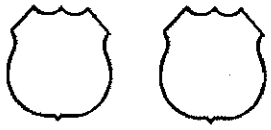
PART III: EXHIBITS

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.: 341-12-26

(2) Sale Name: Foster's 40

(3) Contract Expiration Date: October 31, 2013

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.

X Temporary stream crossings.

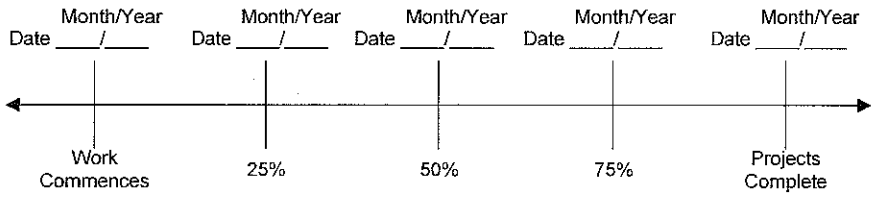
EXHIBIT B

OPERATIONS PLAN

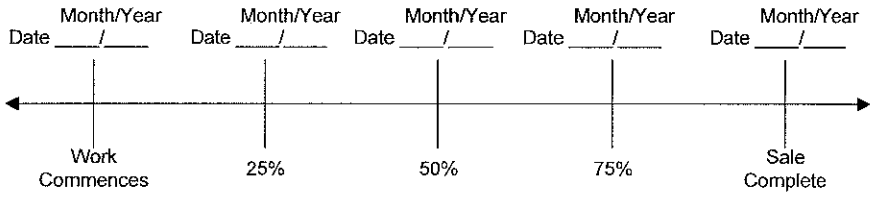
Completion Timeline

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: _____

STATE OF OREGON - DEPARTMENT OF FORESTRY

_____

Title _____

SUBMITTED BY:
PURCHASER

_____

Title _____

Original: Salem
cc: District File
Purchaser

EXHIBIT C – **SAWMILL GRADE**

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: _____

(5) **MINIMUM SCALING SPECIFICATIONS**			**CLASS**		
SPECIES	SCALING DIAMETER INCHES	*NET SCALE VOLUME	PER MBF	** SUM	SUB
Conifers		10	X		
Hardwoods		10	X		

* 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

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

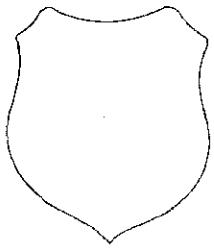
(12) NOTICE OF CANCELLATION OF BRAND:
Effective Date: _____

(13) SALE NAME: Foster's 40
COUNTY: Clatsop

(14) STATE CONTRACT NUMBER: 341-12-26

(15) **STATE BRAND REGISTRATION NUMBER** _____

(16) STATE BRAND INFORMATION (COMPLETE):



(17) PAINT REQUIRED: YES ☒
COLOR: Orange

(18) **SPECIAL REQUESTS** (Check applicable)

PEELABLE CULL (all species)	☐
NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE	☒
PENCIL BUCK	☐
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.

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

(20) SIGNATURES:

_____
Purchaser or Authorized Representative Date

_____
State Forester Representative Date

_____
State Forester Representative PRINT NAME

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

Distribution (See specific instructions on pg.2): ORIGINAL: Salem / COPIES: TPSO, Approved Scaling Location, Purchaser, District, Mgmt. Unit

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 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 14+50	Ditch
14 feet	N/A	1c to 1d	0+00 to 7+90	Outslope
14 feet	N/A	1e to 1f	0+00 to 3+80	Outslope
16 feet	12 feet	2a to 2b	0+00 to 2+80	Ditch
16 feet	12 feet	2c to 2d	0+00 to 8+20	Ditch
16 feet	12 feet	2e to 2f	0+00 to 13+00	Ditch
16 feet	12 feet	2h to 2i	0+00 to 1+00	Ditch
16 feet	12 feet	2j to 2k	0+00 to 1+00	Ditch
16 feet	12 feet	3a to 3b	0+00 to 37+80	Ditch
16 feet	12 feet	4a to 4b	0+00 to 8+20	Ditch
16 feet	12 feet	4c to 4d	0+00 to 16+10	Ditch
16 feet	12 feet	I1 to I2	0+00 to 85+44	Ditch
16 feet	12 feet	I3 to I4	0+00 to 5+76	Ditch
16 feet	12 feet	I5 to I6	0+00 to 4+95	Ditch
16 feet	12 feet	I7 to I8	0+00 to 12+20	Ditch
16 feet	12 feet	I9 to I10	0+00 to 8+00	Ditch
16 feet	12 feet	I11 to I12	0+00 to 9+80	Ditch

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

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.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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.

