkbox"/>
OTHER :	

(15) REMARKS

Operator's Name (Optional inclusion by District): _____

(16)

Purchaser or Authorized Representative Date

State Forester Representative Date

State Forester Representative PRINT NAME



Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE
INSTRUCTIONS FOR FORM 343-307a (rev. 11/11)
Tillamook - NWOA

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers, date and sign where indicated, write diagonally across page "CANCEL", and send to TPSO.

(2)

Columbia River Log Scaling & Grading Bureau
P.O.Box 7002, Eugene, OR 97401
Phone: (541) 342-6007 Fax: (541) 342-2631
Email: services@crls.com

Mountain Western Log Scaling & Grading Bureau
P.O.Box 580, Roseburg, OR 97470
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@southernoregonlogscaling.com

Northwest Log Scalpers Inc.
6137 NE 63rd St, Vancouver, WA, 98661
Phone: (360) 553-7212 ext. 4 Fax: (360) 553-7213
Email: info@nwlogscalpers.com

Pacific Rim Log Scaling Bureau, Inc.
8288 28th Court North East, Lacey, WA 98516
Phone: (360) 528-8710 Fax: (360) 528-8718
Email: office@prlsb.com

Yamhill Log Scaling & Grading Bureau
P.O.Box 709, Forest Grove, OR 97116
Phone: (503) 359-4474 Fax: (503) 359-4476
Email: yamhilllog@frontier.com

Pacific Log Scaling & Grading Bureau, Inc.
P.O.Box 23939, Portland, OR 97281
Phone: (503) 684-5599 Fax: (503) 639-4880
Email: PacLogScale@sol.com

- (3) State District office, address and phone.
- (4) Enter Purchaser's business name, address, and phone number as it appears on the Contract.
- (5) Minimum Scaling Specifications.
- (6) Westside - Region 6 actual taper segment scale. Check Yes or No. Special Service Rules on file with TPSO. See: Segment Scaling and Grading of Long Logs - All Species - State Forestry Department Scaling Practices (Westside).
- (7) Weight Scale Sample - Check box if sale is to be a Weight Scale Sample. All specifics for handling, scaling and processing will be attached or explained in the Remarks section item (15).
- (8) Show scaling locations only applicable to TPSO. Location name should appear as it does on the ODF Approved Scaling Location web site: http://www.odf.state.or.us/DIVISIONS/management/asset_management/ScalingLocation.asp Locations with scaling and processing directions specific to their location should be on a separate form. Species should be identified if not capable of receiving "all" species. Check appropriate box for either: yard, truck scale, or weight. Refer to the web site listed above for the locations approval status.
- (9) Enter sale name and county.
- (10) Enter sale Contract number.
- (11) Enter Oregon's State Brand Registry Number (**REQUIRED**).
- (12) Show brand assigned to timber sale. One brand only. If more than one brand is assigned to the sale: (1) make a separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section item (15).
- (13) Check yes for Paint Required and designate "Orange" for color. Non required removal volumes may sometimes require blue paint.
- (14) Special Requests. These are requests that will be applied to ODF timber sales. All boxes applicable to the timber sales designated in the Exhibit C form must be "marked". If "Other" is indicated, it must contain a description and any necessary comments.
- (15) Use this space to designate any weight conversion factors, per load volumes, weight scale sample instructions or any other explanations to clarify scaling, processing and/or mailing requirements. If additional scaling locations are approved, revise original or current form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.
- (16) Require purchaser to sign and date completed form in addition to State Forester Representative, sign and print name on the form.

Salem Distribution Instructions: Original will be mailed to Salem after it is electronically scanned and placed in the Salem transfer drive \\WPODFILL01\\Transfer\\ScalingInstructions or e-mailed directly to scaling@odf.state.or.us. Scaling Instructions for each brand should be scanned separately, for each approved TPSO.

Notify the District within one hour when branding or painting is inadequate for quick identification, the receipts are missing, not correctly or completely filled out, and/or when logs presented for scaling are impossible to scale accurately.

General Distribution: TPSO, Approved Scaling Locations(s), Purchaser, Specific distribution instructions are outlined on the last page of this report: Instructions for Form



Oregon Department of Forestry
EXHIBIT C - PULP SORT
PROCESSING INSTRUCTIONS - LOCATION APPROVAL
BRAND INFORMATION

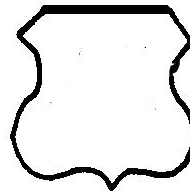
Tillamook, NWOA

(1) ORIGINAL REGISTRATION ☐ Date _____
REVISION NUMBER 000 ☐ Date _____
CANCELLATION _____

(9) **SALE NAME:** Beaver Nation
COUNTY: Tillamook
STATE CONTRACT NUMBER:
TL-341-2020-W00288-01

(2) _____
(Approved Pulp Processing Facility)
(3) FROM: Tillamook Phone (503) 842-2545
(State Forestry District)
Address: 5005 THIRD ST
TILLAMOOK, OR 97141-2999

(11) STATE BRAND REGISTRATION NUMBER: _____
(12) STATE BRAND INFORMATION: _____



(4) PURCHASER: _____
(5) Scaling Bureau (TPSO) Processing Weight receipts:

Mailing Address: _____
Phone Number: _____

(13) **REMARKS:**

(6) **STATE Definition of Approved Pulp Sort:**
• Top portion of the tree (tops).
• All logs with a diameter (Big End) greater than 8 inches marked with blue paint.

Operator's Name (Optional inclusion by District):

(14) SIGNATURES: _____

(7) PULP FACILITY PROCESSING INSTRUCTIONS:
• Pulp loads shall be weighed in lieu of scaling.
• One Ton = 2000 lbs (Short Ton).

• Pulp loads shall have a yellow Log Load Receipt attached.
• Gross weight and truck tare weight for each load shall be machine printed on the weight receipt.
• Weigher shall sign the weight receipt.
• Weigher shall record the Log Load Receipt number on the weight receipt.
• Weigher shall attach the Weight receipt to the Log Load Receipt and mail them weekly to the TPSO processing the Weight receipt.
(8) TPSO PROCESSING INSTRUCTIONS
• Submit data files daily (or each day of activity).
• Mail or deliver scale tickets weekly to ODF Headquarters in Salem.

Purchaser or Authorized Representative Date

State Forester Representative Date

State Forester Representative PRINT NAME

Notify the District within one hour when branding is inadequate for quick identification, the logs are marked with orange paint, the receipts are missing, not correctly or completely filled out, and/or logs do not meet the specifications of the STATE definition of Approved Pulp Sort.

