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: WL-341-2020-W00783-01

(2) Sale Name: Pontius Creek

(3) Contract Expiration Date: 05/31/2022

(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.

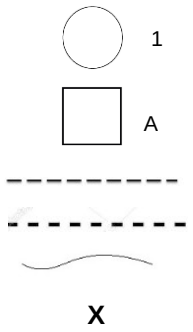
(7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.

(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.



Cable Landing, with numbers for sequence.

Tractor Landing with alphabetical sequence.

Approximate setting boundary.

Spur truck roads.

Tractor yarding roads.

Temporary stream crossings.

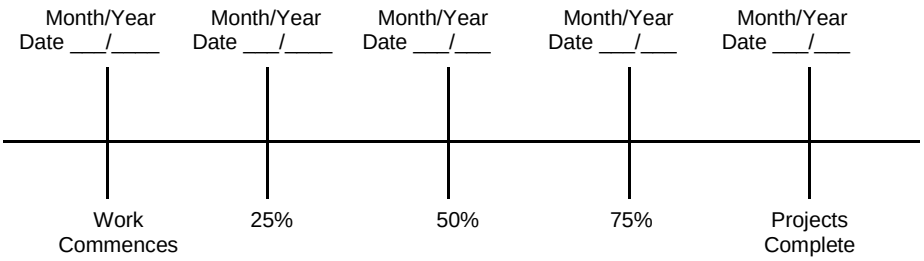
Oregon Department of Forestry
2600 State St Salem OR 97310
PART III: EXHIBITS

EXHIBIT B
OPERATIONS PLAN

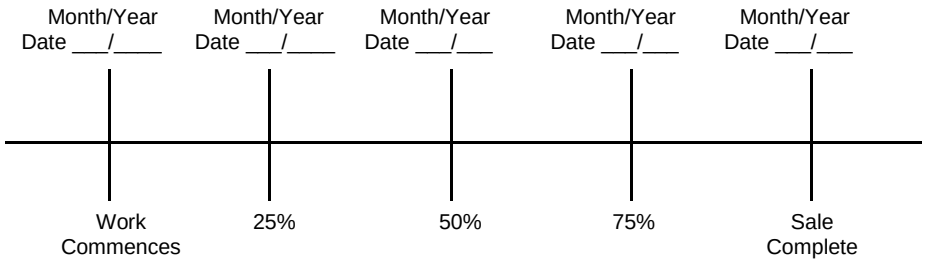
Completion Timeline

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



Harvest & Other Requirements



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: _____

STATE OF OREGON - DEPARTMENT OF FORESTRY

_____

Title _____

SUBMITTED BY:
PURCHASER

_____

Title _____

Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE (WESTSIDE SCALE)
SCALING INSTRUCTIONS - LOCATION APPROVAL - BRAND INFORMATION
Western Lane - SOA

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

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

(3) FROM: Western Lane Phone (541) 935-2283
(State Forestry District)
Address: 87950 TERRITORIAL HWY
VENETA,OR 97487-0157

(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'.

	YES	NO
(7) Weight Scale Sample	☐	☑

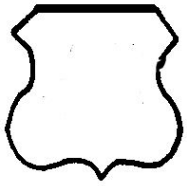
(8) **APPROVED SCALING LOCATIONS** (as shown on the ODF Approved Locations web-site)	Species	Yard	Truck	Weight

(9) **SALE NAME:** Pontius Creek
COUNTY: Lane

(10) **STATE CONTRACT NUMBER:**
WL-341-2020-W00783-01

(11) STATE BRAND REGISTRATION NUMBER: _____

(12) **STATE BRAND INFORMATION:**



(13) PAINT REQUIRED: YES ☑
COLOR: Orange

(14) **SPECIAL REQUESTS** (Check applicable)

PEELABLE CULL (all species).....	☑
NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE.....	☑
ADD-BACK VOLUME - Deductions due to delay...	☑

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

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 - SAWMILL GRADE
INSTRUCTIONS FOR FORM 343-307a (rev. 11/11)
Western Lane - SOA

(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 Scalers Inc.
6137 NE 63rd St, Vancouver, WA, 98661
Phone: (360) 553-7212 ext. 4 Fax:(360) 553-7213
Email: info@nwlogscalers.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 specifies 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 \\WPODFFILL01\\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
Western Lane, SOA

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

(2) **(Approved Pulp Processing Facility)**

(3) FROM: Western Lane Phone (541) 935-2283
(State Forestry District)
Address: 87950 TERRITORIAL HWY
VENETA,OR 97487-0157

(4) PURCHASER: _____

(5) Scaling Bureau **(TPSO)** Processing Weight receipts:
_____
Mailing Address: _____
_____
Phone Number: _____

(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.

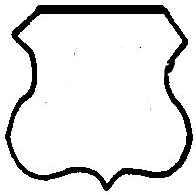
(7) PULP FACILITY PROCESSING INSTRUCTIONS:
- Pulp loads shall be weighed in lieu of scaling.
- One Ton = 2000 lbs(Short Ton).
- Pulp loads shall have a yellow Log Load Receipt attached.
- Gross weight and truck tare weight for each load shall be machine printed on the weight receipt.
- Weigher shall 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.

(9) **SALE NAME:** Pontius Creek
COUNTY: Lane
STATE CONTRACT NUMBER:
WL-341-2020-W00783-01

(11) STATE BRAND REGISTRATION NUMBER: _____

(12) STATE BRAND INFORMATION:



(13) **REMARKS:**

Operator's Name (Optional inclusion by District):

(14) SIGNATURES:

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

Western Lane, SOA

(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/DIVSIONS/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 \\WPODFFILL01\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

Road	Subgrade Width	Surfaced Width	STATION TO STATION	Drainage
Spur 1	16'	12'	0+00 to 0+95 3+65 to 21+26	Outsloped
Spur 1	12'	10'	0+95 to 3+65	Outsloped
Spur 1	16'	12'	21+26 to 29+72	Crowned
Spur 1	16'	12'	29+72 to 50+88	Outsloped
Spur 1a	14'	12'	0+00 to 6+15	Crowned
Spur 1b	14'	12'	0+00 to 3+80	Outsloped
Spur 1c	14'	12'	0+00 to 2+50	Outsloped
Spur 1d	14'	12'	0+00 to 2+00	Outsloped

Surface width shall be increased to accommodate off-tracking on horizontal curves.

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.

Where clearing limits have not been marked, the clearing limits shall extend 10 feet back of the top of the cutslope and 10 feet out from the toe of the fill slope, or as directed by STATE. The “Road Brushing Specifications" in Exhibit I shall apply. Clearing debris shall not be placed or permitted to remain in or under any road embankment sections. Clearing debris shall not be left lodged against standing trees.

All danger trees, leaners, and Snags outside the clearing limits which could fall and hit the road shall be felled.

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 debris shall not be placed or permitted to remain in or under any road embankment sections. Grubbing debris shall not be left lodged against standing trees.

GRUBBING CLASSIFICATION.

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 ditch, whichever is widest, or as marked in the field.

CLEARING AND GRUBBING DISPOSAL. Scatter in stable locations through openings in the timber outside of the cleared right-of-way, except areas where end-haul is required. In areas where end-haul is required, clearing and grubbing debris shall be fully contained and hauled to a designated waste area. Clearing and grubbing debris shall be left in a stable location, and not left lodged against standing trees.

EXHIBIT D
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.

Unless road plans show otherwise, all roads shall be on a balanced cross section, except when the slope is over 50 percent, the road shall be on full bench for the width specified.

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.

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. Leaving sidecast below the road is only permissible if specifically allowed in "Full Bench and End Haul Requirements" in this Exhibit.