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, 2c to 2d, 2e to 2f, 3a to 3b, 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, or outsloped at 4 to 6 percent as shown on the "Forest Road Specifications" table in this Exhibit.

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

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

TURNOUTS. Increase roadbed width an additional 8 feet for both subgrade and surfacing. Length shall be at least 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.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SLOPES	Back Slopes	Fill Slopes
Solid Rock	Vertical to ¼ :1	
Fractured Rock	½:1	
Soil - side slopes 50% and over	¾ :1	1½:1
Soil - side slopes less than 50%	1 :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 crowned for drainage with general grade no more than 3 percent. Surface as shown in the "Road Surfacing" table in this Exhibit.

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

SEASONAL WINTERIZATION. All unsurfaced roads or unfinished subgrades shall be waterbarred in accordance with the specifications in Exhibit H, 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 and hauled in where necessary. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Surplus excavated materials and waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit. Excess excavated material not used for embankment shall be 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 G.

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.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

Segment	Station	Work Description:
1a to 1b	2+10	Install 18" x 40' culvert. Utilize 20 cubic yards of 24"-6" riprap to construct an energy dissipator.
	6+00	Install 18" x 40' culvert. Utilize 20 cubic yards of 24"-6" riprap to construct an energy dissipator.
	8+00	Install 18" x 30' culvert.
	8+25 to 14+00	Shift new road into the hill off of old road grade. End haul excess excavation not useable for road construction to waste area as shown on Exhibit A, or as directed by STATE.
2c to 2d	1+50	Begin traction rock.
	5+50	End traction rock.
2e to 2f	2+50	Begin traction rock.
	5+00	End traction rock.
3a to 3b	0+00	Pt 3a. Begin daylight right. Begin traction rock.
	1+70	Install 18" x 40' culvert. Utilize 20 cubic yards of 24"-6" riprap to construct an energy dissipator.
	2+70	Install 24" x 40' culvert. Utilize 20 cubic yards of 24"-6" riprap to construct an energy dissipator.
	5+10	Install 18" x 40' culvert. Utilize 20 cubic yards of 24"-6" riprap to construct an energy dissipator.
	8+75	Install 18" x 30' culvert. End daylight right.
	12+65	Install 18" x 30' culvert.
	15+50	Install 18" x 30' culvert.
	18+40	End traction rock.
	25+00	Begin traction rock.
	27+00	End traction rock.
	30+00	Begin traction rock.
	33+50	End traction rock.
4a to 4b	1+00	Begin traction rock.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

Segment	Station	Work Description:
4a to 4b	5+00	Install 18" x 40' culvert.
	6+00	End traction rock.
4c to 4d	1+00	Begin traction rock.
	4+00	End traction rock.
	4+75	Install 18" x 30' culvert.

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

1. Timber Removal. Remove all trees within posted Right-of-Way Boundary or individually marked with an orange "C", 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.

3. Bank Slough Removal. Dig out all bank slough. Bank slough material shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE. Waste materials shall be seeded and mulched in accordance with specifications in Exhibit J.

4. 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 J. 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.

5. 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.

6. Fill Armor and Energy Dissipator Construction. Where rock is specified for fill armor, rock shall be machine placed and tamped at a 1½:1 slope, beginning at the toe of the fill. Where rock is used for an energy dissipator, rock shall be placed below the culvert outlet and embedded for a minimum of 3 feet, in accordance with Exhibit G.

7. 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:

8. 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

Segment	Station	Work Description:
I1 to I2	0+00	Begin Improvement. Begin lift of ¾"-0" crushed rock.
	3+55	Clean culvert inlet. Install culvert marker.
	9+25	Culvert is partially plugged, cleanout culvert and catch basin.
	14+22	Culvert is partially plugged cleanout culvert and catch basin. Install culvert marker.
	22+48	Culvert is partially plugged, cleanout culvert and catch basin. Shape backslope as directed by STATE.
	24+23	Remove slide and reshape cut slope as directed by STATE. Load and haul slide material to a designated waste area.
	28+38	Designated waste area.
	32+00	Begin ditchline re-establishment.
	34+40	End ditchline re-establishment.
	39+70	Excavate ditchline across quarry access road junction, as directed by STATE. Ditch shall be shaped to allow pickup vehicle access to the quarry. Ditch shall be a rolling ditch type four foot wide and three feet deep.
	39+90	End vehicle access ditchline. Continue the four foot by three foot "V" ditchline.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