Distribution: ORIGINAL: Salem/ COPIES: TPSO, Approved Pulp Processing Location, Purchaser, District, Mgmt. Unit



Oregon Department of Forestry
EXHIBIT C - PULP SORT
Instructions for Form 343-307b

Tillamook, NWOA

- (1) **Must Complete.** Check appropriate box. REVISION NUMBER requires comments in the Remarks Section (13). CANCELLATION requires logging and hauling to be complete, recall branding hammers, date and sign where indicated, write diagonally across page "CANCEL", and send to TPSO.
- (2) **Must Complete.** Approved Pulp Processing Facility. Write in as written in the Approved Log Delivery Location http://www.odf.state.or.us/DIVISIONS/management/asset_management/ScalingLocation.asp
- (3) **Must Complete.** State Forestry District and District Phone Number.
- (4) **Must Complete.** Purchaser's business name as it appears on the Contract.
- (5) **Must Complete.** Third Party Scaling Organization that will be processing the weight tickets, mailing address, and phone number.

Columbia River Log Scaling & Grading Bureau
P.O.Box 7002, Eugene, OR 97401
Phone: (541) 342-6007 Fax: (541) 342-2631
Email: services@crls.com

Pacific Rim Log Scaling Bureau, Inc.
8288 28th Court North East, Lacey, WA 98516
Phone: (360) 528-8710 Fax: (360) 528-8718
Email: office@prlsb.com

Mountain Western Log Scaling & Grading Bureau
P.O.Box 580, Roseburg, OR 97470
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@southernoregonlogscaling.com

Yamhill Log Scaling & Grading Bureau
P.O.Box 709, Forest Grove, OR 97116
Phone: (503) 359-4474 Fax: (503) 359-4476
Email: yamhilllog@frontier.com

Northwest Log Scalers Inc.
6137 NE 63rd St, Vancouver, WA, 98661
Phone: (360) 553-7212 ext. 4 Fax: (360) 553-7213
Email: info@nwlogscalers.com

Pacific Log Scaling & Grading Bureau, Inc.
P.O.Box 23939, Portland, OR 97281
Phone: (503) 684-5599 Fax: (503) 639-4880
Email: PacLogScale@sol.com

Must Complete. Big end log not to exceed _____ inches. Big end of log is not to exceed 2 inches greater than the minimum removal specifications in the contract. Example: Minimum removal specifications 6 inches and 20 board feet, then the Big end of log not to exceed 8 inches. When conifer and hardwood removal specifications are different, use the smaller removal diameter to determine this specification.

- (7) **Must Complete.** Enter sale name and county. If more than one county write in all the counties that the sale is located in.
- (8) **Must Complete.** Enter sale Contract number.
- (9) **Must Complete.** Enter Oregon's State Brand Registry Number **(REQUIRED)**.
- (10) **Must Complete.** Show brand assigned to timber sale. One brand only, if more than one brand is assigned to the sale: (1) make a separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section Item(13).
- (11) Use this section to list any special instructions or the reason for any revisions in section item (1).
- (12) **Must Complete.** Purchaser required to sign and date completed form in addition to State Forester Representative, sign and print name on the form.

Salem Distribution Instructions: Original will be mailed to Salem after it is electronically scanned and placed in the Salem transfer drive \\WPODFILL01\Transfer\ScalingInstructions or e-mailed directly to scaling@odf.state.or.us. Scaling instructions for each brand should be scanned separately, for each approved TPSO.

Distribution(See specific instructions on pg.2): ORIGINAL: Salem/ COPIES: TPSO, Approved Pulp Processing Location, Purchaser, District, Mgmt. Unit

EXHIBIT D

FOREST ROAD SPECIFICATIONS

POINT TO POINT	STATION TO STATION	SUBGRADE WIDTH (feet)	SURFACE WIDTH (feet)	DRAINAGE	DITCH SHAPE	DITCH DEMINIONS (WIDTH X DEPTH) (feet)
A to B	0+00 to 17+75	Existing	12	Existing	Existing	Existing
A to B	17+75 to 22+75	16	12	Ditch	V	2 x 1
A to B	22+75 to 33+15	Existing		Existing	Existing	Existing
C to D	0+00 to 1+00	Existing	12	Outslope	---	---
C to D	1+00 to 16+20	Existing	---	Outslope	---	---
E to F	0+00 to 82+70	16	12	Existing	Existing	Existing
G to E	0+00 to 85+00	Existing	12	Existing	Existing	Existing

CLEARING. This work shall consist of clearing, removing, and disposing of all trees, snags, down timber, brush, surface objects, and protruding obstructions within the clearing limits. Trees outside the clearing limits shall not be felled unless approved in writing by STATE. All danger trees, leaners, and snags outside the clearing limits that could fall and hit the road shall be felled. Where clearing limits have not been marked, clearing limits shall be as follows:

- New construction – 10 feet back from the top of the cut slope and 5 feet back from the toe of fill slopes.
- Improvements and reconstructions - 10 feet back from the shoulder of the subgrade or the ditch, whichever is widest.

GRUBBING. This work shall consist of the removal or digging out of stumps and protruding objects. All stumps shall be completely removed within the limits of required grubbing. Stumps overhanging cutslopes shall be removed. Grubbing limits shall be as follows:

- New construction - From the top of the cutslope to the toe of the fill.
- Improvements and reconstructions - 4 feet back from the shoulder of the subgrade or the ditch, whichever is widest.
- Sidecast pullback – From top of pullback to toe of pullback.

Clearing and grubbing only required in pullback and widening sections of A to B and E to F. Not required on G to E.

CLEARING AND GRUBBING DISPOSAL. Clearing and grubbing debris shall not be placed or permitted to remain in or under any road embankment sections. Clearing and grubbing debris shall not be left lodged against standing trees. Clearing and grubbing debris may be scattered through openings in the timber outside of the cleared right-of-way, except for the following areas where debris shall be fully contained and hauled to a designated waste area:

- Where end-haul is required
- On side slopes exceeding 55 percent
- On unstable areas
- In any stream channel (Type F, N or D) or where material may enter the stream channel.

Clearing, grubbing, and associated disposal shall be completed prior to subgrade approval.

