

# PART III: EXHIBITS

State Timber Sale Contract  
No. 341-11-26  
Sprague's Stump

EXHIBIT B

Page 1 of 3  
629-Form 341-203  
Revised 06/97

## OREGON DEPARTMENT OF FORESTRY

### TIMBER SALE OPERATIONS PLAN

(See Page 2 for instructions)

Date Received by STATE: \_\_\_\_\_

(5) State Brand Information (complete):



(1) Contract No.: 341-11-26

(2) Sale Name: Sprague's Stump

(3) Contract Expiration Date: October 31, 2012

Project Completion Dates: \_\_\_\_\_

(4) Purchaser: \_\_\_\_\_

(6) Purchaser Representatives:

Projects: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Projects: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Projects: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Projects: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Logging: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Logging: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Logging: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Logging: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

(7) State Representatives:

Projects: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

Logging: \_\_\_\_\_

Phone: \_\_\_\_\_

Cell/Other

Phone: \_\_\_\_\_

Home: \_\_\_\_\_

(8) Name of Subcontractors & Starting Dates:

Projects: No(s) \_\_\_\_\_ - \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

No(s) \_\_\_\_\_ - \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

No(s) \_\_\_\_\_ - \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

No(s) \_\_\_\_\_ - \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Logging: Felling \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Yarding: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

(9) Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

EXHIBIT B  
INSTRUCTION SHEET FOR OPERATIONS PLAN

**SUBMIT ONE COPY OF PLAN TO STATE**

Operations shall be limited to the work shown in the plan until a revised plan or supplemental plan is submitted covering additional work. Compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act. 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.

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 those required by the timber sale contract. Provide spur road specifications.
  - 3. Location of proposed tractor yarding roads. Show if and how marked on the ground.
  - 4. Location of temporary stream crossings.
  - 5. List the sequence of performing project work.
  - 6. Location of rock sources - attach pit development plans.







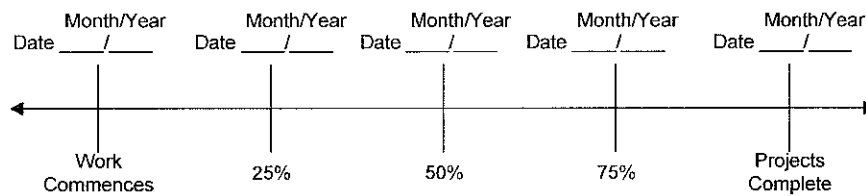
-  Cable Landing, with numbers for sequence.
-  Tractor Landing with alphabetical sequence.
-  Approximate setting boundary.
-  Spur truck roads.
-  Tractor yarding roads.
-  Temporary stream crossings.

EXHIBIT B  
OPERATIONS PLAN

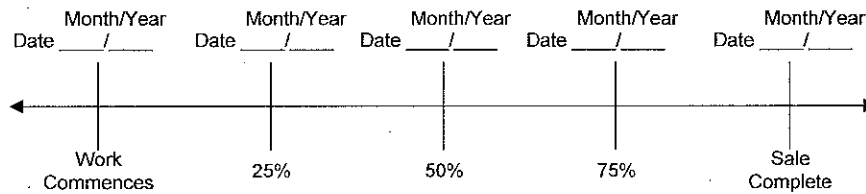
Completion Timeline

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

**Projects**



**Harvest & Other Requirements**



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

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

APPROVED: Date: \_\_\_\_\_

SUBMITTED BY:  
PURCHASER

STATE OF OREGON - DEPARTMENT OF FORESTRY

\_\_\_\_\_  
Title


\_\_\_\_\_  
Title

Original: Salem  
cc: District File  
Purchaser

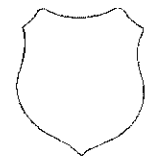
EXHIBIT C

**SCALING INSTRUCTIONS -- LOCATION APPROVAL -- BRAND INFORMATION**

- (1) ORIGINAL REGISTRATION  Date \_\_\_\_\_  
 REVISION NUMBER \_\_\_\_\_  Date \_\_\_\_\_  
 CANCELLATION  Date \_\_\_\_\_
- (2) TO: \_\_\_\_\_  
 (Third Party Scaling Organization)
- (3) FROM: Astoria (04) Phone (503) 325-5451  
 (State Forestry District)  
 Address 92219 Highway 202, Astoria, OR 97103
- (4) PURCHASER: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

- (12) NOTICE OF CANCELLATION OF BRAND:  
 Effective Date: \_\_\_\_\_  
 State Forester's Representative \_\_\_\_\_
- (13) SALE NAME Sprague's Stump  
 COUNTY Clatsop
- (14) STATE CONTRACT NUMBER 341-11-26
- (15) STATE BRAND REGISTRATION NUMBER \_\_\_\_\_
- (16) STATE BRAND INFORMATION:  
 (COMPLETE) 

(5) MINIMUM SCALING SPECIFICATIONS			CLASS		
SPECIES	SCALING DIAMETER INCHES	*NET SCALE VOLUME	PER MBF	** SUM	SUB
All Conifer	--	10			
All Hardwood	---	10			



- (17) PAINT REQUIRED: YES   
 COLOR Orange

- \* Apply minimum volume test to whole logs over 40' Westside; 20' Eastside.  
 \*\* Sum (if indicated): see instructions and explain in Item (19).
- (6) WESTSIDE SCALE: YES  NO   
 Use Region 6 actual taper rule. Logs over 40'.
- (7) EASTSIDE SCALE: YES  NO   
 Use Region 6 actual taper rule. Logs over 40'.
- (8) Weight Scale Sample    
 (6) - (8), pink log load receipts
- (9) Weight Sale
- (10) Per Load    
 (9) and (10), yellow log load receipts

(18) SPECIAL REQUESTS
PEELABLE CULL (all species)
<b>NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE</b>
ADD-BACK VOLUME - Deductions due to delay
OTHER:

- (19) REMARKS All Hardwood logs less than 30 board feet shall be scaled as "Utility". Hardwood logs greater than or equal to 30 net board feet shall be scaled as a sawlog.

(11) APPROVED SCALING LOCATIONS	Species	Yard	Truck	Weight

- Operator's Name (Optional inclusion by District): \_\_\_\_\_
- (20) SIGNATURES:  
 Purchaser or Authorized Representative \_\_\_\_\_ Date \_\_\_\_\_  
 State Forester Representative \_\_\_\_\_ Date \_\_\_\_\_

**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.**

EXHIBIT C

INSTRUCTIONS FOR FORM 343-307 (rev. 10/08)

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires Item (12). Complete date.
- (2) Designate Third Party Scaling Organization (TPSO).
- (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. Review Section 2040 or 2045, "Log Removal," of the Contract. Species, or combined species can be separate entries. Information serves as a basis for scaling (see also Items (16) thru (18)), and is required to show existence on the sale. **SUM** (lump sum material). **SUB** (submerchantable material). SUB, as used by the State, references that material containing at least 10 bf (net) but less than the lower merchantable net volume limit or grade requirements for other merchantable (Per MBF) entries. Per MBF, SUM, and SUB must be indicated by checking the appropriate column. Species with the same specifications and value are combined into one entry. Per MBF and SUB require scaling therefore complete specifications. SUM need not be scaled, hence no specifications. Loads containing only SUM are to be ticketed if so instructed in Item (19). Mixed loads of SUM, Per MBF and/or subspecies will always be scaled.
- (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) Eastside – Region 6 actual taper/taper table segment scale. Special Service Rules on file with TPSO. See: Segment Scaling and Grading of Long Logs -- All Species -- State Forestry Department Scaling Practices (Northwest Log Rules Eastside). Items with \* follow U.S. Forest Service Eastside rules.
- (8) Weight Scale Sample – Check box if sale is to be a Weight Scale Sample. All specifics for handling, scaling and processing will be attached or explained in the Remarks section Item (19).
- (9) Weight Sale – Check box if sale is to be sold as a weight sale. Processing procedures from approved locations to TPSO's will be explained in the Remarks section of Item (19).
- (10) Per Load – Check box if volumes on sale are per load. Specific instructions for handling and processing will be fully explained in the Remarks section of Item (19).
- (11) Show scaling locations only applicable to TPSO. Location name should appear as it does on the ODF Approved Scaling Location web site: [http://www.odf.state.or.us/DIVISIONS/management/asset\\_management/ScalingLocation.asp](http://www.odf.state.or.us/DIVISIONS/management/asset_management/ScalingLocation.asp) Locations with scaling and processing directions specific to their location should be on a separate form. Species should be identified if not capable of receiving "all" species. Check appropriate box for either: yard, truck scale, or weight. Refer to the web site listed above for the locations approval status.
- (12) When logging and hauling is complete, recall branding hammers, date and sign where indicated, check CANCELLATION box in Item (1), and send to TPSO.
- (13) Enter sale name and county
- (14) Enter sale Contract number.
- (15) Enter Oregon's State Brand Registry Number (required).
- (16) Show brand assigned to timber sale. One brand only. If more than one brand is assigned to the sale: (1) make separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section Item (19).
- (17) Check yes for Paint Required and designate "Orange" for color. Non required removal volumes may sometimes require blue paint.
- (18) Special Requests. These are requests that will be applied to ODF timber sales. If "Other" is indicated, it must contain a description and any necessary comments.
- (19) Use this space to designate any weight conversion factors, per load volumes, weight scale sample instructions or any other explanations to clarify scaling or processing requirements. If additional scaling locations are approved, prepare another form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.
- (20) Require purchaser to sign and date completed form.

EXHIBIT D  
 FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
16 feet	12 feet	1A to 1B	0+00 to 13+45	DITCH
16 feet	12 feet	1C to 1D	0+00 to 3+00	DITCH
16 feet	12 feet	2A to 2B	0+00 to 46+70	DITCH
14 feet	12 feet	2C to 2D	0+00 to 29+40	OUTSLOPED
14 feet	N/A	2E to 2F	0+00 to 10+30	OUTSLOPED
14 feet	N/A	3A to 3B	0+00 to 1+50	OUTSLOPED
14 feet	N/A	3C to 3D	0+00 to 1+00	OUTSLOPED
14 feet	12 feet	4A to 4B	0+00 to 22+90	DITCH
14 feet	12 feet	4C to 4D	0+00 to 13+80	DITCH
14 feet	12 feet	4E to 4F	0+00 to 2+00	DITCH
16 feet	12 feet	11 to 12	0+00 to 15+60	DITCH
16 feet	12 feet	13 to 14	0+00 to 1+00	DITCH
14 feet	N/A	15 to 16	0+00 to 34+50	OUTSLOPED

**CLEARING.** This work shall consist of clearing, removing, and disposing of all trees, Snags, Down Timber, brush, surface objects, and protruding obstructions within the clearing limits.

