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: FG-341-2024-W01015-01

(2) Sale Name: Clear Connection

(3) Contract Expiration Date: 05/31/2026

(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 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.

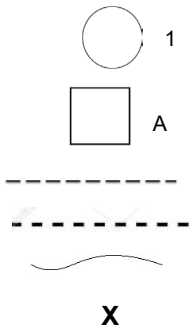
(7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.

(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.



Cable Landing, with numbers for sequence.

Tractor Landing with alphabetical sequence.

Approximate setting boundary.

Spur truck roads.

Tractor yarding roads.

Temporary stream crossings.

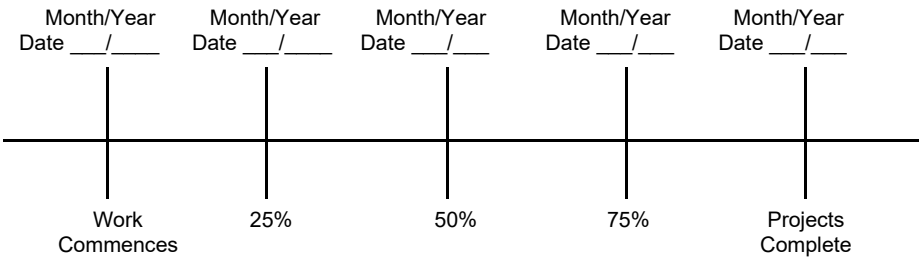
Oregon Department of Forestry
2600 State St Salem OR 97310
PART III: EXHIBITS

EXHIBIT B
OPERATIONS PLAN

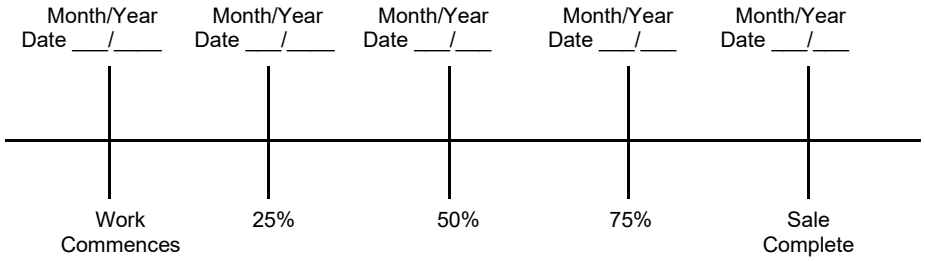
Completion Timeline

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 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: _____

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
Forest Grove - NWOA

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

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

(3) FROM: Forest Grove Phone (503) 357-2191
(State Forestry District)
Address: 801 GALES CRK RD
FOREST GROVE,OR 97116-1199

(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	☐	☑

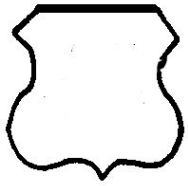
(8) **APPROVED SCALING LOCATIONS** (as shown on the ODF Approved Locations web-site)	Species	Yard	Truck	Weight

(9) **SALE NAME:** Clear Connection
COUNTY: Columbia

(10) **STATE CONTRACT NUMBER:**
FG-341-2024-W01015-01

(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

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 and Purchaser.

Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE
INSTRUCTIONS FOR EXHIBIT C
Forest Grove - 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

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

(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: 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

Forest Grove, NWOA

(1) ORIGINAL REGISTRATION ☐ Date _____

REVISION NUMBER 000 ☐ Date _____

CANCELLATION ☐ Date _____

(2) TO: _____

(Approved Pulp Processing Facility)

(3) FROM: Forest Grove Phone (503) 357-2191
(State Forestry District)

Address: 801 GALES CRK RD

FOREST GROVE,OR 97116-1199

(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:** Clear Connection

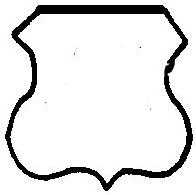
COUNTY: Columbia

(10) **STATE CONTRACT NUMBER:**

FG-341-2024-W01015-01

(11) STATE BRAND REGISTRATION NUMBER: _____

(12) STATE BRAND INFORMATION:



(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):

(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.

General Distribution: TPSO, Approved Scaling Locations and Purchaser.

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

Forest Grove, 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
P.O.Box 580, Roseburg, OR 97470
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@mwlsgb.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
Match Existing	Match Existing	A to B	0+00 to 493+75	Ditch
Match Existing	Match Existing	B to C	0+00 to 18+40	Ditch
16 feet	12 feet	C to D	0+00 to 7+40	Ditch
Match Existing	Match Existing	D to E	0+00 to 50+75	Ditch
Match Existing	Match Existing	E to F	0+00 to 66+00	Ditch
Match Existing	Match Existing	G to H	0+00 to 12+20	Ditch
Match Existing	Match Existing	I to J	0+00 to 20+50	Ditch
Match Existing	Match Existing	K to L	0+00 to 13+40	Ditch

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.

New Construction - Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 5 feet out from the toe of the fill slope, or as directed by STATE.

Improvement - 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 cutslopes shall be removed.

GRUBBING CLASSIFICATION.

New construction - from the top of the cutslope to the toe of the fill.

Improvements - 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 55 percent
- On unstable areas
- In any stream channel (Type F, N or D) or where material may enter the stream channel.

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

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.

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 8 feet for both subgrade and surfacing. Length shall be at least 25 feet, plus 25-foot approaches at each end. Location: Intervisible but not greater than 750 feet apart.

SLOPES. Top of cutslope shall be rounded.	Cutslopes	Fill Slopes
Solid Rock	Vertical to ¼ :1	
Fractured Rock	¼:1	
Soil - side slopes 50% and over	½:1	1½:1
Soil - side slopes less than 50%	¾:1	1½:1

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 stated or 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, with 2 feet of subgrade extending out from base of the surfacing.

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 H and blocked from vehicular traffic prior to October 31, annually and as directed by STATE.

EROSION CONTROL. Install bio bags, silt fence, or straw bales for erosion control in project areas and ditch lines where sedimentation or erosion is possible, as directed by STATE. Each Bio-bag shall be installed with a minimum of two wooden stakes.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD CONSTRUCTION INSTRUCTIONS:

(1) Excavated Materials. Excavated materials shall be utilized for road construction and hauled in where required. 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.

(2) Drainage Ditches. Construct ditchlines, including ditchouts, as directed by STATE. Cutslopes of ditchlines and ditchouts shall not exceed a 1:1 slope. Construct culvert sediment basins. Waste materials from drainage ditches and sediment basins shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE.

(3) Culvert Installation. Fill construction backfill shall consist of select materials and may be obtained from borrow pits, as directed by STATE. Backfill materials shall be hauled in where necessary and thoroughly compacted in accordance with this Exhibit.

(4) Subgrade Preparation and Application of Surfacing Rock.

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

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS:

Segment	Station	Work Description
C to D	0+00	Point C. Begin road segment; crown road, begin ditchlines.
	0+30	Install gate with 36” blocking boulders on each side in accordance with the “Forest Road Gate Installation” portion of this Exhibit. Install large tank trap on existing road on right.
	4+30	Remove blocking stumps.
	5+85	State property line with Weyerhaeuser.
	6+90	Install Culvert No. 4 (18” X 30’) as cross drain.
End	7+40	Point D. End road segment.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

ROAD IMPROVEMENT AND ROAD MAINTENANCE INSTRUCTIONS:

(1) Excavated Materials. Excavated materials shall be utilized for road and fill construction and hauled in where required. 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.

(2) Bank Slough Removal. Excavate all bank slough. Bank slough material shall not be pulled across existing surfacing rock. Excavated material shall be hauled to the designated waste areas as marked in the field and/or designated on Exhibit A.

(3) 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.

(4) Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Clean out all culvert inlets and outlets for a 10-foot radius. Ditch debris including woody debris shall be loaded and hauled to designated waste areas and shall be accomplished with the use of an excavator and dump truck. 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.

(5) Settling Ponds and Ditch Armoring. Construct up to 12 settling ponds for erosion control in project areas and ditchlines where sedimentation or erosion is possible 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 length of 6 feet, width of 6 feet, and 3 feet in depth, or as directed by STATE. Backslopes shall be ¾:1. Ditch line armor and settling pond armor shall be 8 inches deep.