FOREST ROAD SPECIFICATIONS

EXCAVATION. Excavation and grading shall not be done when weather and/or ground conditions are such that damage will result to existing subgrade or cause excessive erosion.

Excavation shall conform to STATE-specified lines, grades, dimensions, and plans when provided.

Suitable excavated material shall be used for the formation of fills, shoulders, and drainage structure backfills. Embankment materials shall be free of woody debris, brush, muck, sod, frozen material, and other deleterious materials. All fills and drainage structure backfills shall be machine compacted according to the "Compaction and Processing Requirements" in Exhibit E.

Unless road plans show otherwise, all roads shall be on a balanced cross section, except when the slope is over 55 percent, the road shall be on full bench for the width specified.

Sidecast includes any road generated excess excavation material which is not essential as part of the road prism, is not compacted, and is below the roadway. Sidecast shall not be placed where it will enter a stream course or where material will accumulate in areas deemed a high landslide hazard location by STATE. Leaving sidecast below the road is only permissible if specifically allowed in "Full Bench and End Haul Requirements" in this Exhibit.

All bank excavation and sidecast pullback on a project road segment shall be completed prior to subgrade approval.

ROAD WIDTH LIMITATIONS. PURCHASER shall obtain advance written approval from STATE to construct the road to a greater width than specified. Extra subgrade width shall be required for:

Fill Widening. Add to each fill shoulder 1 foot for fills 3 feet to 6 feet high; 2 feet for fills over 6 feet high.

Curve Widening. Widen the inside shoulder of all curves as specified in the road plans or as follows: 400 divided by the radius of the curve equals the amount of extra width.

DRAINAGE

Ditch. Construct ditch as specified in Exhibit D. Subgrade shall be crowned at 4 to 6 percent. Construct ditchouts away from subgrade at locations marked in the field or as directed by STATE.

Outslope. Road subgrade shall be outsloped at 4 to 6 percent.

Existing. Road subgrade and drainage shall be maintained in its current configuration, outsloped where outsloped, insloped where insloped, and ditched where ditched.

TURNOUTS. Increase roadbed width an additional 8 feet for both subgrade and surfacing. Length shall be at least 25 feet, or as staked on the ground, plus 25-foot approaches at each end.

Location: Intervisible but not greater than 750 feet apart.

SLOPES

Rock
Common

Back Slopes
Vertical to 1/4 :1
3/4 :1

Fill Slopes
Not Steeper
Than 1 1/2: 1

Top of cutslopes shall be rounded.

LANDINGS. Landings shall be constructed as posted in the field, no less than 50 feet wide and no more than 70 feet wide unless otherwise approved by STATE. Surface is to be crowned for drainage with general grade no more than 4 percent and no less than 2 percent. All cuts shall be ditched.

SEASONAL WINTERIZATION. All unsurfaced roads or unfinished subgrades shall be waterbarred in accordance with the specifications in Exhibit H, and blocked from vehicular traffic prior to October 31, annually and as directed by STATE.

EXHIBIT D
FOREST ROAD SPECIFICATIONS
ADDITIONAL ROAD INSTRUCTIONS

A to B

- 17+75 to 22+75: Pullback 4 feet and widen road 2 feet as specified in Exhibit I. End haul material to waste area.
- 32+15: Construct Road Dip as specified in Exhibit J.

C to D

- 0+00: Construct Road Dip as specified in Exhibit J to relieve ditch.
- 3+35 to 4+85: Pullback and widen road 4 feet as specified in Exhibit I. End haul material to waste area.

E to F

- 0+00 to 82+70: Grader ditch road to a 2' x 1' where there is an existing ditch otherwise inslope or outslope road drainage to existing conditions. Place rock for E to F after completion of widening and pullback sections.
- 13+60 to 53+85: Mulch the disturbed pullback segments below the road as specified in Exhibit L.
- 13+60 to 16+20: Pullback 5 feet and widen road 3 feet as specified in Exhibit I. End haul material to waste area.
- 17+10 to 17+80: Pullback 6 feet as specified in Exhibit I. End haul material to waste area.
- 18+10 to 21+50: Pullback 5 feet and widen road 3 feet as specified in Exhibit I. End haul material to waste area.
- 22+25 to 27+10: Pullback 5 feet and widen road 2 feet as specified in Exhibit I. End haul material to waste area.
- 28+05 to 31+15: Pullback 6 feet and widen road 3 feet as specified in Exhibit I. End haul material to waste area.
- 30+20: End haul existing pile to waste area.
- 31+15 to 34+60: Continue 6 foot pullback. End haul material to waste area.
- 35+05 to 49+10: Pullback 6 feet and widen road 5 feet as specified in Exhibit I. End haul material to waste area.
- 50+30 to 53+85: Pullback 3 feet and widen road 3 feet as specified in Exhibit I. End haul material to waste area.

G to E

- 0+00 to 85+00: Place spot rocking after completion of E to F rocking.

EXHIBIT D

FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.
A to B	17+75 to 22+75
C to D	3+35 to 4+85
E to F	13+60 to 82+70

Full Bench and End-Haul Areas General Requirements

Sidecast includes any road generated excess excavation material which is not essential as part of the road prism, is not compacted, and is below the roadway. Material shall not be sidecast unless specified above.

Clearing and grubbing debris shall be end-hauled.

When controlled blasting is required, it shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain material within the road prism.

Containment/Sidecast

Full Containment: Sidecast material lost over the outside edge of the road shall not exceed 6 inches in depth, measured perpendicular to the natural ground slope. Pioneer excavation shall be removed by digging, loading, and hauling rather than by pushing or scraping methods.

Tree bases and stumps may have up to 12 inches of material directly above them.

Any amount of material exceeding the containment requirements shall be removed by whatever means necessary and end-hauled to a designated waste area.

Waste Area Location(s): As shown on Exhibit A as Waste Area 1, 2, and 3 and as marked in the field.

Waste Area Treatment

- (1) All waste must be contained within the waste area clearing limits and cannot be placed on standing trees.
- (2) Deposit soil waste at waste area, spread evenly, compact, and provide adequate drainage.
- (3) Soil waste shall not exceed 15 feet in height at any location and toe of waste no closer than 20 feet from slope break.
- (4) Soil waste shall not exceed 10 feet in height at Waste Area 1.
- (5) Pile woody debris separate from other waste material.
- (6) Seed and fertilize all waste areas in accordance with Exhibit L.

