



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: NC-341-2026-GF8723-01

(2) Sale Name: Kinney GNA

(3) Contract Expiration Date: 10/31/2027

(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
FELLING				
YARDING				

(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.

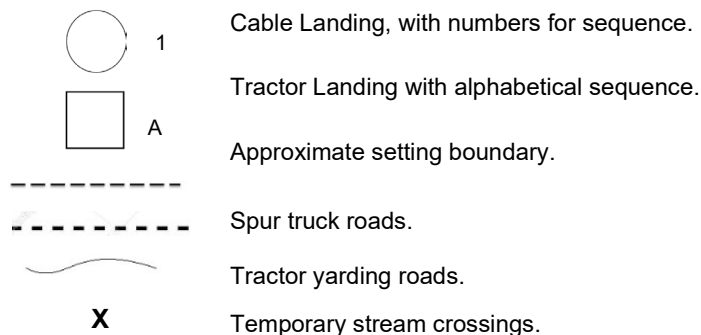
Oregon Department of Forestry
2600 State St Salem OR 97310
PART III: EXHIBITS
EXHIBIT B
INSTRUCTION SHEET FOR OPERATIONS PLAN

SUBMIT ONE COPY OF PLAN TO 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 including without limitation PURCHASER'S independent obligation to avoid take of a T&E species and PURCHASER'S obligation to comply with terms and conditions of any incidental take Permit(s) that include required minimization and mitigation measures in any applicable Habitat Conservation Plan. 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.



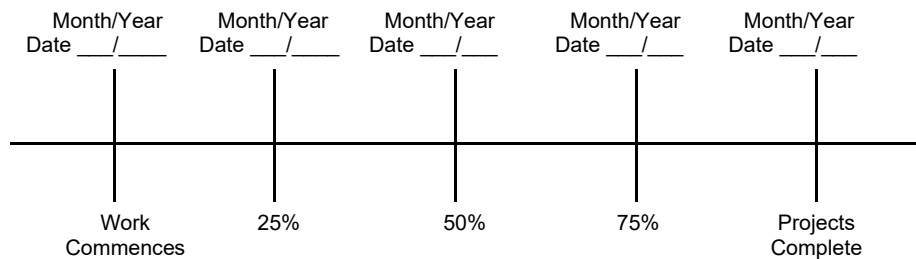


Oregon Department of Forestry
2600 State St Salem OR 97310
PART III: EXHIBITS
EXHIBIT B
OPERATIONS PLAN

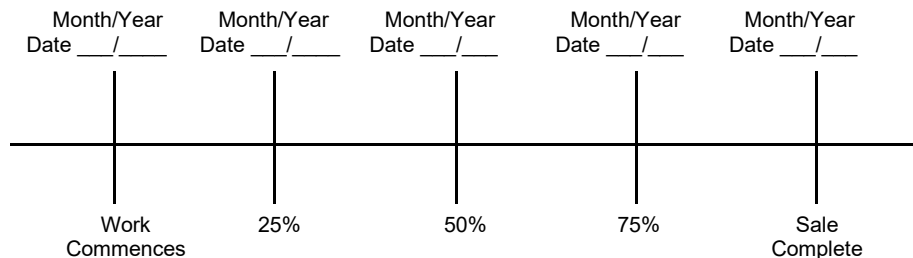
Completion Timeline

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



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 or that the plan is consistent with the terms and conditions of any applicable incidental take Permit(s) including any required minimization and mitigation measures proposed in the applicable Habitat Conservation Plan. As provided in the timber sale contract, PURCHASER's must comply with all applicable state, federal, and local laws, including without limitation any Permit(s) issued thereunder.

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
North Cascade - NWOA

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

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

(3) FROM: North Phone (503) 859-2151
Cascade
(State Forestry District)

Address: 930 W WASHINGTON ST. SUITE 20
STAYTON, OR 97383

(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

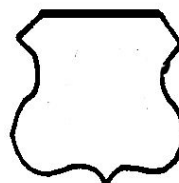
(9) SALE NAME: Kinney GNA

COUNTY: Linn

(10) STATE CONTRACT NUMBER:
NC-341-2026-GF8723-01

(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:
"Mule Trains"
1. Loads are required to have load tickets for each set of bunks.
2. If truck and pup are to be weighed, weigh and process separately for gross and tare weights.

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

(16) SIGNATURES:

Purchaser or Authorized Representative Date

State Forester Representative Date

State Forester Representative PRINT NAME



Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE
INSTRUCTIONS FOR EXHIBIT C
North Cascade - NWOA

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers.

- (2) Designate Third Party Scaling Organization (TPSO).

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
2560 NW Medical Park Drive, OR 97471
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@mountainwestern.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 Scalpers Inc.
6137 NE 63rd St, Vancouver, WA, 98661
Phone: (360) 553-7212 ext. 4 Fax: (360) 553-7213
Email: info@nwlogscalpers.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: https://apps.odf.oregon.gov/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 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. Signatures not required on revisions.



