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: _____

(1) Contract Number: FG-341-2023-W00883-01

(2) Sale Name: Double Parked

(3) Contract Expiration Date: 10/31/2025

(4) Purchaser Name: _____

(5) State Brand Information (Complete)

(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.

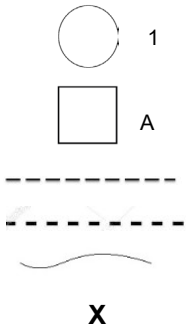
(7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.

(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.

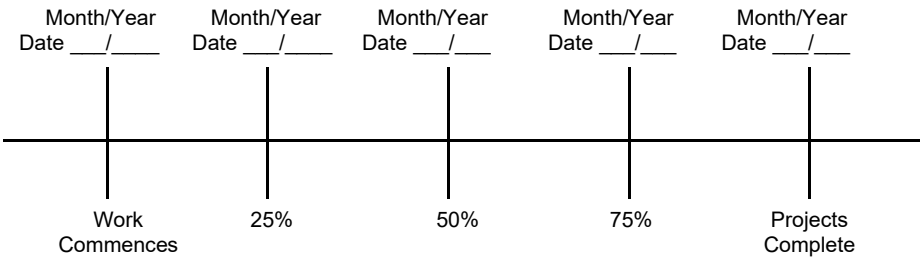
Oregon Department of Forestry
2600 State St Salem OR 97310
PART III: EXHIBITS

EXHIBIT B
OPERATIONS PLAN

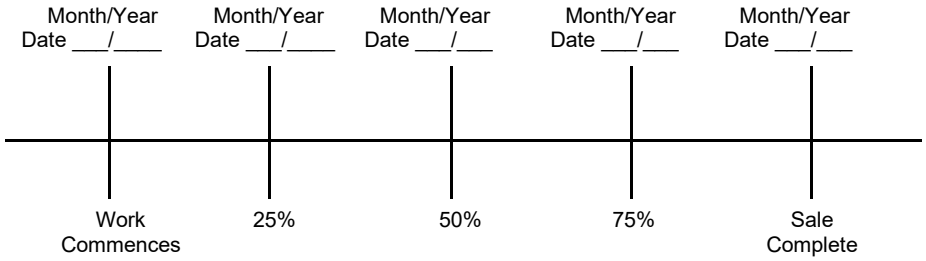
Completion Timeline

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	☐	☑

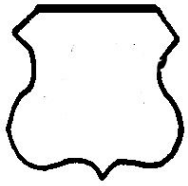
(8) **APPROVED SCALING LOCATIONS** (as shown on the ODF Approved Locations web-site)	**Species**	**Yard**	**Truck**	**Weight**

(9) **SALE NAME:** Double Parked
COUNTY: Washington

(10) **STATE CONTRACT NUMBER:**
FG-341-2023-W00883-01

(11) STATE BRAND REGISTRATION NUMBER:

(12) **STATE BRAND INFORMATION:**



(13) PAINT REQUIRED: YES ☑
COLOR: Orange

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

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

OTHER :

(15) **REMARKS:**

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

(16)

_____
Purchaser or Authorized Representative Date

_____
State Forester Representative Date

_____
State Forester Representative PRINT NAME

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

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

(2) **(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:** Double Parked

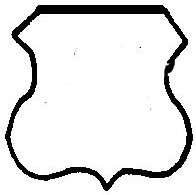
COUNTY: Washington

STATE CONTRACT NUMBER:

FG-341-2023-W00883-01

(11) STATE BRAND REGISTRATION NUMBER: _____

(12) STATE BRAND INFORMATION:



(13) **REMARKS:**

Operator's Name (Optional inclusion by District):

(14) SIGNATURES:

Purchaser or Authorized Representative Date

State Forester Representative Date

State Forester Representative PRINT NAME

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

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

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
16 feet	14 feet	A to B	0+00 to 101+50	Ditch
Match Existing	Match Existing	C to D	0+00 to 36+50	Ditch
Match Existing	Match Existing	E to F	0+00 to 1+30	Ditch
16 feet	12 feet	G to H	0+00 to 20+20	Ditch
Match Existing	Match Existing	I to J	0+00 to 21+50 21+50 to 25+70 25+70 to 49+65	Ditch Outslope Ditch
Match Existing	Match Existing	K to L	0+00 to 2+30	Ditch
16 feet	12 feet	J to M	0+00 to 19+50	Ditch
16 feet	12 feet	N to O	0+00 to 7+00	Ditch
16 feet	12 feet	P to Q	0+00 to 2+00	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.

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	1:1	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 G, 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. Fills shall be thoroughly compacted in accordance with this Exhibit. Excess excavated material on the following segments, G to H 10+00 to 14+20 and 15+75 to 16+25 shall be end hauled and be used for fills at stations G to H 6+00 to 9+60 and 14+20 to 15+75.

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, ditchouts, settling ponds, 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.

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS:

Segment	Station	Work Description
G to H	0+00	Point G. Begin road construction; crown road, begin ditch. Install Culvert No. 15 (18" x 40') as cross drain.
	4+50	Construct turnaround on right.
	5+35	Construct roadside landing on right.
	6+00	Begin fill construction to maintain grade of ≤12%.
	6+55	Install Culvert No. 20 (18" x 50') as cross drain.
	9+60	End fill construction.
	9+70	Construct roadside landing on right.
	10+00	Begin full bench construction to maintain grade ≤18%. End haul surplus material to Waste Area No. 1.
	13+00	Install Culvert No. 21 (18" x 40') as cross drain.
	14+20	End full bench construction and begin fill construction.
	14+70	Install Culvert No. 22 (18" x 50') as cross drain.
	15+75	End fill construction, begin full bench construction.
	16+25	End full bench construction and begin curve widening.
	17+00	End curve widening.
END	20+20	Point H. End road construction.

J to M	0+00	Point J. Begin road construction; crown road, begin ditch.
	2+00	Construct turnaround on left.
	2+80	Construct roadside landing on right.
	4+80	Begin drift to maintain a grade of ≤ 18%.
	6+30	End drift and begin fill construction. Install Culvert No. 16 (18" X 40') as cross drain.
	6+80	End fill construction, begin drift to maintain a grade of ≤ 18%.
	7+20	Construct roadside landing on right.
	10+30	End drift.
	13+90	Install Culvert No. 17 (18" X 30') as cross drain.
	16+90	Construct roadside landing on right.
	18+00	Install Culvert No. 18 (18" X 30') as cross drain.
	19+00	Construct turnaround on left.
End	19+50	Point M. End road construction, construct landing.

Segment	Station	Work Description
N to O	0+00	Point N. Begin road construction; crown road, begin ditch. Install Culvert No. 19 (18" X 30) as cross drain.
	6+50	Construct turnaround on right.
End	7+00	Point O. End road construction, construct landing.

EXHIBIT D

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS:

Segment	Station	Work Description
P to Q	0+00	Point P. Begin road construction; crown road, begin ditch.
End	2+00	Point Q. End road construction, construct landing.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT 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. 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. If road is a through-cut re-establish ditchlines on both sides of road. 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. Construct 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 3 feet, width of 3 feet, 3 feet in depth and 1 foot apart, or as directed by STATE. Backslopes shall be ¾:1.

6. Energy Dissipator Construction. 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 on Exhibit A, or other stable locations as directed by STATE.