All fills shall be machine compacted according to the "Compaction and Processing Requirements" in this Exhibit.

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 plans or as follows: 400 divided by the radius of the curve equals the amount of extra width.

DRAINAGE

Subgrade. Subgrade shall be crowned or outsloped at 4 to 6 percent as shown on the "Forest Road Specifications" table in this Exhibit.

Ditch. Construct "V shaped ditch 3 feet wide and to a depth of 1 foot below subgrade.

Ditchouts. Construct ditchouts to drain away from subgrade at locations marked in the field or as directed by STATE.

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 and as marked in the field.

SLOPES	Back Slopes	Fill Slopes
Solid Rock	Vertical to ¼ :1	
Fractured Rock	¼:1	
Soil - side slopes 50% and over	¾:1	
Soil - side slopes less than 50%	1:1	1½ :1

Top of cutslope shall be rounded were specified by STATE.

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 outsloped or crowned for drainage with general grade no more than 3 percent. Surface as shown in the "Road Surfacing" table in this Exhibit.

TURNAROUNDS. Increase subgrade width an additional 20 feet for a length of 20 feet at locations marked in the field.

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD CONSTRUCTION/RECONSTRUCT INSTRUCTIONS:

(1) Roadside Brushing. Conduct roadside brushing as specified in Exhibit H.

(2) Timber Removal. Remove all trees within posted right-of-way, as specified in Section 2210, "Designated Timber."
(3) Bank Slough Removal. Dig out all bank slough. Bank slough material shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE.
(4) Drainage Ditches. Restore or construct ditch lines, including ditchouts, as directed by STATE. Clean out any plugged culvert inlets and outlets. Waste materials from drainage ditches and sediment basins shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE. Damaged culvert inlets and/or outlets shall be repaired by opening them with a hydraulic jack, or cutting off the culvert end to allow for free passage of water at peak flow levels.
(5) Excavated Materials. Excavated materials shall be utilized for road construction and hauled in where necessary. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Surplus excavated materials and waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit.
(6) Fill Armor and Energy Dissipator Construction. Where rock is specified for fill armor, rock shall be machine placed and tamped at a 1½:1 slope, beginning at the toe of the fill. Where rock is used for an energy dissipator, rock shall be placed below the culvert outlet and embedded for a minimum of 3 feet, in accordance with Exhibit G.
(7) Stream crossings and Cross Drain culverts shall be installed as directed by STATE and in accordance to Exhibit G. The Location of the culverts shall be marked by STATE. A STATE representative will mark the location after the completion of the subgrade. Rocking shall not occur until all culverts have been installed unless otherwise approved in writing by STATE.
(8) All inlets and outlets of stream crossings shall be armored with rock. All outlets of cross drains shall be armored with rock. Rock may be acquired at STATE approved locations on STATE lands, or utilized from STATE approved road generated rock material. Install energy dissipater as outlined in Exhibit G.
(9) Each culvert shall be backfilled with some crushed rock, or provided extra surfacing rock allocated over the culvert on the running surface, or compact the soil with a tamping device. Operator shall provide adequate support around the culvert.
(10) Subgrade Preparation and Application of Surfacing Rock.

(a) Complete culvert installations, drainage ditches, ditchouts, fill construction, and other specified work prior to the application of surfacing rock.

(b) Subgrade shall be crowned or outsloped at 4 to 6 percent.

(c) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with specifications in the "Compaction and Processing Requirements" in this Exhibit. Final road surface shall be crowned or outsloped at 4 to 6 percent.

The subgrade shall be approved by STATE prior to the application of rock.

EXHIBIT D
FULL BENCH AND END-HAUL REQUIREMENTS

Full bench construction is required on slopes over 55%. Excavated material from these areas shall be deposited in waste areas approved by State

Road	STA. to STA.	Approx. Loose Waste (yds^3)	Containment Sidecast	Waste Area Location	Waste Area Treatment
Spur 1	9+90 to 26+03	2633	1	3	1-2
Spur 1a Full Bench	2+09 to 3+31	692	1	3	1-2
Spur 1a	0+00 to 2+09 3+31 to 6+15	1126		3	1-2
Landing 1	8+65	1193	1	3	1-2
SwitchBack	26+03 to 29+72	4633	1	3	1-2
	Total	**10277**			

Landing fills shall not be allowed on slopes over 55%

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.

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

(1) Full: No excavated material remains below the road.

(2) Normal/Incidental: The amount of excavated material lost over the outside edge of the road shall not exceed 1 foot in depth.

(3) Sidecast: Material shall be spread evenly below the road so that it does not build up behind trees, snags or other debris, and shall not exceed 3 feet in depth.

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

(1) As shown on Exhibit A and as marked in the field.

(2) Setback from slope break shall be a minimum of 20 feet horizontal measurement.

(3) As directed by STATE.

Waste Area Treatment

(1) Deposit at waste area, spread evenly, compact with Dozer, and provide adequate drainage.

(2) Pile woody debris separate from other waste material.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Haul Route point A to H (Swamp Creek (16-7-6) and 16-8-1) as shown on Exhibit A:

Point: C to D, E to F and G to H
Grade and shape running surface and establish drainage. The operator shall maintain or reestablish drainage for the entire road based on road current grade and shape. Clearing ditches of debris, reestablishment of ditches where needed, cleaning out catch basins and unplugging or cleaning culverts along the road. Purchaser is required to maintain during the entirety of sale.

Point A to H Conduct roadside brushing according to Exhibit H.

Rocking Instructions:

Spot Rock along Haul Route
Utilize Spot rock allocated to location were specified by STATE, approximately 100' Cu yards of 1 ½"-0".

Spur 1 as shown on Exhibit A:

0+00 to 50+88 Conduct roadside brushing according to Exhibit H.

Clear and grub. Approx., 20 feet wide of clearing and grubbing is anticipated. Remove all stumps within 5 feet of the edge of the road and any stump where the roots or stumps are overhanging the cutslope.

Scatter stumps in openings and gaps in stable locations. On slopes greater than 50%, stumps shall be hauled to an approved waste area.

Clearing debris shall be piled on stable locations on slopes less than 50%. Clearing debris shall be piled in a manor to facilitate burning. The piles shall be conical in nature.

Improve the ditch lines. Establish a 3'x1' ditch in Areas specified by STATE depending on road Drainage type.

The subgrade shall be compacted according to Exhibit F and in lifts where fill is used.

Construct the subgrade. A balanced cut and fill is anticipated throughout the majority of the construction. All fill material shall be clean soil, free from organic debris. For any excess material needed to construct the subgrade, standard drifting or endhaul techniques shall be used.

Conduct sidecast pullback according to Exhibit N. Remove any organic debris encountered in the road prism or logs cribbed against fill material.

Extra subgrade width shall be provided for offtracking around horizontal curves.

Prepare the running surface for a lift of rock.

Grade and shape running surface and establish drainage. Spur 1 has sections of crowned insloped, outsloped drainage. The operator shall maintain or reestablish drainage for each section prior to the application of surfacing rock. The subgrade shall be crowned at 3 to 6 percent.

EXHIBIT D

FOREST ROAD SPECIFICATIONs

Spur 1 as shown on Exhibit A:

29+72 to 42+14 Create rolling dips as directed by the State according to the specifications from Exhibit K. Dimension (a) on the diagram shall be 50'. Dimension (b) on the diagram shall be 1' or 1.5'.

0+00 to 21+26 The subgrade shall be Outsloped at 4 to 6 percent.

21+26 to 29+72 The subgrade shall be Crowned at 4 to 6 percent with a 3'x1 inside ditch.

29+72 to 50+88 The subgrade shall be Outsloped at 4 to 6 percent.