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

North Cascade, NWOA

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

(9) **SALE NAME:** Kinney GNA

COUNTY: Linn

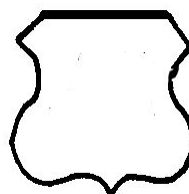
(2) TO: _____
(Approved Pulp Processing Facility)

(10) **STATE CONTRACT NUMBER:**
NC-341-2026-GF8723-01

(3) FROM: North Cascade Phone (503) 859-2151
(State Forestry District)
Address: 930 W WASHINGTON ST. SUITE 20
STAYTON, OR 97383

(11) STATE BRAND REGISTRATION NUMBER: _____

(12) STATE BRAND INFORMATION: _____



(4) PURCHASER: _____

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

Mailing Address: _____

Phone Number: _____

(13) **REMARKS:**
"Mule Trains"
1. Loads are required to have load tickets for each set of bunks.
2. Truck and pup are to be weighed and processed separately for gross and tare weights.

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

(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.

(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.

Purchaser or Authorized Representative _____ Date _____

State Forester Representative _____ Date _____

State Forester Representative PRINT NAME _____

(8) TPSO PROCESSING INSTRUCTIONS

- Submit data files daily (or each day of activity).
- Mail or deliver scale tickets weekly to ODF Headquarters in Salem.

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.

General Distribution: TPSO, Approved Scaling Locations and Purchaser.



**Oregon Department of Forestry
EXHIBIT C - PULP SORT
INSTRUCTIONS FOR EXHIBIT C**

North Cascade, NWOA

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers.
- (2) Approved Pulp Processing Facility. Write in as written in the Approved Log Delivery Location
https://apps.odf.oregon.gov/Divisions/management/asset_management/scalinglocation.asp
- (3) State District office, address and phone.
- (4) Enter Purchaser's business name, address, and phone number as it appears on the Contract.
- (5) 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
2560 NW Medical Park Drive, Roseburg, OR 97471
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@mountainwestern.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

- (6) 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.
- (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 (13).
- (13) Use this section to list any special instructions or the reason for any revisions in section item (1).
- (14) Require purchaser to sign and date completed form in addition to State Forester Representative, sign and print name on the form. Signatures not required on revisions.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
Paved	Paved	A to B	0+00 to 255+50	Crowned
16 feet	12 feet	B to C	0+00 to 119+85	Crowned
16 feet	12 feet	C to D	0+00 to 30+02	Outsloped
16 feet	12 feet	B1 to B2	0+00 to 27+75	Outsloped
16 feet	12 feet	B3 to B4	0+00 to 18+72	Outsloped
16 feet	12 feet	C1 to C2	0+00 to 16+43	Outsloped

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

CLEARING CLASSIFICATION.

Improvement - the "Road Brushing Specifications" in Exhibit E shall apply. Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 10 feet out from the toe of the fill slope, or as directed by STATE.

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 cut slopes shall be removed. Grubbing debris shall not be placed or permitted to remain in or under any road embankment sections.

GRUBBING CLASSIFICATION.

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. Clearing and grubbing debris shall not be placed or permitted to remain in or under any road embankment sections. Clearing and grubbing debris shall be left in a stable location, and not 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 45 percent
- On unstable areas
- In any stream channel (Class 1, 2, 3, or 4) or where material may enter the stream channel.

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

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 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, outsloped, or insloped 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 (12) feet for both subgrade and surfacing. Length shall be at least (50) feet, or as staked on the ground, plus 25-foot approaches at each end.

SLOPES

	<u>Cut Slopes</u>	<u>Fill Slopes</u>
Solid Rock	Vertical to ¼ :1	
Fractured Rock	½:1	
Soil - side slopes 50% and over	½:1	1½:1
Soil - side slopes less than 50%	1:1	1½:1

Top of cut slope 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 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 F, and blocked from vehicular traffic prior to October 15, annually and as directed by STATE.

EXHIBIT D
FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (1) Roadside Brushing. Conduct roadside brushing as specified in Exhibit E.
- (3) Excavated Materials. Excavated materials shall be utilized for road and fill 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. Excess excavated material not used for embankment shall be sidecast on slopes up to (50) percent and end hauled or pushed to waste areas as shown on Exhibit A and marked in the field.
- (5) Culvert Replacement, Culvert Installation, Fill Reconstruction, and Fill Removal. Existing culvert geometry shall be modified to provide for optimum drainage and culvert performance. Modifications may include, skewing the culvert and/or installing the culvert at gradients equal to or exceeding the drainage (or ditch) gradient. Where fill reconstruction or culvert replacement is specified, fills shall be excavated to natural stream course levels. All woody debris encountered during fill excavation shall be removed. Fill reconstruction backfill shall consist of select materials and may be obtained from borrow pits, as directed by STATE. Unsuitable backfill material shall be hauled to the designated waste areas as marked in the field and/or designated on Exhibit A. Backfill materials shall be hauled in where necessary and thoroughly compacted in accordance with this Exhibit.
- (6) Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Clean out all culvert inlets and outlets for a 10-foot radius. Re-establish or construct culvert sediment basins. Waste materials from drainage ditches and sediment basins shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas.
- (7) Settling Ponds and Ditch Armoring. Construct settling ponds as directed by STATE. Excavated material shall be hauled to the designated waste areas as marked in the field and/or designated on Exhibit A. Waste materials shall be sloped and compacted for drainage. Settling pond dimensions shall be a finished top diameter of 5 feet, bottom diameter of 3 feet and 3 feet in depth, to the top of the pond armor rock or as directed by STATE. Backslopes shall be ¾:1.
- (8) 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.
- (9) Sod Removal. Remove/separate sod from crushed rock surfacing as directed by STATE. Sod material shall be scattered in stable locations through openings in the timber outside of the cleared right-of-way. In areas where sod cannot be scattered in a stable location, material shall be end hauled to designated waste areas as shown on Exhibit A, or other stable locations as directed by STATE.
- (10) Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.
- (11) Waste areas shall be uniformly sloped and compacted for drainage.