8. Subgrade Preparation and Application of Surfacing Rock.
   (a) Complete culvert installations, drainage ditches, 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) 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.
   (d) Upon completion of above required work, apply, process, and compact surfacing rock in accordance to this Exhibit.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

Segment	Station	Work Description
A to B	0+00	Point A. Rogers Road. Begin road improvement; crown road, clean or construct ditch lines.
	0+15	Existing culvert, clean inlet and outlet.
	0+75	Existing gate. Restore existing gate, according to the specifications in Exhibit I. Remove existing latch open post and install new latch open post and lock box, according to the specifications in Exhibit I. Remove existing gate posts and gate debris that are no longer serviceable. Reestablish blockages to vehicle access around existing gate.
	3+65	Live Stream. Existing culvert, remove existing culvert and replace with Culvert No. 1 (24" X 40'). Construct three settling ponds to left of inlet.
	4+60	Begin cutslope layback and road widening, re-align road prism to the left. Fall all timber within the Right-of-Way tags. All merchantable timber shall be hauled during the project period. End haul surplus material and all woody debris, including slash and stumps to Waste Area No. 1.
	4+85	Construct three settling ponds in ditchline on left.
	5+35	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 2 (24" X 40').
	6+25	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 3 (24" X 50').
	6+80	Live Stream. Existing culvert, install marker. Place 24cy of Riprap as Energy Dissipator at outlet.
	11+80	Construct three settling ponds in ditchline on left.
	12+30	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 4 (24" X 40').
	12+80	Construct three settling ponds in ditchline on left.
	13+30	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 5 (24" X 40').
	15+70	Construct three settling ponds in ditchline on left.
	16+20	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 6 (24" X 40').
	16+90	Construct three settling ponds in ditchline on left.
	17+40	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 7 (24" X 40') as cross drain.
	18+85	Existing culvert, clean inlet and outlet.
	21+50	Construct three settling ponds in ditchline on left.
	22+00	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 8 (24" X 50') as cross drain.
	25+00	End cutslope layback and road widening.
	27+25	Construct three settling ponds in ditchline on left.
	27+75	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 9 (30" X 40').
	28+30	Live Stream. Existing culvert.
	28+90	Junction on right.
	32+05	Junction on right.
	32+85	Junction on left.
Cont.	33+65	Junction on left.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

Segment	Station	Work Description
A to B Cont.	34+20	Existing bridge. Replace guard rails and install missing post, according to the specifications in Exhibit J.
	34+50	Existing gate. Restore existing gate, according to the specifications in Exhibit I.
	35+10	Junction on right.
	35+80	Junction on left and right.
	37+30	Continue improvement on Plantation Road. Junction on left. Existing culvert, clean inlet and outlet.
	41+90	Construct three settling ponds in ditchline on left.
	42+40	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 10 (24” X 40’).
	45+25	Begin ditch construction on both sides of road.
	47+95	End ditch on right, continue ditch on left.
	48+20	Junction on right.
	48+40	Install gate, according to specifications in Exhibit I.
	48+50	Construct tank trap on road to left. Existing culvert, clean inlet and outlet, install marker.
	48+80	Remove existing gate, according to the specifications in Exhibit I.
	49+00	Point C. Junction with C to D on left.
	49+30	Existing culvert, clean inlet and outlet.
	52+00	Construct three settling ponds in ditchline on left.
	52+50	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 11 (24” X 30’).
	57+30	Existing culvert, clean inlet and outlet.
	58+40	Improve turnaround on right.
	58+70	Begin ditch construction on both sides.
	58+75	Construct three settling ponds in ditchline on left.
	59+25	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 12 (24” X 40’).
	61+20	End ditch on right, continue ditch on left.
	63+55	Existing culvert, clean inlet and outlet.
	66+90	Construct Waste Area No. 1 on left.
	76+60	Construct three settling ponds in ditchline on left.
	77+10	Live Stream. Existing culvert.
	77+80	Begin ditch construction on both sides of road.
	80+00	End ditch on right, continue ditch on left.
	82+40	Existing culvert, clean inlet and outlet.
	83+00	Point G. Junction with G to H on left.
	83+50	Begin ditch construction on both sides.
	85+90	End ditch on right, continue ditch on left.
	89+20	Existing culvert, clean inlet and outlet.
	89+30	Begin ditch construction on both sides.
Cont.	98+70	End ditch on both sides. Continue ditch on left.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

A to B Cont.	100+50	Construct turnaround on left.
End	101+50	Point B. End road improvement.

Segment	Station	Work Description
C to D	0+00	Point C. Begin road realignment; crown road, construct ditch.
	1+80	End road realignment and begin road improvement. Construct tank trap on road to left.
	3+50	Existing culvert, clean inlet and outlet.
	8+65	Live stream. Existing culvert.
	9+55	Install Culvert No. 13 (18” X 30’) as disconnect.
	13+05	Existing culvert, clean inlet and outlet.
	15+60	Live Stream. Existing culvert, remove existing culvert and install Culvert No. 14 (24” X 30’).
	17+05	Construct three settling ponds in ditchline on left.
	17+55	Live Stream. Existing culvert.
	19+10	Existing culvert, clean inlet and outlet.
	21+50	Existing culvert, clean inlet and outlet.
	28+85	Existing culvert, clean inlet and outlet, install marker.
	29+45	Point E. Junction with E to F on right.
	34+15	Existing culvert, clean inlet and outlet.
	36+00	Improve turnaround
End	36+50	Point D. End road improvement, improve landing.

Segment	Station	Work Description
E to F	0+00	Point E. Begin road improvement; crown road, clean or construct ditch lines.
End	1+30	Point F. End road improvement, improve landing.

Segment	Station	Work Description
I to J	0+00	Point I. Improve landing. Begin road improvement; crown road clean or construct ditch.
	0+50	Point H. Junction with G to H on right. Construct junction to be used as a turnaround.
	9+00	Begin cutslope layback and widen road. End haul surplus material and all woody debris, including slash and stumps to Waste Area No. 2.
	12+00	End cutslope layback.
	14+75	Construct Waste Area No. 2 on right.
	14+80	Point P. Junction with P to Q on left.
	15+00	Point K. Junction with K to L on left.
	18+50	Point N. Junction with N to O on left.
Cont.	18+90	Existing culvert, install marker.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

I to J Cont.	21+50	Begin outslope, end ditch.
	21+70	Begin cutslope layback and widen road. Fall all timber within the Right-of-Way. Stack merchantable outside road prism. Merchantable timber shall be hauled during the project period. End haul surplus material and all woody debris, including slash and stumps to Waste Area No. 2.
	24+10	Property line with Stimson Lumber Co.
	25+70	End cutslope layback and outslope, begin crown and ditch.
	27+50	Junction G on left.
	33+55	Junction on left.
	35+85	Junction on left.
	44+60	Junction on left.
	48+00	Junction on left.
End	49+65	Point J. Junction with J to M on right. End road improvement. Property line with ODF.

Segment	Station	Work Description
K to L	0+00	Point K. Begin road improvement; crown road, clean or construct ditch lines.
End	2+30	Point L. End road improvement, improve landing.

EXHIBIT D

FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.
A to B	4+60 to 25+00
G to H	10+00 to 14+20
G to H	15+75 to 16+25
I to J	9+00 to 12+00
I to J	21+70 to 25+70

Full Bench and End-Haul Areas General Requirements

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

Containment/Sidecast

- Full: No excavated material remains below the road; end haul all material.

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 20 feet horizontal measurement.

Waste Area Treatment

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

EXHIBIT D

ROCK TABLE

ROAD SEGMENT: A to B				Sta. to Sta. 0+00 to 101+50				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 - 12	Varies	Culvert	24	Culverts	12	288
Energy Dissipator	Riprap	9+00	Varies	Culvert	24	Culverts	1	24
Base Rock	3"-0 Crushed	0+00 to 37+30	10	Station	53	Stations	37.3	1,976
Surfacing Rock	1 ½"-0 Crushed	A to B	3	Station	15	Stations	101.5	1,522
Junction	1 ½"-0 Crushed	A to B	3	Junction	12	Junctions	3	36
Junction	1 ½"-0 Crushed	28+90, 32+05, 32+85, 33+65, 35+10 and 35+80	12	Junction	48	Junctions	6	288
Turnout	1 ½"-0 Crushed	A to B	3	Turnout	7	Turnouts	5	35
Turnaround	1 ½"-0 Crushed	100+50	3	Turnaround	6	Turnarounds	1	6
Total Rock for Road Segment:								4,175

ROAD SEGMENT: C to D				Sta. to Sta. 0+00 to 36+50				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	3"-0 Crushed	Culvert Nos. 13 and 14	Varies	Culvert	24	Culverts	2	48
Base Rock	3"-0 Crushed	0+00 to 1+80	12	Station	65	Stations	1.8	117
Surfacing Rock	3"-0 Crushed	1+80 to 36+50	6	Station	31	Stations	34.7	1,075
Junction	3"-0 Crushed	Point E	6	Junction	12	Junctions	1	12
Turnout	3"-0 Crushed	36+00	6	Turnout	14	Turnouts	3	42
Landing	3"-0 Crushed	Point D	6	Landing	90	Landings	1	90
Total Rock for Road Segment:								1,384