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

0+00 Start of clear and grubbing. Begin Outslope Road Reconstruction. Grade, shape, compact subgrade, and establish drainage for outsloped road. Road shall be outsloped 4 to 6 percent.

At intersection of Spur 1 and 16-8-1 rd. reestablish 3-way intersection.

7+51 to 9+90 Start of tapered cut.

The top of cut is approximately on average **10 feet horizontal distance** from posted Right-of-Way. Endhaul waste material will be utilized in Fill 1 (Approximately 288 Cu. Yds.) at 9+42. Leftover waste material will be end hauled (905 Cu. Yds.) in accordance with Exhibit D.

8+65 Construct a roadside landing. Landing shall be a minimum of 50' by 50' and no greater than 70' by 70'. Landing should be outsloped 3%-5%.

9+42 Location of Fill 1. Fill (Approximately 288 Cu. Yds.)

9+42 to 26+00 Re-establish centerline. Excavate into the bank to establish required road width. End-haul waste and fill material to an approved waste or fill area (approximately 2633 loose Cu Yds.) as directed by STATE.

20+77 Construct a truck turn out on the Left side of road. Turn out shall a minimum of 8' by 50'.

26+03 Start of tapered cut. Start of 50' radius switchback. Construct 3-way intersection at intersection for Spur 1, Spur 1a and unused upper road. Establish water bar on Old unused road as specified in Exhibit J so water will flow into ditch towards Spur 1A. Subgrade shall be a minimum of 26' to accommodate offtracking. Operator will build Switchback so grade will be no more than 10% throughout curve. An additional 170 Cu. Yards of rock will be needed to account for curve widening.

The top of cut is approximately on average **10 feet horizontal distance** from posted Right-of-Way. Endhaul waste material will be utilized in Fill 2 (Approximately 836 Cu. Yds.) at 0+35 Spur 1A (Fill 2 location) and Fill 3 (Approximately 1522 Cu Yds.) at 42+14. Leftover waste material will be end hauled to Waste Area location as directed by State.

Install an 18"x40' cross drain as marked in the field in accordance to Exhibit G.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

26+03 Fill material used in subgrade construction shall not be any closer than **10 feet** from the posted Right of-Way boundary unless otherwise approved in writing by STATE.

29+72 End of 50' radius Curve Switchback. Install an 18"x40' cross drain as marked in the field in accordance to Exhibit G.

32+46 Construct 3-way intersection/ truck turnaround at intersection for Spur 1 and Spur 1B.

38+35 Construct 3-way intersection/ truck turnaround at intersection for Spur 1 and Spur 1C.

42+46 Location of Fill 3. **Project 3 & 4** Pull buried logs, organic material out of stream. Install 24"X 40' culvert at stream crossing. The inlet and outlet shall be armored with an Energy Dissipater according to Exhibit H with Riprap or Pit run quality rock.

The stream currently flows underneath logs that had been placed for temporary stream crossing. This is approximately 30' down and 20' wide. The operator shall install the stream crossing to encompass all water through the one culvert. Seeding and mulching crossing in accordance to Exhibit L.

Ensure a smooth transition into the stream crossing. The operator may be required to build up portions of this road to transition properly into the crossing. The grade for crossing will not exceeded an unfavorable grade of 13% and favorable of 16%. Clean fill may be used to build up road. Fill material is expected to be hauled in where necessary and utilized from the waste generated from the project roads listed. An alternative source may be approved in writing by STATE.

42+77 Construct 3-way intersection/ truck turnaround at intersection for Spur 1 and Spur 1D.

45+72 Start New Crowned Construction in accordance to Exhibit D. The top of cut is approximately on average **10 feet horizontal distance** from posted Right-of-Way.

48+30 Construct truck turnaround on the left side in accordance to Exhibit D.

50+88 End Road. Construct a landing. Landing shall be a minimum of 50' by 50' and no greater than 70' by 70'.

Rocking Instructions for Spur 1:

0+00 to 50+88 From the intersection of 16-8-1 Rd and Spur 1 to the 50+88 landing, provide a compacted depth of 6" of 3 "-0" base rock and 2" of 1½"-0" cap rock .

The running surface shall be sloped for drainage according to the subgrade specifications for that portion.

Apply additional rock for off tracking and turnouts as directed by STATE.

Apply 40 Cu. Yds. of Pit Run of landing rock for each landing.

Apply 20 Cu. Yds. of 3"-0" for each Truck Turn Around.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Spur 1A Road (Stationing 0+00 to 6+15)

Subgrade instructions:

0+00 to 6+15 Clear and grub. Approx., 40 feet wide of clearing and grubbing is anticipated. Remove all stumps within 5 feet of the edge of the road and any stump where the roots or stump are overhanging the cutslope.

On slopes greater than 60%, stumps shall be end hauled to an approved waste area. Otherwise, stumps shall be wasted in openings and gaps in stable locations. No Waste or stumps shall be placed over Headwall.

The subgrade construction consists of both balanced and full bench. All fill shall be clean soil, free from organic debris.

The top of cut is approximately on average **10 feet horizontal distance** from posted Right-of-Way.

Establish a 3'x1' ditch in Areas specified by STATE depending on road Drainage type.

Conduct sidecast pullback along entire old roadbed on the top of Headwall where specified by STATE. Remove any organic debris encountered in the road prism or logs cribbed against fill material.

The subgrade shall be crowned at 3 to 6 percent unless otherwise approved by STATE.

Spur 1A as shown on Exhibit A

0+00 to 2+09 Begin crowned road construction off spur 1. Grade, shape, compact subgrade, and establish drainage for crowned road. Road shall be crowned 3 to 6 percent. Ditches should be 3'x1'.

Clear and grub. Clearing debris shall be piled on stable locations. Clearing debris shall be piled in a manor to facilitate burning. The piles shall be conical in nature.

Construct Empty Truck Turn Around on Rightside near Switchback. Use Clean Fill material to construct Turn Around.

2+09 Install an 18"x40' cross drain the inlet and outlet shall be armored with an Energy Dissipater according to Exhibit H with Riprap or Pit run quality rock.as marked in the field in accordance to Exhibit G.

2+09 to 3+31 Full Bench Construction. The top of cutslope shall be rounded. The top of cut is approximately on average **10 feet horizontal distance** from posted Right-of-Way. EndHaul to be taken to approved Fill and waste area in accordance to Exhibit D area (approximately 630 loose Cu Yds.).

3+31 to 6+15 Re-establish centerline and begin crowned road reconstruction. Excavate into the bank to establish required road width. End-haul waste material to an approved waste and fill area (approximately 1188 loose Cu Yds.) accordance to Exhibit D.

6+15 End Road. Construct a landing. Landing shall be a minimum of 50' by 50' and no greater than 70' by 70'.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Rocking Instructions:

0+00 to 6+15 From the intersection of Spur 1 and Spur 1a to the landing at 6+15, apply a compacted depth of 6" of 3"-0" base rock and 2" of 1½"-0" cap rock. The running surface of crowned road sections shall be crowned at 3 to 6 percent.

The running surface shall be sloped for drainage according to the subgrade specifications for that portion.

0+00 Apply 20 Cu. Yds. of 3"-0" for each Truck Turn Around.

6+15 Apply 40 Cu. Yds. of Pit Run of rock for each landing.

Spur 1B as shown on Exhibit A

0+00 to 3+80 Clear and grub Area for Junction for Spur 1 and 1b. This area should be cleared to tagging limits and cleared for daylighting junction and creation of Truck turn around. Clearing debris shall be piled on stable locations. Clearing debris shall be piled in a manor to facilitate burning. The piles shall be conical in nature.

Waste Material from other areas will be used to provide no more than a 2' lift to create out slope drainage.

0+00 At intersection of Spur 1 and Spur 1b, establish 3-way intersection.