EXHIBIT D
FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (11) Subgrade Preparation and Application of Surfacing Rock.
- (a) Complete culvert installations, drainage ditches, fill reconstruction, ditchouts, and other specified work prior to the application of new surfacing rock.
 - (b) Cut out all potholes and/or washboard sections from the existing surfacing.
 - (c) Apply required patching and leveling rock, as directed by STATE.
 - (d) Process (grade and mix) the existing surface and added base rock. Provide for a crown, outslope, or inslope of 4 to 6 percent, and compact in accordance to the "Compaction and Processing Requirements" in this Exhibit.
 - (e) Upon completion of above required work, apply, process, and compact surfacing rock in accordance to this Exhibit.

ADDITIONAL GENERAL TEMPORARY ROAD AND LANDING IMPROVEMENT INSTRUCTIONS

- (1) All landings (not in system roads) and temporary roads used during project activities shall be subsoiled to a depth of 20 inches of mineral soil 'munching' or bucket ripping would be the preferred style of subsoiling. All units that have existing compaction levels above 20% would be a priority to undergo enhancement subsoiling. All roads that are to be closed would be treated for invasive species prior to completion. Close off any temporary spur roads, if used, as soon as possible after logging and related activities are completed. Areas of disturbed soil would be seeded with native seed and covered with weed-free straw, mulch or on-site slash following subsoiling activities.
- (2) Construction and operations on project roads and landings shall not be allowed during wet conditions unless otherwise approved in writing by STATE.
- (3) Temporary roads will be made hydrologically stable and rehabilitated after completion of project activities. Rehabilitation of temporary roads may include blocking the entrance, removal of culverts, out-sloping the road surface, pulling back displaced material onto the roadway, installation of water bars, re-vegetation of the road prism, and/or the subsoiling of compacted surfaces when necessary.
- (4) On segments of decommissioned roads in between fill removals, build water bars to divert surface drainage and de-compact the road surface to a depth of 12-24" to ensure infiltration of surface runoff.
- (5) Existing temporary roads shall be limited to no more than 1/2 mile in total length and use existing impacted areas wherever possible. Locate temporary spurs on existing skid roads where possible to minimize soil compaction. Clean fill (soil or rock free of slash and debris) would be used for construction of temporary roads. Sources of rock and fill material needs to be free of invasive plants. Rock quarries that may be used would be surveyed for invasive plants prior to use. If invasive plants are found, they would be treated as necessary prior to use.
- (6) Construction or maintenance of roads would not be done when soils are saturated, or run-off occurs. A stable fill would be constructed across all streams when crossed by new temporary roads, including a temporary culvert. Temporary stream crossings should be perpendicular to the stream channel and take the shortest corridor through the no-cut buffer. All stream crossings would be removed before the wet season if the road is needed for more than one operating season. If it is not feasible to remove stream crossings during the wet season, the road must be hydrologically stabilized before the wet season in concurrence with the State.

- (7) All non-system roads used for timber harvest will be decommissioned after completion of project activities, which includes removing all stream crossings and de-compacting the road surface. Decommissioning will include at a minimum removing all stream culverts and water-barring the road. May also include removal of ditch relief culverts, side cast pull back, de-compaction and re-contouring the slope. Decommissioning includes the administrative action of removing the road from the road system.
- (8) Non-system roads, skid trails and landings that have not been designated for wet season use shall be storm proofed with water bars or drain dips prior to extended periods of wet weather or predicted high precipitation events. Water bar location shall occur where local terrain facilitates effective drainage of the non-system road, skid trail, or landing while avoiding unnecessary soil disturbance. An example would be to construct water bars every 100 feet on slopes less than 15%, and every 50 feet on slopes greater than 15%. Water bars should be keyed-in to the cut bank and have a clear outlet on the downhill side. In lieu of water bars, where available in concentrations, slash can be scattered on corridors, skid trails and landings.
- (9) Closed system roads will be hydrologically stabilized. This usually includes removing all stream culverts and water-barring, but sometimes deep fill stream crossings will be stabilized by reducing the fill material over culverts left in place, or other measures to hydrologically stabilize the road as determined by a hydrologist.
- (10) Any project activity that occurs within a perennial stream channel, such as culvert replacement, shall comply with the Oregon Department of Fish and Wildlife seasonal restriction for in-stream work activities [June 1 – August 31 window, North Santiam River above Big Cliff Dam] and follow a dewatering plan. If a waiver to these dates is necessary, the STATE would need to review the proposal and seek concurrence from the applicable regulatory agencies. Culvert removal sites will be dewatered while the culvert is being removed if stream flow is sufficient for dewatering to be possible. On Class 2 streams, ensure fish salvage is performed by a fisheries biologist and ensure continuous stream flow below the work site. At culvert removal sites, the road must have water bars or other drainage features constructed to route surface water away from the newly excavated slopes.
- (11) Disturbed areas (culverts installations, disposal sites, etc.) should be re-vegetated with seed provided by STATE. Weed free mulch or straw shall be applied as determined by STATE.
- (12) Construction or maintenance of roads would not be done when soils are saturated, or run-off occurs. A stable fill would be constructed across all streams when crossed by new temporary roads, including a temporary culvert. Temporary stream crossings should be perpendicular to- the stream channel and take the shortest corridor through the no-cut buffer. All stream crossings would be removed before the wet season if the road is needed for more than one operating season. If it is not feasible to remove stream crossings before the wet season, the road must be hydrologically stabilized before the wet season in concurrence with the STATE.
- (13) All waste material generated from road maintenance shall be placed in a pre-designated area outside of Riparian Reserves, as approved by STATE.