ROAD SEGMENT: E to F				Sta. to Sta. 0+00 to 1+30				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Surfacing Rock	3"-0 Crushed	E to F	6	Station	31	Stations	1.3	40
Landing	3"-0 Crushed	Point F	6	Landing	90	Landings	1	90
Total Rock for Road Segment:								130

EXHIBIT D

ROCK TABLE

ROAD SEGMENT: G to H				Sta. to Sta. 0+00 to 20+20				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Base Rock	3”-0 Crushed	G to H	6	Station	32.5	Stations	20.2	657
Surfacing Rock	1 ½”-0 Crushed	G to H	6	Station	32.5	Stations	20.2	657
Turnout	3”-0 Crushed	G to H	12	Turnout	29	Turnouts	3	87
Turnaround	3”-0 Crushed	4+50	12	Turnaround	20	Turnarounds	1	20
Curve Widening	3”-0 Crushed	16+25 to 16+75	12	Station	52	Stations	.5	26
Roadside Landings	3”-0 Crushed	5+35 & 9+70	12	Landings	95	Turnarounds	2	190
Total Rock for Road Segment:								1,637

ROAD SEGMENT: I to J				Sta. to Sta. 0+00 to 49+65				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Surfacing Rock	1 ½”-0 Crushed	I to J	3	Station	15	Stations	49.65	744
Junction	1 ½”-0 Crushed	9+00, 12+50 and 12+70	3	Junction	12	Junctions	3	36
Turnout	1 ½”-0 Crushed	I to J	3	Turnout	7	Turnouts	7	49
Turnaround	1 ½”-0 Crushed	26+50	3	Turnaround	6	Turnarounds	1	6
Landing	1 ½”-0 Crushed	Point J	3	Landing	45	Landings	1	45
Total Rock for Road Segment:								880

ROAD SEGMENT: K to L				Sta. to Sta. 0+00 to 2+30				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Surfacing Rock	1 ½”-0 Crushed	K to L	3	Station	15	Stations	2.3	34
Landing	1 ½”-0 Crushed	Point L	3	Landing	45	Landings	1	45
Total Rock for Road Segment:								79

EXHIBIT D

ROCK TABLE

ROAD SEGMENT: J to M				Sta. to Sta. 0+00 to 19+50				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	3”-0 Crushed	Culvert Nos. 16 - 18	Varies	Culvert	24	Culverts	3	72
Base Rock	3”-0 Crushed	J to M	12	Station	65	Stations	19.5	1,267
Turnout	3”-0 Crushed	J to M	12	Turnout	29	Turnouts	1	29
Turnaround	3”-0 Crushed	2+00 and 19+00	12	Turnaround	20	Turnarounds	2	40
Roadside Landing	3”-0 Crushed	2+80, 7+20 and 16+90	12	Landing	95	Landings	3	285
Landing	3”-0 Crushed	Point M	12	Landing	180	Landings	1	180
Total Rock for Road Segment:								1,873

ROAD SEGMENT: N to O				Sta. to Sta. 0+00 to 7+00				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Culvert Bedding /Backfill	3”-0 Crushed	Culvert No. 19	Varies	Culvert	24	Culverts	1	24
Base Rock	3”-0 Crushed	N to O	12	Station	65	Stations	7	455
Landing	3”-0 Crushed	Point O	12	Landing	180	Landings	1	180
Total Rock for Road Segment:								659

ROAD SEGMENT: P to Q				Sta. to Sta. 0+00 to 2+00				TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) Per		Number of		
Base Rock	3”-0 Crushed	P to Q	12	Station	65	Stations	2	130
Landing	3”-0 Crushed	Point Q	12	Landing	180	Landings	1	180
Total Rock for Road Segment:								310

STOCKPILE			
Rock Size and Type	Location	Approximate Dimensions	Volume (Stockpile Measurement CY)
1 ½”-0 crushed	Wildcat Mountain Quarry	Base:125’ x 125’ Top: 90’ x 90’ Height: 12’	5,000

TOTAL ROCK	24”-12” Riprap	3”-0 Crushed	1 ½”-0 Crushed
	24 CY	7,286 CY	9,617 CY

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.

Stockpile Measurement. Purchaser shall construct stockpiles according to the dimensions determined by STATE and included in the Quarry development plan required by Exhibit F. Dimensions will consist of the length and width of the base, length and width of the top, and height of all four corners. The finished stockpile surface shall be smooth, uniform, and all corners filled in. All stakes and reference points shall be protected until stockpile measurements are accepted 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

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

COMPACTION EQUIPMENT OPTIONS

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

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

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

EXHIBIT E

CULVERT SPECIFICATIONS

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

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.

Backfill shall consist of crushed rock on improvement segments and crushed rock 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 as follows: 12" for culverts 18” to 36” and 18” for culverts 42” to 96”. 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.

Culverts 36 inches in diameter or larger shall have 1:1 step beveled inlets.

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for all 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	40	A to B	3+65
2	24	40	A to B	5+35
3	24	50	A to B	6+25
4	24	40	A to B	12+30
5	24	40	A to B	13+30
6	24	40	A to B	16+20
7	24	40	A to B	17+40
8	24	50	A to B	22+00
9	30	40	A to B	27+75
10	24	40	A to B	42+40
11	24	40	A to B	52+50
12	24	40	A to B	59+25
13	18	30	C to D	9+55
14	24	30	C to D	15+60
15	18	40	G to H	0+00
16	18	40	J to M	6+30
17	18	30	J to M	13+90
18	18	30	J to M	18+00
19	18	30	N to O	0+00
20	18	50	G to H	6+55
21	18	40	G to H	13+00
22	18	50	G to H	14+70