The subgrade shall be standard balance cut fill construction.

Stumps may be piled in openings and gaps in stable locations.

0+00 Begin out slope road construction Grade, shape, compact subgrade, and establish drainage for crowned road. Road shall be crowned 3 to 6 percent.

1+00 To right of Road, an Area of 150'W X 300' L X 5' H for waste Area 1 should be cleared and logs decked outside of area towards road for removal.

3+80 Construct a landing. Landing shall be a minimum of 50' by 50' and no greater than 70' by 70'.

Rocking Instructions:

0+00 to 3+80 From the intersection of Spur 1 and Spur 1b to the landing at 3+80, apply a compacted depth of 6" of 3"-0" base rock and 2" of 1½"-0" cap rock. The running surface of crowned road sections shall be crowned at 3 to 6 percent.

0+00 Apply 20 Cu. Yds. of 3"-0" for each Truck Turn Around.

3+80 Apply 40 Cu. Yds. of Pit Run of landing rock for each landing.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Spur 1C as shown on Exhibit A

0+00 to 2+50	Clear and grub Area for Junction for Spur 1 and 1C. This area should be cleared to tagging limits and cleared for daylighting junction and creation of Truck turn around. Clearing debris shall be piled on stable locations. Clearing debris shall be piled in a manor to facilitate burning. The piles shall be conical in nature.
	Waste Material from other areas will be used to provide no more than a 2' lift to create out slope drainage.
0+00	At intersection of Spur 1 and Spur 1C, establish 3-way intersection.
	The subgrade shall be standard balance cut fill construction.
	Stumps may be piled in openings and gaps in stable locations.
0+00	Begin out slope road construction grade, shape, compact subgrade, and establish drainage for crowned road. Road shall be crowned 3 to 6 percent.
2+50	Construct a landing. Landing shall be a minimum of 50' by 50' and no greater than 70' by 70'

Rocking Instructions:

0+00 to 2+50	From the intersection of Spur 1 and Spur 1C to the landing at 2+50, apply a compacted depth of 6" of 3"-0" base rock and 2" of 1½"-0" cap rock. The running surface of crowned road sections shall be crowned at 3 to 6 percent.
0+00	Apply 20 Cu. Yds. of 3"-0" for each Truck Turn Around.
2+50	Apply 40 Cu. Yds. of Pit Run of landing rock for each landing.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Spur 1D as shown on Exhibit A

0+00 to 2+00	Clear and grub Area for Junction for Spur 1 and 1D. This area should be cleared to tagging limits and cleared for daylighting junction and creation of Truck turn around. Clearing debris shall be piled on stable locations. Clearing debris shall be piled in a manor to facilitate burning. The piles shall be conical in nature. Waste Material from other areas will be used to provide no more than a 2' lift to create out slope drainage.
0+00	At intersection of Spur 1 and Spur 1D, establish 3-way intersection. The subgrade shall be standard balance cut fill construction. Stumps may be piled in openings and gaps in stable locations.
0+00	Begin out slope road construction grade, shape, compact subgrade, and establish drainage for crowned road. Road shall be crowned 3 to 6 percent.
2+00	Construct a landing. Landing shall be a minimum of 50' by 50' and no greater than 70' by 70'.

Rocking Instructions:

0+00 to 2+00	From the intersection of Spur 1 and Spur 1D to the landing at 2+00, apply a compacted depth of 6" of 3"-0" base rock and 2" of 1½"-0" cap rock. The running surface of crowned road sections shall be crowned at 3 to 6 percent.
0+00	Apply 20 Cu. Yds. of 3"-0" for each Truck Turn Around.
2+00	Apply 40 Cu. Yds. of Pit Run of landing rock for each landing.

Exhibit E

ROAD	ROCK TYPE	ROCK SIZE	COMPACTED DEPTH	YDS^3/STA	TOTAL STATIONS	APPROX. TOATAL YDS^3
Spur 1	BASE	3"-0"	6"	33	50.88	1680
Spur 1	CAP	1 1/2"-0"	2"	11	50.88	560
Spur 1a	BASE	3"-0"	6"	33	6.15	200
Spur 1a	CAP	1 1/2"-0"	2"	11	6.15	70
Spur 1b	BASE	3"-0"	6"	33	3.80	130
Spur 1b	CAP	1 1/2"-0"	2"	11	3.80	40
Spur 1c	BASE	3"-0"	6"	33	2.50	80
Spur 1c	CAP	1 1/2"-0"	2"	11	2.50	30
Spur 1d	BASE	3"-0"	6"	33	2.00	70
Spur 1d	CAP	1 1/2"-0"	2"	11	2.00	20
LANDINGS						
ROAD		**ROCK SIZE**	**COMPACTED DEPTH**	**YDS^3/STA**	**STATIONS**	**APPROX. TOATAL YDS^3**
Spur 1		Pit Run	6"	40	2.00	80
Spur 1a		Pit Run	6"	40	1.00	40
Spur 1b		Pit Run	6"	40	1.00	40
Spur 1c		Pit Run	6"	40	1.00	40
Spur 1d		Pit Run	6"	40	1.00	40
TRUCK TURN AROUND						
ROAD		**ROCK SIZE**	**COMPACTED DEPTH**	**Yds^3/Point**	**NO. OF TURN AROUNDS**	**APPROX. TOATAL YDS^3**
Spur 1		3"-0"	6"	20	7	140
Spur 1a		3"-0"	6"	20	1	20
Spur 1b		3"-0"	6"	20	1	20
Spur 1c		3"-0"	6"	20	1	20
Spur 1d		3"-0"	6"	20	1	20

CURVE WIDENING/SPOT ROCK						
Road		**ROCK SIZE**	**COMPACTED DEPTH**	**Yds³/Point**	**# POINTS**	**APPROX. TOATAL YDS³**
Spur 1		3"-0"	6"	170	1	170
Swamp Creek (16-7-6)		1 1/2"-0"	2"	11	9	99
Energy Disipator						
ROAD		**ROCK SIZE**	**COMPACTED DEPTH**	**YDS³/STA**	**STATIONS**	**APPROX. TOATAL YDS³**
Spur 1		Rip Rap		10	3.00	30
Spur 1a		Rip Rap		10	1.00	10

EXHIBIT E

Rock Totals	Pit Run	3"-0"	1 1/2"-0"	Rip Rap
LOOSE TRUCK Cu. Yds	240	2450	789	40

Total Approximate Yds3 3"-0" = **2450**
Total Approximate Yds3 Pit Run = **240**

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

Depth measurement shall be used to determine contract compliance.

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 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 D. 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 D. 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.

Load Records. Notify STATE before spreading the rock and maintain a record of all rock delivered for spreading. Make the record available for STATE inspection. A report listing the amount of rock delivered weekly. However, depth measurement shall be used to determine contract compliance.

EXHIBIT E

DURABLE CRUSHED ROCK SPECIFICATIONS

Grading Requirements

For 3/4"-0"	Passing	1" sieve	100%
	Passing	3/4" sieve	90-100%
	Passing	3/8" sieve	55-75%
	Passing	1/4" sieve	40-60%
	Passing	No. 10 sieve	20-40%
	Passing	No. 40 sieve	8-16%
For 1½"-0"	Passing	2" sieve	100%
	Passing	1½" sieve	90-100%
	Passing	3/4" sieve	60-90%
	Passing	1/4" sieve	30-50%
	Passing	No. 10 sieve	15-30%
	Passing	No. 40 sieve	7-15%
For 3"-0"	Passing	4" sieve	100%
	Passing	3" sieve	90-100%
	Passing	1½" sieve	60-90%
	Passing	3/4" sieve	40-60%
	Passing	1/4" sieve	20-40%
	Passing	No. 10 sieve	5-20%

JAW-RUN, PIT-RUN, and RIPRAP ROCK SPECIFICATIONS

For Pit Run	Passing	6" sieve	100%
	Passing	3" sieve	45-65%

Control of gradation shall be by visual inspection by STATE.