(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 E.

(7) 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 in Exhibit A, or other stable locations as directed by STATE.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

ROAD IMPROVEMENT AND ROAD MAINTENANCE INSTRUCTIONS:

(8) Subgrade Preparation and Application of Surfacing Rock.

(a) Complete culvert installations, drainage ditches, fill reconstruction, ditchouts, settling ponds, 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. Provide for a crown, outslope, or inslope of 4 to 6 percent, and compact in accordance with the “Compaction and Processing Requirements” in this Exhibit.

(e) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with this Exhibit.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC SALE ACCESS ROAD IMPROVEMENT, SURFACE ROCK REPLACEMENT, AND ROAD MAINTENANCE INSTRUCTIONS:

Segment	Station	Work Description
A to B	0+00	Point A. McGregor Road. Junction with Highway 26. Begin segment; crown road, clean or construct ditchlines.
	1+45	Red fire gate.
	22+60	.5 mile marker on left.
	45+35	Y- junction on right.
	47+20	Junction on left.
	51+85	1 mile marker on left.
	56+20	Junction on right.
	81+30	1.5 mile marker on left.
	87+00	Junction on right.
	106+00	2 mile marker on right.
	108+10	Junction with Music Road on right.
	111+05	Junction on left.
	130+65	Junction on right.
	138+50	2.5 mile marker on left.
	148+70	Junction on right.
	152+70	Junction with access to West Mac Stockpile site on left.
	160+35	3 mile marker on right.
	186+90	3.5 mile marker on right.
	193+25	Y- junction on left.
	202+40	Junction on right.
	208+25	Y- junction on left.
	215+60	4 mile marker on right.
	225+25	Junction with North Fork Wolf Creek Road on right.
	231+75	Junction with North Fork Wolf Creek Road on right.
	244+55	4.5 mile marker on right.
	246+80	Junction on right.
	268+10	Junction on right.
	275+85	5 mile marker on left.
	291+75	5.5 mile marker on right.
	296+10	Junction on left.
	296+45	Junction on right.
	315+20	Junction with Olson Road on left.
	325+55	6 mile marker on right.
	340+65	6.5 mile marker on right.
	348+90	Junction with North Fork Road on right.
	350+55	Junction with Cherry Lane on right.
	350+80	Junction with Olson Road on left.
	352+20	Junction on right.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC SALE ACCESS ROAD IMPROVEMENT, SURFACE ROCK REPLACEMENT, AND MAINTENANCE INSTRUCTIONS:

A to B Continued	363+95	Junction on left.
	374+00	Junction on left.
	376+85	7 mile marker on left.
	394+20	7.5 mile marker on left.
	395+15	Junction on left.
	406+30	Y- junction on left.
	422+85	8 mile marker on right.
	427+60	Junction with Lower Rock Creek Stockpile site on left.
	428+90	Junction with Lower Rock Creek Road on left.
	429+65	Junction with Eastside Grade ahead and Pit Road on right. Continue improvement onto Eastside Grade Road.
	445+85	Existing culvert, repair outlet.
	448+95	Live Stream. Install Culvert No. 1 (24” x 30’).
	452+95	Existing culvert, clean inlet and outlet, repair outlet.
	457+80	.5 mile marker on right.
	468+40	Existing culvert, clean inlet and outlet, repair outlet.
	485+60	Existing culvert, install marker.
	486+45	1 mile marker on left. Live Stream. Remove existing culvert and install Culvert No. 2 (30” x 40’). Construct six settling ponds, three on uphill side of inlet and three on uphill side of outlet.
End	493+75	Point B. Junction on right. End segment.

Segment	Station	Work Description
B to C	0+00	Point B. Eastside Grade Road. Junction on right. Begin segment; crown road, clean or construct ditchlines.
	8+30	Existing culvert, repair inlet, install marker.
	9+45	Junction on right.
	11+95	Existing culvert, repair inlet, install marker.
	18+30	Install Culvert No. 3 (18” x 30’) as cross drain.
End	18+40	Point C. End segment.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC SALE ACCESS ROAD IMPROVEMENT, SURFACE ROCK REPLACEMENT, AND ROAD MAINTENANCE INSTRUCTIONS:

Segment	Station	Work Description
D to E	0+00	Point D. Eastside Grade Road. Begin segment; crown road, clean or construct ditchlines.
	19+45	Junction on left.
	44+30	Junction ahead and left. Continue improvement on right through stockpile site.
	45+75	Junction on left.
	45+95	Junction on left.
End	50+75	Point E. Quarry on left. End segment.

Segment	Station	Work Description
E to F	0+00	Point E. Begin segment; crown road, clean or construct ditchlines.
	0+75	Junction on left. Existing oversize pile. End haul oversize pile material and place with existing oversize stockpile located inside the quarry at Point E.
	3+00	State property line with Weyerhaeuser.
	3+55	Existing blocking boulders. Place blocking boulders in stable location, outside of road prism.
	4+00	Remove existing tank trap. Install Culvert No. 5 (18” x 30’) as disconnect.
	4+55	Live Stream. Remove existing culvert and install Culvert No. 6 (24” x 30’). Remove existing tank trap, utilize existing tank trap material for fill. Construct six settling ponds, three on uphill side of inlet and three on uphill side of outlet.
	7+65	Install Culvert No. 7 (18” x 30’) as disconnect.
	8+05	Live Stream. Existing culvert.
	8+45	Existing blocking boulders. Place blocking boulders in stable location, outside of road prism. Install Culvert No. 8 (18” x 30’) as disconnect.
	17+95	Junction with G to H on left.
	21+75	Live Stream. Remove existing culvert and install Culvert No. 9 (24” x 30’). Place 12cy of riprap as energy dissipater at outlet.
	23+00	Live Stream. Existing culvert, clean inlet and outlet.
	24+85	Junction with I to J on left.
	30+35	Install Culvert No. 10 (18” x 30’) as cross drain.
	35+20	Junction on right.
	39+80	Existing culvert, clean inlet and outlet.
	45+00	Existing culvert, install marker.
	49+00	Junction on right.
	53+20	Install Culvert No. 11 (18” x 30’) as cross drain.
	60+30	Junction on right.
	64+70	Existing blocking boulders. Place blocking boulders in stable location, outside of road prism.
	65+35	Remove existing tank trap. Install Culvert No. 12 (18” x 30’) as cross drain.
End	66+00	Point F. End segment.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC SALE ACCESS ROAD IMPROVEMENT, SURFACE ROCK REPLACEMENT, AND ROAD MAINTENANCE INSTRUCTIONS:

Segment	Station	Work Description
G to H	0+00	Point G. Junction with E to F on right. Begin segment; crown road, clean or construct ditchlines.
	1+85	Existing culvert, clean inlet and outlet.
	4+50	Existing culvert, clean inlet and outlet, install marker.
	7+85	Live Stream. Existing culvert, install marker.
	9+20	Live Stream. Install Culvert No. 13 (24” x 30’).
	10+60	Construct turn around on right.
End	12+20	Point H. End segment. Improve landing. Excavate suitable fill material from adjacent cutslope, place and compact fill to a level gradient. Re-establish ditchline.

Segment	Station	Work Description
I to J	0+00	Point I. Junction with E to F on right. Begin segment; crown road, clean or construct ditchlines.
	4+75	Existing culvert, clean inlet and outlet.
	11+00	Existing culvert, clean inlet and outlet.
	19+10	Construct turnaround on left.
	20+00	Existing culvert, repair outlet, install marker.
End	20+50	Point J. End segment. Improve landing.

Segment	Station	Work Description
K to L	0+00	Point K. State property line with Weyerhaeuser. Begin segment; crown road, clean or construct ditchlines.
	3+50	Junction with Point F on left.
End	13+40	Point L. State property line with Weyerhaeuser. End segment.

EXHIBIT D

FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.
E to F	0+75
V1 to V2	0+75
V1 to V2	1+90
V3 to V4	16+50
V3 to V4	20+10
V3 to V4	22+00
V3 to V4	22+80

Full Bench and End-Haul Areas General Requirements

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

Clearing and grubbing debris shall be end-hauled.