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

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

**GRUBBING.** This work shall consist of the removal or digging out of stumps and protruding objects.

All stumps shall be completely removed within the limits of required grubbing. Stumps overhanging cutslopes shall be removed. Grubbing debris shall not be placed or permitted to remain in or under any road embankment sections. Grubbing debris shall not be left lodged against standing trees.

**GRUBBING CLASSIFICATION.**

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

Improvements and reconstructions - 4 feet back from the shoulder of the subgrade or ditch, whichever is widest, or as marked in the field.

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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

Excavation shall conform to STATE-specified lines, grades, dimensions, and plans when provided. Plans are provided between points 1A to 1B, 2A to 2B, 2C to 2D, 4A to 4B, and 4C to 4D.

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

Suitable excavated material shall be used for the formation of fills, shoulders, and drainage structure backfills. Embankment materials shall be free of woody debris, brush, muck, sod, frozen material, and other deleterious materials.

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

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

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

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

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

DRAINAGE

Subgrade. Subgrade shall be crowned 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 50 feet, or as staked on the ground, plus 25-foot approaches at each end.

Location: Intervisible but not greater than 750 feet apart and as marked in the field.

SLOPES

Solid Rock

Fractured Rock

Soil - side slopes 50% and over

Soil - side slopes less than 50%

Back Slopes

Vertical to  $\frac{1}{4}$  :1

$\frac{1}{2}$  :1

$\frac{3}{4}$  :1

1 :1

Fill Slopes

1½:1

1½:1

Top of cutslope shall be rounded.

LANDINGS. Landings shall be constructed as posted in the field, no less than 50 feet wide and no more than 70 feet wide unless otherwise approved by STATE. Surface is to be crowned for drainage with general grade no more than 3 percent. Surface as shown in the "Road Surfacing" table in this Exhibit.

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

**SEASONAL WINTERIZATION.** All unsurfaced roads or unfinished subgrades shall be waterbarred in accordance with the specifications in Exhibit J, and blocked from vehicular traffic prior to October 1, annually and as directed by STATE.

GENERAL ROAD CONSTRUCTION INSTRUCTIONS:

- (1) Timber Removal. Remove all trees within posted right-of-way boundary, as specified in Section 2210, Designated Timber.
- (2) Excavated Materials. Excavated materials shall be utilized for road construction. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Surplus excavated materials and waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit. Excess excavated material not used for embankment on the following segment shall be end hauled or pushed to waste areas as shown on Exhibit A and marked in the field.
- (3) 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 I.
- (4) Geotextile Road Fabric: Install woven fabric in accordance with the specifications in Exhibit H.
- (5) Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic-yard, track mounted excavator.
- (6) Subgrade Preparation and Application of Surfacing Rock.
  - (a) Complete culvert installations, drainage ditches, ditchouts, fill construction, and other specified work prior to the application of surfacing rock.
  - (b) Subgrade shall be crowned 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 at 4 to 6 percent.

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
1A to 1B	0+00	Point 1A. Construct "T" Junction. Construct 50-foot radius curve. Add curve widening of five feet left and right.
	0+75	End 50-foot radius curve.
	2+80 to 5+00	Construct at minimum two percent grade for positive drainage.
	5+00	Begin truck end-haul.



EXHIBIT D  
FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
1A to 1B	6+00	End truck end-haul.
	8+10	Construct turnout/landing left.
	8+75	Begin truck end-haul.
	9+75	End truck end-haul.
	13+45	Point 1B. Daylight landing to provide positive drainage. Utilize excavation for construction of landing.
2A to 2B	0+00	Begin installation of geotextile fabric as described in Exhibit H.
	3+00	Construct 90-foot radius curve. Add curve widening six feet left.
	3+50	Install 18" x 40' culvert. Utilize 10 cubic yards of 24"-6" riprap to construct an energy dissipater.
	3+95	End 90-foot radius curve.
	5+65	Begin 80-foot radius curve. Add curve widening of eight feet left.
	6+90	End 80-foot radius curve.
	9+90	Begin 120-foot radius curve. Add curve widening of three feet right.
	10+65	End 120-foot radius curve.
	11+65	Begin armor on left side of fill. Utilize 50 cubic yards of 24"-6" riprap.
	12+25	End armor.
	11+80	Install 18"x40' culvert. Utilize 10 cubic yards of 24"-6" riprap to construct an energy dissipater.
	11+95	Begin 90-foot radius curve. Add curve widening of six feet left.
	12+80	End 90-foot radius curve.
	13+70	Install 18"x40' culvert. Utilize 10 cubic yards of 24"-6" riprap to construct an energy dissipater.
18+65	Install 18"x30' culvert. Utilize 10 cubic yards of 24"-6" riprap to construct an energy dissipater.	
19+45	Begin daylight right.	

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
2A to 2B	20+95	End day light right.
	21+40	End installation of geotextile fabric.
	36+60	Begin 120-foot radius curve. Add curve widening of four feet right.
	37+60	End 120-foot radius curve.
	40+50	Begin armor left ditchline. Utilize 10 cubic yards of 6"-0" pitrun.
	41+00	End armor left.
	42+85	Turnout left. Construct Landing.
	46+70	Point 2B. Construct 50-foot landing.
4A to 4B	0+90	Begin fill widening right of one foot. Utilize 70 cubic yards of 24"-6" riprap to armor fill slopes.
	1+75	End fill widening.
	1+90	Begin truck end-haul.
	2+60	End truck end-haul.
	2+90	Begin fill widening of one foot to each side. Utilize 80 cubic yards of 24"-6" riprap to armor fill slopes.
	3+60	End fill widening. End fill slope armor.
	8+60	Begin truck end-haul.
	9+10	End truck end-haul.
	17+45	Begin 80-foot radius curve. Add curve widening of 3 feet right.
	18+50	End 80-foot radius curve.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (1) Excavated Materials. Excavated materials shall be utilized for road construction. 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.
- (2) Bank Slough Removal. Dig out all bank slough. Bank slough material shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE. Waste materials shall be seeded and mulched in accordance with specifications in Exhibit L.
- (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. All waste materials shall be hauled to nearby waste areas and shall be uniformly sloped and compacted for drainage. Waste materials shall be seeded and mulched in accordance with specifications in Exhibit L. Fill reconstruction 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. Crushed rock shall be used for backfilling excavation trenches less than 3 feet deep. STATE may require the use of crushed rock for culvert bedding. Removed culverts shall be hauled to an approved refuse site off of STATE land.
- (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. 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 and uniformly sloped and compacted for drainage, as directed by STATE. Damaged culvert inlets and/or outlets shall be repaired by opening them with a hydraulic jack, or cutting off the culvert end to allow for free passage of water at peak flow levels. Install a culvert marker at each newly installed culvert and at each existing culvert that is missing a marker that could be reached by a grader blade.
- (5) 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 I.
- (6) Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

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

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
15 to 16	0+00 to 34+50	Remove road block and waterbars. Outslope road for drainage.

EXHIBIT D  
 FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.	CONTAINMENT - SIDECAST	WASTE AREA LOCATION	WASTE AREA TREATMENT
1A to 1B	5+00 to 6+00	2	1	1
1A to 1B	8+75 to 9+75	2	1, 2	1
4A to 4B	1+90 to 2+60	2	3	1
4A to 4B	8+60 to 9+10	2	4	1

Full Bench and End-Haul Areas General Requirements

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

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

Containment/Sidecast

- (1) Full: No excavated material remains below the road.
- (2) Normal/Incidental: The amount of excavated material lost over the outside edge of the road shall not exceed 1 foot in depth.
- (3) Sidecast: Material shall be spread evenly below the road so that it does not build up behind trees, snags or other debris, and shall not exceed 3 feet in depth.

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

Waste Area Location

- (1) Waste Area No. 1 is for fill construction on Road Segment 1A to 1B, Station 0+00 to 2+80.
- (2) Waste Area No. 2 is for fill construction on Road Segment 1A to 1B, Stations 0+00 to 2+80 and 10+80 to 11+30.
- (3) Waste Area No. 3 is for fill construction on Road Segment 4A to 4B, Station 0+00 to 1+90.
- (4) Waste Area No. 4 is for fill construction on Road Segment 4A to 4B, Station 11+80 to 14+00.

Waste Area Treatment

Use suitable excess excavated materials as designed by STATE to construct designed fill. Compact fill according to Exhibit D specifications.

EXHIBIT D  
 ROAD SURFACING

ROAD SEGMENT: 1A to 1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A to 1B		0+00 to 13+45		
				Volume (CY) Per		Number of		
Base Rock	4"-0"		8	station	50	Stations	13.45	673
Junctions	4"-0"	1A- T – junction	8	junction	40	Junctions	1	40
Turnouts	4"-0"		8	TO	22	TO's	2	44
Turnarounds	4"-0"		8	TA	24	TA's	1	24
Curve Widening	4"-0"	(0+00 to 0+75)	8			Curves		48
Traction Rock	¾"-0"	(0+00 to 3+00)	3	station	19	Stations	3.0	57
Junction	¾"-0"	1A- T – junction	3			Junctions	2	24
Curve Widening	¾"-0"	1A- T – junction	3			Curves		20
Landings	6"-0"	8+10, 1B		Landing	80	Landings	2	160
Total Rock for Road Segment:				1A to 1B				1,090
ROAD SEGMENT: 1C to 1D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1C to 1D		0+00 to 3+00		
				Volume (CY) Per		Number Of		
Base Rock	6"-0"		12	Station	75	Stations	3	225
Junctions	6"-0"	1C	12	Junction	20	Junctions	1	20
Landings	6"-0"	1D		Landing	80	Landing	1	80
Total Rock for Road Segment:				1C to 1D				325
ROAD SEGMENT: 2A to 2B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A to 2B		0+00 to 46+70		
				Volume (CY) Per		Number of		
Base Rock	4"-0"		10	Station	63	Stations	46.70	2,942
Junctions	4"-0"	0+00	10	junction	20	junctions	1	20
Turnouts	4"-0"	1+90, 6+60, 10+40, 13+20, 16+80, 21+90, 30+10, 35+30, 38+60, 42+85	10	TO	28	TO's	10	280
Turnarounds	4"-0"	16+80, 41+00	10	TA	24	TA's	2	48
Curve Widening	4"-0"	3+00 to 3+95, 5+65 to 6+90, 9+90 to 10+65, 11+95 to 12+80, 36+60 to 37+60	10			curves	5	212
Traction Rock	¾"-0"	11+00 to 13+00, 26+20 to 28+20, 31+85 to 41+85	3	station	19	stations	14.0	266
Junctions	¾"-0"	0+00	3	junction	10	junctions	1	10
Curve Widening	¾"-0"	11+95 to 12+80, 36+60 to 37+60	3			curves	2	22
Fill Armor	24"-6"	11+65 to 12+25				fills	1	50
Dissipator	24"-6"	3+50, 11+80, 13+70, 18+65			10	dissipator	4	40
Ditch armor	6"-0"	40+50 to 41+00			10	ditch armor	1	10
Landings	6"-0"	Pt. 2B, Sta. 42+85		Landing	80	Landings	2	160
Total Rock for Road Segment:				2A to 2B				4,060