EXHIBIT F

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.

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 and compacted 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 and as directed by STATE.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All road segments requiring crushed rock.	(1) Vibratory Roller

EXHIBIT F

COMPACTION EQUIPMENT OPTIONS

(1) 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.

EXHIBIT G

CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the Contract.

Culverts shall be constructed of corrugated aluminized (Type 2) steel.

Polyethylene culverts shall be double-walled and meet the requirements of AASHTO M-294-06, Type S, **or** ASTM F2648 Culvert.

Aluminized (Type 2) steel culverts shall meet the requirements of AASHTO M-36-03[1].

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.

Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3 percent or greater than 10 percent.

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. Bedrock shall be excavated as required to provide a uniform foundation for the full length of the culvert.

Backfill shall consist of, crushed rock, or approved job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the culvert. Additional surfacing rock shall be placed over the culvert to account for shrinkage and compaction during hauling.

Transporting of the culvert shall be done carefully. Dragging or allowing free fall from trucks or into trenches shall not be permitted.

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be as follows: 12" for culverts 18" to 36". Minimum vertical cover for other designs shall be as specified by STATE.

Lengths of individual culvert sections shall be not less than 10 feet, unless otherwise provided for in special instructions.

The ends of each culvert shall be free of logs and debris which would restrict the free flow of water.

EXHIBIT G

CULVERT SPECIFICATIONS

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, or other approved slope protection device. Construct lead-off ditches away from culvert outlets where the slope gradients restrict the free flow of water.

EXHIBIT G

CULVERT SPECIFICATIONS

The intake ends of culverts in fills less than 3 feet to the top of the culvert shall be marked by driving steel posts within 6 inches of the downgrade side. Posts shall be painted with a rust-resistant paint and be a minimum of 5 feet long, with the spade driven 2 feet into the ground.

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

Following are the minimum standard gauges for steel culvert and coupling bands. Some culverts may require different gauges and may be found in the culvert listing.

	Steel Culvert	Thickness			Band Widths (")	
Dia.	Gauge	Uncoated	Coated	Band Gauges	Annular	Helical
18-24	16	(0.0598")	(0.064")	16	12	12

CULVERT LIST

DIAMETER / PIPE ARCH	LENGTH		MATERIAL	ROAD	STATION
(Inches)	(Feet)	Gauge			
18"	40	16	Aluminized Steel	Spur 1	26+03
18"	40	16	Aluminized Steel	Spur 1	29+72
24"	40	16	Aluminized Steel	Spur 1	42+46
18"	40	16	Aluminized Steel	Spur 1a	2+09

ACSP = Aluminized, CPP = Polyethylene, GCSP = Galvanized

Culvert Length shown are not the exact lengths. The length may be less or greater based on site conditions. Operator shall install the appropriate length of culvert to meet the requirements in this Exhibit as stated above and as directed by STATE.

"Stewardship in Forestry"

State Timber Sale Contract
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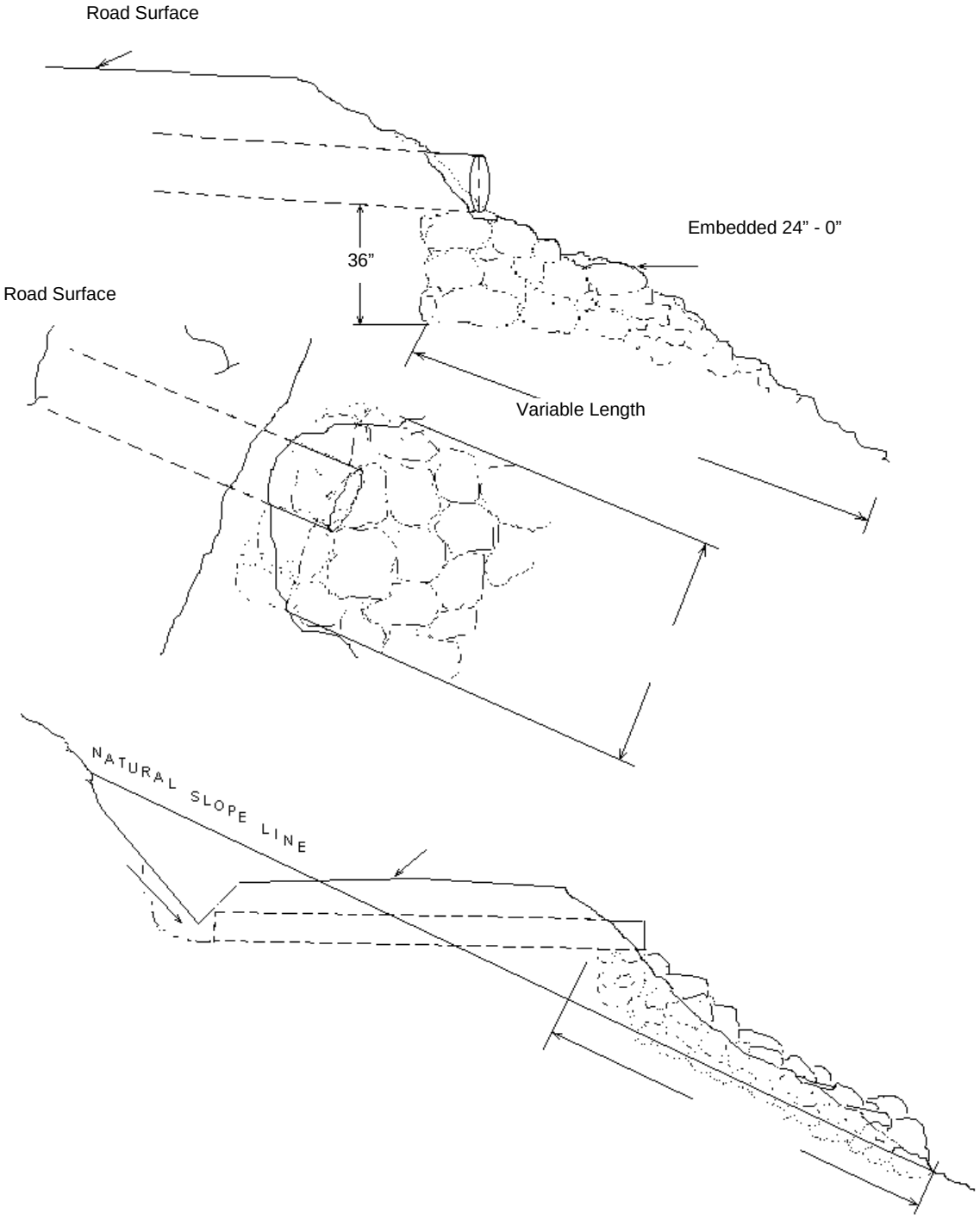
Pontius Creek