EXHIBIT E
 ROAD SURFACING

ROAD SEGMENT: A to B			STATIONS: 0+00 to 33+15					
Application	Rock Size and Type	Location	Compacted Depth	Volume (CY) per		Number of Units	Curve Widening (CY)	Approx. Total (CY)
Road Rock	Crushed 1 1/2"-0"	0+00 to 33+15	4 "	station	20.211	33.15	40	710
Turnouts	Crushed 1 1/2"-0"	A to B	4 "	TO	10	5	50	
Application	Rock Size and Type	Location	Approx. Total (CY)					
Culvert Backfill	Crushed 1 1/2"-0"	23+55	10					
Junction Rock	Crushed 1 1/2"-0"	7+00 & 30+45	40					
Energy Dissipator	Riprap 24"-6"	23+55	10					

ROAD SEGMENT: C to D			STATIONS: 0+00 to 1+00					
Application	Rock Size and Type	Location	Compacted Depth	Volume (CY) per		Number of Units	Curve Widening (CY)	Approx. Total (CY)
Road Rock	Crushed 1 1/2"-0"	0+00 to 1+00	4 "	station	30.000	1.00	10	40
Turnouts	Crushed 1 1/2"-0"	C to D	4 "	TO	10	1	10	
Application	Rock Size and Type	Location	Approx. Total (CY)					
Junction Rock	Crushed 1 1/2"-0"	0+00	20					

ROAD SEGMENT: E to F			STATIONS: 0+00 to 82+70					
Application	Rock Size and Type	Location	Compacted Depth	Volume (CY) per		Number of Units	Curve Widenin g (CY)	Approx. Total (CY)
Road Rock	Crushed 2"-0"	0+00 to 82+70	2 "	station	9.915	82.70	40	860
Turnouts	Crushed 2"-0"	E to F	2 "	TO	10	12	120	
Application	Rock Size and Type	Location	Approx. Total (CY)					
Culvert Backfill/Bedding	Crushed 2"-0"	Culv. In Exhibit G	60					
Energy Dissipator	Riprap 24"-6"	Culv. In Exhibit G	20					

ROAD SEGMENT: G to E			STATIONS: 0+00 to 85+00						
Application	Rock Size and Type	Location	Approx. Total (CY)						
Spot Rocking	Crushed 2"-0"	As Directed by State	200						

EXHIBIT E

ROAD SURFACING

TOTAL ROCK	24"-6" Riprap	2"-0" Crushed	1 ½"-0 Crushed
2,150 CY	30 CY	1,240 CY	880 CY

Roads shall be uniformly graded and approved by STATE prior to rocking.

Additional rock for curve widening is required and has been included in the volume estimates.

Turnouts and junctions shall be rocked concurrently with the road.

End-dumping of riprap shall not be allowed, unless otherwise approved in writing by STATE.

Any additional turnarounds or turnouts created during any operation associated with this timber sale shall be rocked at PURCHASER's expense and as instructed by STATE.

EXHIBIT E

CRUSHED ROCK SPECIFICATIONS

PURCHASER shall use a STATE approved commercial rock source to meet the rocking requirement of Exhibit E. Except for rocking on E to F and G to E segments.

Materials. The material shall be fragments of rock crushed to the required size. The material shall be free from vegetation and lumps of clay. STATE requires materials utilized as crushed rock to be free of excess fine material. Excess fines are present, when greater than 5 percent of a total rock sample weight, passes a #200 sieve.

Quality and Grading Requirements. The base material shall be rock. River gravel shall not be used. Crushed rock shall meet the grading requirements that follow;

Hardness - Test Method AASHTO T 96: 30% Maximum

Durability - Test Method ODOT TM 208
Passing No. 20 Sieve: 30% Maximum

For 1 ½" – 0" Crushed Commercial Rock

Sieve size	Percent Passing
2	100
1.5	95-100
3/4	55-90
1/4 or #4	35-50
#10	15-35
#40	5-20
#200	0-5

For 24"-6" Riprap 50 percent or more of the material shall measure at least 24 inches in one dimension. Material shall be clean, well graded, and free of 2"-0" fines.

Control of riprap gradation shall be by visual inspection by STATE.

The referenced sieve shall have square openings as set forth in AASHTO M 92, Woven Cloth Series. The determinations of size and gradings shall be as set forth in AASHTO T 27.

EXHIBIT E
ROCK ACCOUNTABILITY

PURCHASER shall obtain subgrade approval from STATE prior to rocking. Rocking shall be limited to periods when weather conditions are acceptable to STATE and when sediment will not enter streams. Additional surfacing needed because of construction season or construction practice is not included in the preceding ROAD SURFACING table, and shall be furnished at PURCHASER expense.

Rock accountability shall be determined by depth measurement and the following methods, as directed by STATE. STATE shall be given 24 hours' notice prior to rocking.

Depth Measurement. Rock shall be spread and compacted according to the depths specified in Exhibit E. Truck measure volumes are given, but shall not limit the amount of rock spread. Depth shall be determined in the most compacted area of the surface cross section. The depth of compacted aggregates shall not vary more than 1 inch from the depth specified in the "Road Surfacing" table in Exhibit E. The average depth for each road segment shall be the specified depth or greater. If additional rock is required because of insufficient depth, the locations and volumes to be added shall be determined by STATE. The conversion from compacted yardage to truck yardage is 1.3 multiplied by the compacted yardage equals truck yardage.

Junctions and Turnouts shall have minimum rock volumes as shown in Exhibit E and visual inspections by STATE.

Curve Surfacing. Extra surface width shall be required for the inside of all curves as follows: 400 divided by the radius of the curve equals the amount of extra width to be surfaced at the depths shown in Exhibit E.

EXHIBIT E

COMPACTION AND PROCESSING REQUIREMENTS

Moisture Content: Compaction must take place when moisture content of the materials being compacted is favorable for effective compaction as determined by STATE.

Compaction Pass: A pass is defined as traveling a road section forward and then backward over that same section.

Subgrade. Subgrade surfaces of the road segments listed below shall be graded and compacted prior to rocking. Compaction shall be accomplished by traveling all surfaces from shoulder to shoulder until the surface is smooth and hard and visible deformation ceases. At least 3 passes shall be made over the entire width and length of the road. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

Subgrade shall be crowned, outsloped, or insloped at 4 to 6 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
C to D	Vibratory Rollers

Crushed Rock. The rock shall be uniformly mixed and spread in layers on the approved roadbed. Each layer of crushed rock shall be moistened or dried to uniform moisture content suitable for maximum compaction and compacted in layers not to exceed 6 inches in depth. When more than 1 layer is required, each shall be shaped, compacted, and approved by STATE before the succeeding layer is placed. Any irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. Each layer shall be compacted with a minimum of 3 passes over the entire width and length of the road until the surface is smooth and hard and visible deformation ceases. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

Rock shall be compacted and processed during the same project period it is spread, unless otherwise approved in writing by STATE.