EXHIBIT D  
 ROAD SURFACING

ROAD SEGMENT: 4A to 4B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	4A to 4B		0+00 to 22+90		
				Volume (CY) Per	Number Of	Number Of	Number Of	
Base Rock	4"-0"	0+00 to 22+90	10	Station	63	Stations	22.90	1,443
Junctions	4"-0"	4A	10	junction	12	junctions	1	12
Turnouts	4"-0"	5+10, 9+45, 18+00	10	Turnout	28	Turnouts	5	140
Turnarounds	4"-0"	5+10, 9+45, 18+00	10	TA	24	TAs	3	72
Curve Widening	4"-0"	12+15 to 13+30, 17+45 to 18+50, 19+75 to 20+50	10			curves	3	70
Traction Rock	¾"-0"	0+00 to 4+50, 9+90 to 13+90, 19+65 to 20+50	3	Station	19	Stations	10	190
Junctions	¾"-0"	4A	3	junction	12	junctions	1	12
Turnouts	¾"-0"	12+90, 20+10	3	TO	8	TO's	2	16
Curve Widening	¾"-0"	12+15 to 13+30, 19+75 to 20+50	3			curves	3	13
Fill Armor	24"-6"	0+90 to 1+75, 2+90 to 3+60						150
Landings	6"-0"	Sta. 6+80	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:				2C to 2D				2,198
ROAD SEGMENT: 4C to 4D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	4C to 4D		0+00 to 13+80		
				Volume (CY) Per	Number Of	Number Of	Number Of	
Base Rock	4"-0"	0+00 to 13+80	10	Station	63	Stations	13.80	869
Junctions	4"-0"	4C, 4E	10	junction	24	Junctions	2	48
Turnouts	4"-0"	9+15	10	TO	28	TO's	1	28
Turnarounds	4"-0"	12+30	10	TA	24	TAs	1	24
Curve Widening	4"-0"		10			Curves	3	66
Landings	6"-0"	4D		Landing	80	Landings	1	80
Total Rock for Road Segment:				4A to 4B				1,115
ROAD SEGMENT: 4E to 4F				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	4E to 4F		0+00 to 2+00		
				Volume (CY) Per	Number Of	Number Of	Number Of	
Base Rock	6"-0"	0+00 to 2+00	12	Station	75	Stations	2.00	150
Landings	6"-0"	4F		Landing	80	Landings	1	80
Total Rock for Road Segment:				4C to 4D				230

EXHIBIT D  
 ROAD SURFACING

ROAD SEGMENT: I1 to I2				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I1 to I2		0+00 to 15+60		
				Volume (CY) Per		Number Of		
Subgrade Leveling	4"-0"	I1 to I2	N/A	Station		Stations		60
Surfacing	4"-0"	I1 to I2	6	Station	38	Stations	15.60	593
Traction Rock	3/4"-0"	0+00 to 6+00	3	Station	19	Stations	6	114
Turnouts	4"-0"		6	TO	20	TO's	3	60
Turnaround	4"-0"		6	TA	10	TA's	1	10
Junction	3/4"-0"		3	junction	10	junctions	2	20
Total Rock for Road Segment:				I1 to I2				857
ROAD SEGMENT: I3 to I4				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I3 to I4		0+00 to 1+00		
				Volume (CY) Per		Number Of		
Surfacing	4"-0"	I3 to I4	6	Station	38	Stations	1	38
Traction Rock	3/4"-0"	0+00 to 1+00	3	Station	19	Stations	1	19
Junction	3/4"-0"	Pt. I3	3	junction	10	junctions	1	10
Total Rock for Road Segment:				I1 to I2				67
ROAD SEGMENT: V1 to V2				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	V1 to V2				
				Volume (CY) Per		Number Of		
Culvert Bedding	3/4"-0"	4+70	N/A	Culvert	20	Culverts	1	20
Road Block	36"-12"	0+00	N/A					20
Total Rock for Road Segment:				V1 to V2				40

24"-6" & 36"-12"	6"-0"	4"-0"	3/4"-0"	ROCK TOTALS (CY)
260	1,045	7,864	813	9,982

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



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.

Rock Checking. All rock spreading shall be done only when a STATE representative is present. STATE shall issue a receipt for each load delivered, and rock shall be measured without allowance for shrinkage or shakedown during hauling. Total truck measure volume for each road segment shall be as shown on Exhibit D. Deliver at least 600 cubic yards per 8-hour shift, unless otherwise approved by STATE. A penalty of \$10 for each 10 cubic yards which are not delivered during a single shift shall be billed, and payment shall be required prior to final acceptance of the project by STATE.

Depth Measurement. Rock shall be spread and compacted according to the depths specified in Exhibit D. Truck measure volumes are given, but shall not limit the amount of rock spread.

Depth shall be determined in the most compacted area of the surface cross section. The depth of compacted aggregates shall not vary more than 1 inch from the depth specified in the "Road Surfacing" table in Exhibit D. The average depth for each road segment shall be the specified depth or greater. If additional rock is required because of insufficient depth, the locations and volumes to be added shall be determined by STATE.

Load Records. Notify STATE before spreading the rock and maintain a record of all rock delivered for spreading. Make the record available for STATE inspection. A report listing the amount of rock delivered the prior month must be submitted no later than the 15 of each month.

EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

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

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

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

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

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All road segments that require crushed rock.	1

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

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

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All road segments.	1, 2, or 3; and 4

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 and compacted before the succeeding layer is placed. Any irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. Each layer shall be compacted with a minimum of 3 passes over the entire width and length of the road until the surface is smooth and hard and visible deformation ceases. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

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

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

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

**Pit-Run Rock.** The rock shall be uniformly mixed and spread in layers on the approved roadbed. Each layer of pit-run rock shall be moistened or dried to uniform moisture content suitable for maximum compaction and compacted in layers not to exceed 8 inches in depth. When more than 1 layer is required, each shall be shaped and compacted before the succeeding layer is placed. Any irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. Each layer shall be compacted with a minimum of 3 passes over the entire width and length of the road. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

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

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All Segments requiring pit-run rock	1, 5, 6

EXHIBIT D

COMPACTION EQUIPMENT OPTIONS

- (1) Vibratory Rollers. The drum shall have a smooth surface, a diameter not less than 48 inches, a width not less than 58 inches, and a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 VPM, corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 VPM. It shall be activated by a power unit of not less than 25 horsepower.) The vibratory roller shall be self-propelled and operated at speeds ranging from 0.9 miles to 1.8 miles per hour, as directed by STATE.
- (2) Rubber-Tired Skidders. A rubber-tired skidder weighing a minimum of 20,000 pounds shall be operated over the fill layers so that the entire layered surface comes in contact with the tires. Skidders with oversized tires (high flotation) are not acceptable for compaction.
- (3) Tampingfoot Compactors. Tampingfoot compactors shall exert a minimum pressure of 250 pounds per square inch on the ground area in contact with the tamping feet. The compactor shall cover a minimum width of 60 inches per pass and weigh a minimum of 16,000 pounds.
- (4) Vibratory Hand-Operated or Backhoe-Mounted Tamper. Vibratory hand-held or hydraulic tampers shall be used for compaction of backfill materials around culverts (and/or bridge approach embankment materials around abutments). The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.
- (5) 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.
- (6) Grid Rollers. Pit-run rock shall be processed by grid roller fully equipped with 32,000 pounds or more of ballast weights. Twenty passes shall be made with a grid roller over the entire length and width of the road, unless STATE requires fewer passes. A grader weighing at least 20,000 pounds shall work the pit-run surface during grid rolling so that all pit-run rock comes in contact with the grid roller. Grid rolling shall be performed when the subgrade is dry and firm. Road surface shall be uniformly shaped and graded prior to and during grid rolling.

## EXHIBIT E

### CULVERT SPECIFICATIONS

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

Culverts shall be constructed of corrugated double-walled polyethylene.

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

Polyethylene culverts shall not be used where required culvert diameter is over 18 inches.

Polyethylene joints shall be made with split couplings, corrugated to engage the culvert corrugations, and shall engage a minimum of 4 corrugations, 2 on each side of the culvert joint.

Culverts shall be located according to the alignment and grade as shown on the Plan and Profile, and/or as staked in the field, or as specified in special instructions.

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

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

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

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

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 culverts.

Backfill shall consist of, crushed rock, rock crusher reject, or job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the culvert.

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

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be as follows: 12" for culverts 18" to 36" and 18" for culverts 42" to 96" add 6" for roads which will not be rocked. Minimum vertical cover for other designs shall be as specified by STATE.

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

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

EXHIBIT E

CULVERT SPECIFICATIONS

The intake end of relief culverts shall be provided with a sediment catching basin 3 feet in diameter at the bottom. The outlet end of any culvert which would allow water to erode embankment soil shall be provided with an energy dissipator, 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 all culverts.

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

The intake ends of culverts in fills less than 3 feet to the top of the culvert shall be marked by driving white fiberglass posts within 6 inches of the downgrade side. Posts shall be a minimum of 6 feet long and 2½ inches wide, with the spade driven 2 feet into the ground.