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

Containment/Sidecast

- Normal/Incidental: The amount of excavated material lost over the outside edge of the road shall not exceed 1 foot 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

- As shown on Exhibit A and as marked in the field.
- Setback from slope break shall be a minimum of 5 feet horizontal measurement.

Waste Area Treatment

- Deposit at waste area, spread evenly, compact, and provide adequate drainage.
- Scatter woody debris separate from other waste material.
- Mulch and seed all waste areas in accordance with Exhibit J.

EXHIBIT D

ROCK TABLE

ROAD SEGMENT: A to B				Sta. to Sta. 0+00 to 493+75				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	1 ½"-0 Crushed	Culvert Nos. 1 & 2	Varies	Culvert	12	Culverts	2	24
Total Rock for Road Segment:								24

ROAD SEGMENT: B to C				Sta. to Sta. 0+00 to 18+40				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	1 ½"-0 Crushed	Culvert No. 3	Varies	Culvert	12	Culverts	1	12
Total Rock for Road Segment:								12

ROAD SEGMENT: C to D				Sta. to Sta. 0+00 to 7+40				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Blocking Boulders	36"-24" Large Riprap	0+20	Varies	Boulder	Varies	Boulders	12	12
Base Rock	4"- 0 Crushed	C to D	12	Station	65	Stations	7.4	481
Junction	4"- 0 Crushed	C to D	12	Junction	24	Junctions	2	48
Total Rock for Road Segment:								541

ROAD SEGMENT: E to F				Sta. to Sta. 0+00 to 66+00				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	1 ½"-0 Crushed	Culvert Nos. 5 - 12	Varies	Culvert	12	Culverts	8	96
Surfacing Rock	4"- 0 Crushed	E to F	8"	Station	42	Stations	66	2,772
Junction	4"- 0 Crushed	E to F	8"	Junction	12	Junctions	6	72
Turnout	4"- 0 Crushed	E to F	8"	Turnout	19	Turnouts	4	76
Energy Dissipator	24"-12" Riprap	Culvert No. 9	Varies	Culvert	12	Culverts	1	12
Total Rock for Road Segment:								3,028

EXHIBIT D

ROCK TABLE

ROAD SEGMENT: G to H				Sta. to Sta. 0+00 to 12+20				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	1 ½"-0 Crushed	Culvert No. 13	Varies	Culvert	12	Culverts	1	12
Surfacing Rock	4"- 0 Crushed	G to H	10"	Station	53	Stations	12.2	647
Turnout	4"- 0 Crushed	G to H	10"	Turnout	24	Turnouts	1	24
Turnaround	4"- 0 Crushed	10+60	12"	Turnaround	20	Turnarounds	1	20
Landing	4"- 0 Crushed	Point H	12"	Landing	95	Landings	1	95
Total Rock for Road Segment:								798

ROAD SEGMENT: I to J				Sta. to Sta. 0+00 to 20+50				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Surfacing Rock	4"- 0 Crushed	I to J	10"	Station	53	Stations	20.5	1,087
Turnout	4"- 0 Crushed	I to J	10"	Turnout	24	Turnouts	1	24
Turnaround	4"- 0 Crushed	19+10	12"	Turnaround	20	Turnarounds	1	20
Landing	4"- 0 Crushed	Point J	10"	Landing	80	Landings	1	80
Total Rock for Road Segment:								1,211

ROAD SEGMENT: K to L				Sta. to Sta. 0+00 to 13+40				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Surfacing Rock	4"- 0 Crushed	K to L	8"	Station	42	Stations	13.4	563
Junction	4"- 0 Crushed	K to L	8"	Junction	12	Junctions	1	12
Turnout	4"- 0 Crushed	K to L	8"	Turnout	19	Turnouts	1	19
Total Rock for Road Segment:								594

ROAD SEGMENT: V1 to V2				Sta. to Sta. 0+00 to 3+15				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Stream Bank Armoring	36"-24" Riprap	V3 to V4	Varies	Boulder	Varies	Boulders	100	100
Total Rock for Road Segment:								100

TOTAL ROCK	36"-24" Riprap	24"-12" Riprap	4"-0 Crushed	1 ½"-0 Crushed
6,308 CY	112 CY	12 CY	6,040 CY	144 CY

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

Total rock cubic yard volumes are rounded to the whole yard.

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.

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	Vibratory Roller
All road segments that require subgrade reinforcement rock	Vibratory Grid Roller or a combination of Vibratory Roller and Dozer

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	FILL COMPACTION OPTIONS
All road segments	Vibratory Roller, Vibratory Hand-Operated, Backhoe-Mounted Tamper, or Dozer

EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

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

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

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

ROAD SEGMENT	CRUSHED ROCK COMPACTION OPTIONS
All road segments requiring crushed rock	Vibratory Roller

EXHIBIT D

FOREST ROAD GATE CONSTRUCTION AND INSTALLATION

CONTRACTOR shall construct, and install the Forest Gate at Points A, as shown on Exhibit A, according to the specifications in this Exhibit. Detailed gate plans may be provided by STATE.

GATE CONSTRUCTION AND SPECIFICATIONS

The gate shall be constructed to the design provided, with steel components meeting the specification and thicknesses within this Exhibit.

Lock pins and locks shall be provided by STATE.

The Gate Arm and Gate Arm Support and Braces shall be constructed with 3” x 4” x 3/16” rectangular tubing.

1. Gate Arm for gate at Point A shall be 20’ long.

The Hinge Post and Lock Bell shall be constructed from 6” Sch 40 B.I.P.

The Latch Posts shall be constructed from 5” Sch 40 B.I.P.

Hinge Rings and Lock Rings shall be constructed from 8” D.O.M seamless ½” thick.

Channel Iron shall be 4” x 1½ x ¼” 6.25lb stock.

All Plates and Caps shall be A-36 flat steel ¼” thick.

Flat Bar shall be constructed from A-36 flat steel 4” x 1” stock.

Rebar shall be #4, ½” in diameter.

All welds and cuts shall be completed prior to installation, except “Lock Rings”, “Lock Tongue” and “Gate Arm Adjustment”.

Gates shall be painted with a rust resistant primer coat and a topcoat of a rust resistant paint.

Prior to painting, gate and posts shall be cleaned and free of oil, debris, and rust scale.

All gates shall be inspected and approved, in writing, by STATE prior to installation.

GATE INSTALLATION AND SPECIFICATIONS

The gate shall be installed to the design provided within this Exhibit.

Gate post location shall be marked on the ground by STATE.

Excavated post holes shall be inspected and approved by STATE before the installation of the posts and placing of the concrete.

All field welds shall be inspected and approved by STATE.

Hinge post shall be on the cutslope side of the road.

Gates shall be able to swing freely, in both directions, open and latch with ease after the curing of concrete.

A Latch Post shall be installed beside the road in the “Locked Open” direction of the swing on the hinge side of the road, being able to be locked open with the provided pin and lock.

All bare metal, welds, scrapes, cuts or grind marks shall be cleaned and painted to the specifications stated above in this Exhibit.