Rock shall be crowned, outsloped, or insloped at 4 to 6 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
A to B, E to F, and G to E	Vibratory Rollers
C to D (0+00 to 1+00)	Vibratory Rollers

EXHIBIT E

COMPACTION AND PROCESSING REQUIREMENTS

Existing Crushed Rock. The existing rock shall be unearthed to a minimum depth of 4 inches or to 1 inch below the bottom of potholes, whichever is greater. The existing rock shall then be uniformly mixed and moistened or dried to a uniform moisture content suitable for maximum compaction and compacted. Any irregularities or depressions that develop during compaction shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. The existing rock shall be compacted with a minimum of 3 passes over the entire width and length of the road. Compaction shall be accomplished by using the approved equipment listed below or others approved by STATE:

Existing crushed rock shall be compacted and processed after completion of all project work and log hauling, unless otherwise approved in writing by STATE.

Rock shall be crowned, outsloped, or insloped at 4 to 6 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
A to B, E to F, and G to E	Vibratory Rollers

EXHIBIT E

COMPACTION EQUIPMENT OPTIONS

Vibratory Rollers. The drum shall have a smooth surface, a diameter not less than 48 inches, a width not less than 58 inches, and a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 VPM, corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 VPM. It shall be activated by a power unit of not less than 25 horsepower. The vibratory roller shall be self-propelled and operated at speeds ranging from 0.9 miles to 1.8 miles per hour, as directed by STATE.

Rubber-Tired Skidders. A rubber-tired skidder weighing a minimum of 20,000 pounds shall be operated over the fill layers so that the entire layered surface comes in contact with the tires. Skidders with oversized tires (high flotation) are not acceptable for compaction.

Tampingfoot Compactors. Tampingfoot compactors shall exert a minimum pressure of 250 pounds per square inch on the ground area in contact with the tamping feet. The compactor shall cover a minimum width of 60 inches per pass and weigh a minimum of 16,000 pounds.

Vibratory Hand-Operated or Backhoe-Mounted Tamper. Vibratory hand-held or hydraulic tampers shall be used for compaction of backfill materials around culverts (and/or bridge approach embankment materials around abutments). The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.

Vibratory Grid Compactors. The roller shall have a grid surface and have an operating weight of 32,000 pounds or more. The rock shall be worked with a grader weighing at least 20,000 pounds during the grid rolling process. All rock shall come in contact with the vibratory grid compactor.

Grid Rollers. Pit-run rock shall be processed by grid roller fully equipped with 32,000 pounds or more of ballast weights. Twenty passes shall be made with a grid roller over the entire length and width of the road, unless STATE requires fewer passes. A grader weighing at least 20,000 pounds shall work the pit-run surface during grid rolling so that all pit-run rock comes in contact with the grid roller. Grid rolling shall be performed when the subgrade is dry and firm. Road surface shall be uniformly shaped and graded prior to and during grid rolling.

Loaded Dump Trucks. Dump trucks shall be routed over the entire cross section of the road surface. Loaded trucks shall cover all of the subgrade with a minimum of three passes.

Crawler Tractors. A dozer/track-type tractor weighing a minimum of 45,000 pounds as directed by STATE shall be operated over the pit-run or jaw-run rock so that the entire surface comes in contact with the tracks.

EXHIBIT F

CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the Contract. Culverts shall be constructed of corrugated polyethylene and aluminized steel as specified in the list below. Polyethylene culverts shall be double-walled and meet the requirements of AASHTO M-294-11, Type S, or ASTM F2648 Aluminized (Type 2) steel culverts shall meet the requirements of AASHTO M-36-03¹ Transporting of the culvert shall be done carefully. Dragging or allowing free fall from trucks or into trenches shall not be permitted.

Lengths of individual culvert sections shall be not less than 10 feet, unless otherwise provided for in special instructions. The shortest culvert section length shall be placed at the inlet end.

Joining shall be done with bands of like material and corrugations. Manufacturers' instructions shall be followed for prefabricated pipe assembly. Polyethylene joints shall be made with split couplings, corrugated to engage the culvert corrugations, and shall engage a minimum of 4 corrugations, 2 on each side of the culvert joint.

Culverts shall be located according to the alignment and grade as shown on the Plan and Profile, and/or as staked in the field, or as specified in special instructions. The STATE Representative shall determine final culvert locations and stake the locations in the field prior to installation.

Cross drain culverts on road grades in excess of 3 percent shall be skewed at least 30 degrees from perpendicular to the road centerline, except that cross drain culverts at the low point of dips in roads shall not be skewed.

Culvert grade shall slope away from ditch grade at least 5 percent unless otherwise specified.

The foundation and trench walls for all culverts shall be free from logs, stumps, limbs, stones, and other objects which would dent or damage the culvert. The culvert trench shall be excavated 3 culvert diameters wide to permit compaction and working on each side of the culvert. Tamping shall be done in 6-inch lifts, 1 culvert diameter each side of the culvert to 95 percent density or over. Bedrock shall be excavated as required to provide a uniform foundation for the full length of the culvert. Minimum bedding depth shall be 6 inches.

A bedding of granulated material or crushed rock as specified in Exhibit E shall be placed to provide a wide band of support and to transmit the load from above evenly over the entire length of the culvert.

Backfill shall consist of granulated material, crushed rock as specified in Exhibit E, or job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the culvert. Tamping is required on all culverts.

Minimum height of cover over top of culvert to subgrade when road is to be rockered shall be 12". Minimum vertical cover for other designs shall be as specified by STATE.

The ends of each culvert shall be free of logs and debris, which would restrict the free flow of water. The intake end of relief culverts shall be provided with a sediment-catching basin 3 feet in diameter at the bottom. The outlet end of any culvert which would allow water to erode embankment soil shall be provided with an energy dissipator as specified in Exhibit E or other approved slope protection device. Construct lead-off ditches away from culvert outlets where the slope gradients restrict the free flow of water.