Segment	Station	Work Description:
I1 to I2	43+36	End four foot wide and three feet deep ditchline. Begin ditchline re-establishment.
	44+43	Culvert is partially plugged, cleanout culvert and catch basin. Install culvert marker.
	50+12	End ditchline re-establishment.
	51+77	Culvert is partially plugged, cleanout culvert and catch basin.
	59+55	Begin ditchline re-establishment.
	64+17	End ditchline re-establishment.
	83+41	Install culvert marker.
	85+44	End Improvement. End application of ¾"-0" crushed rock.
I3 to I4	0+00	Begin improvement. Begin application of 1 1/2"-0" crushed rock. Clean out ditchout left. Begin ditchline re-establishment.
	4+90	End ditchline re-establishment. Clean culvert catch basin.
	5+50	Clean woody debris from ditchline by scattering.
	5+76	End improvement. End application of 1 1/2"-0" crushed rock. Blend applied crushed rock with junction with Road Segment I1 to I2.
I5 to I6	0+00	Begin improvement. Begin constructing ditchline on right side of road.
	1+00	Pull eroded base rock off of fill slope and from Foster Mainline ditchline and re-establish it on the road surface.
	2+92	End ditchline right side of road. Begin ditchline left side of road. Construct Rolling water bar between the left and right ditchline as directed by STATE.
	4+50	End ditchline left side of road. End improvement.
I7 to I8	0+00	Begin Improvement, Begin ditchline re-establishment. Begin application of 1 1/2"-0" crushed rock.
	1+80	Begin cut slope reconstruction, Reshape cut slope, Load and haul material to a designated waste area.
	4+80	End cut slope reconstruction, End truck end haul.
	8+40	Cleanout culvert and catch basin. Install culvert marker.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

Segment	Station	Work Description:
I7 to I8	12+20	End ditchline re-establishment, End improvement.
I9 to I10	0+00	Begin Improvement, Begin ditchline re-establishment. Begin application of 1 1/2"-0" crushed rock.
	3+30	Cleanout culvert and catch basin. Install culvert marker.
	8+40	End ditchline re-establishment, End improvement.
I11 to I12	0+00	Begin Improvement, Begin ditchline re-establishment.
	5+60	Cleanout culvert and catch basin. Install culvert marker.
	9+80	End ditchline re-establishment, End improvement.

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	8+25 to 14+00	2	1 and 2	1
V1 to V2	0+00 to 3+00	2	1 and 2	1
V8 to V9	0+00 to 1+00	2	1 and 2	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) As shown on Exhibit A and as marked in the field.

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

Waste Area Treatment

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

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

(3) Mulch and seed all waste areas in accordance with Exhibit J.

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 Volume (CY) Per		0+00 to 14+50 Number of		
Base Rock	4"-0" Crushed	0+00 to 14+50	8	Station	50	Stations	14.5	725
Turnarounds	4"-0" Crushed	14+50	8	TA	22	TA's	1	22
Landings	6"-0" Pit-run	1+00	N/A	Landing	50	Landings	1	50
Dissipator	24"-6" Riprap	2+10, 6+00	N/A	Dissipator	20	Dissipators	2	40
Total Rock for Road Segment:			1a to 1b					837
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 **Volume (CY) Per**		0+00 to 2+80 **Number Of**		
Base Rock	4"-0" Crushed	0+00 to 2+80	8	Station	50	Stations	2.8	140
Junctions	4"-0" Crushed	2a	8	Junction	22	Junctions	1	22
Landings	6"-0" Pit-run	2b	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2a to 2b					242
ROAD SEGMENT: 2c to 2d				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size and Type**	**Location**	**Depth of Rock (inches)**	2c to 2d **Volume (CY) Per**		0+00 to 8+20 **Number of**		
Base Rock	4"-0" Crushed	0+00 to 8+20	8	Station	50	Stations	8.2	410
Junctions	4"-0" Crushed	2c	8	Junction	22	Junctions	1	22
Traction Rock	1 ½"-0" Crushed	1+50 to 5+50	3	Stations	19	Stations	4	76
Landings	6"-0" Pit-run	6+00, 2d	N/A	Landing	80	Landings	2	160
Total Rock for Road Segment:			2c to 2d					668
ROAD SEGMENT: 2e to 2f				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size And Type**	**Location**	**Depth of Rock (inches)**	2e to 2f **Volume (CY) Per**		0+00 to 13+00 **Number Of**		
Base Rock	4"-0" Crushed	0+00 to 13+00	8	Station	50	Stations	13.0	650
Junctions	4"-0" Crushed	2e	8	Junction	22	Junctions	1	22
Turnouts	4"-0" Crushed	8+40	8	Turnout	22	Turnouts	1	22
Turnarounds	4"-0" Crushed	11+50	8	TA	22	TAs	1	22
Traction rock	1 ½"-0" Crushed	2+50 to 5+00	3	Station	19	Stations	2.5	48
Landings	6"-0" Pit-run	2f	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2e to 2f					844