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

CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	MATERIAL TYPE	ROAD SEGMENT POINT TO POINT	STATION
1	18	30	CPP	1A to 1B	2+80
2	18	30	CPP	1A to 1B	7+50
3	18	30	CPP	2A to 2B	1+40
4	18	40	CPP	2A to 2B	3+50
5	18	40	CPP	2A to 2B	9+00
6	18	40	CPP	2A to 2B	11+80
7	18	40	CPP	2A to 2B	13+70
8	18	30	CPP	2A to 2B	16+00
9	18	30	CPP	2A to 2B	18+65
10	18	30	CPP	2A to 2B	22+25
11	18	30	CPP	2A to 2B	28+60
12	18	30	CPP	2A to 2B	34+40
13	18	40	CPP	2A to 2B	37+50
14	18	30	CPP	2C to 2D	20+40
15	18	40	CPP	4A to 4B	3+10
16	18	30	CPP	4A to 4B	6+50
17	18	30	CPP	4A to 4B	10+10
18	18	40	CPP	4A to 4B	16+00
18	12	30	CPP	V1 to V2	4+70

CPP = Polyethylene

EXHIBIT F

ROCK QUARRY DEVELOPMENT AND USE

- (1) PURCHASER 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 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.
- (2) PURCHASER shall schedule and coordinate quarry and stockpile usage with other existing or planned activity requiring quarry or stockpile usage. PURCHASER shall notify STATE 5 days prior to the start of quarry development activities.
- (3) 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. Overburden shall be removed for a distance of 20 feet beyond the developed rock source.
- (4) All overburden and reject material shall be hauled to the designated waste area as directed by STATE.
- (5) PURCHASER shall conduct the operations relative to the disposal of waste material in such manner that sediment, rock, or debris shall not be washed, conveyed, or otherwise deposited in any stream.
- (6) 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. PURCHASER 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.
- (7) Benches shall be maintained/constructed 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.
- (8) Quarry face shall be developed in a uniform manner. All quarry backslopes shall be left in a stable condition.
- (9) The quarry floor shall be developed to provide for drainage away from the quarry. All quarry and stockpile site drainage ditches shall be maintained. Quarry access roads shall be cleared and blocked upon completion of quarry use as directed by STATE.
- (10) Proper winterization and storm-water control measures such as waterbarring, 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.

State Timber Sale Contract  
No. 341-11-26  
Sprague's Stump

EXHIBIT G

PIT-RUN & RIPRAP ROCK SPECIFICATIONS

<u>For 6"-0" Pit-Run</u>	Passing	10" sieve	100%
	Passing	6" sieve	60-85%
	Passing	3" sieve	30-50%
	Passing	1/4" sieve	0-20%

For 24"-6" 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.

Control of gradation shall be by visual inspection by STATE.



EXHIBIT H

GEOTEXTILE SPECIFICATIONS

GEOTEXTILE SPECIFICATIONS - shall be woven geotextile fabric designed for forest road subgrade surfacing purposes and shall meet or exceed the following requirements, unless otherwise approved in writing by STATE:

1. Grab Tensile	300 lbs.	ASTM D4623
2. Puncture strength	110 lbs.	ASTM D4833
3. Mullen Burst	600 lbs.	ASTM D3786
4. Width - 12.5 feet		

INSTALLATION REQUIREMENTS - fabric shall be installed according to the following requirements:

- (1) Subgrade surface shall be leveled and smoothed to remove humps and depressions which exceed 6 inches in height and depth. Small pieces of woody debris shall be removed. Light vegetation (grass, weeds, leaves, and fine woody debris) may be left in place.
- (2) Fabric shall be installed directly on the prepared surface. Longitudinal and traverse joints shall be overlapped at least 3 feet.
- (3) Surfacing course material shall be placed to the designated thickness in one lift and spread in the direction of fabric overlap. Hauling and spreading equipment shall not be operated on the fabric until the total thickness of surfacing course material is placed.
- (4) Torn, punctured, or separated sections of the fabric shall be repaired by installing a fabric patch over the break prior to placing the surfacing course material. The patch shall be at least 4 feet larger in horizontal dimensions than the break to be repaired.
- (5) Fabric failures resulting after rock placement and as evidenced by subgrade pumping or roadbed distortion shall be corrected. Correction measures shall consist of: (1) removing at least three-quarters the depth of surfacing course material in the affected area, (2) placing a fabric patch over the affected area with a minimum 4-foot overlap around the circumference of the area, and (3) replacing enough rock to cover the patch and blend in with the rest of the road.
- (6) Should STATE determine that installation of woven fabric on roads or portions of roads is not necessary, PURCHASER shall deliver an equivalent amount of woven road fabric to STATE.
- (7) Fabric locations:

Road Segment	Location
2A to 2B	0+00 to 21+40

EXHIBIT I

TYPICAL EMBEDDED ENERGY DISSIPATOR

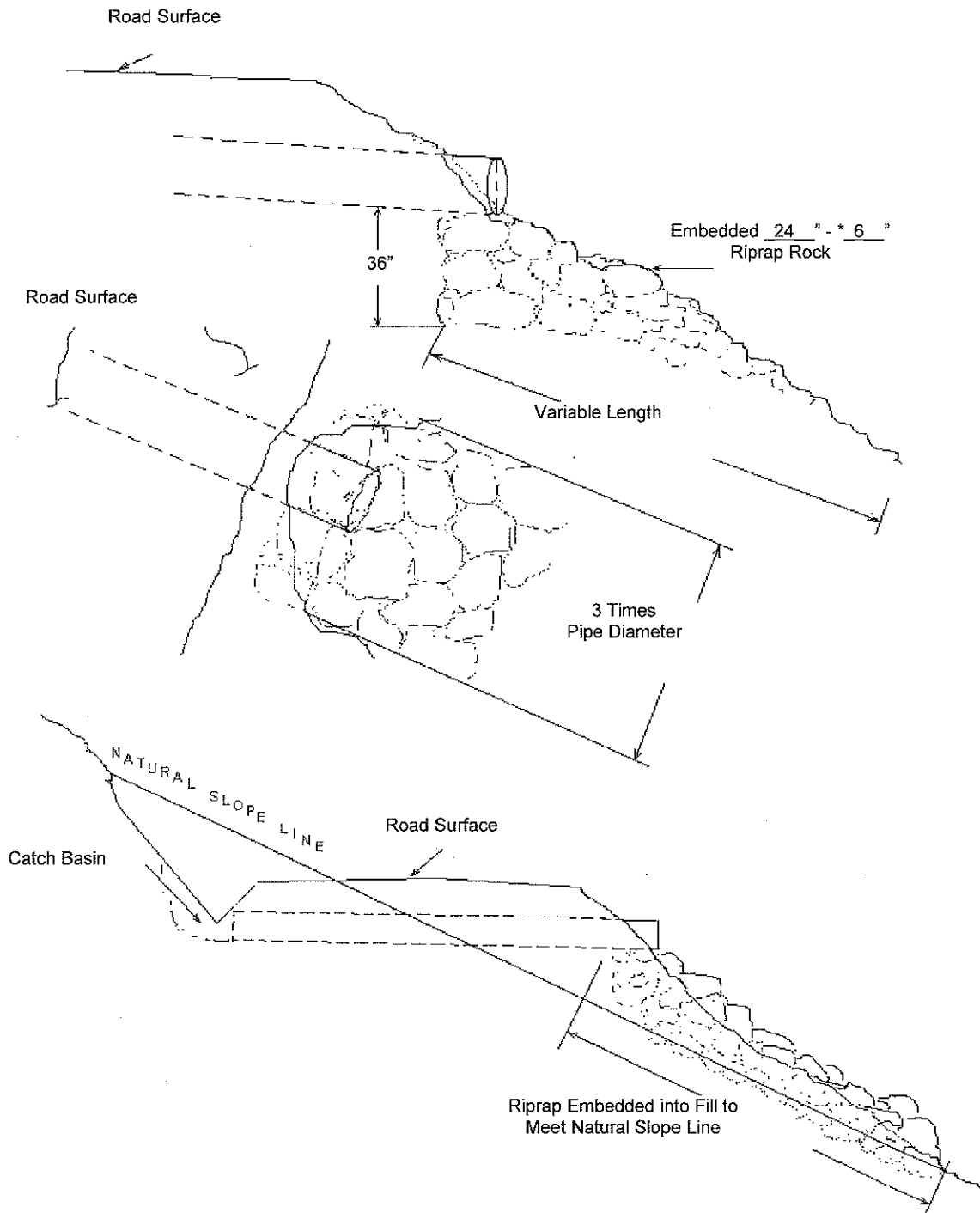
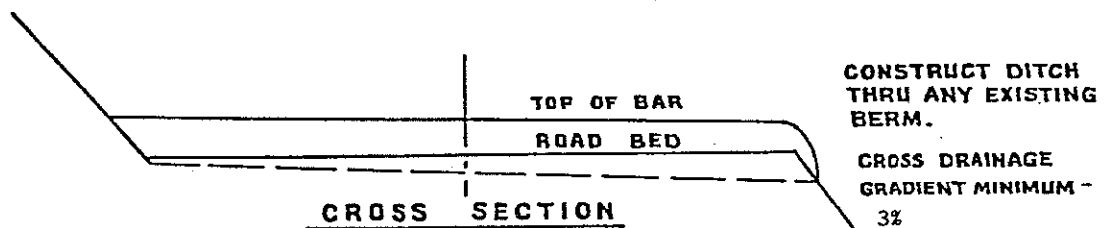
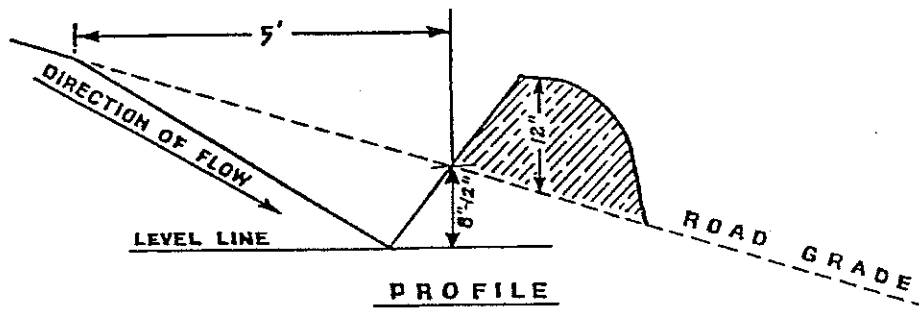
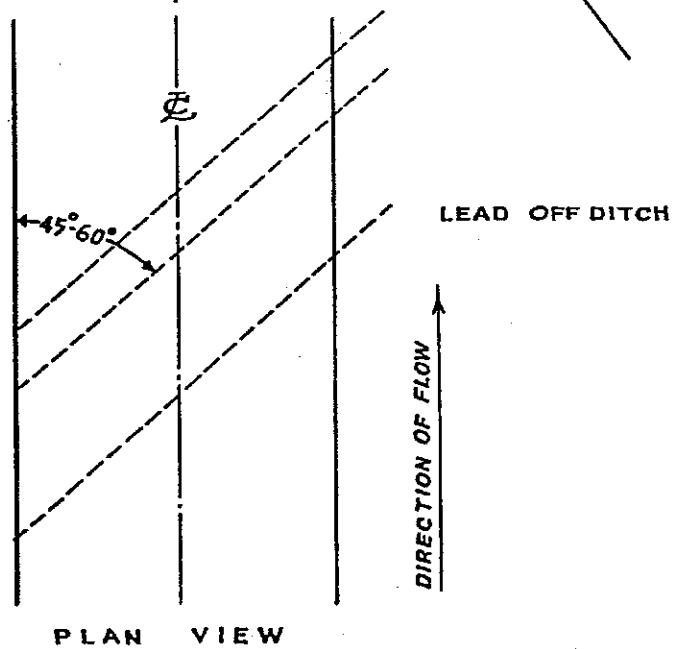


