

# PART III: EXHIBITS

State Timber Sale Contract  
No. 341-11-10  
Stone Soup

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.: 341-11-10

(2) Sale Name: Stone Soup

(3) Contract Expiration Date: October 31, 2013

Project Completion Dates: October 31, 2012

(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.



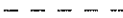



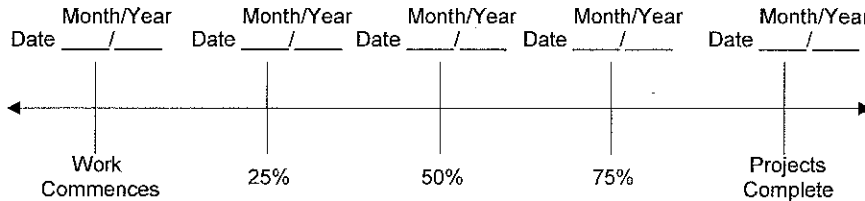
-  Cable Landing, with numbers for sequence.
-  Tractor Landing with alphabetical sequence.
-  Approximate setting boundary.
-  Spur truck roads.
-  Tractor yarding roads.
-  Temporary stream crossings.

EXHIBIT B  
OPERATIONS PLAN

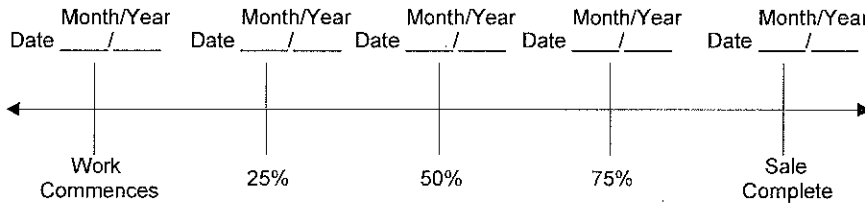
**Completion Timeline**

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

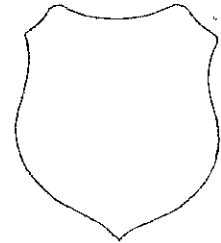
Original: Salem  
cc: District File  
Purchaser

EXHIBIT C – 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: \_\_\_\_\_

- (13) SALE NAME: Stone Soup  
 COUNTY: Clatsop
- (14) STATE CONTRACT NUMBER: 341-11-10
- (15) STATE BRAND REGISTRATION NUMBER \_\_\_\_\_
- (16) STATE BRAND INFORMATION (COMPLETE):



- (17) PAINT REQUIRED: YES   
 COLOR: Orange

(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

(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 board feet shall be scaled as sawlogs.

Operator's Name (Optional inclusion by District): \_\_\_\_\_

- (20) SIGNATURES:
- \_\_\_\_\_  
 Purchaser or Authorized Representative Date
- \_\_\_\_\_  
 State Forester Representative Date
- \_\_\_\_\_  
 State Forester Representative PRINT NAME

(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: \_\_\_\_\_

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- **SAWMILL GRADE**  
INSTRUCTIONS FOR FORM 343-307 (rev. 01/09)

- (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** (sub-merchantable 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. All boxes applicable to the timber sales designated in the Exhibit C form must be "marked". If "Other" is indicated, it must contain a description and any necessary comments.
- (19) Use this space to designate any weight conversion factors, per load volumes, weight scale sample instructions or any other explanations to clarify scaling, processing and/or mailing requirements. If additional scaling locations are approved, revise original or current form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.
- (20) Require purchaser to sign and date completed form in addition to State Forester Representative, sign and print name on the form.

**Salem Distribution Instructions:** Original will be mailed to Salem after it is electronically scanned and e-mailed directly to the State Forests Program/Asset Management Unit to both Timber Revenue Specialists. Scaling instructions for each brand should be scanned separately, for each approved TPSO.

EXHIBIT D  
 FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
16 feet	12 feet	A to B	0+00 to 4+08	Ditch
16 feet	12 feet	1A to 1B	0+00 to 4+55	Ditch
14 feet	Dirt	1A to 1B	4+55 to 21+65	Outsloped
14 feet	Dirt	1C to 1D	0+00 to 9+15	Outsloped
14 feet	Dirt	1E to 1F	0+00 to 5+25	Outsloped
16 feet	12 feet	1G to 1H	0+00 to 4+40	Ditch
16 feet	12 feet	2A to 2B	0+00 to 7+50	Ditch
16 feet	12 feet	2C to 2D	0+00 to 5+25	Ditch
16 feet	12 feet	2E to 2F	0+00 to 2+40	Ditch
16 feet	12 feet	3A to 3B	0+00 to 0+75	Ditch
16 feet	12 feet	4A to 4B	0+00 to 1+00	Ditch
16 feet	12 feet	5A to 5B	0+00 to 42+55	Ditch
16 feet	12 feet	5C to 5D	0+00 to 2+00	Ditch
16 feet	12 feet	5E to 5F	0+00 to 1+00	Ditch
16 feet	12 feet	5G to 5H	0+00 to 2+85	Ditch
16 feet	12 feet	5I to 5J	0+00 to 1+43	Ditch
16 feet	12 feet	5K to 5L	0+00 to 2+10	Ditch
22 feet	20 feet	I1 to I2	0+00 to 0+46	Ditch
16 feet	12 feet	I1 to I2	0+46 to 7+65	Ditch
16 feet	12 feet	I3 to I4	0+00 to 44+20	Ditch
16 feet	12 feet	I5 to I6	0+00 to 56+00	Ditch
16 feet	12 feet	I7 to I8	0+00 to 25+36	Ditch
16 feet	12 feet	I9 to I10	0+00 to 21+15	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 5 feet back of the top of the cutslope and 5 feet out from the toe of the fill slope, or as directed by STATE. 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.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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 - 5 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 5A to 5B, I1 to I2 sta. 0+00 to 4+72, I3 to I4 sta. 0+00 to 5+27, sta. 19+64 to 24+10, and sta. 32+11 to 35+34.

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 or outsloped as shown on the "Forest Road Specifications" table in this Exhibit.

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

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.

<u>SLOPES</u>	<u>Back Slopes</u>	<u>Fill Slopes</u>
Solid Rock	Vertical to $\frac{1}{4}$ :1	
Fractured Rock	$\frac{1}{2}$ :1	
Soil - side slopes 50% and over	$\frac{3}{4}$ :1	$1\frac{1}{2}$ :1
Soil - side slopes less than 50%	1 :1	$1\frac{1}{2}$ :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.

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.



EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD CONSTRUCTION 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. Excess excavated material not used for embankment shall be sidecast on slopes up to 50 percent or end hauled to waste areas as shown on Exhibit A and marked in the field or be used for fill as designated in this Exhibit.
- (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.
- (4) Fill Material. For segment 5A to 5B, utilize end haul material from 5A to 5B and 5E to 5F or quarry reject material, located at the Cole Mountain Quarry or the Sweethome Stockpile Site, to construct fill and approaches to the existing road grades, as directed by STATE.
- (5) Geotextile Road Fabric: Install woven fabric on Road Segment 5A to 5B from Stations 7+65 to 8+50, 12+25 to 13+65, 15+10 to 16+35, 31+25 to 32+40, and 36+20 to 36+50, and on Road Segment I1 to I2 from Station 0+00 to 3+30 in accordance with the specifications in Exhibit L.
- (6) Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic-yard, track-mounted excavator.
- (8) 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>
A to B	0+00	Utilize 4"-0" crushed rock for base rock. Utilize reclaimed rock as second lift. These two lifts shall be mixed and processed together, as directed by STATE.
	3+20	Construct curve tying into station 34+47 on Segment I3 to I4.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
1A to 1B	4+55	Begin outsloped road.
5A to 5B	3+22	Begin curve widening (2 ft. left).
	4+38	End curve widening.
	5+21	Begin curve widening (4 ft. right).
	6+67	End curve widening.
	7+63	Begin Fill Armor on each side, utilize 24"-6" riprap.
	8+49	End fill widening and Fill Armor.
	9+49	Begin curve widening (2 ft. right).
	9+75	End curve widening.
	11+17	Begin curve widening (5 ft. left).
	12+25	Begin Fill Armor right, utilize 24"-6" riprap.
	12+49	End curve widening.
	12+53	Begin Fill Armor on both sides.
	13+64	End Fill Armor and end fill widening.
	15+12	Begin Fill Armor on each side, utilize 24"-6" riprap.
	15+63	Begin curve widening (2 ft. left).
	15+82	End curve widening.
	16+36	Begin curve widening (3 ft. right). End fill Armor.
	16+89	End curve widening.
	23+96	Begin curve widening (2 ft. right).
	24+94	End curve widening.
	26+84	Begin curve widening (4 ft. left).
	29+61	End curve widening.