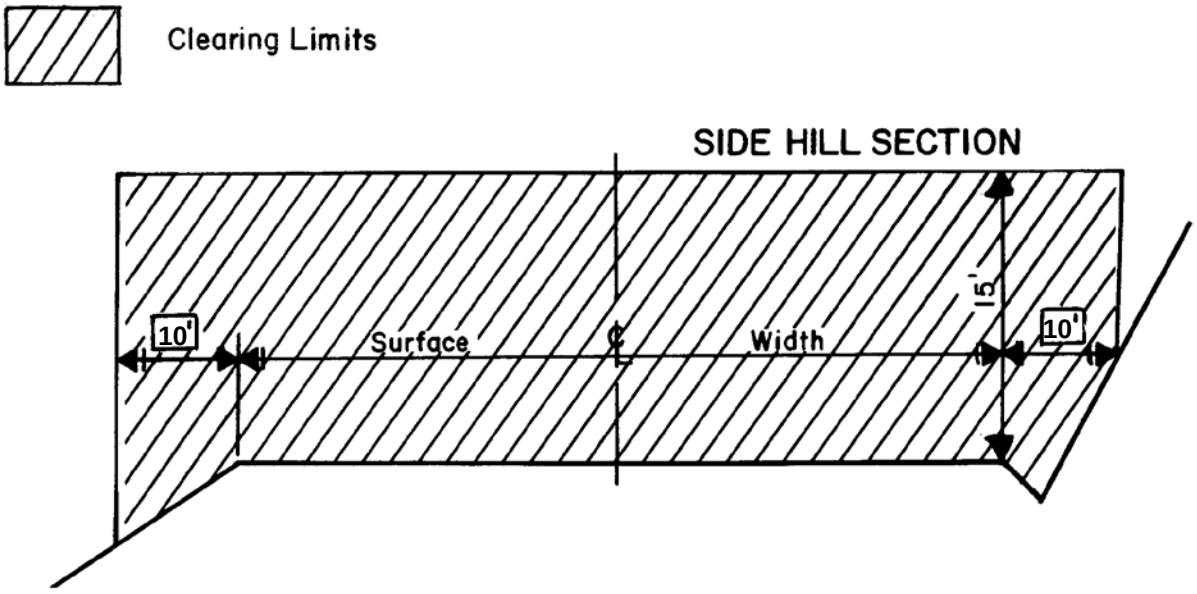
EXHIBIT H
TYPICAL EMBEDDED ENERGY DISSIPATOR



State Timber Sale Contract
No. 341-2020-W00783-01
Pontius Creek.

EXHIBIT I

ROAD BRUSHING SPECIFICATIONS



Brush between Project Points A to D as shown on Exhibit A in accordance to the requirements bellow.

REQUIREMENTS

The minimum height of clearing shall be 15 feet from the road surface, and the minimum width of clearing on the cut slope side of the road shall be 10 feet horizontal distance from the shoulder of the road and 10 feet horizontal on the down slope side from the road shoulder.

Brush and trees shall be cut to a maximum height of 6 inches above the ground surface or obstructions such as rocks or existing stumps.

Debris resulting from the brushing operation shall be removed from the roadway, cut slope, ditches, water courses, culvert inlets and outlets and sediment catching basins. Debris shall be mulched or scattered downslope from the road or placed in other stable locations. Large debris, 6 inches or larger in diameter, shall be mulched or cut into lengths 6 feet or less to facilitate rapid decay, unless otherwise approved by STATE.

EXHIBIT I

ROAD BRUSHING SPECIFICATIONS

Trees larger than 6 inches in diameter at stump height, located within clearing limits but outside of the ditch line or shoulder, shall not be cut down, but shall be limbed for road visibility. Planted or established conifers, located within brushing limits but outside of the ditch line or shoulder, shall not be cut down, but shall be limbed for road visibility unless otherwise directed by STATE.

Existing debris on the roadway, cut slope, ditch line, or catch basin shall be removed and treated. Debris shall be mulched or scattered downslope from the road or placed in other stable locations. Large non-merchantable debris, 6 inches or larger in diameter, shall be mulched or cut into lengths 6 feet or less to facilitate rapid decay, unless otherwise approved by STATE.

Merchantable blown down trees encountered shall be bucked in lengths as directed by STATE, and placed in locations acceptable to STATE, or pushed out of the road prism.

When spur roads to be brushed end with a Landing, the Landing is to be brushed as directed by STATE.

CULVERT DAMAGES. Culverts damaged, or any portion of a marker damaged from PURCHASER activities shall be assessed a damage fee.

"Stewardship in Forestry"

State Timber Sale Contract
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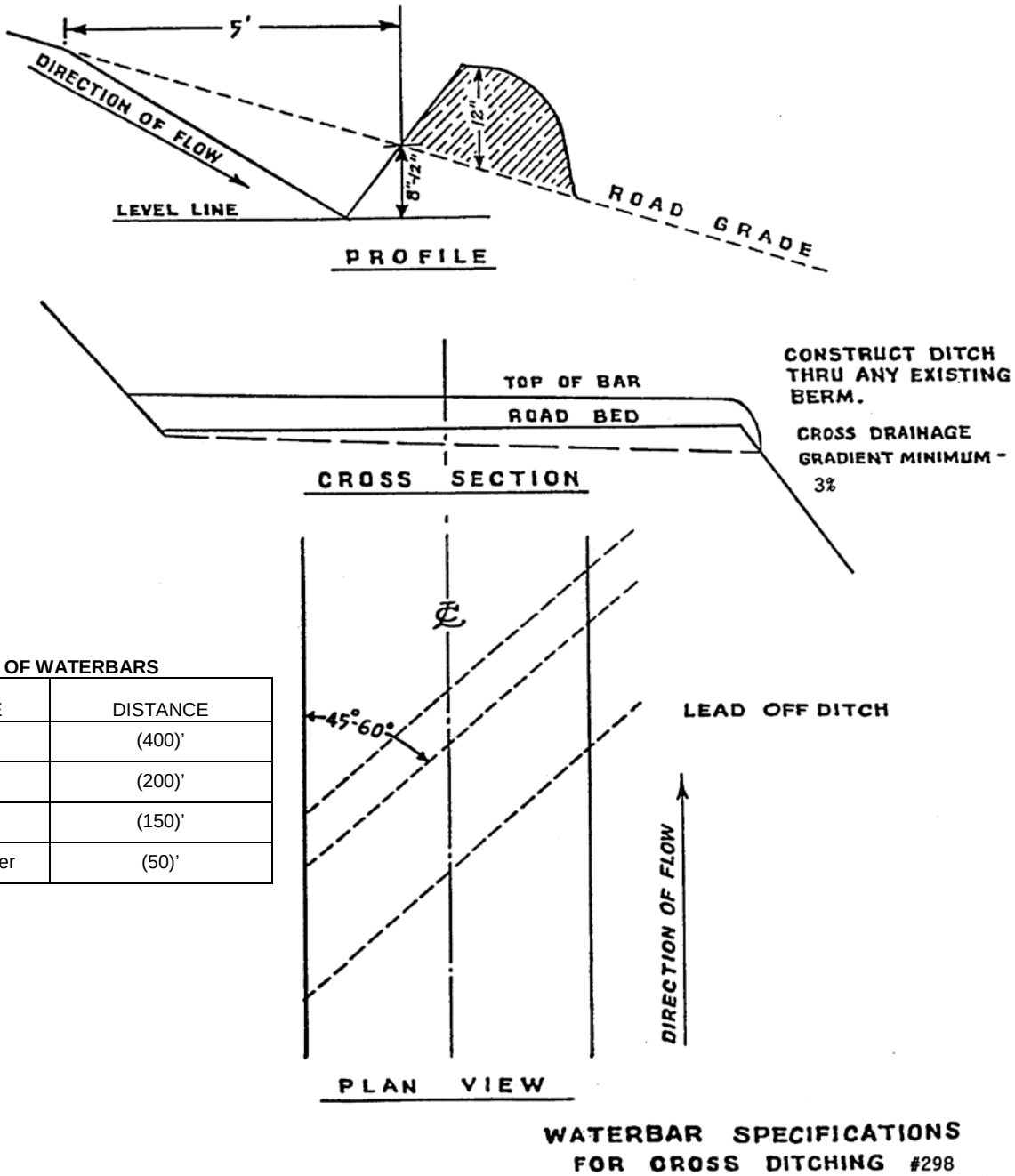
Pontius Creek