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
A to B	0+00	Junction of Detroit Dam and Kinney Creek Rd (USFS 2122), begin road improvement by clearing and reshaping ditches (Construct "V" shaped ditch (3) feet wide and to a depth of (1) foot below subgrade), clearing culvert inlets and outlets. Rubber tire or tracked equipment required while working on paved surfaces. End haul ditch and debris material to pre-approved waste area. Begin road brushing.
	20+74	Remove 9cy of debris and rock from ditch. Continue general ditch improvement. Deliver waste material to end-haul location.
	27+25	Remove 9cy of debris and rock from ditch. Continue general ditch improvement. Deliver waste material to end-haul location.
	28+53	Remove 9cy of debris and rock from ditch. Continue general ditch improvement. Deliver waste material to end-haul location.

	37+39	Remove 20cy of debris and rock from ditch. Continue general ditch improvement. Deliver waste material to end-haul location.
	169+45	Remove 90cy of debris and rock from ditch. Continue general ditch improvement. Deliver waste material to end-haul location.
	255+550	End road improvement and brushing point B.
B to C	0+00	Junction off of USFS Rd 2212 on to USFS Rd 634, begin road improvement by cleaning and reshaping the ditches (Construct "V" shaped ditch (3) feet wide and to a depth of (1) foot below subgrade), culvert inlets and outlets, cut out and compact potholes, and grade road, and spot rocking where needed. End haul ditch material to pre-approved waste areas along the road. Begin road brushing. Remove tank trap as directed by STATE. Between 0+00 to 76+04 apply 76 cy of 1 ½"-0" as directed by STATE. Between 76+04 to 119+85 apply 876cy of 1 ½"-0" as directed by STATE. Construct/improve waste disposal end-haul area at 119+85 as directed by STATE. Construct/improve truck turnaround at 119+85.
	119+85	End road improvement and brushing at point C.
C to D	0+00	Junction off of USFS Rd 634 on to USFS Rd 637, begin road improvement by cleaning the ditches, culvert inlets and outlets, cut out and compact potholes, and grade road. End haul ditch material to pre-approved waste areas along the road. Begin road brushing. Apply 600 cy of 1 1/2"-0" as directed by STATE.
	30+02	End road brushing; end regrade, shape, ditch, and compact. End of spot rocking. Block vehicle access to 637 with woody debris as directed by STATE.
B1 to B2	0+00	Begin temporary improvement following general instructions, or as directed by STATE.
	27+75	End of temporary road improvement. Construct temporary landing.
B3 to B4	0+00	Begin temporary improvement following general instructions, or as directed by STATE.
	18+72	End of temporary road improvement. Construct temporary landing.
C1 to C2	0+00	Begin temporary improvement following general instructions, or as directed by STATE.
	18+72	End of temporary road improvement. Construct temporary landing.

EXHIBIT D
END-HAUL REQUIREMENTS

WASTE AREA LOCATION
Station C

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.

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.

Waste Area Treatment

- (1) Deposit at waste area, spread evenly, compact, and provide adequate drainage.
- (2) Pile woody debris separate from other waste material.

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT: Point A to Point B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	B to C		2.27 miles		
				Volume (CY) Per		Number of		
Top Rock (spot rocking)	1.5”- 0” Crushed	0+00 to 76+04	varies	Station	1	Stations	76.04	76
Top Rock	1.5”- 0” Crushed	76+04 to 119+85	Varies	Station	20	Stations	43.81	876
Landing Rock	Pit Run	Unit 1	Piled	Site	30	Site	2	60
Truck Turnaround	1.5”- 0” Crushed	119+85	Piled	Station	30	Stations	1	60
Total Rock for Road Segment:								1,072
ROAD SEGMENT: Point B to C				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	C to D		0.57 miles		
				Volume (CY) Per		Number Of		
Top Rock	1.5”- 0” Crushed	0+00 to 30+02	Varies	Station	20	Stations	30.02	600
Landings	Pit Run	Unit 2	Piled	Site	30	Site	2	60
Total Rock for Road Segment:								660

TOTAL ROCK	Pit-run	1 ½"-0 Crushed
1,733 CY	120 CY	1,613 CY

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

If rock is delivered by weight scale, it will be based on a moisture content of (15) percent. STATE will not give credit for weight of water delivered for moisture content above (15) percent.

EXHIBIT D

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 in the prior month must be submitted no later than the 15th of each month.