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT: 2g				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	2g Volume (CY) Per		Number Of		
Landings	6"-0" Pit-run	0+00	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2g					80
ROAD SEGMENT: 2h to 2i				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size And Type**	**Location**	**Depth of Rock (inches)**	2h to 2i Volume (CY) Per		0+00 to 1+00 Number Of		
Base Rock	4"-0" Crushed	0+00 to 1+00	8	Station	50	Stations	1	50
Junctions	1 ½"-0" Crushed	2h	8	Junction	22	Junctions	1	22
Landings	6"-0" Pit-run	2i	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2h to 2i					152
ROAD SEGMENT: 2j to 2k				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size And Type**	**Location**	**Depth of Rock (inches)**	2j to 2k Volume (CY) Per		0+00 to 1+00 Number Of		
Base Rock	4"-0" Crushed	0+00 to 1+00	8	Station	50	Stations	1	50
Junctions	1 ½"-0" Crushed	2j	8	Junction	22	Junctions	1	22
Landings	6"-0" Pit-run	2k	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2j to 2k					152
ROAD SEGMENT: 3a to 3b				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size And Type**	**Location**	**Depth of Rock (inches)**	3a to 3b Volume (CY) Per		0+00 to 37+80 Number Of		
Base Rock	4"-0" Crushed	0+00 to 37+80	8	Station	50	Stations	37.8	1890
Junctions	4"-0" Crushed	3a	8	Junction	22	Junction	1	22
Turnouts	4"-0" Crushed	14+25, 18+40, 24+20, 30+00	8	Turnout	22	Turnouts	4	88
Turnarounds	4"-0" Crushed	35+00	8	TA	22	TAs	1	22
Dissipator	24"-6" Riprap	1+70, 2+70, 5+10	N/A	Dissipator	20	Dissipators	3	60
Surface Rock	1 ½"-0" Crushed	0+00 to 18+40, 25+00 to 27+00, 30+00 to 33+50	3	Station	19	Stations	23.9	454
Turnouts	1 ½"-0" Crushed	14+25, 18+40, 24+20, 30+00	3	Turnout	11	Turnouts	4	44
Landings	6"-0" Pit-run	10+75	N/A	Landing	50	Landings	1	50
Landings	6"-0" Pit-run	37+00, 3b	N/A	Landing	80	Landings	2	160
Total Rock for Road Segment:			3a to 3b					2790

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 8+20		
				Volume (CY) Per		Number Of		
Base Rock	4"-0" Crushed	0+00 to 8+20	8	Station	50	Stations	8.2	410
Junctions	4"-0" Crushed	4a	8	Junction	22	Junctions	1	22
Turnouts	4"-0" Crushed	3+00	8	Turnout	22	Turnouts	1	22
Turnarounds	4"-0" Crushed	6+70	8	TA	22	TAs	22	22
Traction Rock	1 ½"-0" Crushed	1+00 to 6+00	3	Station	19	Stations	5	95
Landings	6"-0" Pit-run	4b	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			4a to 4b					651
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 16+10		
				Volume (CY) Per		**Number Of**		
Base Rock	4"-0" Crushed	0+00 to 16+10	8	Station	50	Stations	16.1	805
Junctions	4"-0" Crushed	4c	8	Junction	22	Junctions	1	22
Turnouts	4"-0" Crushed	5+00	8	Turnout	22	Turnouts	1	22
Turnarounds	4"-0" Crushed	12+90	8	TA	22	TAs	1	22
Traction Rock	1 ½"-0" Crushed	1+00 to 4+00	3	Station	19	Stations	3	57
Landings	6"-0" Pit-run	4d	N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			4c to 4d					1008
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 85+44		
				Volume (CY) Per		**Number Of**		
Surface Rock	¾"-0" Crushed	0+00 to 85+44	3	Station	19	Stations	85.44	1623
Junctions	¾"-0" Crushed		3	Junction	10	Junctions	6	60
Turnouts	¾"-0" Crushed		3	Turnout	8	Turnouts	12	96
Curve Widening	¾"-0" Crushed		N/A	Curve	N/A	Curves	13	125
Leveling Rock	¾"-0" Crushed		3	Load	11	Loads	6	66
Total Rock for Road Segment:			I1 to I2					1970
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 5+76		
				Volume (CY) Per		**Number Of**		
Surface Rock	1 ½"-0" Crushed	0+00 to 5+76	3	Station	19	Stations	5.76	109
Turnouts	1 ½"-0" Crushed		3	Turnout	8	Turnouts	1	8
Curve Widening	1 ½"-0" Crushed		3	Curve		Curves	2	15
Total Rock for Road Segment:			I3 to I4					132