EXHIBIT J

WATERBAR SPECIFICATIONS



SPACING OF WATERBARS

ROAD GRADE	DISTANCE
≤ 5%	(400)'
6-10%	(200)'
11-15%	(150)'
16-20% or greater	(50)'

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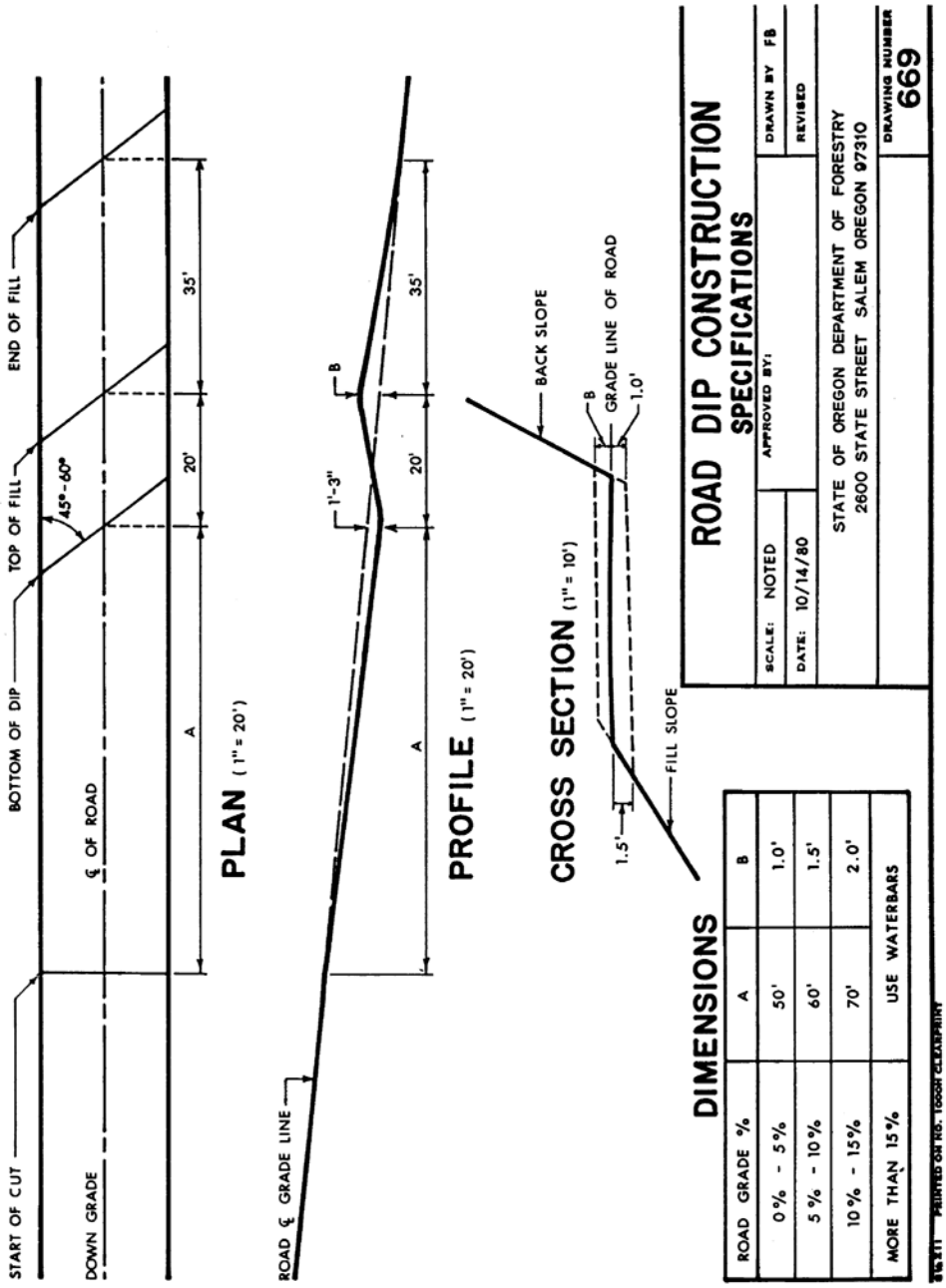
State Timber Sale Contract
No. 341-2020-W00783-01
Pontius Creek

EXHIBIT K

ROAD DIP CONSTRUCTION SPECIFICATIONS



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Pontius Creek

EXHIBIT L

SEEDING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed, fertilizer, and straw mulch. Straw mulch shall consist of straw that is free of noxious weeds. Apply seed, fertilizer, and straw mulch to all waste areas, and bare soils resulting from Project No. 4.

Seeding Seasons. Seeding shall be performed only from March 1 through June 15 and August 15 through October 31. 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 within 24 hours of seeding and fertilizer application.

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

The seed mixture listed below shall be applied at 100 lbs. per acre. The seed mixture shall be comprised of the following:

SPECIES	MIXTURE	PURE LIVE SEED	GERMINATION
Annual Rye	33%	95%	>90%
Orchard Grass	33%	95%	>90%
Perennial Rye	34%	95%	>90%

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.

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 1½ to 2½ inches. This rate requires between 2 and 3 tons of dry mulch per acre.
Application Locations:

Road Segment	Location	Road Segment	Location
1C to 1D	0+00 to 37+00	6A to 6B	0+00 to 16+50
4A to 4B	0+00 to 7+30	6C to 6D	0+00 to 36+15
5A to 5B	0+00 to 5+85	6I to 6J	0+00 to 9+00

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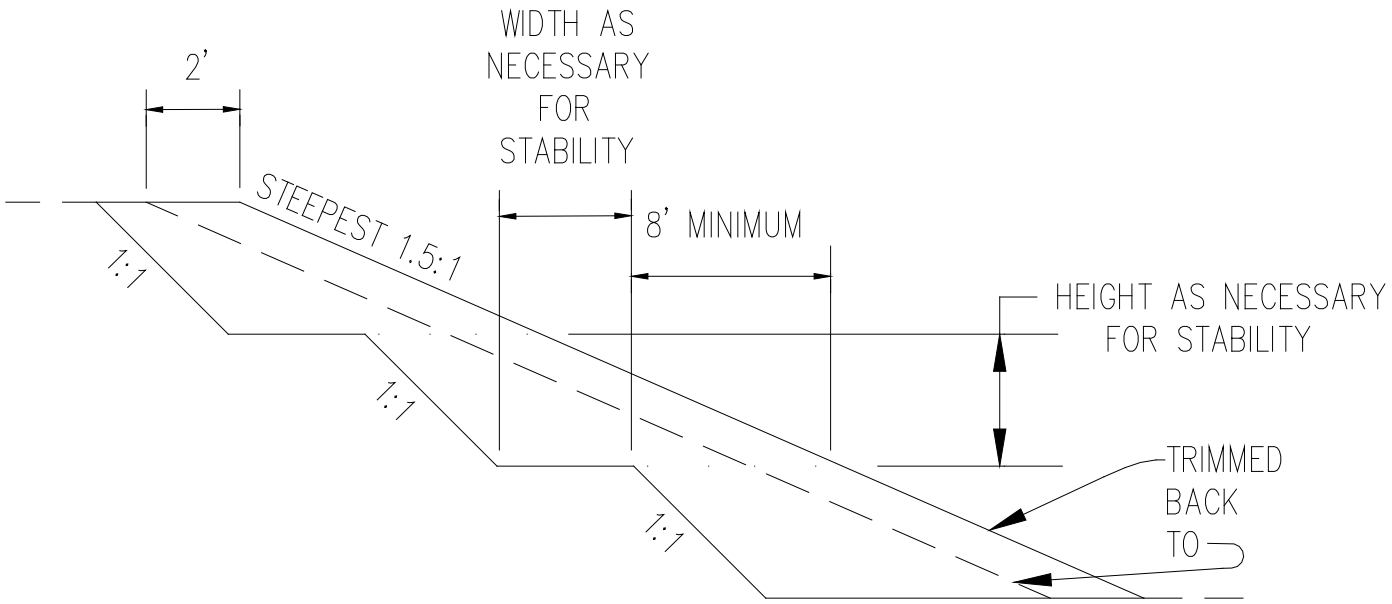
Pontius Creek