TOTAL LENGTHS BY DIAMETER		
18 INCH	24 INCH	30 INCH
340	240	290

EXHIBIT E

TYPICAL EMBEDDED ENERGY DISSIPATOR

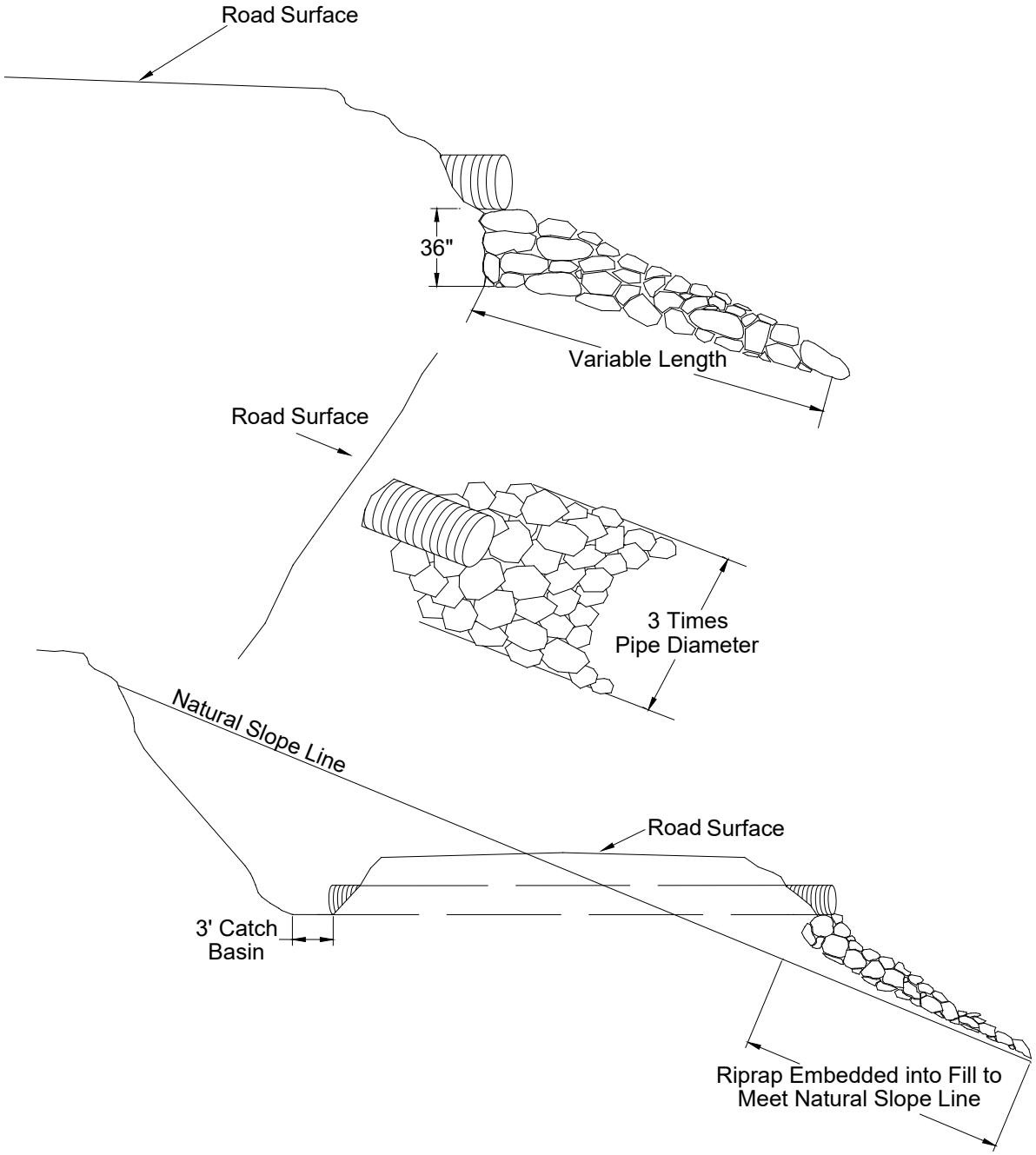


EXHIBIT F

CRUSHED ROCK SPECIFICATIONS

Materials. The material shall be fragments of rock crushed to the required size. The material shall be free from vegetation and lumps of clay.

STATE requires screening and/or rejecting of materials utilized for production of crushed rock for the purpose of removing excess fine material. Excess fines are present, when greater than 5 percent of a total rock sample weight, passes a #200 sieve. Rock crushing shall be limited to periods when weather conditions are acceptable to STATE.

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

Hardness- Test Method AASHTO T 96: 15% Maximum

Durability- Test Method ODOT TM 208
Passing No. 20 Sieve: 10% Maximum

For the purpose of crushing rock specified under the projects in Section 2610, “Project Work,” CONTRACTOR shall utilize a **three-stage with screen** rock crusher, or equivalent, unless otherwise approved by STATE.

The rock crusher shall be calibrated to produce rock as specified in this exhibit. Prior to the commencement of production crushing, CONTRACTOR shall sample, test, and provide rock test results meeting STATE specifications. STATE may then sample and test crushed rock for approval to proceed. CONTRACTOR shall take one sample of each 2,000 cubic yards of crushed rock material produced thereafter, using approved AASHTO sampling procedures. CONTRACTOR shall submit samples to a certified laboratory or shall perform testing for graduation requirements using AASHTO T 11 and AASHTO T 27 testing procedures. Prior to testing, each sample shall be split, making one-half of the sample, with proper identification, available for testing by STATE. Each sample and the results of CONTRACTOR testing shall be made available to STATE within 24 hours of sampling. Any rock crushed prior to STATE approval to proceed shall not be credited to the required rock quantity. Any subsequent rock tests not meeting STATE specifications shall be reason for rejection of that portion of crushed rock produced after that test and shall not be credited to the required rock quantity. STATE may sample the crushed rock at any time during the operation. Results of STATE’s tests shall prevail over all other test results.

EXHIBIT F

CRUSHED ROCK SPECIFICATIONS

Grading Requirements

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

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

EXHIBIT F

ROCK QUARRY DEVELOPMENT AND USE

1. CONTRACTOR shall prepare a written development plan for the quarry area. The plan shall be submitted to STATE for approval prior to conducting any operation in quarry area. The plan shall include, but not be limited to:

   (a) Location of quarry floor, benches, and roads to benches.
   (b) Disposal site for woody debris, overburden and reject material.
   (c) Time lines for rock quarry use.
   (d) Erosion control measures.
   (e) Oversize material location

2. CONTRACTOR shall schedule and coordinate quarry and stockpile usage with other existing or planned activity requiring quarry or stockpile usage. **CONTRACTOR shall notify STATE 5 days prior to the start of quarry development activities.**

3. Overburden removal shall extend for a distance of at least 20 feet beyond the developed rock source. Areas of overburden removal shall be inspected for completeness and approved by STATE prior to drilling or rock removal.

4. CONTRACTOR shall conduct the Operations relative to the disposal of waste material in such manner that silt, rock, debris, dirt, or clay shall not be washed, conveyed, or otherwise deposited in any stream. All waste shall be deposited at an approved "waste disposal site."

5. The quarry floor shall be developed to provide drainage away from the quarry. All quarry and stockpile site drainage ditches shall be developed and maintained. Drainage ditches shall not discharge into streams.

6. Benches shall be constructed and maintained at intervals of 40 feet or less in height and shall be a minimum of 20 feet in width. Any gravel or talus slopes shall be left with a working face at an angle of 60 percent or less. There shall be a minimum of one bench with an access road to it. Said bench shall be easily accessible with tractors.

7. The STATE shall be notified two working days prior to the beginning of drilling operations. Working days shall be defined as Monday through Friday, 6:00 a.m. to 2:30 p.m.

8. Controlled blasting techniques shall be utilized for any blasting operations, and shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain as much material as possible within the quarry development area (full containment). Each low intensity shot shall be shot into the previous shots' void in order to contain all the material in the quarry development area. Each shot shall also have a "tattle-tale" end cap so that it is known if all charges were detonated. The CONTRACTOR shall detonate or remove all non-detonated explosives from STATE LANDS. CONTRACTOR shall maintain a comprehensive blasting log that contains all pertinent data for all blasting operations. The blasting log shall be submitted to the STATE after the completion of all blasting activity. The blasting log is intended for STATE record keeping purposes only.

9. Quarry face shall be developed in a uniform manner. All quarry backslopes shall be left in a stable condition.

10. Oversized material that is produced shall be piled in the vicinity of the quarry as directed by STATE.

11. The quarry site shall be left in a condition free from overburden and debris. Access roads to the quarry, benches, and the quarry floor shall be cleared of unused shot rock and dirt at the termination of use. Access roads shall be waterbarred to provide drainage and blocked as directed by STATE.

12. Proper winterization and storm-water control measures such as water barring, drainage, utilization of filter bales, mulching and/or blocking access shall be constructed and maintained to protect the watershed and Project Work, as directed by STATE.