EXHIBIT D

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	SUBGRADE COMPACTION OPTIONS
All road segments that require rock surfacing	1

Fills. Embankments and fills shall be placed in (approximately) horizontal layers not more than 8 inches in depth. Each layer shall be separately, and thoroughly, compacted. Compaction equipment shall be operated over the entire width of each layer until visible deformation of the layers ceases. At least 3 passes shall be made over the entire width and length of each layer.

Placing individual rocks or boulders with more depth than the allowed layer thickness shall be permitted, provided the embankment will accommodate them. Such rocks and boulders shall be at least 6 inches below the subgrade. They shall be carefully distributed and the voids filled with finer material, forming a dense and compacted mass. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

ROAD SEGMENT	FILLS COMPACTION OPTIONS
All road segments	1, 2, 3, and 4

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.

EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

ROAD SEGMENT	CRUSHED COMPACTION OPTIONS
All road segments requiring crushed rock.	1

Pit-Run Rock. The rock shall be uniformly mixed and spread in layers on the approved roadbed. Each layer of pit-run rock shall be moistened or dried to uniform moisture content suitable for maximum compaction and compacted in layers not to exceed 8 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. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

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	CRUSHED COMPACTION OPTIONS
Segments requiring pit-run rock	1 or 4

EXHIBIT D

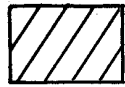
COMPACTION EQUIPMENT OPTIONS

- (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.
- (2) 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.
- (3) 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.
- (4) 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.
- (5) Dozer. 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 E

[Height 20' for Mainline]
[Height 15' for Collectors/Spurs]

ROAD BRUSHING SPECIFICATIONS



Clearing Limits

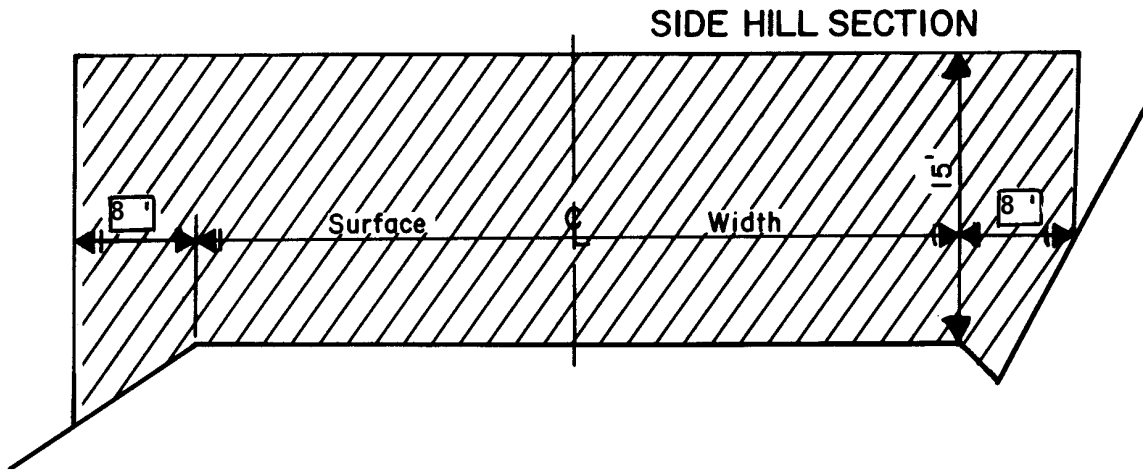


EXHIBIT E

ROAD BRUSHING SPECIFICATIONS

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(s) of the road shall be (8) feet horizontal distance from the shoulder of the road and (8) 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.

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.

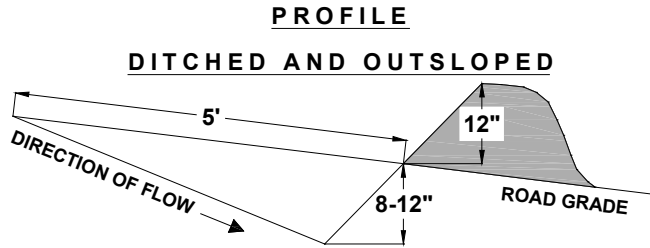
Existing debris on the roadway, cut slope, ditch line, or catch basin shall be removed and treated. Debris shall be mulched or scattered downslope from the road or placed in other stable locations. Large non-merchantable debris, 6 inches or larger in diameter, shall be mulched or cut into lengths 6 feet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

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

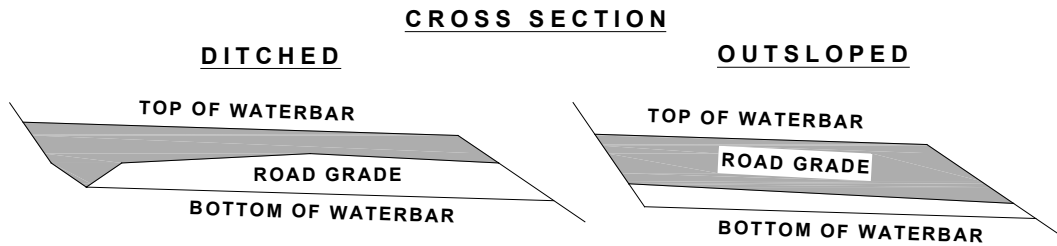
CULVERT AND ROAD MARKER DAMAGES. Culvert and road markers damaged, or any portion of a marker damaged from PURCHASER activities shall be replaced.