EXHIBIT M

SIDEHILL EMBANKMENT FILL CONSTRUCTION SPECIFICATIONS

(no scale)

All temporary earth slopes shall comply with OR-OSHA requirements. Areas to receive structural fill that have a slope greater than 2 ½ : 1 (40%) shall have horizontal benches and key ways cut into the fill areas prior to placing the new fills. All fill material shall be placed and compacted as fill 2 feet beyond 1.5H : 1V slope and then be trimmed back to a 1.5H : 1V slope so that compacted fill is exposed on the face of the slope (see detail below).



DETAIL: BENCHING AND SIDEHILL EMBANKMENT FILL CONSTRUCTION

STATE shall be contacted to inspect the prepared bench configuration prior to new fill material placement. STATE shall be contacted to inspect the final cut and fill slope configurations.

Once observed by STATE, erosion control measures shall be applied to the graded slopes. Variations to these specifications shall not be allowed unless approved in writing by STATE.

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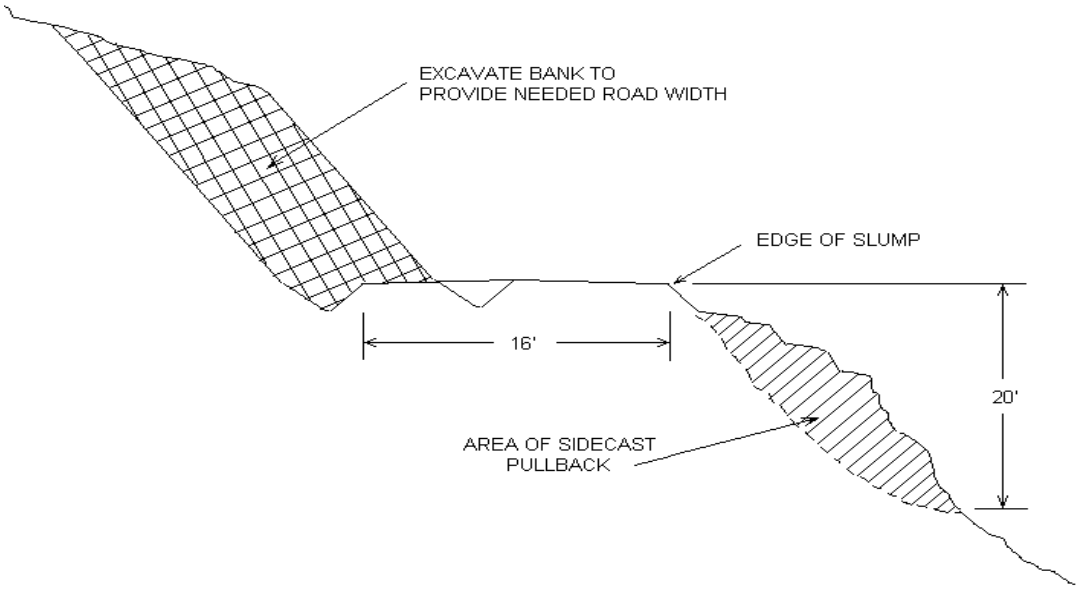
EXHIBIT N

TYPICAL CROSS SECTION VIEW OF SIDECAST PULLBACK AND ROAD REALIGNMENT



(No Scale)

PART IV: OTHER INFORMATION
OREGON DEPARTMENT OF FORESTRY
Western Lane District

Written Plan

Pontius Creek Timber Sale
341-2020-W00783-01

Portions of Section 12, T16S, R8W, W.M., Lane County

Protected Waters: Small non fish tributary of (Pontius Creek).

Activity: Constructing permanent crossings with fills over 15 feet deep in a Type N stream.

Protection Measures:

- The stream crossing culvert will meet or exceed the 100 year flow.
- The inlet and outlet will be armored with Rip-Rap quality rock.
- The pipe gradient will be placed at an angle that approximately matches the natural gradient of the stream.
- The total depth of fill shall be minimized where possible. Anticipated maximum fill depth measured from the road centerline at the intersection of the creek may be 15 feet, give or take a couple feet.
- The crossing will be the low spot of the subgrade so that if the pipe fails, water will not be redirected outside of its natural channel.

Prepared By: Kevin Gehrig
Natural Resource Specialist

Date: October 21, 2019

PART IV: OTHER INFORMATION
OREGON DEPARTMENT OF FORESTRY
Western Lane District

Written Plan

Pontius Creek Timber Sale
341-2020-W00783-01
Portions of Section 12, T16S, R08W, W.M., Lane County

Potential Protected Resource: Unsurveyed Suitable Marbled Murrelet Habitat.

Activity: Tailhold within potential suitable habitat buffer (330 feet)

Project Measures:
No trees will be removed within 330 feet of suitable habitat
When within 330 feet of suitable habitat

- Sound stumps will be favored as a first choice were safe to do so.
- Notching of the trees to prevent cable slippage will be limited to less than 1/3 the circumference of the tree.
- An ODF Biologist or a designee familiar with murrelet habitat and biology will inspect and approve tailhold trees before each is used. Lead time of at least two weeks for all reviews or meeting with ODF representatives is required.
- The use of chainsaws to notch trees for tailholds is restricted within 330 feet of suitable habitat between April 1st to September 15th. Chainsaw us shall not be allowed from April 1st to September 15th within the Chainsaw Restricted Area, as shown on Exhibit A. Furthermore, daily timing restrictions shall be in effect from August 6th to September 15th within the Chainsaw Restricted Area during which chainsaw use may be allowed from no earlier than two hours after sunrise until no later than two hours before sunset.
- The following trees shall not be selected for tailholds:
  - Trees with potential nest platforms or immediately surrounding trees that provide cover to potential nest platforms.
  - Trees that contain murrelet nests.
  - Trees that are in a location that – when the skyline is lifted – potential suitable marbled murrelet platforms on other trees will be damaged by the lifted skyline. For example, this usually occurs when tailhold trees are located within the interior of a patch of potential marbled murrelet habitat trees.

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Prepared By: Kevin Gehrig, Natural Resources Specialist
Date: August 7, 2019

PART IV: OTHER INFORMATION

OREGON DEPARTMENT OF FORESTRY
Western Lane District

Written Plan

Pontius Creek Timber Sale
341-2020-W00783-01

Portions of Section 12, T16S, R8W, W.M., Lane County

Protected Waters: Small Type F (Pontius Creek)

Activity: Cable yarding within 100 feet of a small Type F stream for approximately 2,000 feet (Pontius Creek).

Protection Measures:

Cable Yarding:

- No cutting will take place within approximately 100 feet of the stream (either side) except for any cable corridors that may be needed or for safety purposes.
- Any tree requiring to be felled for either corridors or safety reasons that is within the stream RMA (beyond the Timber Sale Boundary signs) will be felled away from the stream if safe to do so and left where they fall.
- Corridors through the RMA, if necessary, will be at least 100 feet apart (within the RMA).
- All lines will be re-spooled and then restrung for each new corridor.

Prepared By: Kevin Gehrig
Natural Resource Specialist

Date: August 6, 2019