EXHIBIT J  
 WATERBAR SPECIFICATIONS



SPACING OF WATERBARS

ROAD GRADE	DISTANCE
≤5%	400'
6-10%	200'
11-15%	150'
16-20% or greater	100'



**WATERBAR SPECIFICATIONS  
 FOR CROSS DITCHING #298**

EXHIBIT K

ROAD VACATING SPECIFICATIONS

PURCHASER shall vacate at and between the following points: V1 to V2, V3, and V4. Specific objectives for this project include:

- (a) Fill removal.
  - (b) Culvert removal.
  - (c) Restoration of drainage by constructing waterbars.
  - (d) Sidecast pullback.
  - (e) Minimize disturbance of existing vegetation.
  - (f) Total project cost not exceeding \$20,000.
- 
- (1) Tree Removal. Cut or remove trees necessary to access the project area and to facilitate vacating operations, as marked with Orange "C's", and as directed by STATE. Removed trees shall be placed on site in stable locations.
  - (2) Fill Removal and Stream Channel Development. Remove fills as specified in specific instructions. Excavated slopes shall be sloped at natural contours or no steeper than 1 ½:1, as directed by STATE.
  - (3) Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off of STATE land.
  - (4) 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 Exhibit K. Sidecast material remaining greater than 20 feet below the road shall be tapered and sloped for drainage.
  - (5) Use of Excavated Materials.
    - (A) Fill Excavation and Sidecast Pullback. Excavated materials shall be placed on the interior (cut) side of the road, and utilized to restore the cutslope to natural contours, or to a minimum 10 percent outsloped surface for drainage. Any excess material will be hauled to a designated waste area, as directed by STATE.
    - (B) Woody Debris may be placed in stable locations and on top of waste materials. Woody debris shall not entirely block the old road prism in order to reestablish pre-existing horse trails, as directed by STATE.
    - (C) Block Roads. Use 36"-12" riprap to block roads from vehicle access, as directed by STATE.
  - (6) Erosion Control. Erosion control shall be completed in a progressive manner. Grass seed and straw mulch shall be applied for every 500 feet of road vacated, prior to continuing work.

Apply seed and straw mulch to excavated material and bare soils, in accordance with the specifications in Exhibit L. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.
  - (7) Construct Waterbars. Construct waterbars at locations specified in this Exhibit and as directed by STATE according to the specifications in Exhibit J.

EXHIBIT K

ROAD VACATING SPECIFICATIONS

- (8) Equipment. Track mounted excavators shall be used for all excavation, culvert removal, streambed preparation, road blocking, and waterbarring, as described in this Exhibit, unless otherwise approved in writing by STATE.
- (9) Dry Conditions. All work shall be performed during dry conditions acceptable to STATE.

Credit for Project Work. The final credit for Project No. 2 shall not exceed \$20,000 per Section 2630, "Credit for Project Work," in the Timber Sale Contract. STATE may adjust the credit in Section 2630 in the event that the work is completed prior to using all available credit rates.

Credit Rates. Rates credited toward completion of the project will be applied for periods of active operation on the project work only and exclusive of initial move-in of equipment or supplies. The method of crediting PURCHASER will be determined by applying the following credit rates for equipment, personnel, and supplies.

(a)	C312 excavator, or equivalent, and operator.	\$85 per operating hour
(b)	C330 excavator, or equivalent, and operator.	\$144 per operating hour
(c)	D8 dozer, or equivalent, and operator.	\$147 per operating hour
(d)	Heavy equipment transport and operator. (For mobilization of equipment)	\$135 per operating hour
(e)	10-12 cubic yard dump truck and operator.	\$73 per operating hour
(f)	25 cubic yard, off-road dump truck and operator.	\$125 per operating hour
(g)	Laborer(s). (Application of mulch and culvert installation only)	\$38 per operating hour
(h)	Timber faller(s).	\$48 per operating hour
(i)	Straw mulch. (Includes transport and staging of material at job site)	\$10 per bale
(j)	Grass seed.	\$2 per pound
(k)	12" CPP culvert.	\$10 per foot

Record Keeping. PURCHASER shall keep an accurate log of operating time (exclusive of standby time, repair delays, down time, etc.) and invoices for all equipment, personnel, straw bales, and grass seed on a daily basis, and submit it to the STATE Representative upon request. STATE shall provide the form for recording the required log. If the log is determined by STATE to not be complete or accurate, then PURCHASER will not get credited for all or a portion of the work, as determined by STATE.

Verification. The STATE representative shall provide direction for the conduct of work according to the specifications, verify hours of operation, verify required record keeping, and determine credits for Project Work.

Continuous Operations. Operations shall provide for continual operation on the project, 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.

EXHIBIT K

ROAD VACATING SPECIFICATIONS

A Penalty of \$250 per day shall be assessed for any 8-hour work day that either equipment, personnel, or supplies are not operating or available due to failure to supply approved and acceptable equipment, personnel, or supplies in order to continue the project in an efficient and progressive manner. STATE may terminate the project in the event that work progress is not satisfactory to STATE.

Operators shall be experienced in operating the required equipment and be able to operate the equipment proficiently and efficiently. If STATE determines that an operator(s) or other personnel is/are not operating in a proficient and efficient manner, STATE considers the operator(s) or personnel not approved and not acceptable and may require the PURCHASER to do one or more of the following measures:

- Replace operator(s) and/or personnel;
- Replace equipment;
- Terminate operations.

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

SPECIFIC INSTRUCTIONS/SPECIFICATIONS :

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V1 to V2	0+00	Point V1. Begin Vacating. Utilize 20 cubic yards of 36"-12" riprap to block road. Place rock to allow restoration of horse trail.
	0+00 to 22+80	Mobilize equipment from Point V1 portion of the project. Utilize C312 excavator, or equivalent for all work.
	4+70	Remove culvert. Install 12"x30' culvert. Utilize 20 cubic yards of ¾"-0" for bedding and backfill.
	5+40	Construct waterbar.
	6+60	Construct waterbar.
	9+90	Construct waterbar.
	11+40	Construct waterbar.
	13+50	Construct waterbar.
	17+00	Construct temporary crossing for excavator. Remove fill and redevelop stream channel upon completion of use. Pullback fill slopes on both sides of fill.
	18+70	Construct waterbar.
	19+20	Breach fill. Pullback fill edges and establish drainage.

EXHIBIT K

ROAD VACATING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V1 to V2	21+40	Construct waterbar.
	22+80	Pullback south edge of fill slope.
22+80 to 83+00		Mobilize equipment from Point V2 portion of the project. Utilize C312 excavator, or equivalent for all waterbarring and culvert removal. C312 excavator will be used for fill removal work between 22+80 and 70+40.
	22+80	Pullback north edge of fill slope.
	25+70	Construct waterbar.
	27+20	Construct waterbar.
	28+00	Construct waterbar.
	29+80	Construct waterbar.
	31+20	Construct waterbar.
	34+00	Construct waterbar.
	35+80	Remove culvert. Establish drainage.
	37+50	Construct waterbar.
	40+30	Construct waterbar.
	42+90	Construct waterbar.
	43+90	Construct waterbar.
	44+70	Remove culvert. Establish drainage.
	46+30	Construct waterbar.
	47+40	Construct waterbar.
	48+40	Construct waterbar. Waste area.
	50+20	Breach fill. Pullback fill edges and establish drainage.
	52+70	Construct waterbar.
	54+60	Remove culvert. Establish drainage.
	58+30	Breach fill. Pullback fill edges. Establish drainage.

EXHIBIT K

ROAD VACATING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V1 to V2	60+40	Remove fill that is reachable with C312 excavator, or to the extent that waste areas within reach of the excavator are full, or damage to standing timber may occur.
	65+60	Begin sidecast pullback.
65+60 to 67+40		Construct temporary access road. Reslope material upon completion of use. Minimize excavation to only that necessary to mobilize equipment.
	66+70	End sidecast pullback.
	69+10	Construct waterbar.
	70+40	Utilize C330 excavator, or equivalent for fill excavation. Mobilize from Point V2 portion of project. Utilize C312 excavator, or equivalent for placement of waste and sloping of waste areas. Remove fill reachable with C330 excavator, or to the extent that waste areas within reach of the excavators are full.
70+40 to 83+00		Develop and yard blowdown conifer within, or adjacent to the old road grade as necessary for completion of Project No. 4.
	73+50	Construct waterbar.
	78+60	Remove culvert. Establish drainage.
	83+00	Point V2. Construct waterbar. Reconstruct waterbars and slope, compact, seed and mulch any disturbed soils outside V1 to V2 that result from activities associated with mobilization of equipment.