SPECIFIC ROAD BRUSHING INSTRUCTIONS. Road segments designated as heavy will need additional equipment for the brushing and clean-up of these segments. Clean-up shall include grading or pulling with an excavator, as directed by STATE.

EXHIBIT F WATERBAR SPECIFICATIONS



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



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

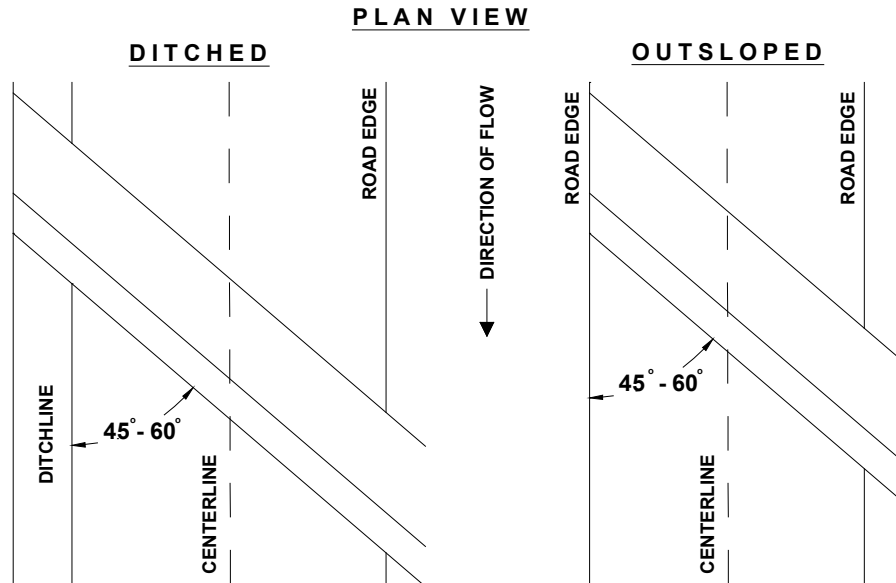
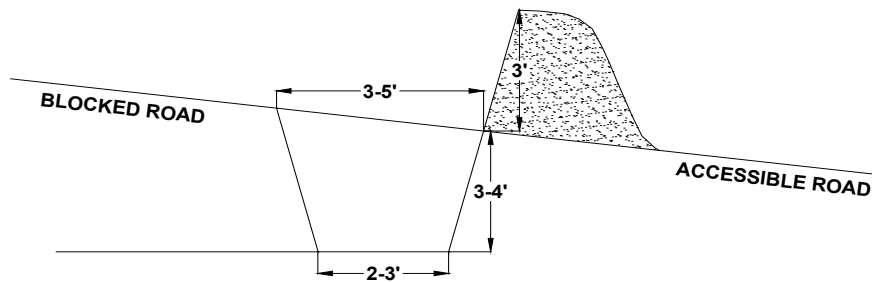


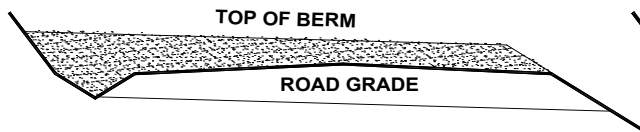
EXHIBIT G
TANK TRAP SPECIFICATIONS

**PROFILE
DITCHED AND OUTSLOPED**

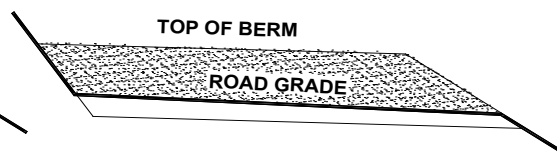


CROSS SECTION

DITCHED



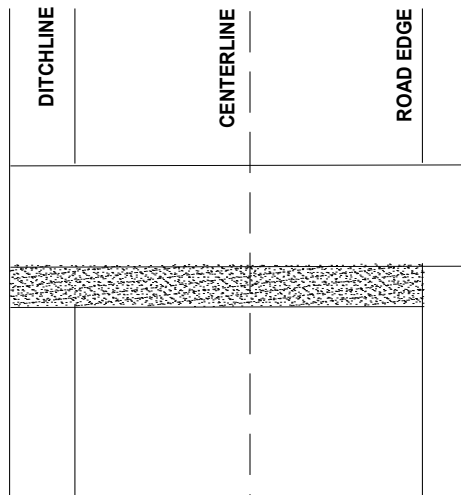
OUTSLOPED



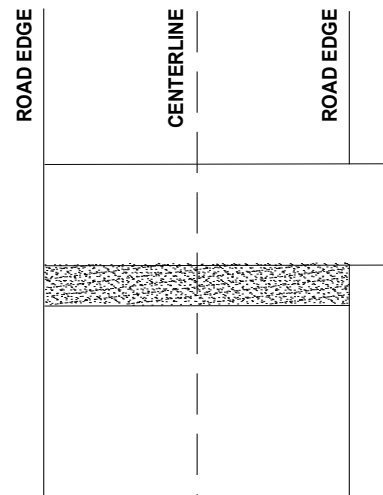
CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
CROSS DRAINAGE GRADIENT MINIMUM 3%

PLAN VIEW

DITCHED



OUTSLOPED



DIRECTION OF FLOW
↓

It should be sloped to drain with a relief ditch through the down slope edge of the road. The trench shall be behind the berm for approaching traffic.