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT: I7 to I8				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I7 to I8 Volume (CY) Per		0+00 to 12+20 Number Of		
Surface Rock	1 ½"-0" Crushed	0+00 to 12+20	4	Station	25	Stations	12.2	305
Leveling Rock	1 ½"-0" Crushed		4	Load	11	Loads	4	44
Junctions	1 ½"-0" Crushed		4	Junction	11	Junctions	1	11
Total Rock for Road Segment:								360
ROAD SEGMENT: I9 to I10				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size And Type**	**Location**	**Depth of Rock (inches)**	I9 to I10 **Volume (CY) Per**		0+00 to 8+00 **Number Of**		
Surface Rock	1 ½"-0" Crushed	0+00 to 8+00	4	Station	25	Stations	8	200
Leveling Rock	1 ½"-0" Crushed		4	Load	11	Loads	2	22
Total Rock for Road Segment:								222
ROAD SEGMENT: I11 to I12				**POINT TO POINT**		**Sta. to Sta.**		**TOTAL VOLUME (CY)**
Application	**Rock Size And Type**	**Location**	**Depth of Rock (inches)**	I11 to I12 **Volume (CY) Per**		0+00 to 9+00 **Number Of**		
Surface Rock	1 ½"-0" Crushed	6+00 to 9+00	3	Station	19	Stations	3	57
Total Rock for Road Segment:								57

ROCK TOTALS (CY)	24"-6"	6"-0"	4"-0"	1½"-0"	3/4"-0"
10,165	100	980	5526	1589	1970

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 500 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.

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 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

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

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 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 stream crossing culverts on road improvement segments.

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.

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 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.

EXHIBIT E

CULVERT SPECIFICATIONS

Culverts 24 inches in diameter or larger shall have 1:1 step beveled inlets.

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for all 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	40	CPP	1a-1b	2+10
2	18	40	CPP	1a-1b	6+00
3	18	30	CPP	1a-1b	8+00
4	18	40	CPP	3a-3b	1+70
5	24	40	CPP	3a-3b	2+70
6	18	40	CPP	3a-3b	5+10
7	18	30	CPP	3a-3b	8+75
8	18	30	CPP	3a-3b	12+65
9	18	30	CPP	3a-3b	15+50
10	18	40	CPP	4a-4b	5+00
11	18	30	CPP	4c-4d	4+75

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.

EXHIBIT F

PIT-RUN and RIPRAP ROCK SPECIFICATIONS

For 6"-0" Pit-Run	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.

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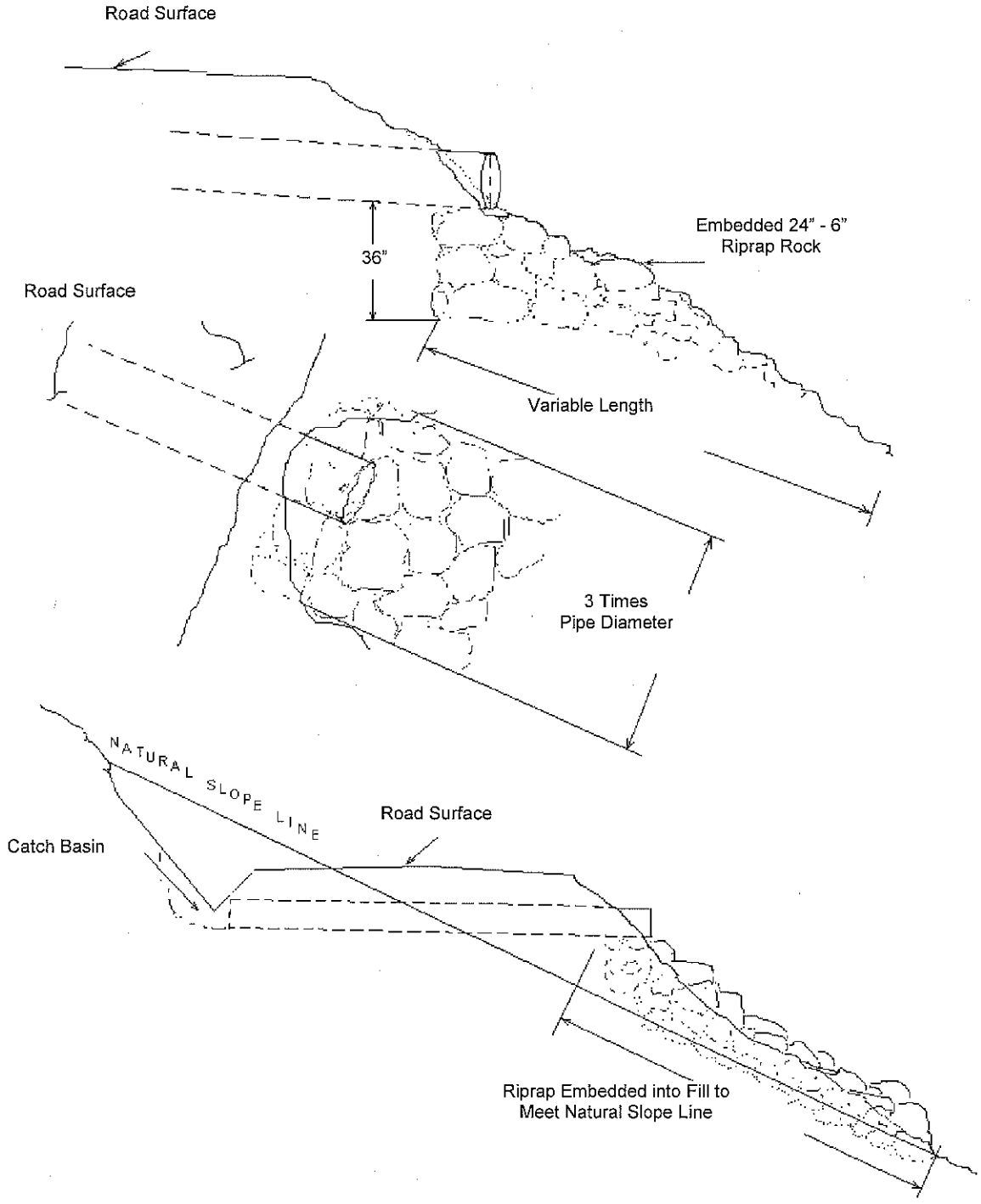
Foster's 40