EXHIBIT K

TYPICAL CROSS SECTION VIEW OF ROAD VACATING SIDECAST PULLBACK

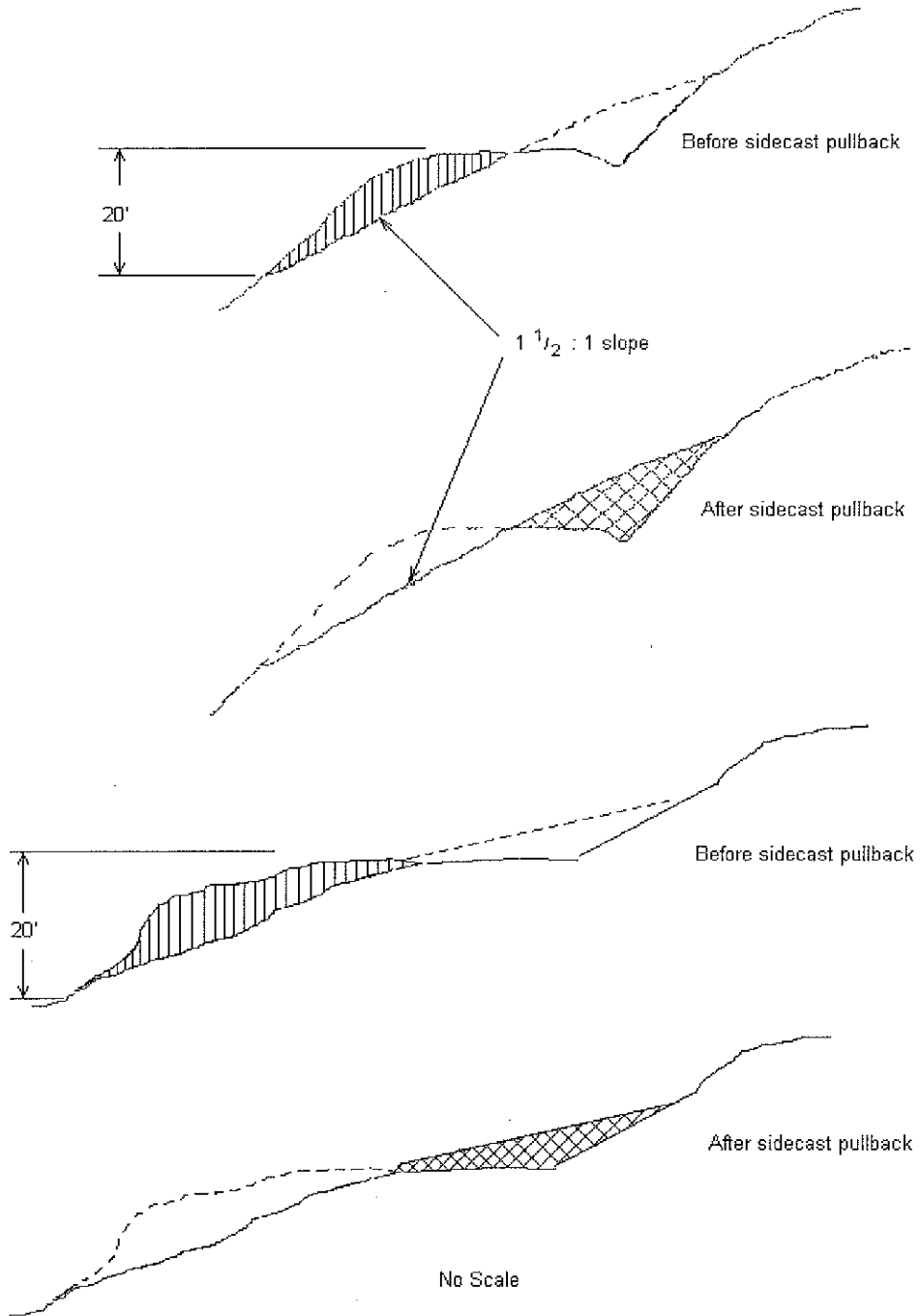


EXHIBIT L

SEEDING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed, fertilizer, and straw mulch. Straw mulch shall consist of straw that is free of noxious weeds. Apply seed and straw mulch to all waste areas, and bare soils resulting from Project Nos. 1, 2, and 4.

Seeding Seasons. Seeding shall be performed only from March 1 through June 15 and August 15 through October 31. Seeding materials shall not be applied during windy weather or when the ground is excessively wet or frozen. Areas of disturbed soil shall be seeded by the end of the project period in which work was started.

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

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%

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:

Apply seed and straw mulch to all waste areas resulting from Project Nos. 1, 2, and 4, and bare soils resulting from Project Nos. 2 and 4, and as directed by STATE.

EXHIBIT M

STREAM ENHANCEMENT INSTRUCTIONS

General Instructions:

- (a) Work shall be conducted only during periods of low water flows and between July 1 and August 31, annually unless otherwise approved in writing by STATE. STATE shall be notified a minimum of 48 hours prior to beginning work. STATE has prepared the required FPA "Written Plan" for this work.
- (b) 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. 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), provided all practicable erosion control measures have been implemented. Oil spill response materials will be on site before work begins.
- (c) Trees required for stream enhancement work shall be obtained from the Northrup Quarry or at other locations acceptable to STATE. Trees are marked with an orange painted "S".
- (d) Trees shall be uprooted, cut to length, and delivered to the project site, as directed by STATE. Trees will be transported by log truck, or other means so that roads are not damaged (i.e., trees cannot be dragged on road surface).
- (e) Access routes will be selected to minimize disturbance to the riparian area, and equipment transporting trees to the sites will take care to avoid damage to existing in-stream logs, riparian or other trees. Trees that are cleared to gain access will be placed in the creek or used to block access trails.
- (f) A minimum 1½ cubic-yard, track-mounted excavator shall be used for all placement.
- (g) All areas of bare or disturbed soils shall be seeded with an approved grass seed mix. Fertilizer shall not be used. All access trails will be thoroughly blocked to prevent access using large woody debris or boulders, water barred, de-compacted, and mulched upon completion, as directed by STATE.

Specific Instructions:

<u>Location</u>	<u>Work Description</u>
Site No. 1	Materials: Ten logs with a DBH of at least 18 inches and at least 30 feet long.  Scatter logs within flood plain and overflow channel west of the active stream channel.
Site No. 2	Materials: Five trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads and the largest diameter portion of five tree tops at least 30 feet long.

EXHIBIT M

STREAM ENHANCEMENT INSTRUCTIONS

Specific Instructions:

<u>Location</u>	<u>Work Description</u>
Site No. 2	<p>Wedge the top of one tree between two alder trees on the northeast bank. Place the other end of the tree on the west bank against the upstream side of an alder tree. Place the root wad end of one tree against the west bank with the top angled across the channel and between two alder trees on the east bank. Place the root wad end of another tree against the west bank with the top angled across the channel and against the upstream side of an alder tree on the east bank. Place the next tree with root wad attached in the middle of the stream channel with the small end placed between two alder trees on the west bank. Place the final tree with root wad against the west bank and the small end wedged between two alder trees on the east bank. Place five logs between the previously placed trees with the small ends wedged into alders. Place the five tree tops between and around the previously placed trees.</p>
Site No. 3	<p>Materials: Four trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads, and two logs with a diameter of at least 16 inches and 50 feet long. The largest diameter portion of four tree tops at least 30 feet long.</p> <p>Place the root wad end of the first tree in the east channel with the small end against the upstream side of an alder on the island between the west and east channel. Place the next tree parallel to the first but with the root wad placed in the west channel and the small end across the island. The next tree shall be placed with the root wad in the west channel and the small end angled northeast across the island and wedged against the upstream side of an alder on the eastern bank. The final tree with root wad attached will be placed at the head of the island with the root wad at the head of the eastern channel and the small end wedged between two alders on the west bank. The two logs without root wads attached shall be placed on each side of the stream with half of the log angled into the stream channel and the other half on the stream bank and wedged against alder trees. Place the four tree tops between and around the previously placed trees.</p>
Site No. 4	<p>Materials: Five trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads, and the largest diameter portion of five tree tops at least 30 feet long.</p>

EXHIBIT M

STREAM ENHANCEMENT INSTRUCTIONS

Specific Instructions:

<u>Location</u>	<u>Work Description</u>
Site No. 4	<p>Place the root wad end of one tree in mid channel with the opposite end angled toward the west bank and wedged between two alder trees. Place the root wad end of one tree against the west bank with the top wedged into the alders on the east bank. Place the root wad end of another tree in mid channel with the opposite end angled slightly upstream and wedged between two alder on the west bank. Place the next tree with the root wad mid channel and wedged against the previously placed tree with the other end wedged between alders on the east bank. Place the final tree with root wad attached against the west bank with the opposite end wedged between alders on the east bank. Place the five tree tops between and around the previously placed trees.</p>
Site No. 5	<p>Materials: Four trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads and the largest diameter portion of four tree tops at least 30 feet long.</p> <p>Place the root wad end of the first tree mid channel with the opposite end wedged between two alders on the east bank. Place the next tree with root wad attached against the east bank and the bole of the first tree with the opposite end angled upstream and wedged between two alder on the west bank. Place another tree with root wad attached mid channel with the opposite end placed against alders on the east bank. Place the last tree with root wad attached mid channel and directly upstream of the previous root wad. The opposite end of the last tree shall be wedged against alders on the east bank. Place the four tree tops between and around the previously placed trees.</p>
Site No. 6	<p>Materials: Four trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads and the largest diameter portion of four tree tops at least 30 feet long.</p> <p>Place the root wad end of the first tree mid channel with the opposite end wedged between existing boulders along eastern portion of the stream channel. Place the next tree with root wad attached against the west bank and the opposite end angled upstream and wedged against the root wad of the first tree. Place another tree with root wad attached against the east bank with the opposite end against the root wad of the first tree. Place the last tree with root wad attached mid channel and directly upstream of the first root wad. The opposite end of the last tree shall be wedged against the root wad on the west bank. Place the four tree tops between and around the previously placed trees.</p>

EXHIBIT N

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION  
Counter Balanced Swing Gate

PURCHASER shall design, construct, and install one gate at Point A as shown on Exhibit A. The gate shall be a counter balanced swing gate with a "Miami Lock Box".

The project requires site visitation, preliminary design and approval, final design and approval, gate construction (including painting), and installation at Point G1 as shown on Exhibit A.

PROJECT REQUIREMENTS AND MINIMUM SPECIFICATIONS:

- (a) Coordinate site visitation, preliminary designs, and final design, construction, and installation of gate with STATE. An example of the gate to be constructed is located on Scandinavian Cannery Road off State Hwy 30 (MP 93).
- (b) Site visitation to determine the direction of swing and width for each gate.
- (c) A preliminary detailed design proposal shall be submitted to STATE of the proposed gate to be installed and obtain written approval by STATE. STATE is responsible for timely review of preliminary designs, selection of the preferred design, and giving approval to prepare a final design. The design shall meet the following specifications:
  - (1) The gate shall be a counter balanced swing gate.
  - (2) The gate opening shall be at least 20 feet, and no more than 23 feet.
  - (3) The gate shall be constructed with a minimum of 1/4"x 6"x 12" steel tubing. The support post and attachment post shall be constructed with a minimum of 12" schedule 40 steel pipe.
  - (4) A blocking post shall be installed beside the road in the direction of the swing and have a three foot chain attached for securing the gate in the open position. The blocking post shall be constructed with a minimum of 4" schedule 40 steel pipe.
  - (5) Fill all posts with concrete. Posts shall have devices attached to prevent lifting out of the ground. Including an underground cross arm.
  - (6) The gate shall utilize a "Miami lock box" capable of a minimum of four locks. Supply a minimum of 6, 2" wide pins and 4, 4" wide pins.
  - (7) Prior to painting, gate and posts shall be cleaned and free of rust scale. Paint with a rust resistant primer coat and a topcoat of a rust resistant high visibility yellow paint.
- (d) The final detailed design shall be submitted to STATE for written approval before construction. STATE is responsible of timely review of the final design and giving approval to proceed with construction.
- (e) Construct the gate as to the specifications above and to the approved final design.
- (f) Install the gate at the proper location and as approved by STATE.
- (g) Place 36"-24" rock or other suitable material to block vehicular access around each gate as approved by STATE.