EXHIBIT D

FOREST ROAD GATE CONSTRUCTION AND INSTALLATION

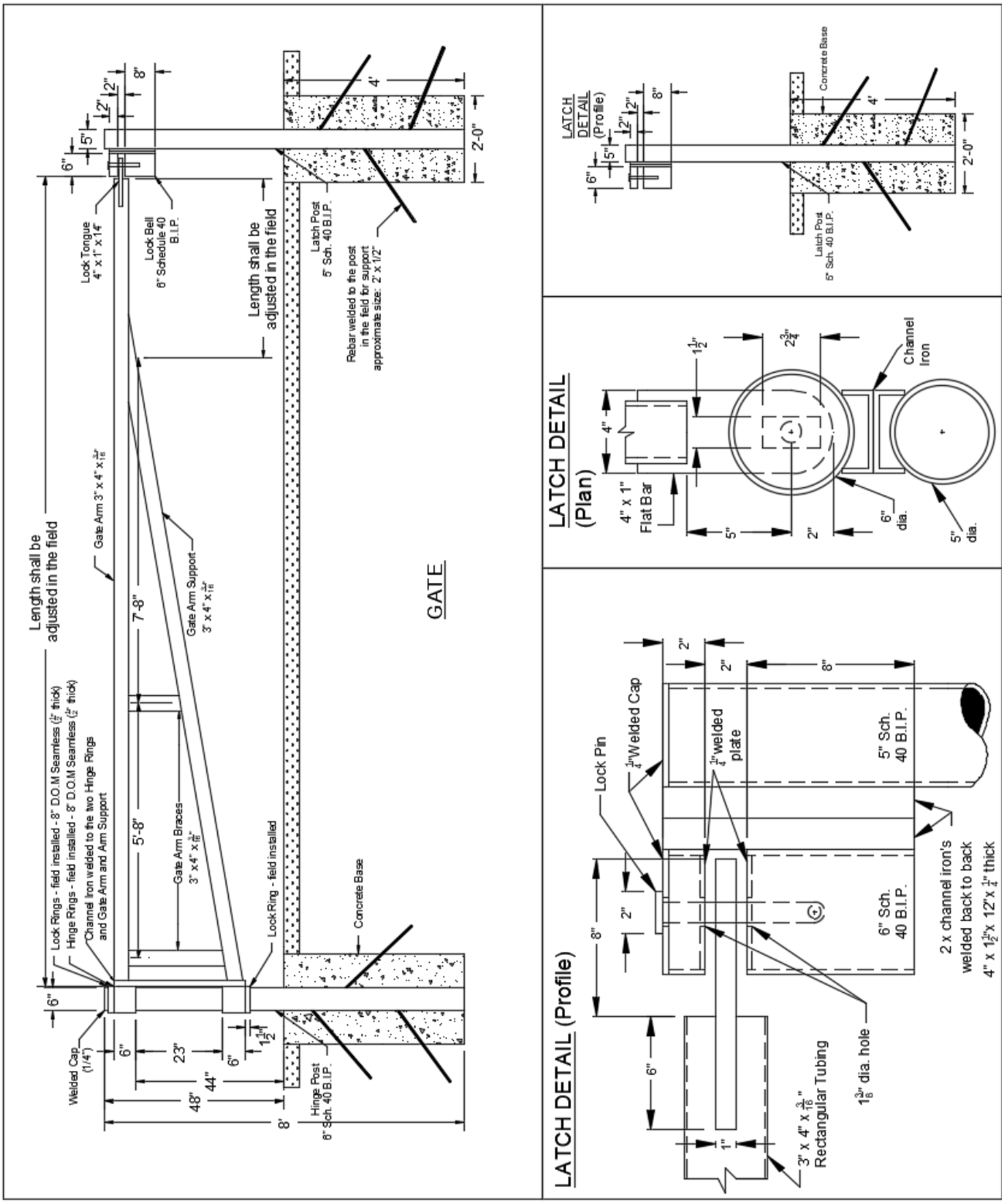


EXHIBIT E

CULVERT SPECIFICATIONS

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

Uninstalled culverts shall become property of the STATE. PURCHASER will deliver surplus culverts to the district office as directed by STATE.

Culverts 36 inches in diameter and smaller shall be constructed of corrugated polyethylene. Culverts larger than 36 inches in diameter shall be constructed of corrugated aluminized Type 2 steel. Polyethylene culverts shall be double-walled and meet the requirements of AASHTO M-294-11, Type S, or ASTM F2648.

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

The STATE Representative shall determine final culvert locations and stake the locations in the field prior to installation.

Culverts in live streams shall be installed with the inlet and outlet on grade with the stream bottom, unless otherwise specified in writing.

Cross Drain Culverts

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 drains shall be skewed to fit the required culvert length to the road prism.

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.

Disconnect Culverts

The culvert inlet shall be located as close to the channel that it is disconnecting, while the culvert outlet shall be located as far from the channel as possible; discharge culvert outflow on the forest floor, allowing for filtration before the water enters the disconnected channel.

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.

A bedding of crushed rock as specified shall be placed to provide a wide band of support and to transmit the load from above evenly over the entire length of the culvert for all live stream culverts and all culverts on road improvement segments.

Backfill shall consist of crushed rock on improvement segments and crushed rock or job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the culvert on new construction segments.

EXHIBIT E

CULVERT SPECIFICATIONS

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be 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 shortest culvert section length shall be placed at the inlet end.

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

The intake end of cross drain and disconnect 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, half round, or other approved slope protection device. Construct lead-off ditches away from culvert outlets where the slope gradients restrict the free flow of water.

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for stream crossing culverts and culverts on improvement sections.

All culverts scheduled for replacement shall become property of the PURCHASER and be removed from STATE land in the same project period in which replacement occurred. 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.

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. Install a culvert marker at each existing culvert that is missing a marker that could be reached by a grader blade.

Energy Dissipators and Settling Ponds shall be installed within 72 hours of culvert installation, unless otherwise approved in writing by STATE. Steel posts used with half round installation shall be painted with rust preventative paint.

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

EXHIBIT E

CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT POINT TO POINT	STATION
1	24	30	A to B	448+95
2	30	40	A to B	486+45
3	18	30	B to C	18+30
4	18	30	C to D	6+90
5	18	30	E to F	4+00
6	24	30	E to F	4+55
7	18	30	E to F	7+65
8	18	30	E to F	8+45
9	24	30	E to F	21+75
10	18	30	E to F	30+35
11	18	30	E to F	53+20
12	18	30	E to F	65+35
13	24	30	G to H	9+20