EXHIBIT H
WATERSHED REGULATIONS

PURCHASER shall take precautions necessary to protect the watershed from damage and to prevent pollution to the water supply. Precautions shall include, but not be limited to, the following regulations.

Laws, Rules, and Regulations. Comply with Oregon laws and with the rules and regulations of the Oregon State Board of Health relative to protection of watersheds and sanitation of public water supply.

Debris in Streams. Prevent, insofar as possible, logs, chunks, and other debris, resulting from logging and road building Operations, from being deposited in streams. If such material should become deposited in streams, immediately remove the material to restore normal stream flow, using necessary care to prevent unnecessary damage to the stream channel and banks.

General Sanitary Conditions. Do not create any conditions which may permit breeding of flies or mosquitoes. Machinery, equipment, soil, and fuel storage shall not be located near streams. Waste oil shall be removed from the watershed. Camping shall not be permitted.

Personnel. Persons with a history of typhoid fever, amoebic dysentery, or infectious hepatitis shall not be employed on the watershed. All personnel shall be required to use the privies. PURCHASER shall verbally instruct all personnel employed on the watershed in the required sanitary precautions to be observed and shall give each such person a copy of these regulations.

Overnight Camping Prohibited. No person shall remain on the watershed overnight, unless authorized in writing by STATE.

EXHIBIT I

ROAD AND LANDING VACATING/DECOMMISSION SPECIFICATIONS

PURCHASER shall decommission temporary roads at the following locations: any roads and landings within Unit 1, B1 to B2, B3 to B4, and C1 to C2. Specific objectives for this project include:

- (a) Fill removal and stream channel development.
 - (b) Culvert removal.
 - (c) Restoration of natural contours by outsloping of the road prism.
 - (d) Minimize disturbance of existing vegetation.
- 1) Tree Removal. Cut or remove all trees necessary to access the project area and to facilitate vacating operations, as directed by STATE.
 - 2) Fill Removal and Stream Channel Development. Remove fills to the natural stream course level. Stream channel shall be excavated/developed to specified widths. Developed stream banks shall be sloped at natural contours or no steeper than 1 ½:1, as directed by STATE.
 - 3) Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off of STATE land.
 - 4) Outslope Road. Outslope road to restore natural contours or establish a minimum of 10 percent slope for drainage at designated locations. If the road grade exceeds 10 percent, outslope of the road shall be 2 percent greater than the road grade.
 - 5) Use of Excavated Materials.
 - (A) Fill Excavation and Sidecast Pullback. Excavated materials shall be placed on the interior (cut) side of the road and utilized to restore the cut slope to natural contours, or to a minimum 10 percent outsloped surface for drainage. Any excess material will be hauled to a designated waste area, as directed by STATE.
 - (B) Woody Debris. Shall be placed on the surface of pullback/fill material.
 - (C) Block Roads. Use excavated material from fill removals to block roads from vehicle access, as directed by STATE.
 - 6) Erosion Control. Erosion control shall be completed in a progressive manner. Grass seed and straw mulch shall be applied for every 500 feet of road vacated, prior to continuing work.

All excavated material and bare soil shall utilize weed free grass seed and straw mulch approved by STATE. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.

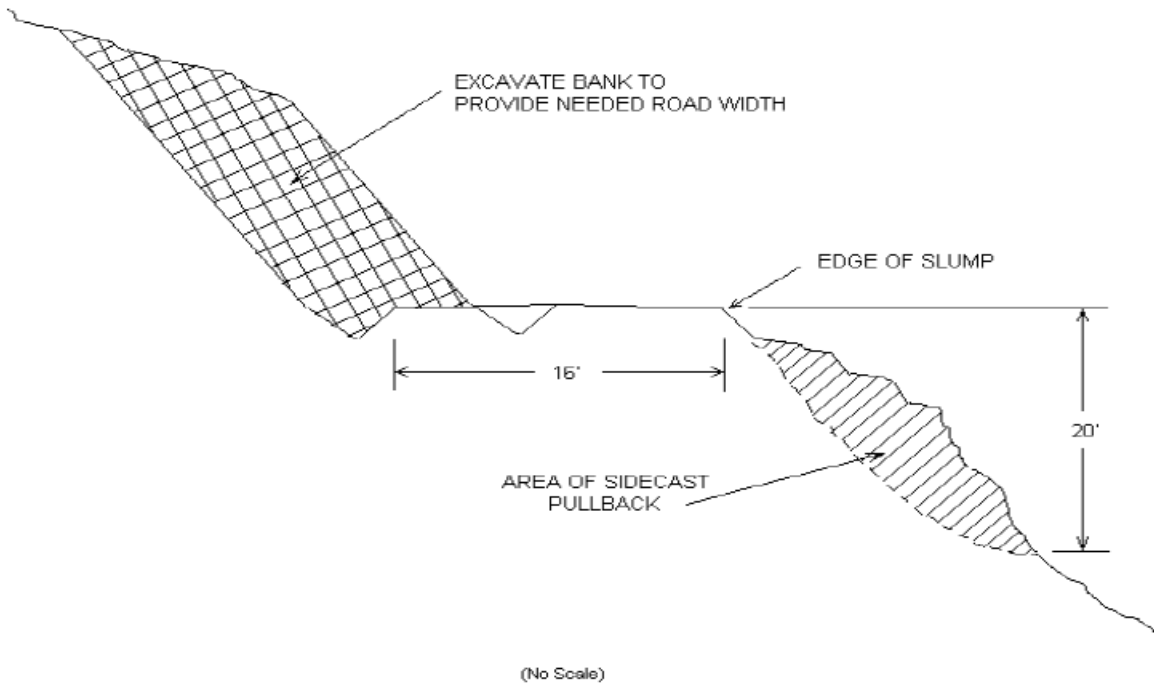
- 7) Erosion Control. Erosion control shall be completed in a progressive manner. Grass seed and straw mulch shall be applied for every 500 feet of road vacated, prior to continuing work.
- 8) Equipment. A minimum 1½ cubic-yard, track mounted excavator shall be used for all excavation, culvert removal, streambed preparation, road blocking, and waterbarring, unless otherwise approved in writing by STATE.
- 9) Dry Conditions. All work shall be performed during dry conditions acceptable to STATE.
- 10) Support, including transport, other equipment, replacements, supplies, maintenance, and repairs, shall be furnished as required to complete the project and shall be furnished without cost to STATE, other than as agreed under the contract terms.