EXHIBIT F

ROCK QUARRY DEVELOPMENT AND USE

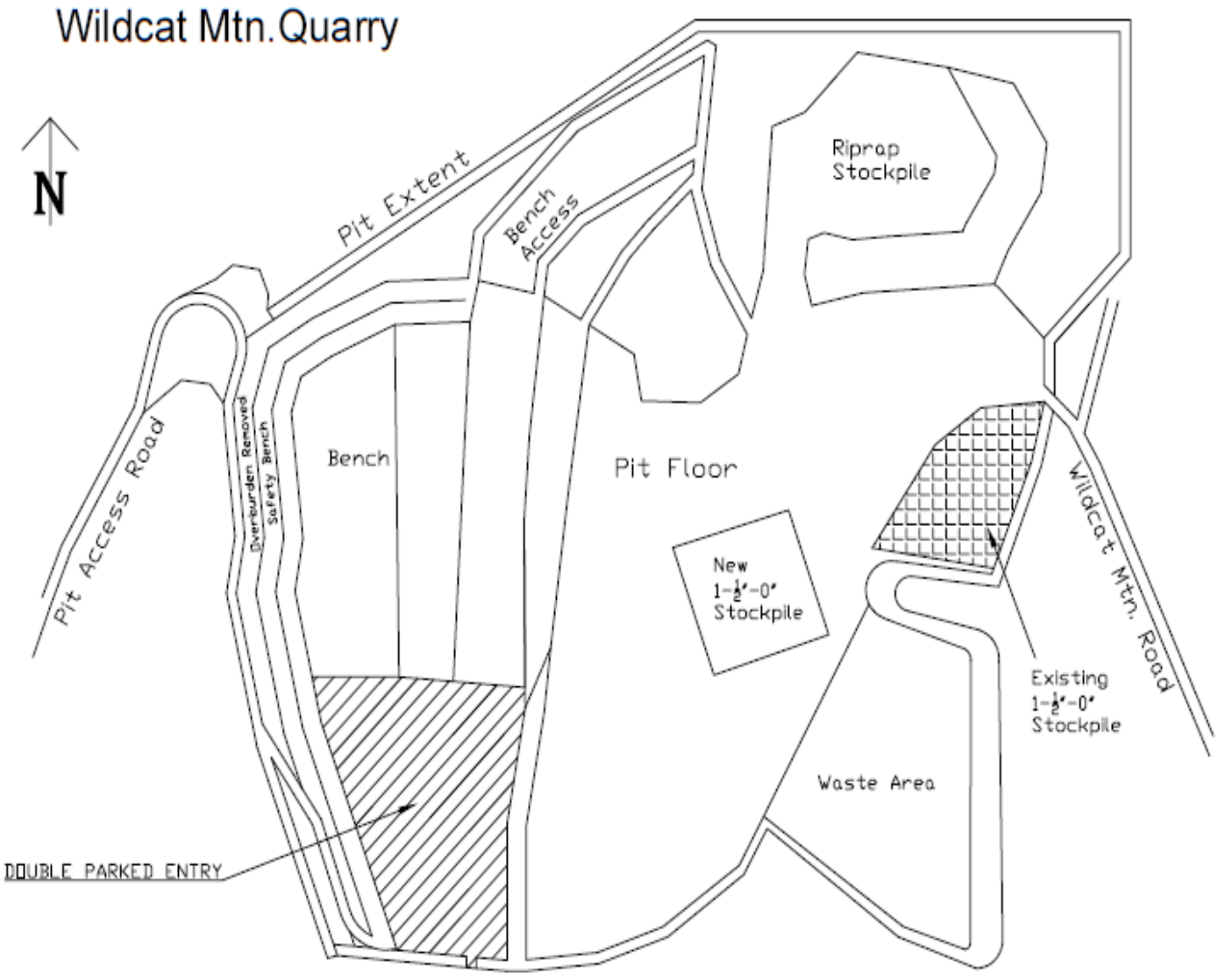
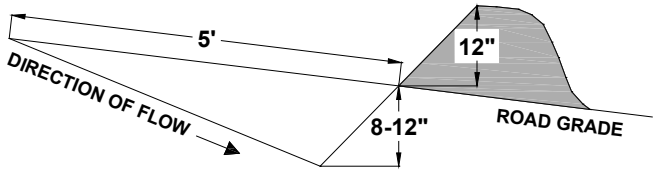


EXHIBIT G

WATERBAR SPECIFICATIONS

PROFILE

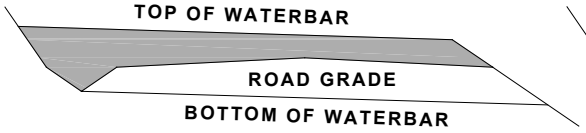
DITCHED AND OUTSLOPED



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

CROSS SECTION

DITCHED



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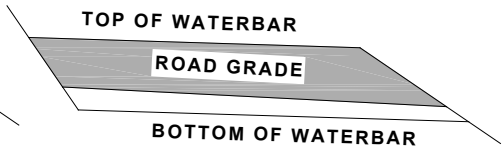
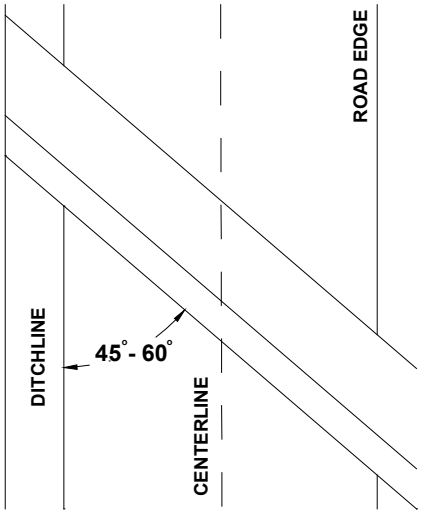


CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
CROSS DRAINAGE GRADIENT MINIMUM 3%.

PLAN VIEW

DITCHED



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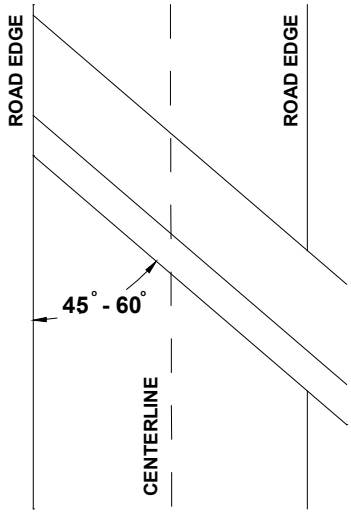
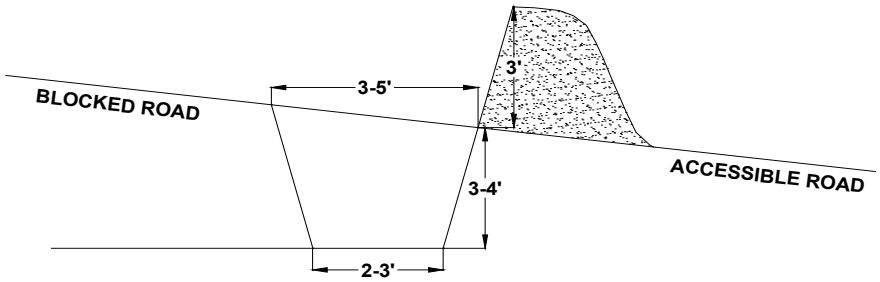


EXHIBIT G

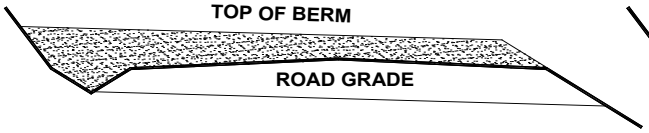
TANK TRAP SPECIFICATIONS

PROFILE
DITCHED AND OUTSLOPED



CROSS SECTION

DITCHED



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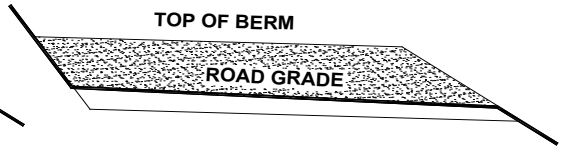
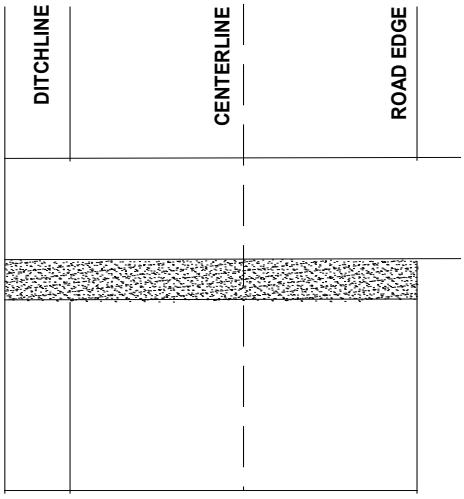


CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
CROSS DRAINAGE GRADIENT MINIMUM 3%

PLAN VIEW

DITCHED



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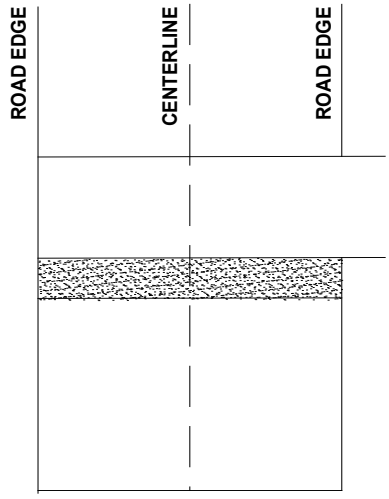


It should be sloped to drain with a relief ditch through the down slope edge of the road. The trench shall be behind the berm for approaching traffic.