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
5A to 5B cont.	34+44	Begin subgrade widening for thru cut (1 ft. each side).
	36+00	End subgrade widening.
	36+22	Begin Fill Armor left, utilize 24"-6" riprap.
	36+49	End Fill Armor.
	36+94	Begin curve widening (2 ft. right).
	38+00	End haul 2,250 cubic yards to station 15+80 and/or 40+30 as needed.
	38+38	End curve widening.
	40+55	Begin curve widening (2 ft. right).
	41+64	End curve widening.
5E to 5F	0+50	End haul 420 cubic yards to station 41+50 on Road Segment I3 to I4.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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. Roadside Brushing. Conduct roadside brushing as specified in Exhibit J.
3. 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.
4. 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 K.
5. Culvert Replacement, Culvert Installation, Fill Reconstruction, and Fill Removal. Existing culvert geometry shall be modified to provide for optimum drainage and culvert performance. Modifications may include, skewing the culvert and/or installing the culvert at gradients equal to or exceeding the drainage (or ditch) gradient. Where fill reconstruction or culvert replacement is specified, fills shall be excavated to natural stream course levels. All woody debris encountered during fill excavation shall be removed. 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 K. 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.
6. Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Clean out all culvert inlets and outlets for a 10-foot radius. Re-establish or construct culvert sediment basins. Waste materials from drainage ditches and sediment basins shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas 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.
7. 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.
8. Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.
9. 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.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (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>
I1 to I2	0+00	Begin improvement as specified on plan's. Construct approach flares with 20 foot radius as directed by STATE. Begin subgrade width of 22 feet and running surface width of 20 feet. Begin application of 12"-6" riprap as subgrade reinforcement rock, 4"-0" crushed base rock, and ¾"-0" crushed surface rock. Begin utilization of geotextile. Geotextile shall be applied on top of the subgrade reinforcement rock, covering the road and the highway approach flares, as directed by STATE.
	0+08	Replace existing culvert. Utilize 50 cubic yards of 1½"-0" crushed rock as bedding and backfill. Inlet and outlet of culvert shall line up with existing ODOT Highway 53 ditchline and culvert inlet.
	0+46	End subgrade width of 22 feet. Taper to a subgrade width of 16 feet and running surface width of 12 feet. Begin curve widening of 1 foot.
	0+70	Install new culvert. Utilize 40 cubic yards of 1½"-0" crushed rock as bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap for energy dissipator.
	1+97	Center of turnout left to be constructed.
	2+40	Replace existing culvert. Utilize 40 cubic yards of 1½"-0" crushed rock as bedding and backfill.
	3+30	End utilization of geotextile, subgrade reinforcement rock, 4"-0" crushed base rock, specified plan work, and curve widening. Begin moving road into hill 3 feet. Remove large stump. Blend alignment forward and back as directed by STATE. Re-establish existing ditchline and dispose of pulled material in designated waste area.
	3+75	End moving road into hill.
	4+20	Improve existing turnout left.
	5+00	Replace existing culvert. Utilize 40 cubic yards of 1½"-0" crushed rock as bedding and backfill.
	7+65	Begin 2 feet of curve widening and turnout improvement right. Point 5B.

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
I3 to I4	0+00	Begin road segment improvement. Begin construction as specified in plans. Begin application of 1½"-0" crushed rock.
	0+95	Begin 3 feet of curve widening.
	1+15	Begin application of 4"-0" crushed rock.
	1+34	End curve widening.
	1+68	Begin construction of a 55 foot radius curve with 7 feet of curve widening.
	1+92	Begin blending new construction with existing road grades being crossed as directed by STATE.
	2+00	End application of 4"-0" crushed rock.
	2+89	End blending of grades. Begin application of 4"-0" crushed rock.
	3+06	Construct ditchout left as directed by STATE.
	3+85	End construction of 55 foot radius curve and curve widening. Construct ditchout left as directed by STATE.
	4+51	Begin construction of a 100 foot radius curve.
	5+10	End application of 4"-0" crushed rock.
	5+27	End construction of a 100 foot radius curve. Blend alignment with existing road. End construction as specified in plans. End application of 1½"-0" crushed rock.
	6+62	Replace existing culvert. Skew new culvert 30°. Utilize 33 cubic yards of 1½"-0" crushed rock as bedding and backfill. Utilize 22 cubic yards of 4"-0" crushed rock for base course restoration. Utilize 11 cubic yards of 24"-6" riprap for energy dissipator. Begin ditch re-establishment and dispose of excavated material in designated waste area.
	12+59	Existing culvert inlet is silted in. Inlet and catch basin need to be cleaned out. End ditchline re-establishment.
	16+30	Begin ditch re-establishment and dispose of excavated material in designated waste area. Improve ditchout right.
	19+00	Begin application of 1½"-0" crushed rock. Blend vertical alignment with Cole Ridge junction. Utilize 22 cubic yards of 1½"-0" crushed rock in blending junction. Utilize 22 cubic yards of 1½"-0" crushed rock to facilitate traffic turning north onto Cole Mountain Ridge Road.

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
13 to 14	19+64	Begin improvement as specified in plans. Construct ditchout as directed by STATE. End ditchline re-establishment.
	19+79	Begin 100 foot radius curve with 4 feet of curve widening. Begin moving road into hill per plans.
	20+49	End 100 foot radius curve.
	20+72	Begin 150 foot radius curve with 2 feet of curve widening.
	21+00	Utilize 22 cubic yards of 4"-0" crushed rock on subgrade moved into the hill. Construct turnout left. Utilize 22 cubic yards of 4"-0" crushed rock for turnout.
	21+57	End 150 foot radius curve.
	21+86	Utilize 11 cubic yards of 4"-0" crushed rock on subgrade moved into the hill.
	22+62	Begin 100 foot radius curve with 6 feet of curve widening.
	22+86	Utilize 33 cubic yards of 4"-0" crushed rock on subgrade moved into the hill.
	23+62	End moving road into hill per plans.
	24+10	End 100 foot radius curve. End specified plan improvement.
	25+45	Improve turnout left. Utilize 22 cubic yards of 4"-0" crushed rock. Designated waste area.
	25+65	Begin re-establishing existing ditchline and dispose of excavated material in designated waste area.
	28+45	Construct a new turnout left. Utilize 22 cubic yards of 4"-0" crushed rock.
	32+11	Begin improvement as specified in plans. Begin reclaiming existing crushed rock for use as directed by STATE. Begin application of 4"-0" crushed rock. End ditchline re-establishment.
	32+91	Point I7. Construct ditchline on right road edge as directed by STATE.
	33+19	Remove and salvage existing culvert. Re-install or transport existing culvert to a location directed by STATE. Utilize 22 cubic yards of reclaimed crushed rock as backfill in vacated culvert bed.
	34+47	Utilize 22 cubic yards of reclaimed crushed rock in construction of a light vehicle 15 foot radius curve tying into road segment A to B as directed by STATE.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
I3 to I4	34+83	End application of 4"-0" crushed rock. End reclaiming existing crushed rock. Blend vertical and horizontal alignment with road segment A to B.
	35+34	Point B.
	38+57	Move road into hill 2 feet, utilizing 11 cubic yards of 4"-0" crushed rock. Construct turnout left. Utilize 22 cubic yards of 4"-0" crushed rock.
	39+37	End moving road into the hill.
	40+09	Junction and curve re-alignment. Begin lift of 4"-0" crushed rock.
	40+77	Junction with road segment I9 to I10. Utilize 22 cubic yards of 1½"-0" and 33 cubic yards of 4"-0" crushed rock.
	41+30	Begin raising existing road grade with fill material end hauled from road segment 5E to 5F (station 0+50, as directed by STATE. Begin geotextile application.
	41+46	End curve realignment. End 4"-0" crushed rock lift.
	43+23	End raising existing road grade. End geotextile application.
	44+20	Point I4. End application of 1½"-0" crushed rock. Begin construction of road segment 5A to 5B.
I5 to I6	0+00	Begin road improvement.
	4+15	Construct ditchout left.
	5+90	Begin re-establishing existing ditchline and dispose of excavated material in designated waste area.
	5+90	Begin re-establishing existing ditchline and dispose of excavated material in designated waste area.
	7+93	Install new culvert. Utilize 33 cubic yards of 1½"-0" crushed rock as bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap for an energy dissipator. End ditchline re-establishment.
	9+85	Install new culvert. Utilize 33 cubic yards of 1½"-0" crushed rock as bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap for an energy dissipator.
	11+92	Begin re-establishing existing ditchline and dispose of excavated material in designated waste area.