TOTAL LENGTHS BY DIAMETER		
18 INCH	24 INCH	30 INCH
240	120	40

EXHIBIT E

TYPICAL EMBEDDED ENERGY DISSIPATOR

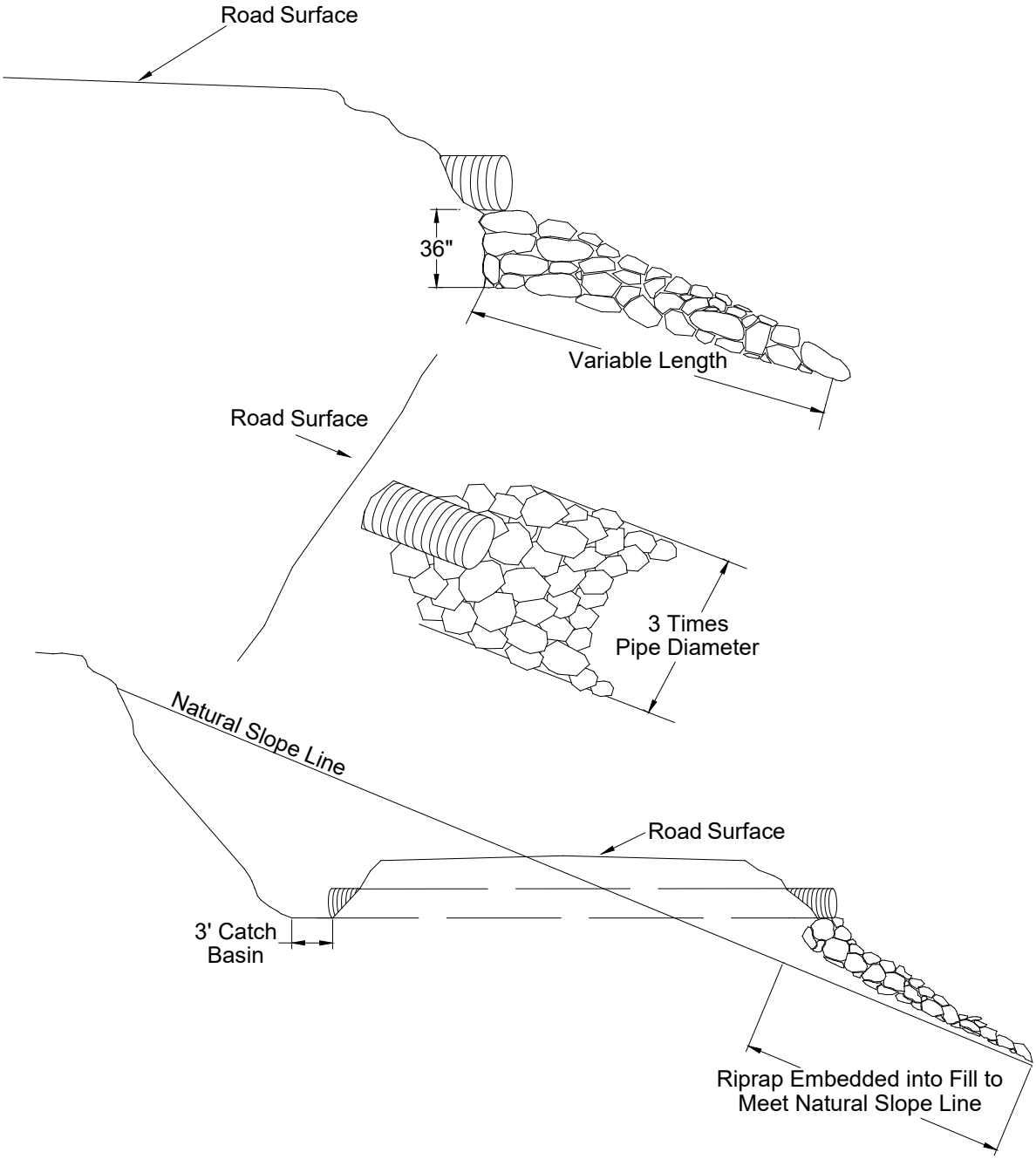


EXHIBIT F

RIPRAP ROCK SPECIFICATIONS

Grading Requirements

For 36”-24” & 24”-12” Riprap. A minimum of 50 percent of the material shall measure a minimum of 24 inches, measured in one dimension. Material shall be clean, well graded, and free of 2"-0" fines.

For riprap, control of gradation shall be by visual inspection by STATE.

The quarry site shall be left in a condition free from overburden and debris. Access roads to the quarry, and the quarry floor, shall be cleared at the termination of use. Unused shot rock material that is produced shall be piled in the vicinity of the quarry as directed by STATE.

The quarry floor shall be developed to provide for drainage away from the quarry and from seasonal stream to the east. All quarry and stockpile site drainage ditches shall be maintained. Ditches, culverts, waterbars and other direct conveyances of water from the quarry or stockpile sites shall be constructed to drain to the forest floor in locations that will provide filtration. Quarry access roads shall be cleared and blocked upon completion of quarry use as directed by STATE.

EXHIBIT G

ROAD BRUSHING SPECIFICATIONS

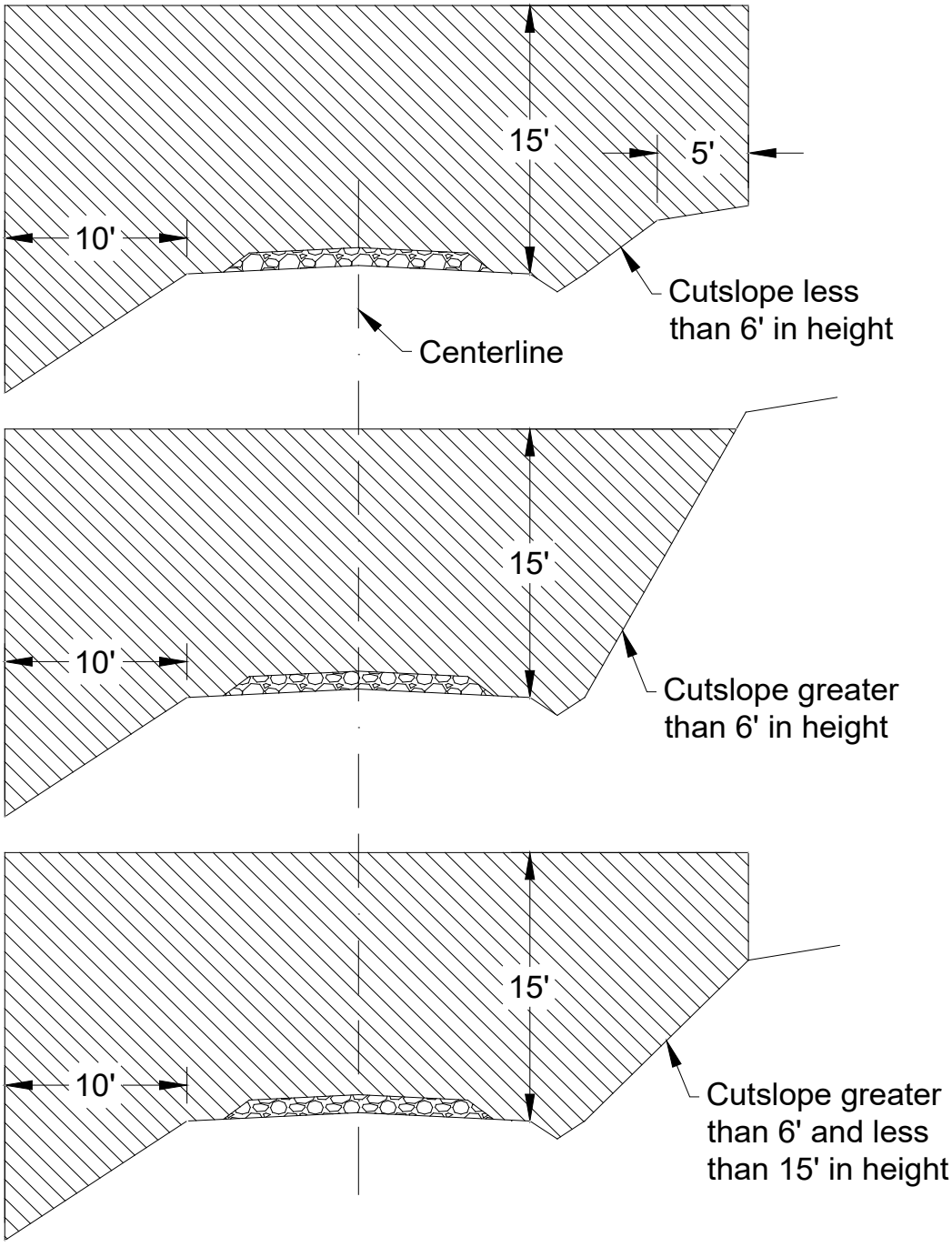


EXHIBIT G

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 down slope side of the road shall be 10 feet horizontal distance. The minimum width of brushing on the cut slope side of the road shall be dictated by the height of the cut slope as indicated in the three drawings above.

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.

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.

Brushing operations shall be completed before road improvement: road grading or surfacing of rock within the project area. If damages occur to the road surface outside of project area PURCHASER may be required to repair damages as directed by STATE.

DAMAGES

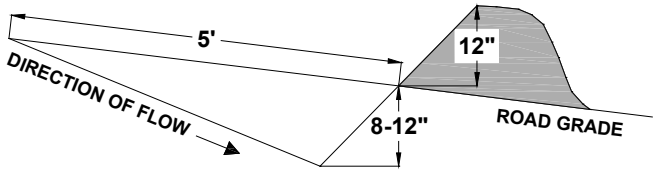
Culverts, Culvert Markers, Culvert Tags, Road Markers, Mile Markers, Point Signs, Timber Sale Boundary Tags, Project Point Signs, OHV Signs and Gates damaged, destroyed or displaced during brushing operations shall be repaired or replaced by PURCHASHER or as directed by STATE.