EXHIBIT H

FOREST GATE INSTALLATION AND RESTORATION

PURCHASER shall install a Forest Gate at A to B 48+40 and restore existing gates at A to B 0+75 and 34+50, according to the specifications in this Exhibit.
Forest Gate and additional Lock Box will be provided by STATE and available for pickup at the Forest Grove District office. Detailed gate plans can be provided by STATE.

GATE RESTORE SPECIFICATIONS:

Existing gate at A to B 0+75. Existing Latch Open Post shall be reinstalled and modified to allow the Lock Box to be welded to the Latch Open Post so the gate can be locked open. Gate shall be able to latch open with ease after the curing of concrete.

All field welds shall be inspected and approved by STATE.

Prior to repainting, gate and posts shall be cleaned and free of oil and debris.

Gates shall be repainted with a rust resistant primer coat and a topcoat of a rust resistant paint. Gates shall be painted “Safety Yellow”.

Two 2” x 18” red and white reflective tape pieces shall be placed on both sides of the gate arm.

All gate posts, debris and concrete bases shall become property of the PURCHASER and be removed from STATE land in the same project period in which replacement occurred.

Area around removed gate, posts and debris bases shall be restored by filling in any holes and reestablishing the road prism, as directed by STATE.

Removed gate from A to B 48+80 shall be transported to the Forest Grove District office, as directed by STATE.

GATE INSTALLATION AND SPECIFICATIONS:

Gate Arm shall be 20’ long.

All welds and cuts are completed, except “Lock Rings”, “Lock Tongue” and “Gate Arm Adjustment”.

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 (right/north) side of the road.

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

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

EXHIBIT H

FOREST ROAD GATE DESIGN AND INSTALLATION

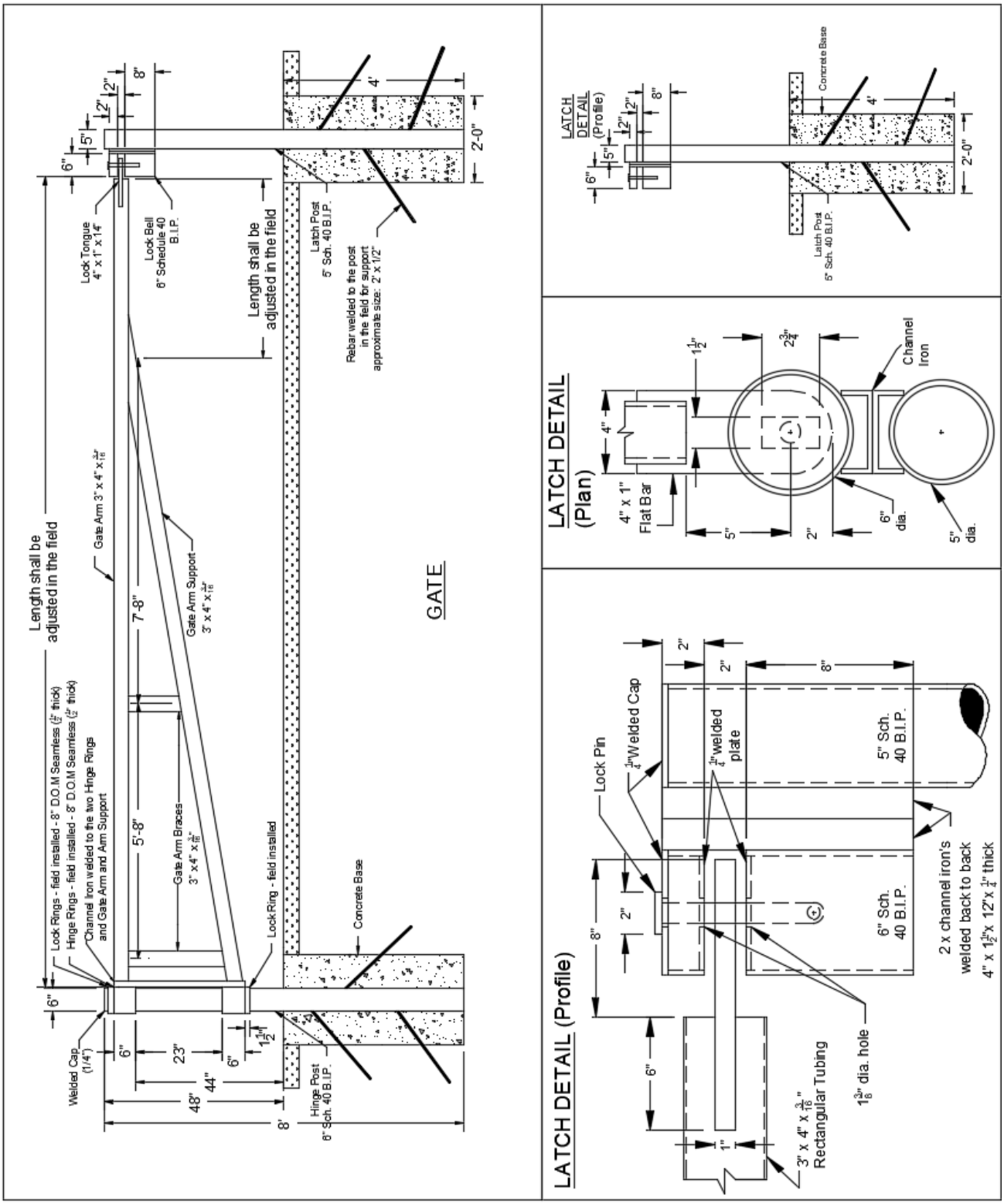


EXHIBIT I

BRIDGE MAINTENANCE SPECIFICATIONS

PURCHASER shall replace existing guardrails and install missing posts on the Rogers Road Bridge, according to the specifications in this exhibit and as directed by STATE.

GUARDRAIL SPECIFICATIONS:

Metal W-Beam Rail - Galvanized steel beam rail shall conform to the requirements of AASHTO M 180, Class A. The zinc coating shall conform to the requirements of AASHTO M 180, Type II, applied after fabrication and subject to the single spot test. Backup plates will be accepted with ungalvanized edges and bolt holes, provided these areas are field-coated with an approved galvanizing substitute.

Guardrail Hardware - All bolts, nuts, washers and other fittings for beam type guardrail shall be galvanized steel meeting the requirements of AASHTO M 180.

Guardrail Anchor Hardware - Provide cable and fittings for guardrail anchors that conform to the requirements of AASHTO M 30, Class A, for Type II cable. Galvanize all fittings according to AASHTO M 111 (ASTM A123).

All bolts, nuts, and washers shall be as detailed, with nuts tapped oversize not to exceed 1/32 inch.

Block shall be 6” X 8” X 14” constructed from wood that has been incised and pressure treated for ground contact, as approved by STATE.

POST SPECIFICATIONS:

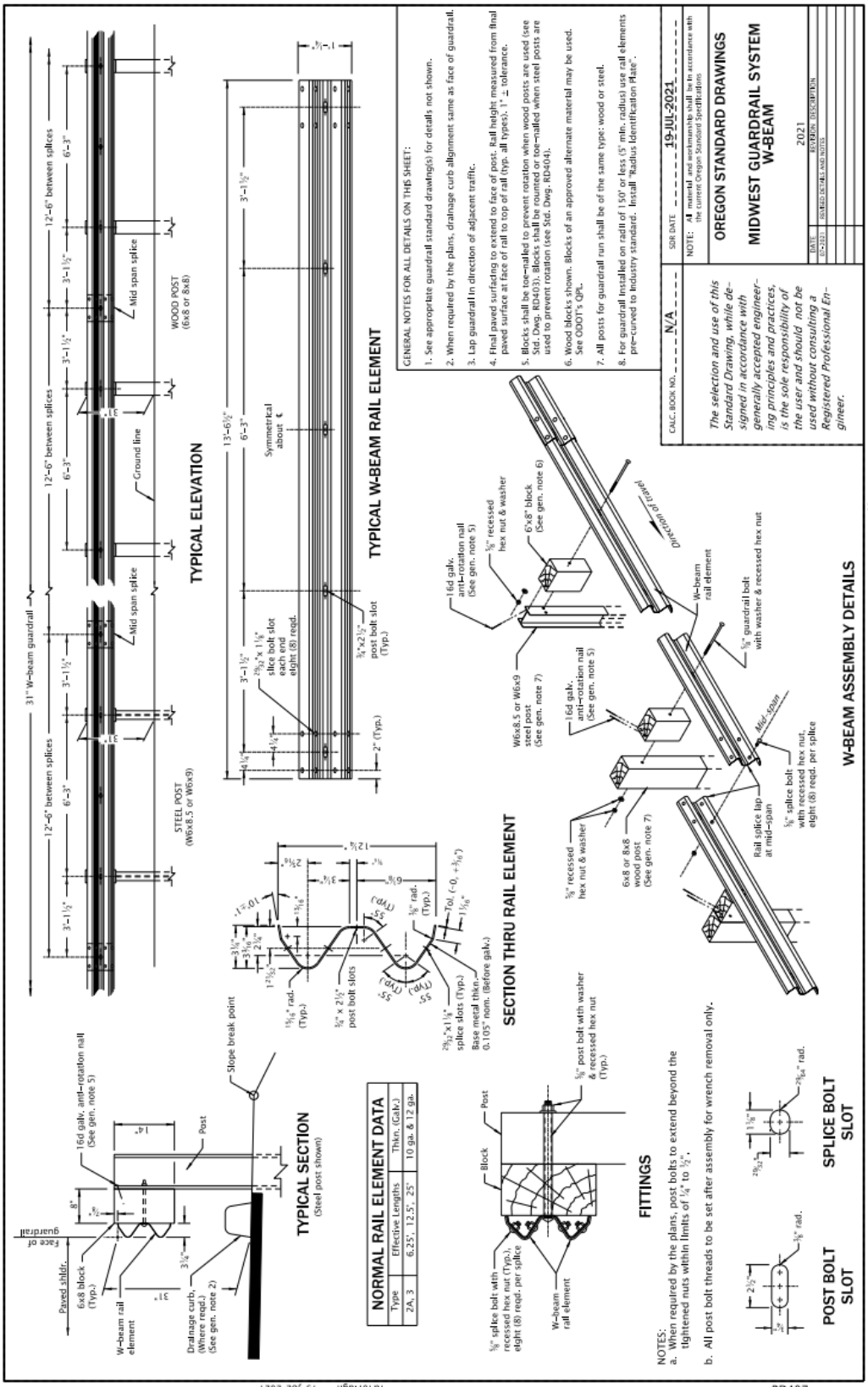
Metal Guardrail and Median Barrier Post - Metal post shall be of structural steel conforming to the requirements of ASTM A36 and galvanized according to AASHTO M 111 (ASTM A123).

For steel anchors, the steel tubing shall meet the requirements of ASTM A500, Grade B, ASTM A501 or ASTM A618. The Soil plate shall meet the requirements of ASTM A36. After fabrication galvanize tubing and plate according to AASHTO M 111 (ASTM A123).

All bolts, nuts, and washers shall be as detailed, with nuts tapped oversize not to exceed 1/32 inch.

EXHIBIT I

BRIDGE MAINTENANCE SPECIFICATIONS



Double Parked
FG-341-2023-W008

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 and 4. Apply straw mulch to all bare soils within 100' of streams resulting from Project Nos. 1, 2 and 4 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.

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	1+00 to 25+00
A to B	Culvert Nos. 1 - 12
A to B	Waste Area No. 1
C to D	Culvert No. 14
I to J	1+80 to 18+50
I to J	Waste Area No. 2

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	25	$6,250

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.

EXHIBIT L

STREAM ENHANCEMENT INSTRUCTIONS

GENERAL STREAM ENHANCEMENT INSTRUCTIONS:

1. Work shall be conducted only during periods of low water flows from July 15 through September 30, and between the hours of 6 a.m. and 6 p.m., unless otherwise approved in writing by STATE. STATE shall be notified a minimum of 14 days prior to beginning work. STATE has prepared the required FPA "Written Plan" for this work.

2. Stream crossings will be limited to those necessary to access the sites and whenever possible equipment will operate from the banks to minimize stream disturbance. Stream crossing locations and activities shall be approved by STATE before work begins.

3. Turbidity shall not exceed 10% above natural stream turbidities as a result of work. The turbidity may be exceeded for a limited duration (per OAR 340-41-0036), provided all practicable erosion control measures have been implemented. Oil spill response materials will be on site before work begins.

4. PURCHASER shall select and place 60 conifer trees/logs, meeting the specifications in this exhibit, for stream enhancement at the site locations shown on Exhibit A. The trees shall be obtained from the Timber Sale Area shown on Exhibit A, greater than 115 feet horizontal distance from Type-F streams. Trees shall be uprooted as needed, cut to length, and delivered to the project site, as directed by STATE. Trees shall be transported by log truck, or other means so that roads are not damaged (i.e. trees shall not be dragged on road surface). All trees shall adhere to the minimum specifications as described in the project instructions.

5. Trees required for stream enhancement work shall be conifers obtained from the Timber Sale Area. Trees can have defects such as double tops, crooked trunks, heart rot, etc., as long as they meet the minimum required size dimensions.

6. All areas of bare or disturbed soils shall be seeded with an approved grass seed mix. Fertilizer shall not be used. All access trails shall be thoroughly blocked to prevent access using large woody debris or boulders, water barred, ripped or tilled, and mulched upon completion, as directed by STATE.

7. Trees should be placed in a complex configuration with at least one end on the stream banks as to simulate a natural log jam as show in Figure 1 of this exhibit, and as approved by STATE.

8. Tree tops, which won't meet the minimum log specifications, can be used to construct these structures to utilize the whole tree.

9. Access routes have been designated and marked in the field to minimize disturbance to the riparian area. Equipment transporting trees to the sites shall take care to avoid damage to existing in-stream logs, riparian vegetation, and other trees**.** Trees that are cleared to gain access will be placed around the creek or used to block access trails. Alternative access routes shall be approved by STATE prior to use.

10. A minimum 1½ cubic-yard, track-mounted excavator shall be used for all placement. An articulated clamshell bucket is highly recommended.

11. All access trails will be thoroughly blocked to prevent access using large woody debris or boulders, water barred, de-compacted, and rehabilitated upon completion, as directed by STATE.