EXHIBIT D  
FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
15 to 16	25+31	Pull ditchline and dispose of excavated material in designated waste area.
	30+90	End ditchline re-establishment. Construct ditchout left.
	32+99	Improve turnout right. Utilize 11 cubic yards of 4"-0" crushed rock.
	38+09	Construct ditchout left.
17 to 18	0+00	Begin improvement. Begin reclaiming of existing crushed rock. Begin existing road bed scarification.
	2+49	End reclaiming of existing crushed rock and road bed scarification. Blend ending of reclaiming crushed rock and road bed scarification with road segment A to B.
19 to 110	0+00	Begin improvement.
	.3+55	Construct turnout left. Utilize 22 cubic yards of 4"-0" and 8 cubic yards of 1½"-0" crushed rock.
	4+68	Replace existing culvert. Utilize 33 cubic yards of 1½"-0" crushed rock as bedding and backfill. Begin re-establishing existing ditchline and dispose of excavated material in designated waste area.
	8+13	Improve turnout left. Utilize 11 cubic yards of 4"-0" crushed rock.
	10+60	End ditchline re-establishment. Begin blade, shape and compaction only.
	21+15	End blade shape and compaction.

EXHIBIT D

FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.	CONTAINMENT - SIDECAST	WASTE AREA LOCATION	WASTE AREA TREATMENT
I3 to I4	19+64 to 24+10	N/A	1	1, 2, & 3
I3 to I4	32+11 to 35+34	N/A	1	1, 2, & 3
I3 to I4	38+57 to 39+37	N/A	1	1
I3 to I4	40+09 to 41+46	N/A	1	1
5A-5B to 5A-5B	38+00 to 15+80	N/A	N/A	N/A
5A-5B to 5A-5B	38+00 to 41+00	N/A	N/A	N/A
5E-5F to I3- I4	0+50 to 41+50	N/A	N/A	N/A

Full Bench and End-Haul Areas General Requirements

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

Clearing and grubbing debris (stumps only) shall be end-hauled on I1 to I2 from Station 0+00 to 4+00.

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 K.

EXHIBIT D  
 ROAD SURFACING

ROAD SEGMENT: A to B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	A to B		0+00 to 4+08		
				Volume (CY) Per		Number of		
Base Rock	4"-0" Crushed		6"	station	38	stations	4.08	155
Turnouts	4"-0" Crushed		8"	turnout	22	turnouts	1	22
Curve Widening	4"-0" Crushed		8"	curve	n/a	curves	2	6
Junctions	1½"-0" Crushed		3"	junction	11	junctions	1	11
Reclaimed Rock	Open gradation		n/a	station	n/a	stations	4.08	88
Total Rock for Road Segment:			A to B					282

ROAD SEGMENT 1A-1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A-1B		0+00 to 21+65		
				Volume (CY) per		Number of		
Base Rock	4"-0" Crushed	0+00 to 4+55	8	station	50	stations	4.55	228
Junctions	4"-0" Crushed	1A & 1C	N/A	junction	33	junctions	2.0	66
Junction Surface Rock	1 1/2'-0' Crushed	1A	N/A	junction	22	junctions	1.0	22
Turnouts	4"-0" Crushed	3+55 to 4+55	N/A	turnout	22	turnouts	1.0	22
Culvert Bedding	1 1/2"-0" Crushed	0+40	N/A	culvert	11	culverts	1.0	11
Total Rock for Road Segment:			1A-1B					349

ROAD SEGMENT 1G-1H				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1G-1H		0+00 to 4+40		
				Volume (CY) per		Number of		
Base Rock	4"-0" Crushed	0+00 to 4+40	8	station	50	stations	4.4	220
Junctions	4"-0" Crushed	1G	N/A	junction	22	junctions	1.0	22
Junction Surface Rock	1 1/2'-0' Crushed	1G	N/A	junction	22	junctions	1.0	22
Turnouts	4"-0" Crushed	2+00 to 3+00	N/A	turnout	22	turnouts	1.0	22
Culvert Bedding	1 1/2"-0" Crushed	0+00	N/A	culvert	22	culverts	1.0	22
Landings	6"-0" Pit-run	4+40		landing	50	landings	1.0	50
Total Rock for Road Segment:			1G-1H					358

ROAD SEGMENT 2A-2B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A-2B		0+00 to 7+50		
				Volume (CY) per		Number of		
Base Rock	4"-0" Crushed	0+00 to 7+50	8	station	50	stations	7.5	375
Junctions	4"-0" Crushed	2A	N/A	junction	22	junctions	1.0	22
Turnaround	4"-0" Crushed	6+50	N/A	turnaround	22	turnaround	1.0	22
Landings	6"-0" Pit-run	7+50		landing	50	landings	1.0	50
Total Rock for Road Segment:			2A-2B					469

ROAD SEGMENT 2C-2D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2C-2D		0+00 to 5+25		
				Volume (CY) per		Number of		
Base Rock	4"-0" Crushed	0+00 to 5+25	8	station	50	stations	5.25	262
Junctions	4"-0" Crushed	2C	N/A	junction	22	junctions	1.0	22
Culvert Bedding	1 1/2"-0" Crushed	0+00	N/A	culvert	22	culverts	1.0	22
Turnouts	4"-0" Crushed	2+00 to 3+00	N/A	turnout	22	turnouts	1.0	22
Landings	6"-0" Pit-run	5+25		landing	50	landings	1.0	50
Total Rock for Road Segment:			2C-2D					378

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT 2E-2F				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2E-2F		0+00 to 2+40		
				Volume (CY) per	Number of	Number of	Number of	
Base Rock	4"-0" Crushed	0+00 to 2+40	8	station	50	stations	2.4	135
Junctions	4"-0" Crushed	3E	N/A	junction	22	junctions	1.0	22
Culvert Bedding	1 1/2"-0" crushed	0+00	N/A	culvert	11	culverts	1.0	11
Turnouts	4"-0" Crushed	2+00 to 3+00	N/A	turnout	22	turnouts	1.0	22
Culvert Bedding	1 1/2"-0" Crushed	0+00	N/A	culvert	22	culverts	1.0	22
Landings	6"-0" Pit-run	5+25		landing	50	landings	1.0	50
Total Rock for Road Segment:				2E-2F				262
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		0+00 to 0+75		
				Volume (CY) per	Number of	Number of	Number of	
Base Rock	4"-0" Crushed	0+00 to 0+75	8	station	50	stations	0.75	38
Junctions	4"-0" Crushed	3A	N/A	junction	22	junctions	1.0	22
Junction Surface Rock	1 1/2 '-0' Crushed	3A	N/A	junction	22	junctions	1.0	22
Landings	6"-0" Pit-run	0+75		landing	80	landings	1.0	80
Total Rock for Road Segment:				3A to 3B				162
ROAD SEGMENT 4A-4B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	4A-4B		0+00 to 1+00		
				Volume (CY) per	Number of	Number of	Number of	
Base Rock	4"-0" Crushed	0+00 to 1+00	8	station	50	stations	1.0	50
Junctions	4"-0" Crushed	3A	N/A	junction	22	junctions	1.0	22
Junction Surface Rock	1 1/2 '-0' Crushed	3A	N/A	junction	22	junctions	1.0	22
Landings	6"-0" Pit-run	1+00		landing	80	landings	1.0	80
Total Rock for Road Segment:				4A-4B				174
ROAD SEGMENT 5A-5B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	5A-5B		0+00 to 42+55		
				Volume (CY) per	Number of	Number of	Number of	
Base Rock	4"-0" Crushed	0+00 to 42+55	10	station	63	stations	42.55	2,684
Surface Rock	1 1/2"-0" Crushed	0+00 to 42+55	3	station	19	stations	42.55	810
Curve Widening	4"-0" Crushed	10 curves	10	station	63	stations	2.3	145
Curve Widening-Surfacing	1 1/2"-0" Crushed	same as above	3	station	19	stations	2.3	44
Road widening-2 ft-through cut	4"-0" Crushed	34+45 to 36+00	10	station	63	stations	0.3	19
Road widening-2 ft-through cut	1 1/2"-0" crushed	34+45 to 36+00	3	station	19	stations	0.3	6
Fill Widening (2ft/side on 3 and 1 ft/side on 2)	4"-0" Crushed	7+64to 8+50, 12+25 to 13+65, 15+12 to 16+37, 31+26 to 32+41, 36+15 to 36+50	10	station	63	stations	1.4	88
Fill Widening-Surfacing	1 1/2"-0" Crushed	same as above	3	station	19	stations	1.4	27