EXHIBIT G

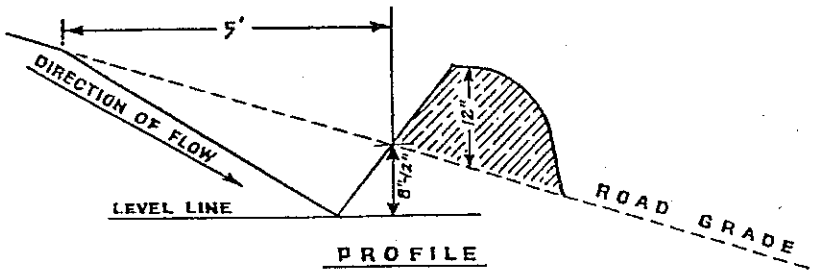
TYPICAL EMBEDDED ENERGY DISSIPATOR

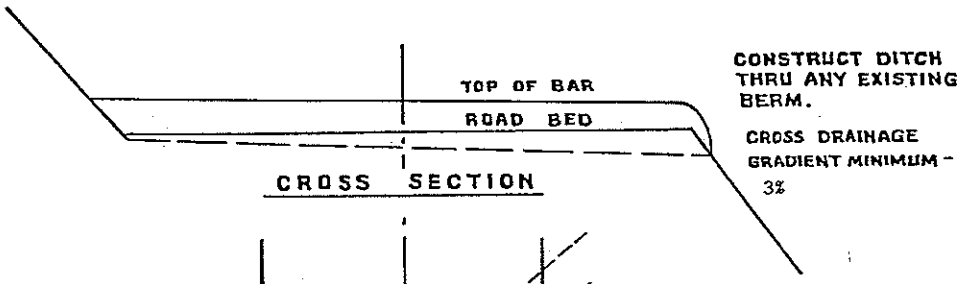


State Timber Sale Contract
No. 341-12-26
Foster's 40

EXHIBIT H

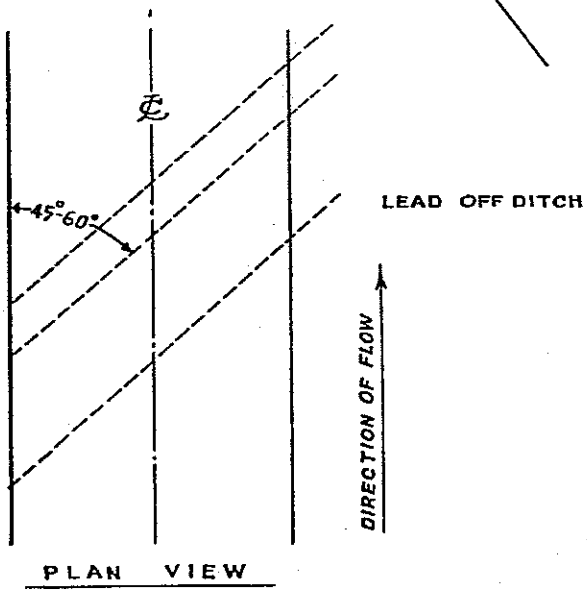
WATERBAR SPECIFICATIONS





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 I

ROAD VACATING SPECIFICATIONS

PURCHASER shall vacate at and between the following points: V1 to V2, V3 to V4, V5, V6 to V7, and V8 to V9. Specific objectives for this project include:

(a) Fill removal.
(b) Restoration of drainage by constructing waterbars.
(c) Sidecast pullback.
(e) Minimize disturbance of existing vegetation.