EXHIBIT N

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION  
Counter Balanced Swing Gate

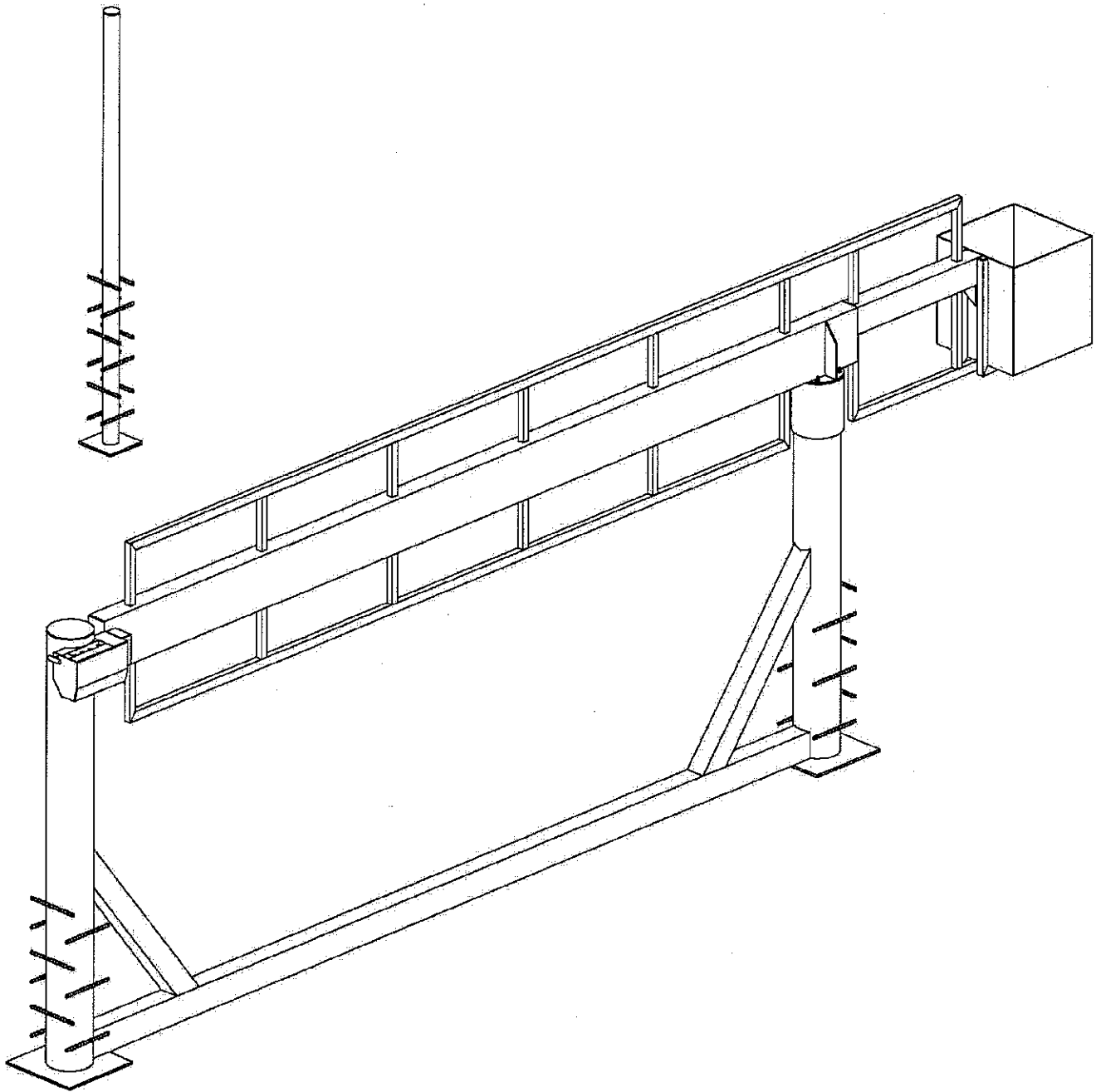
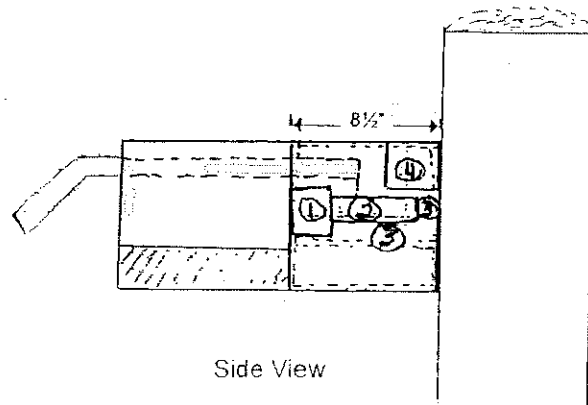
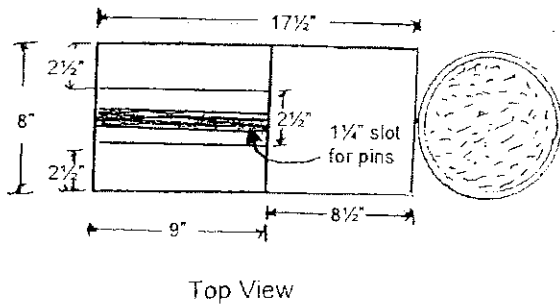


EXHIBIT N

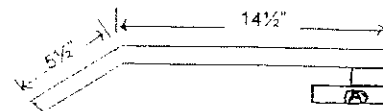
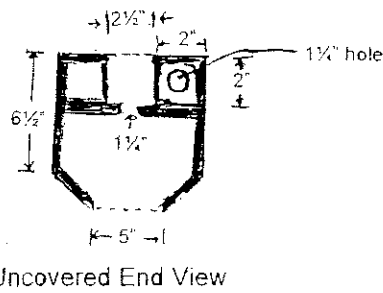
FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION  
Counter Balanced Swing Gate

**"MIAMI" Lock Box**

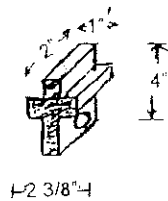


Locking Arm

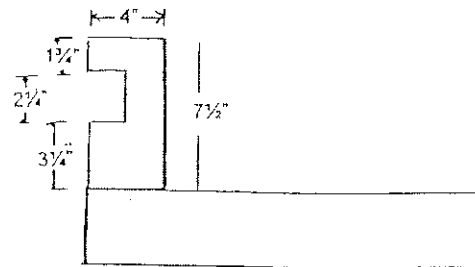
- 1) = 2 1/2"
- 2) = 4 1/2"
- 3) = 1 1/2"
- 4) = 2" sq.



A) 4" x 2" x 1"



15/16" Round Stock  
 Locking Handle





## PART IV: OTHER INFORMATION

State Timber Sale Contract  
No. 341-11-26  
Sprague's Stump

Page 1 of 4

### FOREST PRACTICES ACT "WRITTEN Plan" Sprague's Stump Timber Sale Operating within 100 feet of Type F Streams

Portions of Sections 4, 9, and 16 of T6N, R6W, W.M., Clatsop County, Oregon.

**Landowner:** Oregon Department of Forestry  
92219 Hwy 202  
Astoria, OR 97103  
(503) 325-5451

#### Protected Resources:

1. Cow Creek
2. Tributaries of Cow Creek
3. Tributaries of Northrup Creek

#### Specific Site Characteristics:

1. Cow Creek (Large, Type F) – This stream flows along the western boundary of Area 2 for approximately 2,800 feet, and along the western boundary of Area 3 for approximately 800 feet.
2. Tributaries of Cow Creek (Small, Type F) – These streams flow along the western boundary of Area 1 for approximately 500 feet, along the northern boundary of Area 2 for approximately 1,600 feet, and along the western boundary of Area 3 for approximately 1,000 feet.
3. Tributaries of Northrup Creek (Small, Type F) – This stream flows along the eastern boundary of Area 3 for approximately 1,400 feet.

#### Tree and Vegetation Retention:

Vegetation within the buffers consists of a combination of conifers, hardwoods, and shrubs.

All posted Type F buffers along or within all sale areas exceed 100 feet. If trees need to be felled within FPA defined stream buffers (RMA's) to allow for cable corridors, no trees will be harvested. Cable lines may extend over and/or through these buffers.

#### Resource Protection Practices:

Along all of the above mentioned streams, as well as any other streams, the following practices are required under the timber sale contract, to protect the streams and streamside areas:

- No trees will be felled within stream buffers (RMA's), except in cable corridors.
- Trees that fall or slide into Type F RMA's shall not be removed without prior approval from STATE.
- Trees adjacent to the stream buffers (RMA's) will be felled away from or parallel to the streams to prevent trees from entering the aquatic areas.
- When cable logging is conducted nearby the RMA's, logging lines may cross, but will not be lowered into the RMA's during yarding, except during rigging. During rigging the lines must be pulled out of the RMA's when changing corridors.
- Logs shall be fully suspended when yarding across all stream buffers (RMA's).
- Cable corridors must be at least 100 feet apart where they cross the RMA's.
- No ground based logging equipment will be permitted within 25 feet of the RMA's in all Sale Areas.

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

Original: Salem

CC: Operator, Purchaser, District file, Eng. Unit, Jewell Unit

Forest Practices Act  
"WRITTEN PLAN"  
For Project 2, Road Vacating  
Sprague's Stump Timber Sale

**Landowner:**

Oregon Department of Forestry  
92219 Hwy 202  
Astoria, OR 97103  
(503) 325-5451

**Protected Resources:**

1. **Mobilization to Vacating Segment V1 to V2.** Cow Creek, a medium Type F stream, affected portion in the Northwest ¼, Section 9, T6N, R6W, W.M., Clatsop County, Oregon.
2. **Vacating Segment V1 to V2. 65+60 to 83+00.** A medium Type F stream, tributary to Cow Creek. Located in the Southwest ¼, Section 4, T6N, R6W, W.M., Clatsop County, Oregon.