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT		5A-5B		Continued		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	5A-5B		0+00 to 42+55		Number of		
				Volume (CY) per		Volume (CY) per				
Turnouts (plus taper)	4"-0" Crushed	3+30 to 4+30, 5+25 to 7+25, 11+30 to 12+70, 20+55 to 21+30, 27+33 to 29+05, 37+00 to 38+60, 40+65 to 41+95	10	N/A	N/A	N/A	N/A		325	
Turnout Surface Rock	1 1/2 '-0' Crushed	same as above	3	N/A	N/A	N/A	N/A		100	
Junction Surface Rock	1 1/2 '-0' Crushed	5C, 5E, 5G, 5I	N/A	junction	22	junctions	4		88	
Dissipator Rock	24"-6" riprap	26+75, 31+25, 36+25, 39+65, 42+00	N/A	culvert	11	culverts	5		55	
Fill Armor	24"-6" riprap	7+64 to 8+49, 12+25 to 12+53, 12+53 to 13+64, 15+12 to 16+36, 36+22 to 36+48	N/A	fill	5	fills	5.0		500	
Landings	6"-0" Pit-run			landing	80	landings	1		80	
Total Rock for Road Segment:				5A-5B						4,971
ROAD SEGMENT		5C-5D		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)		
Application	Rock Size and Type	Location	Depth of Rock (inches)	5C-5D		0+00 to 2+00				
				Volume (CY) per		Volume (CY) per				
Base Rock	4"-0" Crushed	0+00 to 2+00	8	station	50	stations	2	100		
Junctions	4"-0" Crushed	0+00	N/A	junction	33	junctions	1	33		
Total Rock for Road Segment:				5C-5D					133	
ROAD SEGMENT		5E-5F		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)		
Application	Rock Size and Type	Location	Depth of Rock (inches)	5E-5F		0+00 to 1+00				
				Volume (CY) per		Volume (CY) per				
Base Rock	4"-0" Crushed	0+00 to 1+00	8	station	50	stations	1	50		
Junctions	4"-0" Crushed	0+00	N/A	junction	33	junctions	1	33		
Landings	6"-0" Pit-run	1+00		landing	80	landings	1	80		
Total Rock for Road Segment:				5E-5F					163	
ROAD SEGMENT		5G-5H		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)		
Application	Rock Size and Type	Location	Depth of Rock (inches)	5G-5H		0+00 to 2+85				
				Volume (CY) per		Volume (CY) per				
Base Rock	4"-0" Crushed	0+00 to 2+85	8	station	50	stations	2.85	143		
Junctions	4"-0" Crushed	0+00	N/A	junction	33	junctions	1	33		
Landings	6"-0" Pit-run	2+85		landing	80	landings	1	80		
Total Rock for Road Segment:				5G-5H					256	
ROAD SEGMENT		5I-5J		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)		
Application	Rock Size and Type	Location	Depth of Rock (inches)	5I-5J		0+00 to 1+43				
				Volume (CY) per		Volume (CY) per				
Base Rock	4"-0" Crushed	0+00 to 1+43	8	station	50	stations	1.43	72		
Junctions	4"-0" Crushed	0+00	N/A	junction	33	junctions	1	33		
Total Rock for Road Segment:				5I-5J					105	

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT		5K-5L		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	5K-5L		0+00 to 2+10		
				Volume (CY) per	Number of			
Base Rock	4"-0" Crushed	0+00 to 2+10	8	station	50	stations	2.1	105
Junctions	4"-0" Crushed	0+00	N/A	junction	33	junctions	1	33
Culvert Bedding	1 1/2"-0" crushed	0+00	N/A	culvert	22	culverts	1.0	22
Total Rock for Road Segment:				5K-5L				138
ROAD SEGMENT		11 to 12		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	11 to 12		0+00 to 7+65		
				Volume (CY) per	Number of			
Subgrade Reinforcement	12"-6" riprap	0+00 - 0+46	12"	station	119	stations	0.46	55
Subgrade Reinforcement	12"-6" riprap	0+46 - 2+40	12"	station	86	stations	1.94	167
Subgrade Reinforcement	12"-6" riprap	Flares	12"	flare	9	flares	2	18
Base Rock	4"-0" crushed	0+00 - 0+46	8"	station	80	stations	0.46	37
Base Rock	4"-0" crushed	0+46 - 2+40	8"	station	50	stations	1.94	97
Base Rock	4"-0" crushed	Flares	8"	flare	6	flares	1	6
Surface Rock	3/4"-0" crushed	0+00 - 0+46	4"	station	40	stations	0.46	18
Surface Rock	3/4"-0" crushed	0+46 - 7+65	4"	station	25	stations	7.19	180
Surface Rock	3/4"-0" crushed	Flares	4"	flare	3	flares	1	3
Curve widening	3/4"-0" crushed		4"	curve	12	curves	2	24
Turnouts	3/4"-0" crushed		4"	turnout	11	turnouts	3	33
Bedding/backfill rock	1 1/2"-0" crushed	0+08,0+70,2+40	n/a	culvert	n/a	culverts	4	170
Dissipator Rock	24"-6" riprap	0+70	n/a	culvert	11	culverts	1	11
Total Rock for Road Segment:				11 to 12				819
ROAD SEGMENT		13 to 14		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	13 to 14		0+00 to 44+20		
				Volume (CY) per	Number of			
Base Rock	4"-0" crushed	1+15-2+00, 2+89-5+10	8"	station	50	stations	2.96	148
Base Rock	4"-0" crushed	32+11-35+34, 40+09-41+46	8"	station	50	stations	4.60	230
Base Rock	4"-0" crushed	6+62,21+00, 21+86, 22+86	8"	station	n/a	stations	n/a	88
Base Rock	4"-0" crushed	38+57 - 39+37	8"	station	n/a	stations	n/a	11
Curve Widening	4"-0" crushed	1+68-3+85, 4+51-5+27	8"	curve	n/a	curves	2	57
Turnouts	4"-0" crushed	21+00,25+45, 28+45, 38+57	8"	turnout	22	turnouts	4	88
Junctions	4"-0" crushed	40+77	8"	junction	n/a	junctions	1	33
Surface Course	1 1/2"-0" crushed	0+00 - 5+27, 19+00 - 44+20	4"	station	25	stations	30.47	762
Curve Widening	1 1/2"-0" crushed		4"	curve	n/a	curves	12	110
Turnouts	1 1/2"-0" crushed		4"	turnout	11	turnouts	5	55

EXHIBIT D  
 ROAD SURFACING

ROAD SEGMENT	13 to 14		Continued	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	13 to 14		0+00 to 44+20		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Bedding / Backfill	1 1/2"-0" crushed	6+62	n/a	culvert	33	culverts	1	33
Junctions	1 1/2"-0" crushed	33+19, 40+77	4"	junction	n/a	junctions	2	66
Leveling Rock	1 1/2"-0" crushed		n/a		n/a		n/a	100
Dissipator Rock	24"-6" riprap	6+62	n/a	culvert	11	culverts	1	11
Backfill culvert trench	reclaimed	32+97	n/a		n/a		n/a	22
Light Vehicle radius	reclaimed	34+47	n/a		n/a		n/a	22
Total Rock for Road Segment:				13 to 14				1,836
ROAD SEGMENT	15 to 16		Continued	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	15 to 16		0+00 to 56+00		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Turnouts	4"-0" crushed	32+99	8"	turnout	11	turnouts	1	11
Bedding backfill	1 1/2"-0" crushed	7+93, 8+96	n/a	culvert	33	culverts	2	66
Leveling Rock	4"-0" crushed		n/a		n/a		n/a	132
Dissipator Rock	24"-6" riprap	7+93, 8+96	n/a	culvert	11	culverts	2	22
Total Rock for Road Segment:				15 to 16				231
ROAD SEGMENT	17 to 18		Continued	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	17 to 18		0+00 to 25+36		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Leveling Rock	1 1/2"-0" crushed		N/A					165
Total Rock for Road Segment:				17 to 18				165
ROAD SEGMENT	19 to 110		Continued	POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	19 to 110		0+00 to 21+15		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Turnouts	4"-0" crushed		8"	turnout	n/a	turnouts	2	33
Leveling Rock	1 1/2"-0" crushed		n/a	station	n/a	stations	n/a	33
Culvert Bedding/Backfill	1 1/2"-0" crushed	4+61	n/a	culvert	33	culverts	1	33
Turnouts	1 1/2"-0" crushed		n/a	turnout	8	turnouts	2	16
Total Rock for Road Segment:				19 to 110				115

ROCK TOTALS (CY)	Reclaimed	24"-6" rr	6"-0" pr	4"-0"	1 1/2"-0"	3/4"-0"	Open G.
11,366	44	839	600	6,666	2,871	258	88

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 15th of each month.



EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

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

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

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

Subgrade shall be crowned 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 surfacing.	1

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

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

ROAD SEGMENT	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 AND PROCESSING REQUIREMENTS

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
Segments requiring pit-run rock	5

COMPACTION EQUIPMENT OPTIONS

- (1) Vibratory Rollers. The drum shall have a smooth surface, a diameter not less than 48 inches, a width not less than 58 inches, and a turning radius of 15 feet or less. (Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 VPM, corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 VPM. It shall be activated by a power unit of not less than 25 horsepower.) The vibratory roller shall be self-propelled and operated at speeds ranging from 0.9 miles to 1.8 miles per hour, as directed by STATE.
- (2) Rubber-Tired Skidders. A rubber-tired skidder weighing a minimum of 20,000 pounds shall be operated over the fill layers so that the entire layered surface comes in contact with the tires. Skidders with oversized tires (high flotation) are not acceptable for compaction.
- (3) Tampingfoot Compactors. Tampingfoot compactors shall exert a minimum pressure of 250 pounds per square inch on the ground area in contact with the tamping feet. The compactor shall cover a minimum width of 60 inches per pass and weigh a minimum of 16,000 pounds.
- (4) Vibratory Hand-Operated or Backhoe-Mounted Tamper. Vibratory hand-held or hydraulic tampers shall be used for compaction of backfill materials around culverts (and/or bridge approach embankment materials around abutments). The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.
- (5) Dozer. A dozer weighing 40,000 pounds or larger shall be operated over the entire layered road surface to break and compact the rock. All rock shall come in contact with the dozer.

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, corrugated aluminized (Type 2) steel, or, corrugated galvanized steel.

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

Aluminized (Type 2) steel culverts shall meet the requirements of AASHTO M-36-03<sup>1</sup>.

Galvanized steel culverts shall meet the requirements of AASHTO M-36-03<sup>1</sup>.

Polyethylene culverts shall not be used where required culvert diameter is over 24 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 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 or rock crusher reject 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.

EXHIBIT E

CULVERT SPECIFICATIONS

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be as follows: 12" for culverts 18" to 36". Minimum vertical cover for other designs shall be as specified by STATE.

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.

Following are the minimum standard gauges for steel culvert and coupling bands. Some culverts may require different gauges and may be found in the culvert listing.

<u>Dia.</u>	<u>Steel Culvert</u>	<u>Thickness</u>		<u>Band Gauges</u>	<u>Band Widths (")</u>	
	<u>Gauge</u>	<u>Uncoated</u>	<u>Coated</u>		<u>Annular</u>	<u>Helical</u>
12-15	16	(0.0598")	(0.064")	16	7	12
18-24	16	(0.0598")	(0.064")	16	12	12

EXHIBIT E  
 CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	MATERIAL TYPE	ROAD SEGMENT POINT TO POINT	STATION
1	18"	40'	CPP	A to B	0+40
2	18"	30'	CPP	1A to 1B	0+50
3	18"	35'	CPP	1G to 1H	0+00
4	18"	30'	CPP	1G to 1H	2+90
5	18"	30'	CPP	2A to 2B	2+75
6	18"	30'	CPP	2A to 2B	6+00
7	18"	35'	CPP	2C to 2D	0+00
8	18"	35'	CPP	2C to 2D	1+35
9	18"	35'	CPP	2E to 2F	0+00
10	18"	30'	CPP	5A to 5B	6+60
11	18"	30'	CPP	5A to 5B	10+00
12	18"	30'	CPP	5A to 5B	20+00
13	18"	30'	CPP	5A to 5B	26+75
14	18"	35'	CPP	5A to 5B	31+35
15	18"	40'	CPP	5A to 5B	33+70
16	18"	40'	CPP	5A to 5B	36+25
17	18"	40'	CPP	5A to 5B	39+65
18	18"	30'	CPP	5A to 5B	42+00
19	18"	35'	CPP	5K to 5L	0+50
20	18"	40"	CPP	I1 to I2	0+08
21	18"	40'	CPP	I1 to I2	0+70
22	18"	40"	CPP	I1 to I2	2+40
23	18"	40"	CPP	I1 to I2	5+00
24	18"	40'	CPP	I3 to I4	6+62
25	18"	40'	CPP	I5 to I6	7+93
26	18"	40'	CPP	I5 to I6	9+85
27	18"	40"	CPP	I9 to I10	4+68

ACSP = Aluminized, 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. 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.
5. 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.
6. Quarry face shall be developed in a uniform manner. All quarry backslopes shall be left in a stable condition.
7. Oversized material that is produced or encountered during development shall be sorted and placed in stable location at the Quarry as directed by STATE.
8. 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.
9. 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.
10. Apply seed and mulch to the waste area, as specified in Exhibit K.

RIPRAP ROCK SPECIFICATIONS

For 12"-6" Riprap A minimum of 50 percent of the material shall measure a minimum of 12 inches, measured in one dimension. Material shall be clean, well graded, and free of 2"-0" fines.