The intake end of culverts shall be marked by installing a 5-foot long, rust-resistant painted steel fence post two feet into the ground, within 6 inches of the inlet on the downgrade side.

Damaged culvert inlets and/or outlets shall be repaired by opening them with a hydraulic jack, or cutting off the culvert end to allow free passage of water at peak flow levels.

A manufacturer's certification that the product was manufactured, tested, and supplied in accordance with this specification shall be furnished to STATE upon request.

All culverts replaced shall become property of the PURCHASER and must be hauled off STATE lands.

EXHIBIT F
 CULVERT LIST

CULVERT NO.	MATERIAL	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT POINT TO POINT	STATION
1	Plastic	18	30	A to B	23+55
2	Alum. Steel	18	40	E to F	11+70
3	Alum. Steel	30	40	E to F	21+70
4	Alum. Steel	18	30	E to F	31+15
5	Alum. Steel	30	40	E to F	39+05

Following are the minimum standard gauges for steel culvert and coupling bands.

<u>Dia.</u>	<u>Steel Culvert</u>	<u>Thickness</u>		<u>Band Gauges</u>	<u>Band Widths (")</u>	
	<u>Gauge</u>	<u>Uncoated</u>	<u>Coated</u>		<u>Annular</u>	<u>Helical</u>
18-30	16	(0.0598")	(0.064")	16	12	12

TOTAL LENGTHS BY DIAMETER	
18 INCH	30 INCH
100 Feet	80 Feet

EXHIBIT G
TYPICAL EMBEDDED ENERGY DISSIPATOR

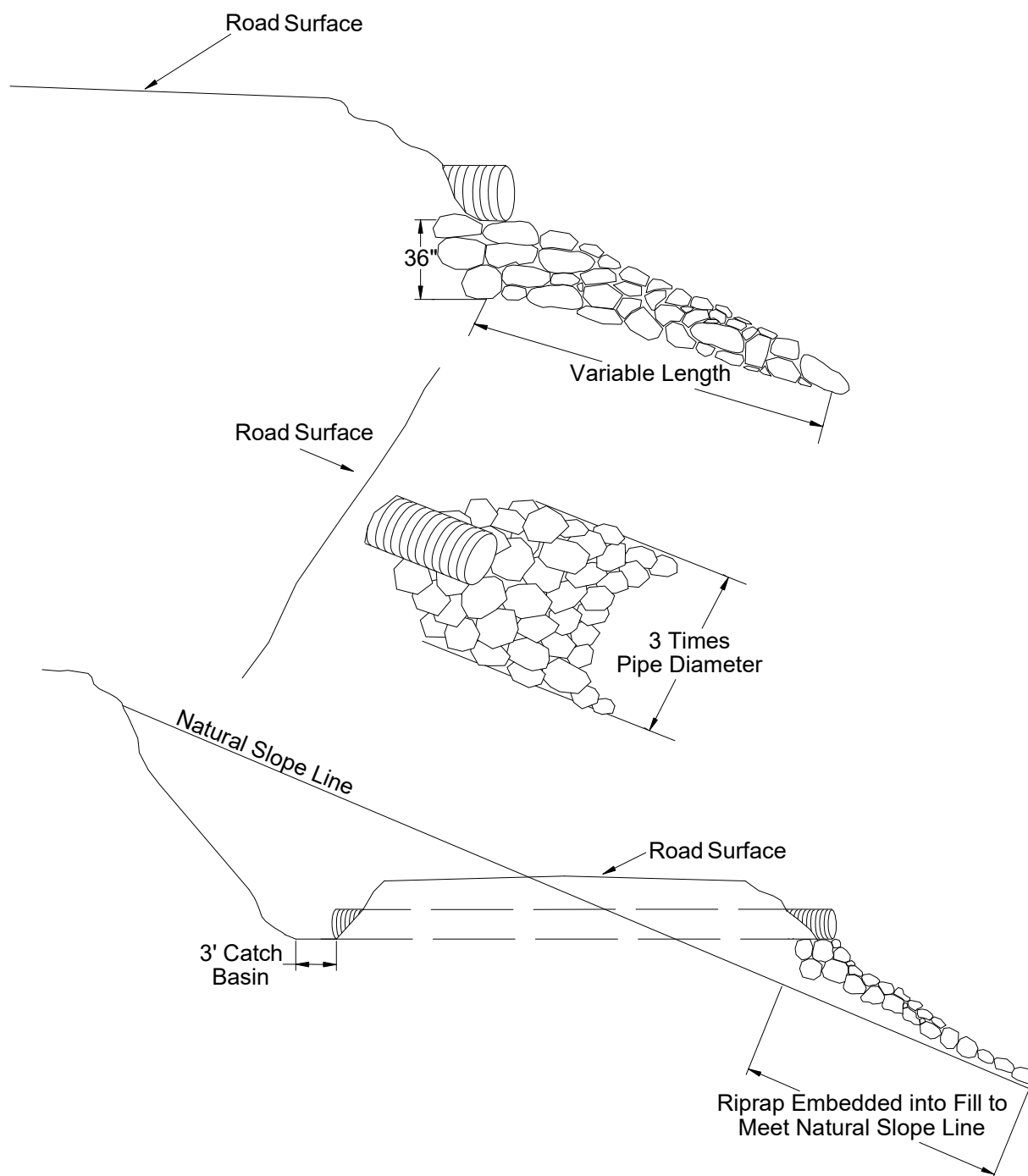
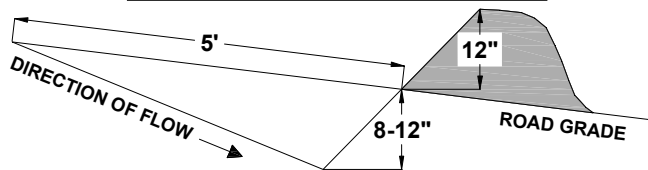


EXHIBIT H

WATERBAR SPECIFICATIONS

PROFILE

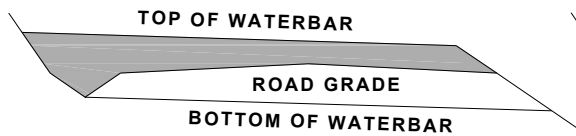
DITCHED AND OUTSLOPED



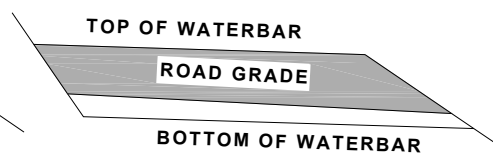
SPACING OF WATERBARS	
ROAD GRADE	DISTANCE
< 6 %	400'
6 - 10 %	200'
11 - 15 %	150'
> 15 %	100'