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
B1 to B2	0+00	Begin vacating/decommission, remove existing fill and culverts, develop stream channel widths, install waterbars per Exhibit F specifications, or as directed by STATE, subsoil road bed to a depth of 20". Seed and mulch exposed soils as directed by STATE.
	19+73	End Vacating. Block road.
B2 to B3	0+00	Begin vacating/decommission, remove existing fill and culverts, develop stream channel widths, install waterbars per Exhibit F specifications, or as directed by STATE, subsoil road bed to a depth of 20". Seed and mulch exposed soils as directed by STATE.
	13+32	End Vacating. Block road.
C1 to C2	0+00	Begin vacating/decommission, remove existing fill and culverts, develop stream channel widths, install waterbars per Exhibit F specifications, or as directed by STATE, subsoil road bed to a depth of 20". Seed and mulch exposed soils as directed by STATE.
	11+68	End Vacating. Block road.

EXHIBIT J

TYPICAL CROSS SECTION VIEW OF SIDECAST PULLBACK AND ROAD REALIGNMENT





OREGON DEPARTMENT of FISH and WILDLIFE

FISH SCREENING PROGRAM

SMALL PUMP SCREEN SELF CERTIFICATION

The Oregon Water Resources Department in coordination and cooperation with the Oregon Department of Fish and Wildlife includes screen requirements on pumps to protect fish as a condition of many surface water and/or reservoir water right permits. This is done in accordance with ORS 537.153.

The Oregon Department of Fish and Wildlife does not usually inspect small pump screens at **pumped diversions less than 225 gpm** (gallons per minute), but furnishes the following fish screening criteria information to the water right permit holder:

Screen material open area must be at least 27% of the total wetted screen area.

Perforated plate: Openings shall not exceed 3/32 or 0.0938 inches (2.38 mm).

Mesh/Woven wire screen: Square openings shall not exceed 3/32 or 0.0938 inches (2.38 mm) in the narrow direction, e.g., 3/32 inch x 3/32 inch open mesh.

Profile bar screen/Wedge wire: Openings shall not exceed 0.0689 inches (1.75 mm) in the narrow direction.

Screen area must be large enough not to cause fish impact. Wetted screen area depends on the water flow rate and the water approach velocity. **Approach velocity** is the water velocity perpendicular to and approximately three inches in front of any part of the screen face.

An Active pump screen is a self-cleaning screen that has a proven cleaning system. The **screen approach velocity for active pump screens** shall not exceed 0.4 fps (feet per second) or 0.12 mps (meters per second). The wetted screen area in square feet is calculated by dividing the maximum water flow rate in cubic feet per second (1 cfs = 449 gpm) by 0.4 fps.

A Passive pump screen is a screen that has no cleaning system other than periodic manual cleaning. **Screen approach velocity for passive pump screens** shall not exceed 0.2 fps or 0.06 mps. The wetted screen area in square feet is calculated by dividing the maximum water flow rate by 0.2 fps.

For further information on fish screening please contact:

Oregon Department of Fish and Wildlife, Statewide Fish Screening Coordinator: 503.947.6229 Oregon
Department of Fish and Wildlife, Screening Program Administrative Specialist: 503.947.6224

As evidence of having met fish screen installation requirements, please sign the certification and send to: **Oregon Water Resources Department, Water Rights Section, 725 Summer Street NE, Suite A, Salem, OR 97301-1271.**

Certification: I certify that my small pumped diversion of less than 225 gpm meets fish screening criteria, and that I will maintain it to comply with regulatory criteria. I also understand that should fish screening standards change, I may be required to modify my installation to meet applicable standards.

Applicant Signature: _____ Date: ____/____/____ WRD File #: _____

Printed Name and Address: _____

Phone: (____) _____ Fax: (____) _____