(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. Timber shall be removed as Designated Timber.

(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 D. 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, or 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 pre-existing off road vehicle trails, as directed by STATE.

(C) Block Roads. Use excavated materials 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, bare soils and waste areas, in accordance with the specifications in Exhibit I. 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 H.

(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.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

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

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

SPECIFIC INSTRUCTIONS/SPECIFICATIONS

Segment	Station	Work Description
V1 to V2	0+00	Point V1. Remove fill to at least the depth staked in field and as directed by STATE. Develop minimum 4 foot stream channel. Haul waste materials to an approved waste area. Fill removal shall be conducted to accommodate nearby new road construction and provide adequate drainage.
	0+60	End fill removal. Begin sidecast pullback. Haul waste materials to an approved waste area. Sidecast pullback work shall be conducted to accommodate nearby new road construction and provide adequate drainage.
	3+00	End sidecast pullback. Point V2.
V3 to V4	0+00	Point V3. Begin waterbarring. Block road grade upon completion of work.
	1+00	Construct waterbar.
	1+70	Construct waterbar.
	2+20	Construct waterbar.
	3+15	Construct waterbar.
	3+60	Construct waterbar.
	4+20	Construct waterbar.
	4+60	Remove fill. Develop minimum 4 foot stream channel and establish drainage.
	5+00	Construct waterbar.
	5+50	Remove fill. Develop minimum 4 foot stream channel and establish drainage.
	6+00	Construct waterbar.
6+00 to 6+50		Pullback sidecast material and outslope road to improve drainage.
	6+50	Construct waterbar. Remove fill. Develop minimum 4 foot stream channel and establish drainage.
	6+70	Point V4.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS

Segment	Station	Work Description
V5		Point V5. Remove fill material to improve drainage. Construct waterbars on the approaches to the fill at least 100 feet on both sides.
V6 to V7	0+00	Point V6. Begin waterbarring. Block road grade upon completion of work.
	3+00	Construct waterbar and establish drainage.
	5+25	Utilize C312 excavator, or equivalent for fill excavation. Remove fill reachable with excavator, to the extent that waste areas within reach of the excavator are full, or 5 hours of excavator time is expended. Any remaining fill shall be sloped for drainage prior to leaving the fill area. Timber removed from fill area shall be decked as designated timber.
	8+50	Point V7. Pullback fill material if C312, or equivalent excavator can access the fill without damaging trees. Construct waterbars on approaches to the fill.
V8 to V9	0+00	Begin sidecast pullback. Haul waste materials to an approved waste area. Sidecast pullback work shall be conducted to accommodate nearby new road construction and provide adequate drainage.
	1+00	End sidecast pullback. Point V9.

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EXHIBIT J

SEEDING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed, and straw mulch. Straw mulch shall consist of straw that is free of noxious weeds. Apply seed, and straw mulch to all waste areas resulting from Project No. 1, waste areas and bare soils resulting from Project No. 2, and bare soils and access trails from Project No. 3.

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

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 is 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.

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:

Waste Areas.
Project No. 2. Road Vacating and Fill Removal. Excavated material, waste areas, and bare soils.
Project No. 3 Stream Enhancement. Bare soils and access trails.

EXHIBIT K

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 shall operate from the banks to minimize stream disturbance. Turbidity shall not exceed 10 percent 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 shall be on site before work begins.

(c) Trees required for stream enhancement work shall be conifers obtained from the sale area, or at other locations acceptable to STATE. Trees can have defects such as double tops, crooked trunks, heart rot etc. as long as they meet the required size dimensions.

(d) Trees shall be uprooted as needed, cut to length, and delivered to the project site, as directed by STATE. Trees shall be transported by log truck, or other means so that roads are not damaged (i.e. trees cannot be dragged on road surface).

(e) Access routes shall be selected to minimize disturbance to the riparian area, and equipment transporting trees to the sites shall take care to avoid damage to existing in-stream logs, riparian or other trees. Trees that are cleared to gain access shall 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 if placement by ground equipment is approved by STATE.