A written plan is required for any activity within 100 feet of any Type F stream.

**Situation:**

1. **Mobilization to Vacating Segment V1 to V2.** In order to efficiently access vacating segment V1 to V2, it is necessary to temporarily cross Cow Creek with two excavators. Alternate methods of access are extremely costly, would require significant disturbance of soils and vegetation, and result in the need to construct other temporary crossings along V1 to V2. The location of the temporary crossing is near a stream enhancement project and will be coordinated to minimize impacts for both projects.
2. **Vacating Segment V1 to V2. 65+60 to 83+00.** An old road adjacent to the medium Type F stream will be vacated. Portions of the road are within 100 feet of the Type F stream. A fill at Station 70+40 will be partially removed to reduce the risk to resources. Between Stations 65+60 and 66+70, at risk sidecast material will be pulled back and re-sloped. Existing culverts will be removed and waterbars established on remaining portions of the road.

**Practices:**

- All excavation and fill removal will be performed using track-mounted excavators.
- Work will be performed only during dry weather periods, low water stream flows, and between May 1 and October 31, annually. In addition, in-stream work and temporary crossing of Type F streams will be conducted between July 1 and August 31, annually.
- Temporary crossings of Type F streams will be minimized to only those trips necessary to facilitate vacating of V1 to V2. Stream banks will be re-sloped, compacted, and seeded and mulched to minimize run-off or erosion. In-stream disturbance will be minimized by utilizing nearby logs to cross the stream. Logs used for the crossing will be removed from the stream channel and placed in stable locations upon completion of the vacating project.
- Excavated fill materials will be used for recontouring slopes and placed in approved waste areas and left in a stable condition.
- Bare soils shall be grass seeded and mulched with straw mulch approved by STATE. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.
- Disturbance to existing vegetation will be minimized.

I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practices Act regarding the operation of equipment near waters of the State. I agree to the protection measures listed on this plan:

Submitted: \_\_\_\_\_ Date: \_\_\_\_\_  
Purchaser/Operator Contract Representative

Forest Practices Act  
"WRITTEN PLAN"  
For Project 4, Stream Enhancement  
Sprague's Stump Timber Sale

**Landowner:**

Oregon Department of Forestry  
92219 Hwy 202  
Astoria, OR 97103  
(503) 325-5451

**Protected Resources:**

Cow Creek is a designated large Type F stream and the affected portion is located in Sections 9 and 16 of T6N, R6W, W.M., Clatsop County, Oregon.

Cow Creek which is designated as a large Type F stream is 10 feet to 20 feet wide at the project site. ODF and ODF&W Stream Biologists have plans for stream enhancement projects at six locations to Cow Creek Road and the vacated portion of Cow Creek road for a distance of approximately 1,100.

**Specific Site Characteristics:**

Cow Creek: The streambeds are approximately 10 to 20 feet wide with subtle to moderate stream-bank slopes. Streamside vegetation is dominated by mature red alder, with some conifer beginning approximately 60 feet from the channel.

**Tree and Vegetation Retention:**

ODF and ODF&W Stream Biologists have plans for stream enhancement projects at six locations adjacent to Cow Creek road and the vacated portion of Cow Creek road for a distance of approximately 1,100. There will not be any harvesting permitted within the RMA.

**Practices:**

Six stream enhancement structures will be constructed using ground based equipment at points SE1 – SE6. Work shall be conducted only during periods of low water flows and between July 1 and August 31, annually unless otherwise approved in writing by STATE. STATE shall be notified a minimum of 48 hours prior to beginning work. The approximate locations are shown on the Exhibit "A" and work to be done is described as follows:

Location            Work Description

Site No. 1            Materials: Ten logs with a DBH of at least 18 inches and at least 30 feet long. Scatter logs within flood plain and overflow channel west of the active stream channel.

Site No. 2            Materials: Five trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads and the largest diameter portion of five tree tops at least 30 feet long.

Wedge the top of one tree between two alder trees on the northeast bank. Place the other end of the tree on the west bank against the upstream side of an alder tree. Place the root wad end of one tree against the west bank with the top angled across the channel and between two alder trees on the east bank. Place the root wad end of another tree against the west bank with the top angled across the channel and against the upstream side of an alder tree on the east bank. Place the next tree with root wad attached in the middle of the stream channel with the small end placed between two alder trees on the west bank. Place the final tree with root wad against the west bank and the small end wedged between two alder trees on the east bank. Place five logs between the previously placed trees with the small ends wedged into alders. Place the five tree tops between and around the previously placed trees.

Forest Practices Act  
"WRITTEN PLAN"  
For Project 4, Stream Enhancement  
Sprague's Stump Timber Sale

Site No. 3      Materials: Four trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads, and two logs with a diameter of at least 16 inches and 50 feet long. The largest diameter portion of four tree tops at least 30 feet long.

Place the root wad end of the first tree in the east channel with the small end against the upstream side of an alder on the island between the west and east channel. Place the next tree parallel to the first but with the root wad placed in the west channel and the small end across the island. The next tree shall be placed with the root wad in the west channel and the small end angled northeast across the island and wedged against the upstream side of an alder on the eastern bank. The final tree with root wad attached will be placed at the head of the island with the root wad at the head of the eastern channel and the small end wedged between two alders on the west bank. The two logs without root wads attached shall be placed on each side of the stream with half of the log angled into the stream channel and the other half on the stream bank and wedged against alder trees. Place the four tree tops between and around the previously placed trees.

Site No. 4      Materials: Five trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads, and the largest diameter portion of five tree tops at least 30 feet long.

Place the root wad end of one tree in mid channel with the opposite end angled toward the west bank and wedged between two alder trees. Place the root wad end of one tree against the west bank with the top wedged into the alders on the east bank. Place the root wad end of another tree in mid channel with the opposite end angled slightly upstream and wedged between two alder on the west bank. Place the next tree with the root wad mid channel and wedged against the previously placed tree with the other end wedged between alders on the east bank. Place the final tree with root wad attached against the west bank with the opposite end wedged between alders on the east bank. Place the five tree tops between and around the previously placed trees.

Site No. 5      Materials: Four trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads and the largest diameter portion of four tree tops at least 30 feet long.

Place the root wad end of the first tree mid channel with the opposite end wedged between two alders on the east bank. Place the next tree with root wad attached against the east bank and the bole of the first tree with the opposite end angled upstream and wedged between two alder on the west bank. Place another tree with root wad attached mid channel with the opposite end placed against alders on the east bank. Place the last tree with root wad attached mid channel and directly upstream of the previous root wad. The opposite end of the last tree shall be wedged against alders on the east bank. Place the four tree tops between and around the previously placed trees.

Site No. 6      Materials: Four trees with a DBH of at least 22 inches and at least 50 foot long with attached root wads and the largest diameter portion of four tree tops at least 30 feet long.

Place the root wad end of the first tree mid channel with the opposite end wedged between existing boulders along eastern portion of the stream channel. Place the next tree with root wad attached against the west bank and the opposite end angled upstream and wedged against the root wad of the first tree. Place another tree with root wad attached against the east bank with the opposite end against the root wad of the first tree. Place the last tree with root wad attached mid channel and directly upstream of the first root wad. The opposite end of the last tree shall be wedged against the root wad on the west bank. Place the four tree tops between and around the previously placed trees.

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

Original: Salem, copies: Operator, Purchaser, District File, and Jewell Unit

OREGON DEPARTMENT of FISH and WILDLIFE

FISH SCREENING PROGRAM

**SMALL PUMP SCREEN SELF CERTIFICATION**

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

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

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

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

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

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

**Screen area** must be large enough to cause fish impact. Wetted screen area depends on the water flow rate and the water approach velocity. **Approach velocity** is the water velocity perpendicular to and approximately three inches in front of any part of the screen face.

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

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

*For further information on fish screening please contact:*

Bernie Kepshire, Oregon Department of Fish and Wildlife,  
7118 NE Vandenberg Avenue, Corvallis, OR 97330-9446 (541) 757-4186 x 255

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

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

Applicant Signature: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_ WRD File #

Printed Name and Address: \_\_\_\_\_

Phone: (\_\_\_\_\_) \_\_\_\_\_ Fax: (\_\_\_\_\_) \_\_\_\_\_

*bmk*  
*3/11/99*  
*PUMPCERT.doc*

NB: ODFW logo is 129% of logo on HQ mail label

**NOTICE OF TRANSFER OF STATE TIMBER**

Instructions

629-Form-301-010

Complete Section 1. Mark the box which applies to you/your company in Section 2. Complete Section 3 and obtain signatures.

**SECTION 1**

On \_\_\_\_\_, state timber sale purchaser (Transferor)  
\_\_\_\_\_, sold, exchanged or otherwise transferred to  
\_\_\_\_\_, (Transferee) state timber originating from State  
Timber Sale Contract No. \_\_\_\_\_.

Transferee hereby certifies that they:

- (a) Will not export the unprocessed state timber which is the subject of this transaction;
- (b) Will not sell, transfer, exchange or otherwise convey the unprocessed timber which is the subject of this transaction to any other person without first obtaining a like certification from that person.
- (c) Are not prohibited by OAR's 629-31-005 through 045 from purchasing state timber or logs directly from the State Forester, or this is a sale of Western Red Cedar for domestic processing.

**SECTION 2**

- Have not exported unprocessed timber originating from private lands in Oregon in the last 24 months.
- This is a sale of hardwood logs for domestic processing.
- This is a sale of Western Red Cedar for domestic processing.
- This is a sale of pulp logs or cull logs processed at domestic pulp mills, domestic chip plants or other domestic operations for the purpose of conversion of the logs into chips.

**SECTION 3**

The parties understand that falsely entering into this certification, or failure to comply with the terms of this certification is a violation of the Forest Conservation and Shortage Relief Act of 1990 and OAR Chapter 629, Division 31, and is subject to any and all penalties contained therein.

Transferor:

Transferee:

Signed \_\_\_\_\_

Signed \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

Dated \_\_\_\_\_

Dated \_\_\_\_\_

[Note: For the purpose of this form, the definition of unprocessed timber is the same as in OAR 629-31-005]

Mail To: State Forester  
2600 State Street  
Salem, OR 97310