CROSS SECTION

DITCHED



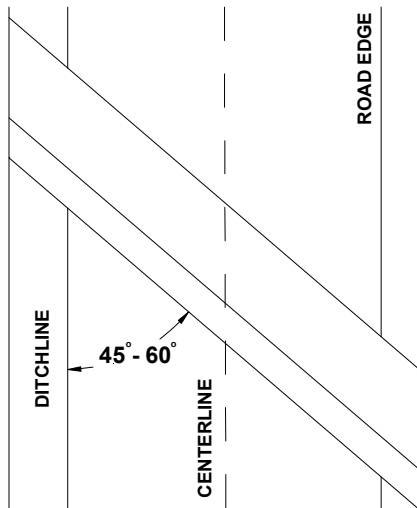
OUTSLOPED



CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
 CROSS DRAINAGE GRADIENT MINIMUM 3%.

PLAN VIEW

DITCHED



OUTSLOPED

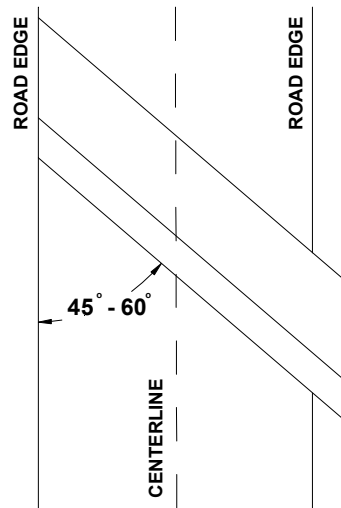
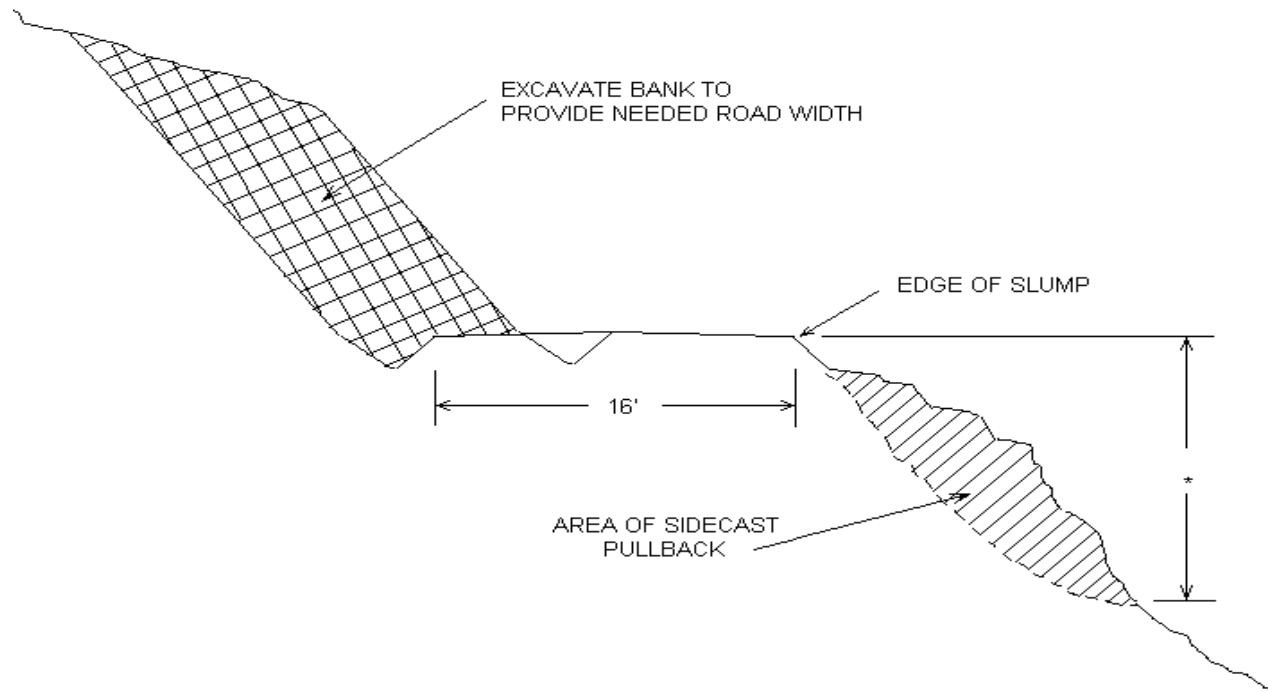