(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 shall be thoroughly blocked to prevent access using large woody debris or boulders, water barred, ripped or tilled, and mulched upon completion, as directed by STATE.

Specific Instructions:

Where logging cables pass over Northrup Creek between Point SE1 and SE2 shown on Exhibit A, PURCHASER shall place logs in 3 separate locations, in accordance with the following specifications, unless otherwise approved by STATE.

(a) Locations shall be at least 100 feet apart and have at least 5 conifer trees or logs at each location;

(b) Logs shall be at least 22 inches in diameter at the large end and at least 50 feet in length;

(c) Logs will be obtained from within the timber sale areas only and not from within the stream buffers.

(d) Notify STATE at least 2 days prior to conducting any tree and/or log placement;

(e) Minimize stream disturbance as specified in Section 2415 "Protection of Watershed," and as specified in the Written Plan.

(f) Logs should be placed in a complex configuration with at least one end on the stream banks as to simulate a natural log jam.

EXHIBIT K

STREAM ENHANCEMENT INSTRUCTIONS

In lieu of log placement by cable yarder the PURCHASER shall have the option to *place logs/trees with root wads attached* in three separate locations that are accessible by ground-based equipment, between Point SE1 and SE2 that are approved by the STATE. This work shall be done in accordance with specifications (b) through (f) above, unless otherwise approved by STATE. Ground-based placement shall only occur during the in-water work period (July 1-August 31) unless previously authorized by STATE.

In the event STATE determines that all or a portion of the tree and/ or log placement cannot be completed, then PURCHASER shall reimburse STATE $100 per tree and/or log. Such payment shall be made to STATE within 10 days upon written notice by STATE. Drawings of typical structures are on file at the Department of Forestry Astoria District office.

PART IV: OTHER INFORMATION

State Timber Sale Contract
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Forest Practices Act
"WRITTEN PLAN"
For operating within 100 feet of Type F Streams

Portions of Sections 20, 21, 28, and 29, T7N, R6W, W.M., Clatsop County, Oregon.

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

Protected Resources:

1. Northrup Creek.
2. Tributaries of Northrup Creek.

Specific Site Characteristics:

1. Northrup Creek (Large, Type F) – This stream flows along the eastern boundary of Sale Areas for approximately 8,000 feet,

2. Tributaries of Northrup Creek (Small and medium Type F) – These streams flow along the southwest boundary of Area 1 for approximately 700 feet, through Area 2 for approximately 1,500 feet, through Area 3 for approximately 1,200 feet, and along the northern boundary of Area 4 for approximately 2,200 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 Areas 1 and 3 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:

- In Areas 1 and 3 no trees will be felled within the posted stream buffers (RMA's), except in cable corridors.
- In Areas 2 and 4 conifer may be thinned down to 25 feet of stream in areas outside of the posted stream buffers. 150 sq ft BA will be left within buffer. No hardwood trees will be cut within 100 feet of stream.
- 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, Jewell Unit

State Timber Sale Contract
No. 341-12-26
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Forest Practices Act
"WRITTEN PLAN"
For Project No. 3, Stream Enhancement
Foster's 40 Timber Sale

Portions of Sections 29 and 32, T7N, R6W, W.M., Clatsop County, Oregon

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

Protected Resources:
2000 feet of Northrup Creek, Large Type F.

Specific Site Characteristics:
The streambeds are approximately 5 to 10 feet wide with gentle to moderate stream-bank slopes. Streamside vegetation is dominated by mature red alder, salmonberry, sword fern, devils club with scattered larger conifer.

Tree and Vegetation Retention:
ODF and ODF&W Stream Biologists have plans for stream enhancement projects at three locations in Northrup Creek. There will not be any harvesting permitted within 25 feet of the stream. No hardwoods will be harvested within 100 feet of the stream. Conifer will be thinned from 25 to 100 feet of the stream if basal area exceeds 150 sq. ft.

Practices:
Stream Enhancement structures shall be created by the PURCHASER for stream improvement as recommended by ODF Biologist or ODFW Fisheries Biologist. Three structures will be created between points SE1 and SE2 on the Exhibit A . Each structure will be created by placing 5 conifer logs in the Type F stream. Structures shall be at least 100 feet apart. Logs shall be at least 22 inches in diameter at the large end and at least 50 feet in length. Logs shall be placed in a complex configuration with at least one end on the stream bank as to emulate a natural log jam.

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.

All conifer logs will be taken from the timber sale area and not from within the stream buffer.

The logs will be lowered into the stream at three separate locations where a cable corridor exists, or placed with ground-based equipment, if approved by STATE.

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

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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

State Timber Sale Contract
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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