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 G

TYPICAL EMBEDDED ENERGY DISSIPATOR

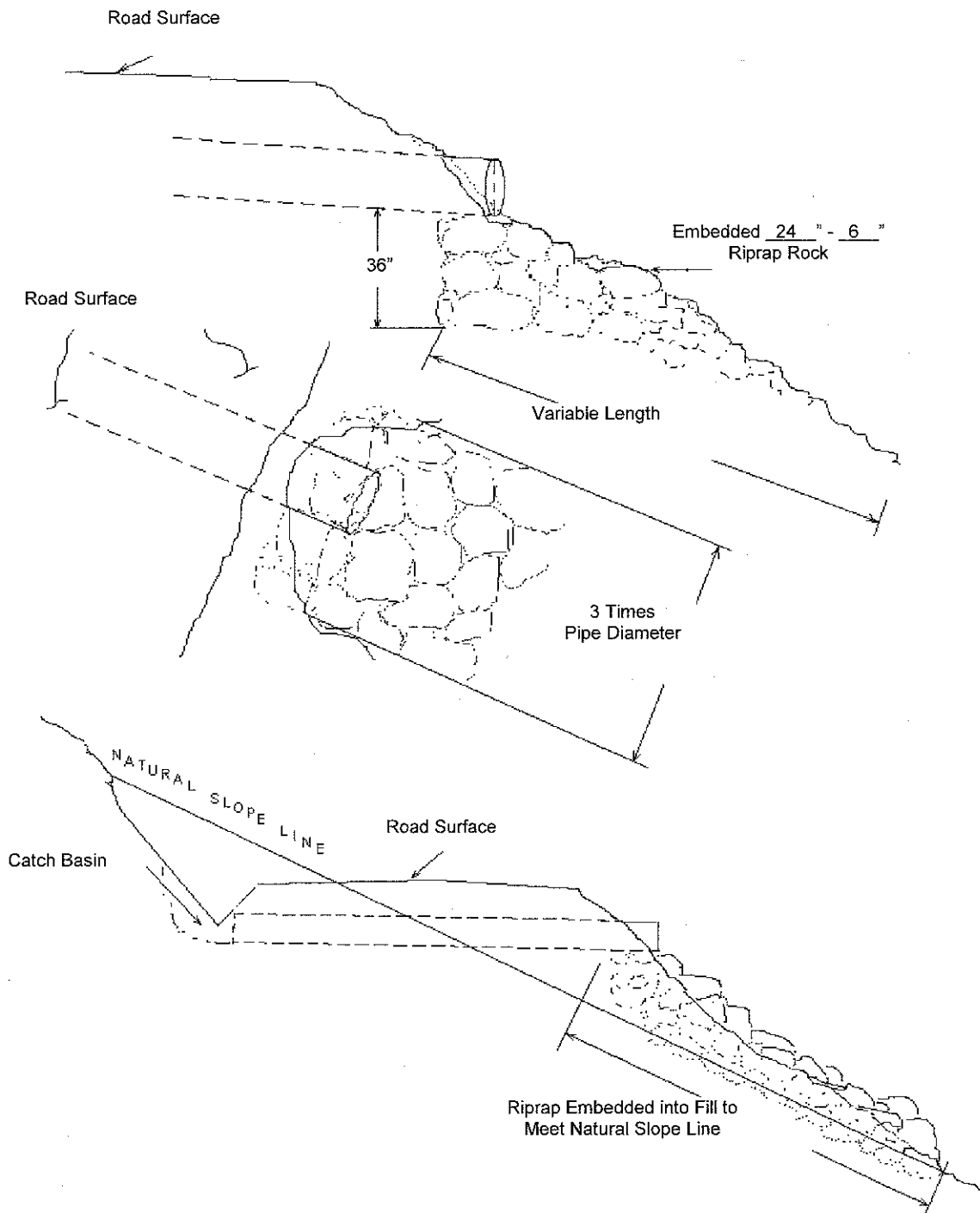
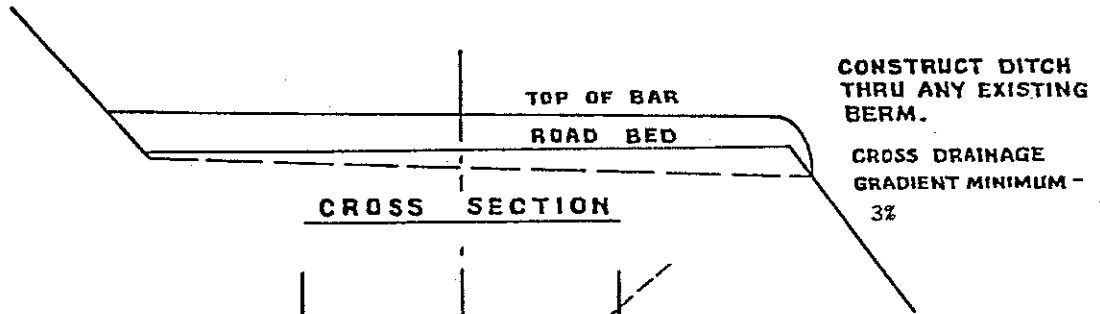
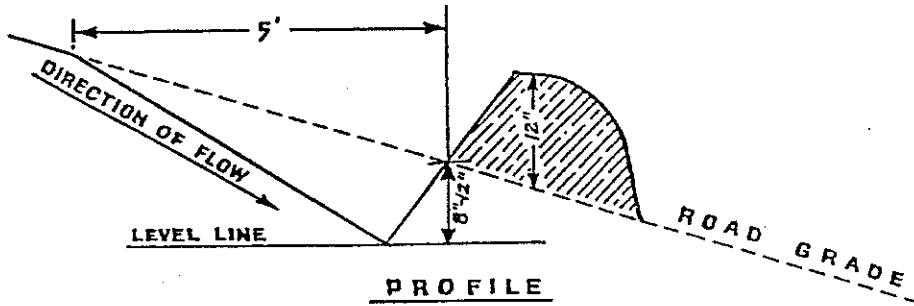
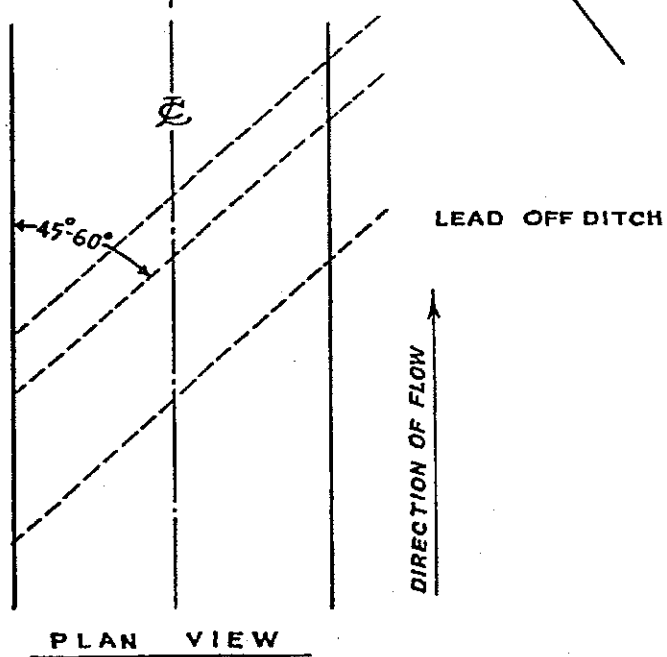


EXHIBIT H  
 WATERBAR SPECIFICATIONS



**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 the following Points: V1 to V2, V3 to V4, V5 to V6, and V7 to V8. Specific objectives for this project include:

- (a) Fill removal and stream channel development.
  - (b) Culvert removal.
  - (c) Restoration of natural contours by outsloping of the road prism (d) Sidecast pullback.
  - (e) Minimize disturbance of existing vegetation.
- (1) Tree Removal. Remove all trees within posted Right-of-Way Boundary or individually marked with an orange "C", as specified in Section 2210, Designated Timber, to access the project area and to facilitate vacating operations, as directed by STATE.
  - (2) Fill Removal and Stream Channel Development. Remove fills to the natural stream course level(s). Stream channel(s) shall be excavated/developed to specified widths. Developed stream banks shall be sloped at natural contours or no steeper than 1½:1, as directed by STATE.
  - (3) Fill Removal with Culvert Remaining and Stream Channel Development. Remove fills to within 3 feet of culvert top elevation. Developed stream banks down to that elevation shall be sloped at natural contours or no steeper than 1 ½: 1, as directed by STATE.
  - (4) Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off of STATE land.
  - (5) Outslope Road. Outslope road to restore natural contours or establish a minimum of 10 percent slope for drainage at designated locations. If the road grade exceeds 10 percent, outslope of the road shall be 2 percent greater than the road grade.
  - (6) 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 M.
  - (7) 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. All excavated material shall be at least 50 feet from a stream. Any excess material will be hauled to a designated waste area, or moved by machine, as directed by STATE.
    - (B) Woody Debris may be incorporated in pullback/fill material.
    - (C) Block Roads. Use excavated material from fill removals to block roads from vehicle access, as directed by STATE.
  - (8) 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 K. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

- (9) Construct Waterbars. Construct waterbars as directed by STATE according to the specifications in Exhibit H.
- (10) Equipment. A minimum 1½ cubic-yard, track mounted excavator shall be used for all excavation, culvert removal, streambed preparation, road blocking, and waterbarring, unless otherwise approved in writing by STATE.
- (11) Dry Conditions. All work shall be performed during dry conditions acceptable to STATE.
- (12) Live Stream Flow Containment: Stream flow shall be contained on all live streams by diverting the water around the work site by the use of a containment barrier, drain hoses, and/or pumps.
- (13) At Direction of STATE: All work shall be performed as directed by STATE.