EXHIBIT I

TYPICAL CROSS SECTION VIEW OF SIDECAST PULLBACK AND ROAD REALIGNMENT



* As marked in field

EXHIBIT J

ROAD DIP CONSTRUCTION SPECIFICATIONS

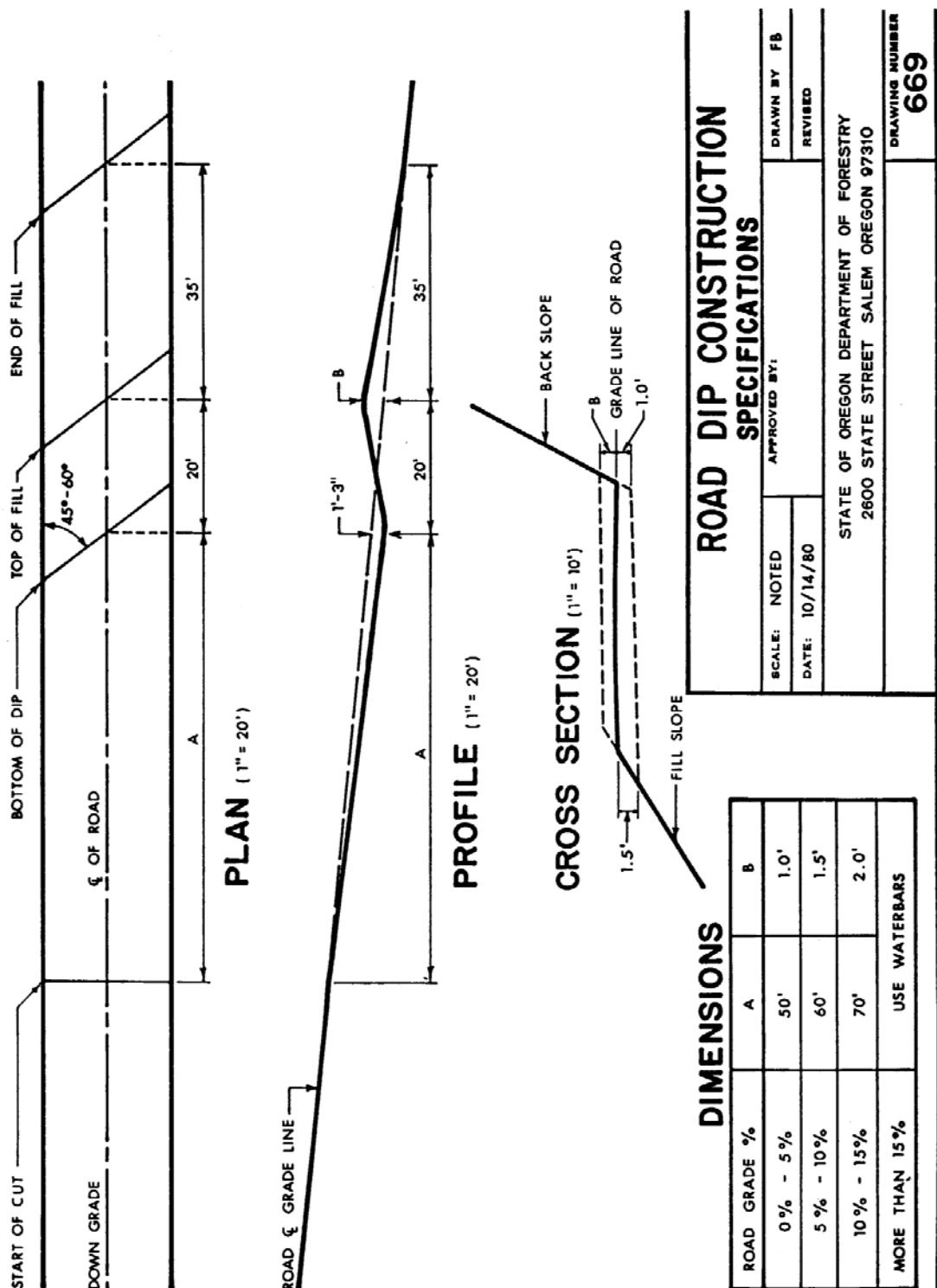


EXHIBIT K

SPECIFICATIONS FOR LANDING SLASH PILING

Piling Slash: All piles shall be as compact as possible. Piles shall be built to a height of 3 to 4 feet and then covered to prevent water from reaching the Slash. Each pile shall be covered with polyethylene plastic sheeting. State shall supply the materials used for covering the Slash. Additional woody debris shall be piled on top of the covered piles to complete the piling, as directed by STATE.

Placement of Piles: Piles shall be placed in a location to minimize damage from burning to standing green trees, snags, and culverts. Piles shall be placed as follows:

- (a) No less than 50 feet from any snag, green tree, or culvert, unless otherwise approved by STATE.
- (b) Cull log segments suitable for firewood shall be piled separately from Slash at a distance of no closer than 50 feet from the Slash piles.

EXHIBIT L

SEEDING, FERTILIZING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed and fertilizer.

Seeding Seasons. Seeding shall be performed only from March 1 through June 15 and August 15 through October 15. Seeding materials shall not be applied during windy weather or when the ground is excessively wet or frozen. Areas of disturbed soil shall be seeded by the end of the project period in which work was started. PURCHASER shall notify STATE 24 hours prior to seeding.

Soil Preparation. Areas to be seeded that have been damaged by erosion or other causes shall be restored prior to seeding. All areas to be seeded shall be finished and then cultivated to provide a reasonably firm, but friable seedbed. A minimum of 1/2 inch of surface soil shall be in a loose condition.

Application Methods for Seed and Fertilizer

Dry Method. Mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders or other approved mechanical seeding equipment shall be used to apply the seed and fertilizer in the amounts and mixtures specified. Hand-operated seeding devices may be used when seed and fertilizer are applied in dry form.

Application Rates for Seed and Fertilizer

Seed listed below shall be applied at the following rates per acre:

SPECIES	Lb./Acre	MIXTURE	PURE LIVE SEED	Repellent
Fine Fescue	12	40%	98%	0
Annual Ryegrass	6	20%	98%	0
Perennial Ryegrass	9	30%	98%	0
White Dutch Clover	3	10%	98%	0

Fertilizer: Chemical analysis shall be 16-20-0 and shall be applied at the rate of 200 pounds per acre. Fertilizer shall not be applied within 100 feet of streams.

Seeding will be considered acceptable when all other specified requirements in this Exhibit have been completed and a healthy, uniform, close stand of grass has been established, unless otherwise approved in writing by STATE.

MULCHING

This work shall consist of furnishing and placing required mulch. Mulch shall consist of straw that is free of noxious weeds.

Mulching Period. Straw mulch shall be applied within 24 hours of spreading grass seed and fertilizer.

Application Rates for Mulch

Place straw mulch to a reasonably uniform thickness of 3/4 to 1 1/4 inches. This rate requires between 1 and 1 1/2 tons of dry mulch per acre.



PART IV: OTHER INFORMATION

WRITTEN PLAN

SALE NAME: Beaver Nation Sale# TL-341-2020-W00288-01

PROTECTED WATERS: Foland Creek, a Large Type F, unnamed large Type F tributary to Foland Creek, 3 unnamed small Type F tributaries to Foland Creek, and 1 unnamed tributary to the Nestucca River.

Definitions: Stream buffer – Type F Small Stream: at least 100 feet horizontal distance from the high water mark on each side of the stream.

LOCATION: Portions of Sections 30, 32 and 33, T3S, R9W, W.M. and, Tillamook County, Oregon.

Activity: Cable yarding across Type F streams.

Protection measures:

- All trees in the RMA are reserved from cutting.
- Cable yarding lines will be pulled out of the RMA prior to rigging the next yarding road.
- If trees or logs fall or slide into a stream channel they will not be limbed, bucked, or removed without prior approval from ODF.
- Cable lines will be an average of at least 150 feet apart where they extend over or through the Type F stream and buffer.
- Full suspension yarding is required when yarding across Type F streams.

Date: August 17, 2019

Prepared by: Nathan Atchison, Forester