EXHIBIT H

WATERBAR SPECIFICATIONS

PROFILE

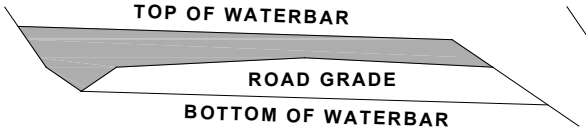
DITCHED AND OUTSLOPED



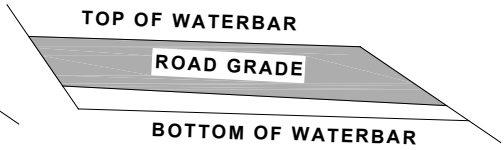
SPACING OF WATERBARS	
ROAD GRADE	DISTANCE
< 6 %	400'
6 - 10 %	200'
11 - 15 %	150'
> 15 %	100'

CROSS SECTION

DITCHED



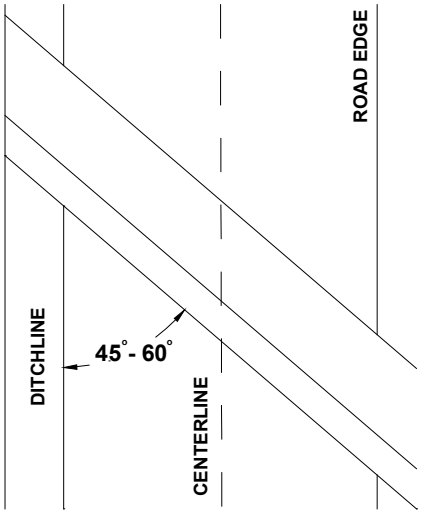
OUTSLOPED



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

PLAN VIEW

DITCHED



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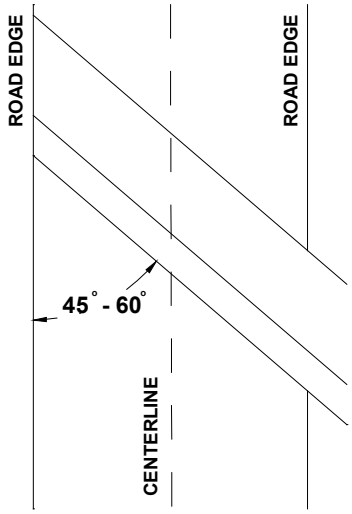
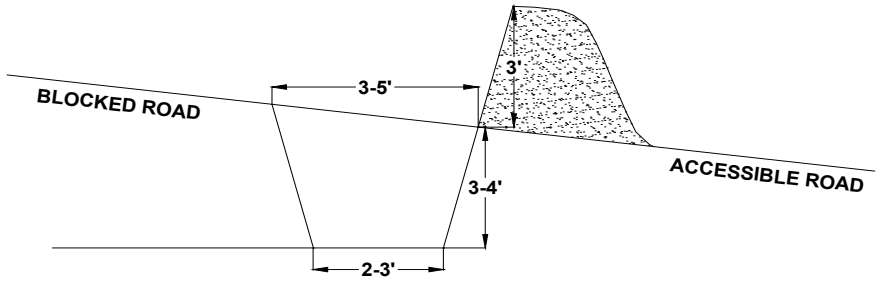


EXHIBIT H

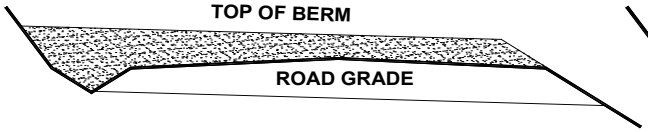
TANK TRAP SPECIFICATIONS

PROFILE
DITCHED AND OUTSLOPED



CROSS SECTION

DITCHED



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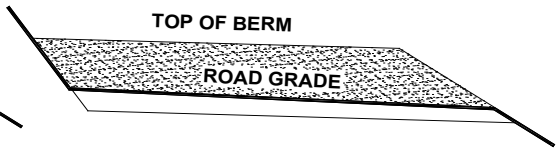
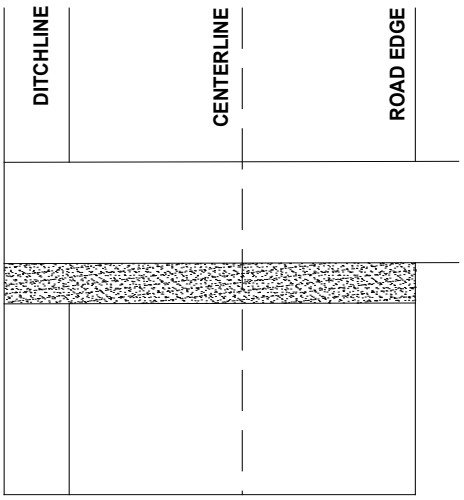


CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
CROSS DRAINAGE GRADIENT MINIMUM 3%

PLAN VIEW

DITCHED



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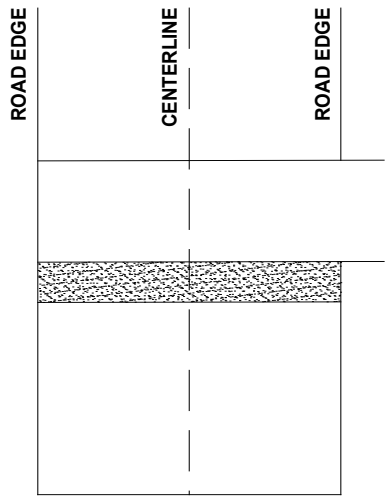


It should be sloped to drain with a relief ditch through the down slope edge of the road. The trench shall be behind the berm for approaching traffic.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

PURCHASER shall vacate road between the following points: V1 to V2 and V3 to V4

Specific objectives for this project include: Sidecast pullback, vacating road surfaces and stream channel restoration to reduce all impacts inside and adjacent to the Upper North Forth Fork Clear Creek Riparian Conservation Area.

Surface removal. Rip road surface to a depth of 12".

Road prism removal. Excavate fill slopes and place material inside of existing road prism to restore natural contours.

Sidecast Pullback. Excavate/pullback previously sidecast materials below the road at designated locations. Developed slopes shall be pulled back to a 1½:1 slope or to natural ground contours. The beginning position for sidecast pullback shall be no greater than 20 feet vertical distance from the existing road surface, in accordance with this Exhibit I. Sidecast material remaining greater than 20 feet below the road shall be tapered and sloped for drainage.

Waste Material Disposal. Do not place excavated material within a riparian management area. If a riparian management area is not required, do not place excavated material within 75 ft. of stream channel.

Mature Tree Protection. All trees with a DBH of ≥ 12" shall not be removed or damaged during vacate, including roots.

Woody Debris. Woody debris shall be placed on the surface of pullback/fill material.

Block Roads. Use excavated material from fill removals and boulders to block roads from vehicle access, as directed by STATE.

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.

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.

Fill Removal and Stream Channel Development. Remove fills to the natural stream course levels. Stream channels shall be excavated/developed to specified widths as directed by STATE. Stream widening shall be done from the same side of the stream as the equipment. Equipment shall not operate over the stream channel. Equipment shall not cross the stream at any time and must be hauled around to the other side. Developed stream banks shall be sloped at natural contours or no steeper than 2:1, as directed by STATE.

Stream Widening Locations:

Segment	Station	Minimum Width of Finished Stream Channel
V1 to V2	1+30	16 Feet
V3 to V4	16+50	12 Feet
V3 to V4	22+00	7 Feet
V3 to V4	22+80	7 Feet

In Water Work. In stream work shall be conducted only between July 1st and August 31st. Live stream work outside this period must have prior approval by Oregon Department of Fish & Wildlife. Approval shall be obtained by the PURCHASER.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

Stream Isolation. Construction site shall facilitate protection of natural stream course flow and fish passage by utilizing cofferdams and silt fences. Cofferdams will be installed to create a barrier between the work site and stream, while silt fencing shall be installed to protect stream and fish passage from any potential sediment delivery from project work. Cofferdams and silt fencing shall be installed and functional for the duration of the project, as directed by STATE.

Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off STATE land.