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V1 to V2	0+00	Begin vacating. Block road as directed by STATE. Utilize 60 cubic yards of 36"-12" pit-run rock and dig trench to form road blockage as directed by STATE.
	1+35	Begin sidecast pullback.
	1+96	End sidecast pullback.
	2+86	Construct waterbar.
	4+00	Begin fill removal as directed by STATE. Remove fill material to within ±3 feet of top of the culvert. Trench width shall be 6 feet at the point fill excavation stops. Tamp fill material left with excavator bucket, as directed by STATE.
	4+64	End fill removal.
	5+30	Begin fill removal.
	5+74	End fill removal.
	6+94	Begin fill and culvert removal as directed by STATE. Stream channel width shall be 6 feet.
	7+55	End fill removal.
	9+74	Construct waterbar.
	11+00	Construct waterbar.
	15+16	Begin fill and culvert removal as directed by STATE. Stream channel width shall be 6 feet.
	15+74	End fill removal.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V1 to V2 Cont.	16+91	Construct waterbar.
	19+19	Begin fill removal as directed by STATE. Remove fill material to within $\pm 3$ feet of top of the culvert. Trench width shall be 8 feet at the point fill excavation stops. Tamp fill material left with excavator bucket, as directed by STATE.
	19+75	End fill removal.
	21+06	End vacating. Block old road as directed by STATE.
V3 to V4	0+00	Begin vacating. Block road as directed by STATE.
	4+46	Begin fill and culvert removal.
	7+40	Begin fill and culvert removal.
	9+26	Begin fill and culvert removal as directed by STATE. Stream channel width shall be 4 feet.
	13+23	End rocked road vacating – begin old spur vacating.
	15+05	Begin side failure rehabilitation.
	16+40	End side failure rehabilitation.
	19+61	Begin side stream fill removal. Access is over the ridge not along the main stream.
	20+01	End side stream fill removal – Point V4.
V5 to V6	0+00	Begin vacating. Block road as directed by STATE.
	2+30	Construct access route to spur to vacate.
	3+32	Begin fill removal.
	3+47	End fill removal.
	6+27	Begin fill removal.
	6+63	End fill removal – Point V6.

EXHIBIT I

ROAD VACATING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V7 to V8	0+00	Station 1+95 on V5 to V6.
	0+96	End fill removal – Point V7.
	7+74	Remove fill.
	3+77	Remove fill.
	4+11	Begin sidecast pullback.
	4+56	End sidecast pullback.
	6+50	Remove fill.
	9+34	Remove fill.
	12+62	Water bar and drain wet area.
	13+07	Water bar and drain for wet area.
	16+71	Remove fill.
	17+69	Remove fill.
	18+06	End vacate.
V9	0+00	Dewater and remove fill. Access each side of the fill from road vacating segments V5-V6 and V7 to V8, push or swing waste material from excavation area to stable location at least 20 feet from excavated fill edge.
V10	0+00	Dewater and remove fill. Access each side of the fill from road vacating segments V5-V6 and V7 to V8, push or swing waste material from excavation area to stable location at least 20 feet from excavated fill edge.
V11	0+00	Dewater and remove fill. Access each side of the fill from road vacating segments V3-V4 and V7 to V8, push or swing waste material from excavation area to stable location at least 20 feet from excavated fill edge.

EXHIBIT J

ROAD BRUSHING SPECIFICATIONS

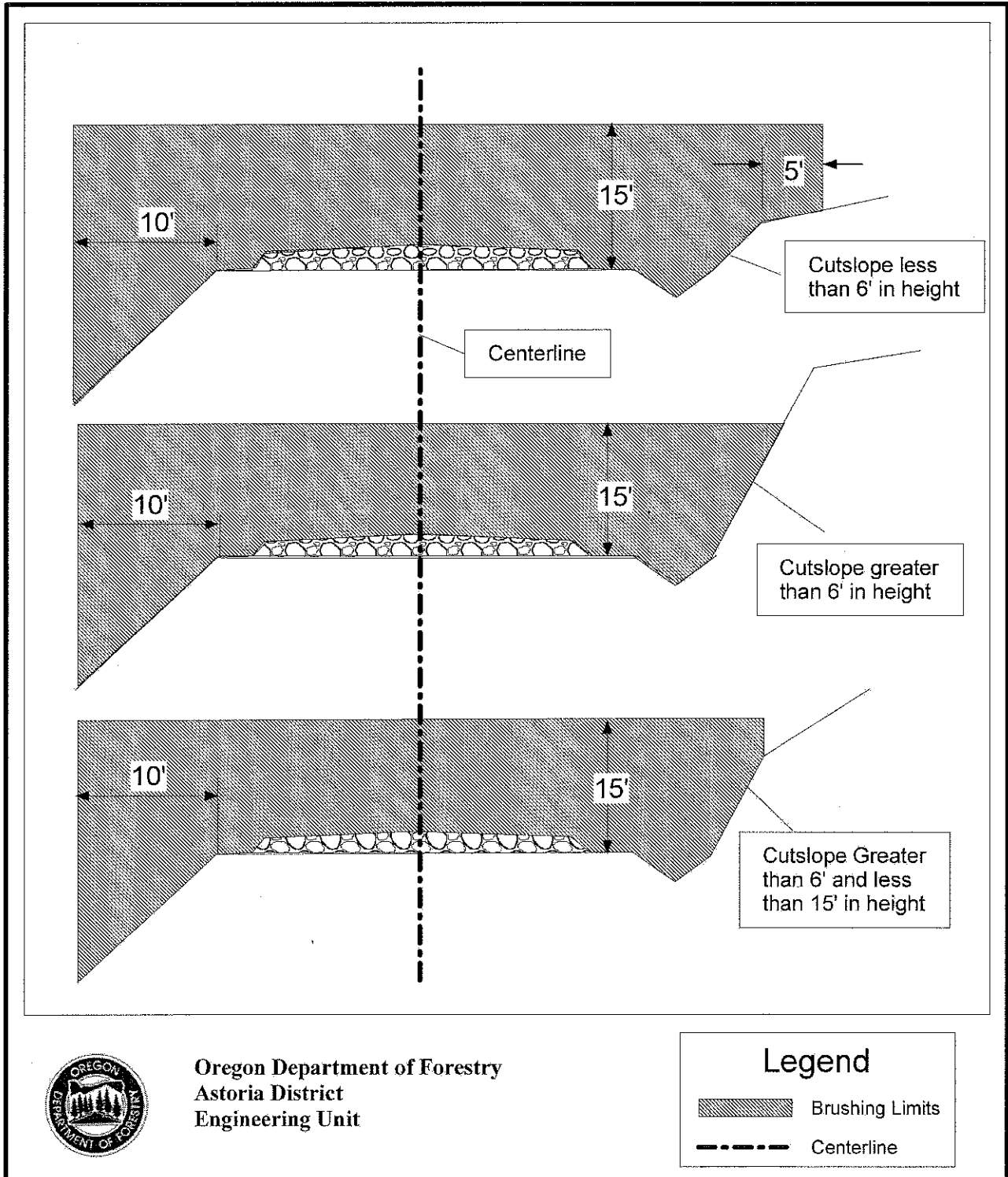


EXHIBIT J

ROAD BRUSHING SPECIFICATIONS

REQUIREMENTS

The minimum height of brushing shall be for all situations 15 feet from the road surface, and the minimum width of brushing on the down slope side of the road shall be 10 feet horizontal distance. The minimum width of brushing on the cutslope side of the road shall be dictated by the height of the cutslope as indicated in the three drawings above. In situations where site distance is an issue brushing heights on the cutslope may vary from the above drawings, as directed by STATE.

Brush and trees shall be cut to a maximum height of 6 inches above the ground surface or obstructions such as rocks or existing stumps.

Debris resulting from the brushing operation shall be removed from the roadway, cutslope, ditches, water courses, culvert inlets/outlets, and sediment catch basins. Debris shall be mulched or scattered downslope from the road or placed in other stable locations. Large debris, 6 inches or larger in diameter, shall be mulched or cut into lengths 6 feet or less to facilitate rapid decay, unless otherwise approved by STATE.

Trees larger than 6 inches in diameter at stump height, located within brushing limits but outside of the ditchline or shoulder, shall not be cut down, but shall be limbed for road visibility.

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

Merchantable blown down trees encountered shall be bucked in lengths as directed by STATE, and placed in locations acceptable to STATE, or pushed out of the road prism.

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

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

SPECIAL INSTRUCTIONS.

When brushing segment B2 to B3, brush the cutslope side of the road only. No brushing will be done on the fill slope side of the road due to the close proximity of a Type F stream.

Brushing Segments B1 to B2, B2 to B3, B3 to B4, B12 to B13, and B13 to B14 are on private land. When brushing the cutslope side of these segments only brush four feet beyond the ditchline or established clearing line.

EXHIBIT K

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, all slopes over 6 feet in height in Project Nos. 1 and 2, and bare soils resulting 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 AND FERTILIZER

Dry Method. Mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment shall be used to apply the seed and fertilizer in the amounts and mixtures specified. Hand-operated seeding devices may be used when seed and fertilizer are applied in dry form.