EXHIBIT L

STREAM ENHANCEMENT INSTRUCTIONS

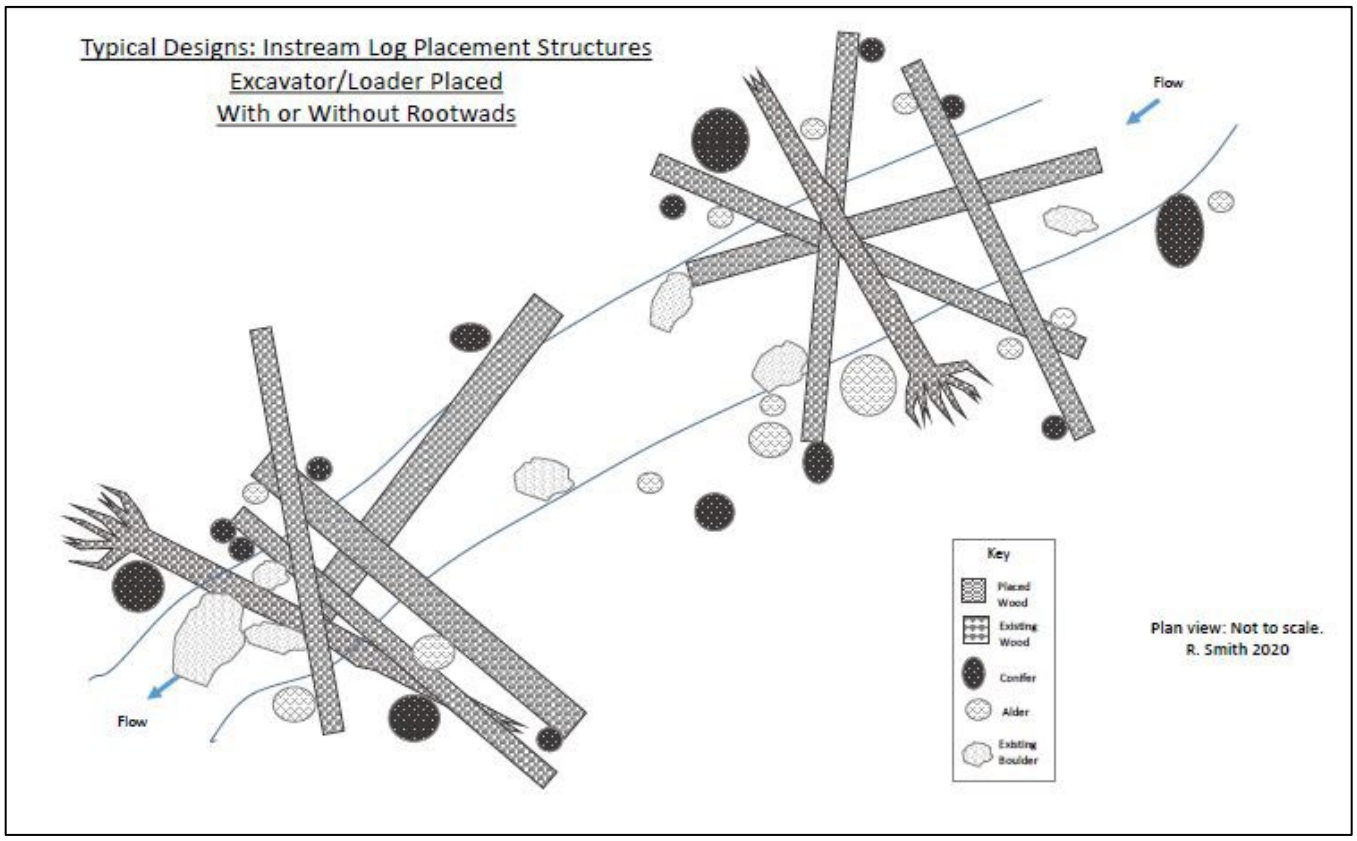
SPECIFIC STREAM ENHANCEMENT INSTRUCTIONS:

Location	Description
Site 1	6 pieces total: 3 with root wads attached minimum length 30', minimum diameter 20" 3 logs minimum length 40', minimum small end diameter 16" Active channel width 20'
Site 2	6 pieces total: 3 with root wads attached minimum length 30', minimum diameter 20" 3 logs minimum length 40', minimum small end diameter 16" Active channel width 20' Intention at this site is to reduce erosion repair storm damage.
Site 3	6 pieces total: 3 with root wads attached minimum length 30', minimum diameter 20" 3 logs minimum length 40', minimum small end diameter 16" Move boulder into main channel and put tree with root wad in front to restrict flow in main channel. Intention is to encourage flow into smaller channel to encourage side channel development leading towards bridge.
Site 4	6 pieces total: 3 with root wads attached minimum length 30', minimum diameter 20" 3 logs minimum length 40', minimum small end diameter 16"
Site 5	6 pieces total: 3 with root wads attached minimum length 30', minimum diameter 20" 3 logs minimum length 40', minimum small end diameter 16"
Site A	5 pieces total: 2 with root wads attached minimum length 15', minimum diameter 16" 3 logs minimum length 20', minimum small end diameter 14" Active channel width 7'.
Site B	5 pieces total: 2 with root wads attached minimum length 15', minimum diameter 16" 3 logs minimum length 20', minimum small end diameter 14"
Site C	5 pieces total: 2 with root wads attached minimum length 15', minimum diameter 16" 3 logs minimum length 20', minimum small end diameter 14"
Site D	5 pieces total: 2 with root wads attached minimum length 15', minimum diameter 16" 3 logs minimum length 20', minimum small end diameter 14"
Site E	5 pieces total: 2 with root wads attached minimum length 15', minimum diameter 16" 3 logs minimum length 20', minimum small end diameter 14"
Site F	5 pieces total: 2 with root wads attached minimum length 15', minimum diameter 16" 3 logs minimum length 20', minimum small end diameter 14"

EXHIBIT L

STREAM ENHANCEMENT INSTRUCTIONS

Typical Design:



PART IV: OTHER INFORMATION

FOREST PRACTICE ACT "WRITTEN PLAN"
For Stream Enhancement Operations within 100 feet of Type-F Streams

The Timber Sale Area is located in portions of Sections 17, 18, and 19, T2N, R5W, W.M., Washington County, Oregon.

Landowner: Oregon Department of Forestry
801 Gales Creek Road
Forest Grove, OR 97116
(503) 357-2191

Protected Resources:

North Fork Gales Creek (large Type-F Stream) tributary to Gales Creek

Unnamed tributary (large Type-F Stream) to Gales Creek

Specific Site Characteristics:

North Fork Gales Creek (Large Type-F Stream) flows outside of the eastern boundary of Unit 1 for approximately 2,000 feet. This stream has a braided channel, which has an average active channel width of 20 feet. Streamside vegetation is a mix of Douglas-fir, red alder, and salmonberry.

Unnamed tributary to Gales Creek (Large Type-F Stream) flows outside of the eastern boundary of Unit 2 for approximately 2,000 feet. This stream is mostly concentrated into a single channel with an average active channel width of 7 feet. Streamside vegetation is a mix of Douglas-fir, red alder, and salmonberry.

Tree and Vegetation Retention:

All logs for stream placement will be sourced from the Timber Sale Area. Vegetation disturbance in the RMA's will be kept to a minimum. Harvesting will not be permitted within the posted Buffer Zones (posted at an average horizontal distance of 115 feet or greater from these Type-F Streams).

Practices:

For North Fork Gales Creek, 5 stream enhancement structures will be placed and constructed using ground-based equipment. These sites are shown on Exhibit "A" as Site 1, Site 2, Site 3, Site 4, and Site 5. Work to be done at these sites is described as follows:

For North Fork Gales Creek, each structure will be created by placing a total of no less than 6 conifer logs into the Type-F Stream. 3 logs with a minimum length of 50 feet and a minimum small end diameter of 16 inches. 3 logs with attached rootwad, a minimum length of 40 feet, and a minimum small end diameter of 22 inches.

For the unnamed tributary to Gales Creek, 6 stream enhancement structures will be placed and constructed using ground-based equipment. These sites are shown on Exhibit "A" as Site A, Site B, Site C, Site D, Site E, and Site F. Work to be done at these sites is described as follows:

For the unnamed tributary to Gales Creek, each structure will be created by placing a total of no less than 5 conifer logs into the Type-F Stream. 3 logs with a minimum length of 20 feet and a minimum small end diameter of 14 inches. 2 logs with attached rootwad, a minimum length of 15 feet, and a minimum small end diameter of 16 inches.

For stream enhancement operations, logs will be placed with ground-based equipment at locations specified by STATE. STATE will be notified a minimum of 14 days prior to beginning work. This work will take place during the in-water work period (July 15 – September 30), unless otherwise approved in writing by STATE. No excavation will be conducted during the stream enhancement. The approximate locations are shown on Exhibit "A".

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

Submitted: _____ Date: _____
Purchaser/Operator Contract Representative

WRITTEN PLAN
Double Parked
#FG-341-2023-W00883-01

LEGAL DESCRIPTION: Portions of Sections 17, 18, and 19, T2N, R5W, W.M., Washington County, Oregon.

PROTECTED RESOURCE: North Fork Gales Creek, a large Type-F stream, flows to the east of Unit 1. There is an unnamed large Type-F Stream that flows to the east of Unit 2.

DESCRIPTION OF THE AREA: Slopes adjacent to these streams range from 5% in the floodplain to over 70% immediately upslope. Streamside vegetation along these Type-F Streams include Douglas-fir, red alder, and salmonberry.

PROTECTION MEASURES: Stream Buffers are posted an average of 115 feet, or greater, from the edge of the floodplain for Type-F Streams associated with this timber sale. When cables pass through or over these Stream Buffers, all necessary precautions shall be taken to protect Stream Buffer components including: locating corridors at least 100 feet apart and pulling cables out of the Stream Buffer prior to rigging the next yarding road. Trees felled within the Stream Buffer for cable corridors shall not be yarded.

Prepared by: Mark Savage 1/31/2023

Reviewed by: Jeff P. Peck 02/14/2023

Jeff Peck; Marketing Unit Forester Date