Dry Conditions. All work shall be performed during dry conditions acceptable to STATE.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

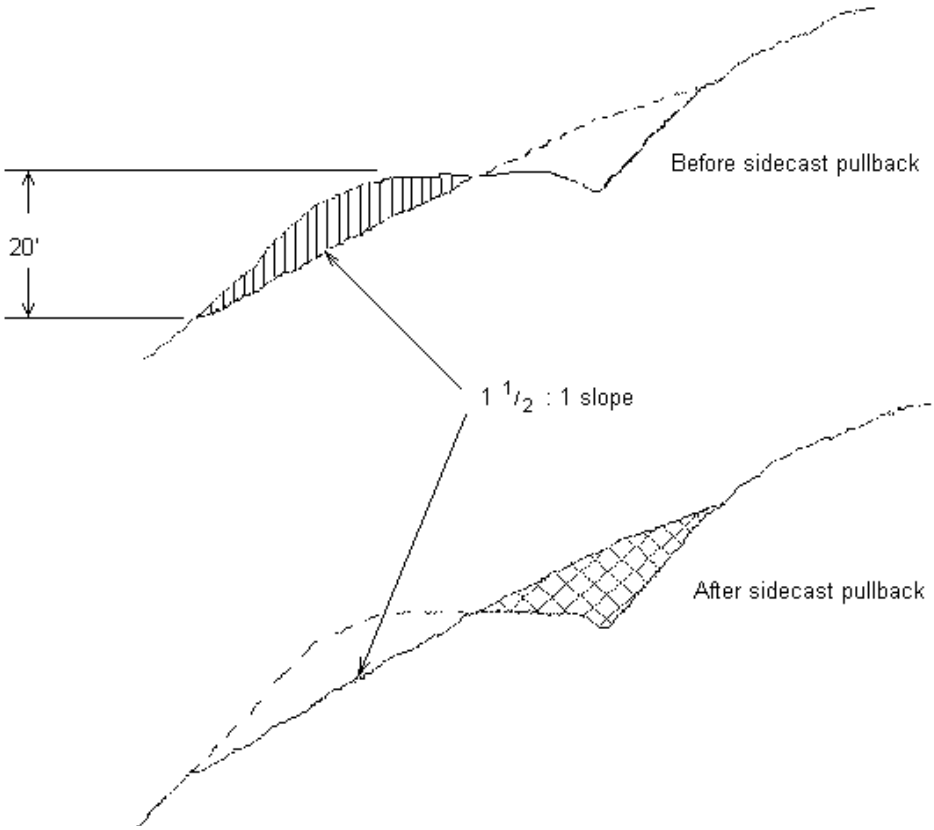
SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

Segment	Station	Work Description
V1 to V2	0+00	Point V1. Junction with V3 and V4. Begin road vacating, rip road surface.
	0+75	Future top of cut staked in the field. Begin fill removal on NE side of stream channel. Excavate remaining fill for a finished side slope at a 2:1 ratio to ensure slope stability. End haul all excavated material to Waste Area No. 2. Place Riprap, in 2 layers, on the side of stream channel as bank armoring.
	1+05	Existing top of cut.
	1+30	Live Stream. No equipment shall cross over or operate within stream. Widen stream bank to a width of 16'.
	1+50	Existing top of cut.
	1+90	Future top of cut staked in the field. Begin fill removal on SW side of stream channel. Excavate remaining fill for a finished side slope at a 2:1 ratio to ensure slope stability. End haul all excavated material to Waste Area No. 1. Place Riprap, in 2 layers, on the side of stream channel as bank armoring. Existing waste area on right. Load and haul all waste material from existing waste area to Waste Area No. 1.
	2+50	Riparian Conservation Area boundary.
End	2+75	Point V2. Construct waterbar to facilitate drainage away from Live Stream. Construct ditchout on right. End road vacating.

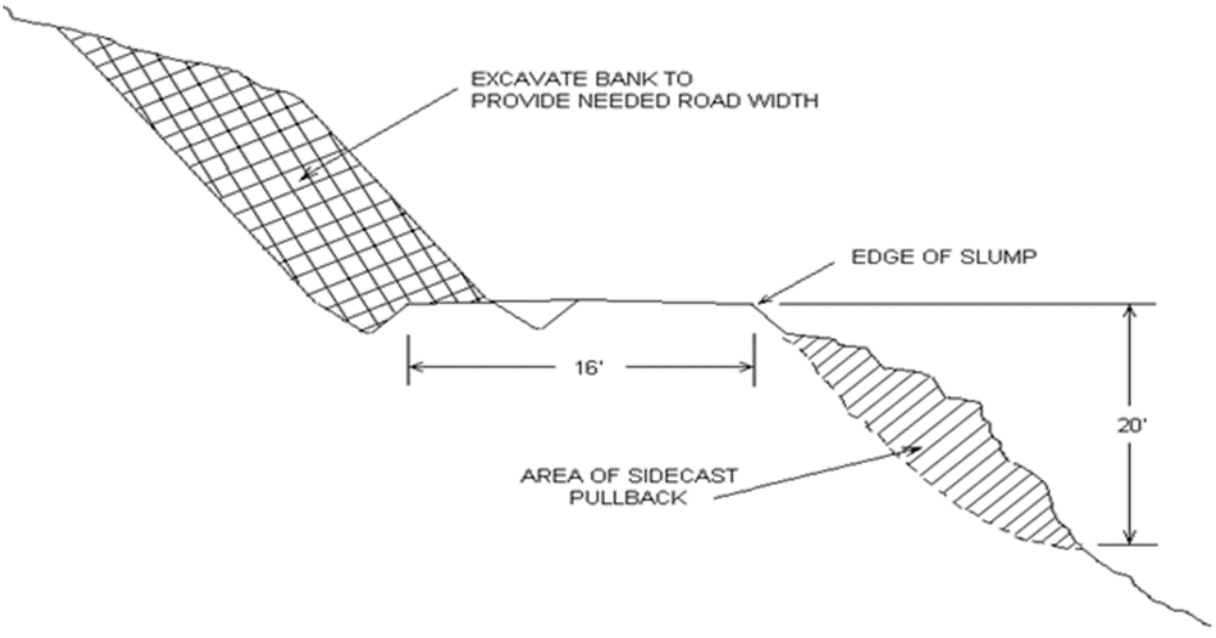
Segment	Station	Work Description
V3 to V4	0+00	Point V3. Begin road vacating, rip road surface. Begin sidecast pullback.
	0+80	Waste Area No. 2 on left. Place existing oversized pile in Waste Area No. 2. Remove all boulders feasible from the stream channel on right.
	3+10	Remove existing culvert.
	5+45	End sidecast pullback.
	5+70	Junction with V1 to V2 on right. Begin ripping rocked road surface.
	6+65	Begin sidecast pullback.
	6+90	Remove existing culvert.
	12+45	End sidecast pullback.
	13+15	Remove existing culvert.
	16+50	Live Stream. Remove existing culvert. Restore stream channel in accordance with this exhibit. End haul waste material to Waste Area No. 3.
	18+80	Waste Area No. 3 on right.
	20+10	Begin sidecast pullback. End haul waste material to Waste Area No. 3.
	22+00	Live Stream. Remove existing culvert. Restore stream channel in accordance with this exhibit. End haul waste material to Waste Area No. 4.
	22+80	Live Stream. Remove existing culvert. Restore stream channel in accordance with this exhibit. End haul waste material to Waste Area No. 4.
	25+00	Remove existing culvert.
	27+00	Waste area No. 4 on right. End sidecast pullback. Begin ripping rocked road surface.
End	29+65	Point V4. End road vacating. Construct tank trap.

EXHIBIT I

TYPICAL CROSS SECTION VIEW OF ROAD VACATING SIDECAST PULLBACK



TYPICAL CROSS SECTION VIEW OF SIDECAST PULLBACK AND ROAD REALIGNMENT



(No Scale)

EXHIBIT J

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 and fertilizer to all waste areas, and bare soils resulting from Project Nos. 1, 2, & 3. Apply straw mulch to all bare soils within 100' of streams resulting from Project Nos. 2 & 3 and to all waste areas.

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.

EXHIBIT J

SEEDING AND MULCHING

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
A to B	Culvert Nos. 1 & 2
E to F	Culvert Nos. 6 & 9
E to F	23+00
G to H	Culvert No. 13
V1 to V2	0+00 to 2+75
V3 to V4	0+00 to 29+65
Waste areas	1, 2, 3, & 4

EXHIBIT K

SPECIFICATIONS FOR BRUSH AND SLASH SHOVEL PILING

Description of Work to be Done

Areas designated for work under the contract shall be treated according to the specifications given below:

Clearing - brush, logging Slash, and other debris shall be cleared from planting sites and piled in windrows or piles, so that 80 percent or more of the soil organic layer is exposed. All woody vegetation other than trees is defined as brush in this exhibit. Stumps, however, shall be placed separately, in small clumps for wildlife.

In-Unit Piles - shall be located at least 75 feet apart and shall be no more than 75 feet long. Piles shall be located inside the sale area designated for piling and shall be more than 50 feet from any cutting edge, standing tree, or existing road. Logs that do not meet Section 2045 Log Removal requirements, chunks larger than 12 inches diameter, and stumps shall be left scattered in the Unit for wildlife habitat away from roads and landings.

Pile Construction - all landing piles, and in-unit piles greater than 9 feet by 9 feet by 9 feet, shall have no smaller than a 200 square feet of polyethylene plastic sheeting or enough to cover 50% of the pile. Start the pile with good burnable material such as conifer limbs and chunks, 6 to 8 feet high, add plastic, and complete the pile with Slash on the plastic. Debris that contains a log segment at least 3 inches in diameter at the small end and at least 10 feet in length shall be decked separately from smaller debris and hauled as Pulp.

Protective Measures - shall comply with Oregon Forest Practice Rules issued per ORS 527.610 to 527.992. Examples of protective measures are: (1) waterbarring tractor trails where necessary to prevent runoff toward streams; (2) not windrowing in streams or streamways; and (3) leaving Stream Buffers along designated streams.

Work specifications may be modified or waived only upon written notice from STATE.

EXHIBIT K

SPECIFICATIONS FOR BRUSH AND SLASH SHOVEL PILING

Equipment Type, Equipment Operation, and Conduct of Work

The specifications given below are requirements for equipment type, equipment operation, and conduct of work under the contract.

Shovel - shall be a track-mounted machine with a ground-pressure rating of not more than 6.8 PSI and a net horsepower of 85 or more. The machine shall be capable of a minimum horizontal reach of 26 feet and a minimum vertical reach of 16 feet.

- Log Loader – shovel: Grapple with rake attachment shall be a hydraulically controlled, with a 360-degree continuous rotation, and tooth length on rake arm shall be greater than 14 inches long, unless otherwise approved in writing by STATE.

Equipment	Rate	Acres	Appraised Value
Log Loader	$250 / acre	50	$12,500

Operator - must be experienced in operating similar equipment on land clearing operations, be able to operate the equipment proficiently, and pile the debris on the area as directed by STATE.

Support - including transport, other equipment, replacements, supplies, maintenance, and repairs shall be furnished as required to complete work; and shall be furnished without cost to STATE, other than as agreed under the contract terms.

Work Scheduling - work shall be accomplished only during dry weather conditions, and started within 14 calendar days after completion of yarding activities on the Timber Sale Area. Operations shall provide for continual operation until contract work is completed, unless interrupted by poor weather, fire closures, or other uncontrollable circumstances. Equipment breakdowns shall be repaired without undue delay, and provision shall be made for replacement of equipment to prevent prolonged delays. Piling operation shall not be allowed when operations might damage sites or affect stream flows. Any exception to these instructions must be authorized in writing by STATE.

STATE Representative - shall provide directions for the conduct of work according to specifications.

PART IV: OTHER INFORMATION

WRITTEN PLAN FOR OPERATION ON TYPE-F STREAM RESTORATION

CLEAR CONNECTION TIMBER SALE

SALE NO. FG-341-2024-W001015-1

ROAD VACATING V1 TO V2 AND V3 TO V4

PROJECT DESCRIPTION:

This project consists of vacating existing road and restoring a Type F stream crossing Upper North Fork Clear Creek, on Pit Road, at the following location:

Landowner Name: State of Oregon

Contact Phone: (503)-357-2191

Address: 801 Gales Creek Rd, Forest Grove, OR 97116

Operation Name: Clear Connection

Legal Description: Section 17-T4N-R5W

The Oregon Forest Practices Act requires a written plan for operations within 100 feet of a Type F stream. This Written Plan addresses the vacating of 3,280' of Pit Road, stream restoration on Upper North Fork Clear Creek, and the protection measures that will be applied to minimize impact to the stream and the associated riparian area. This road vacating shall be completed under this Written Plan to establish a larger buffer between Pit Road and Upper North Fork Clear Creek, as well as restoring a previous Type F stream crossing to its natural stream contours. This will mitigate potential sediment delivery into the stream, facilitate adequate stream flow, and promote fish passage.

PROTECTED RESOURCES:

Upper North Fork Clear Creek is a smaller Type F stream with an expansive stream network. This project site is within the Forest Practices Coast Range Region.

DESCRIPTION OF THE AREA:

V1 to V2:

Pit Road crosses Upper North Fork Clear Creek on segment V1 to V2. This crossing was previously opened by removing the culvert and fill material; however, it does not meet current vacate standards. Steep, failing, side slopes parallel the stream on each side of the bank. The fill material that was removed was staged adjacent to the stream and is now showing tension cracks from the toe of the fill, which now results in sediment delivery into the stream. The stream channel is also much more narrow compared to the natural stream channel behind and ahead of this location. This crossing is in between a few hundred feet of road on both sides of the stream, which intersects V3 to V4 at station 5+70. Segment V1 to V2 is located entirely within the RCA.

V3 to V4:

Pit Road, at the project site, is located within an RCA between stations 0+00 to 12+45, and then transitions in and out of RCAs as marked in the field. It has a total of three live water crossings, placed under large fills, and navigates into through-cuts. Point V3 is located next to an old quarry. Close to this quarry is oversized riprap that appears to have been produced from blasting the quarry decades ago. Oversized riprap is now scattered near the stream bank, within the flood plain, and along the shoulder of the road. Point V4 is located at the end of a through cut, adjacent to a Type F stream.

VACATE DESIGN STRATEGY:

V1 to V2:

The purpose of vacating this segment on Pit Road is to restore the Upper North Fork Clear Creek stream channel back to its natural contours and to promote fish passage. Currently, there is road that needs to be ripped between stations 0+00 and 1+05 on the NE side. Approximately 265 cubic yards of existing material at station 1+05 will be pulled back from the current cutslope on the NE side. Waste produced from station 1+05 will be end-hauled to waste area No. 2. Station 1+30, on the SW side will have approximately 354 cubic yards of material pulled back; on the S portion of the SW cutslope and on the N portion of the SW cutslope. Waste produced from station 1+30 will be end-hauled to waste area No. 1. Both slopes will be laid back at a 2:1 ratio. The stream channel will then be widened to a minimum of 16 ft. Bank armoring on both sides of the stream channel will be placed to ensure the integrity of the newly laid-back slope. Waste material from an old waste site will be relocated to another waste area and rocked road surface will also be ripped between stations 1+30 and 3+15. Once all waste materials have been end-hauled to their designated waste areas, a waterbar with a ditchout will be constructed to facilitate drainage away from the stream.

V3 to V4:

The purpose of vacating this road is to disconnect the road hydrologically from the stream channel and to remove this road segment from the RCA. The vacated road will also be left in a condition where road-related damage to waters of the State will likely not occur. Pit Road will have sidecast material, stream crossings, culverts, and fills removed. Ditch and road surfaces will be treated to prevent erosion and disperse runoff. Stream channel development will occur at the following stations: 16+50, 22+00, and 22+80. Additionally, oversized riprap near an old quarry, near point V3, will be put back into the quarry unless more harm will be done to the stream by attempting to move them. Lastly, fill material will be restored to natural contours with sidecast pullback excavation in accordance with exhibits in the Clear Connection contract.

PROTECTION MEASURES:

All vacate project work will be in compliance with OAR 629-625-0650. In stream work associated with this plan shall be accomplished from July 1st to August 31st, annually. All work shall be performed during dry conditions acceptable to STATE. Construction site shall facilitate protection of natural stream course flow and fish passage by utilizing cofferdams and silt fences. Cofferdams will be installed to create a barrier between the work site and stream, while silt fencing will be installed to protect stream and fish passage from any potential sediment delivery from project work. Cofferdams and silt fencing will be installed and functional for the duration of the project. Upon completion of the vacation, waterbars, and ditch outs, all areas of disturbed soil will be seeded and mulched to promote slope stability. Excavated materials will not be placed within the RCA. All waste material will be placed, shaped, and compacted in the designated waste areas, outside of RCAs. Waste areas will also be grass seeded and mulched to mitigate erosion.

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

Submitted: _____ Date: _____

Purchaser/Operator Contract Representative

Original: Salem

CC: Operator, Purchaser, District file