APPLICATION RATES FOR SEED AND FERTILIZER

The seed mixture listed below shall be applied at 100 lbs. per acre. The seed mixture shall be comprised of the following:

SPECIES	MIXTURE	PURE LIVE SEED	GERMINATION
Annual Rye	26%	95%	>90%
Orchard Grass	25%	95%	>90%
New Zealand White Clover	17%	95%	>90%
Perennial Rye	15%	95%	>90%
Birdsfoot Trifol	07%	95%	>90%
Red Clover	06%	95%	>90%
Alsike Clover	04%	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:

Road Segment	Location	Road Segment	Location
V1 to V2	0+00 to 21+06	Waste Area I3 to I4	25+45
V3 to V4	0+00 to 20+01	Waste Area 5A to 5B	39+80
V5 to V6	0+00 to 6+63	Waste Area 5K to 5L	1+40
V7 to V8	0+00 to 18+06		

EXHIBIT L

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 – 16 feet   |          |            |

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

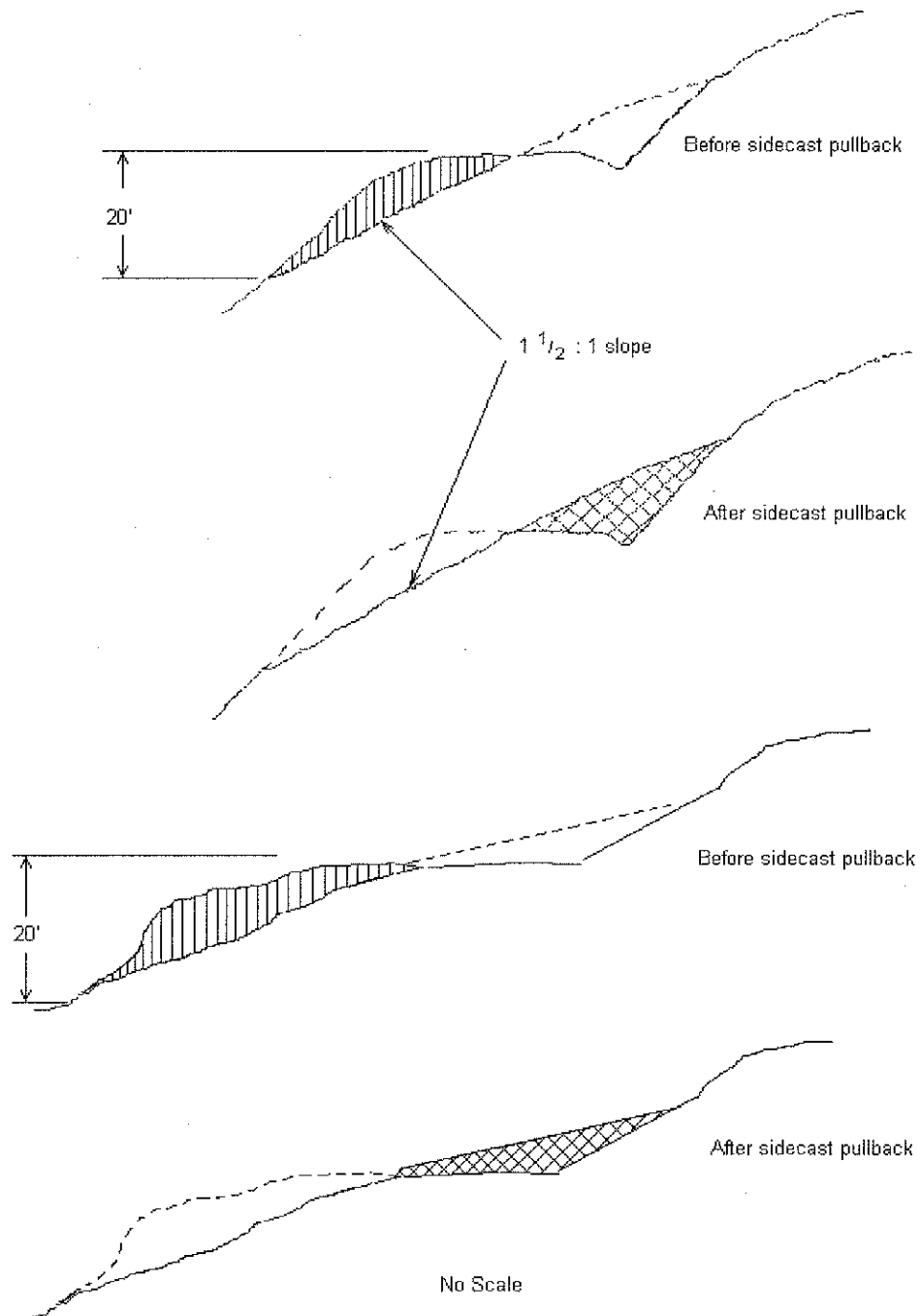
- Subgrade surface shall be leveled and smoothed to remove humps and depressions which exceed 6 inches in height and depth. Small pieces of woody debris shall be removed. Light vegetation (grass, weeds, leaves, and fine woody debris) may be left in place.
- Fabric shall be installed directly on the prepared surface. Longitudinal and traverse joints shall be overlapped at least 3 feet.
- 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.
- 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.
- 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.
- 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.
- Fabric locations:

Road Segment	Location	Road Segment	Location
5A to 5B	7+65 to 8+50	5A to 5B	31+25 to 32+40
5A to 5B	12+25 to 13+65	5A to 5B	36+20 to 36+50
5A to 5B	15+10 to 16+35	I1 to I2	0+00 to 3+30



EXHIBIT M

TYPICAL CROSS SECTION VIEW OF ROAD VACATING SIDECAST PULLBACK



## **PART IV: OTHER INFORMATION**

State Timber Sale Contract  
No. 341-11-10  
Stone Soup

### **FOREST PRACTICES ACT "WRITTEN Plan" Stone Soup Timber Sale Operating within 100 feet of Type F and D Streams**

Portions of Sections 15, 22, and 23 of T4N, R9W, W.M., Clatsop County, Oregon.

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

#### **Protected Resources:**

1. Two tributaries to Soapstone Creek
2. Tributary of North Fork Nehalem River
3. High Landslide Hazard Location

#### **Specific Site Characteristics:**

1. Tributary of Soapstone Creek (Small, Type F) – This stream flows through the middle of Area 1 for approximately 1,600 feet.
2. Tributary of Soapstone Creek (Small, Type F and D) – This stream flows through the southeastern side of the harvest unit of Area 5 for approximately 1,100 feet.
3. Tributary of North Fork Nehalem River (Small, Type F) – This stream flows along the southeastern boundary of Area 2 for approximately 2,500 feet.
4. High Landslide Hazard Locations (Public Safety).
  - a. Adjacent to No. 2 above.
  - b. Within the posted buffer at the south end of Area 2

#### **Tree and Vegetation Retention:**

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

All posted Type F and D 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.

In addition, no removal or harvest of trees will occur in the HLHL associated buffers in Areas 2 and 5.

#### **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.
- No trees will be felled within the HLHL areas within Areas 2 and 5.
- 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.

State Timber Sale Contract  
No. 341-11-10  
Stone Soup

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

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

Attachments: Exhibit A, Geotechnical Report

Original: Salem  
CC: Operator, Purchaser, District file, Sunset Unit

State Timber Sale Contract  
No. 341-11-10  
Stone Soup

**FOREST PRACTICES ACT "WRITTEN Plan"**  
**Stone Soup Timber Sale Operating within 100 feet of Type F**

Portions of Sections 14 and 15, T4N, R9W, W.M., Clatsop County, Oregon.

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

**Protected Resources**

1. Tributaries to Soapstone Creek

**Specific Site Characteristics (Situation):**

Legacy road fills across a tributary of Soapstone Creek (Small, Type F). These fills are failing and have the potential to deliver large quantities of sediment to the type F stream.

**Solution:**

Remove legacy road fills to provide for free flowing stream channels and reduction of sediment delivery to waters of the STATE.

**Tree and Vegetation Retention:**

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

Removal of trees for equipment access will be kept to the minimum and removed trees will be scattered within the project area.

**Resource Protection Measures:**

- 1) Machine activity in stream channels will be minimized.
- 2) Each stream crossing will be dewatered to reduce sediment from entering the stream.
- 3) In stream work shall be conducted during periods of low water flows and between July 1 and September 15, annually.
- 4) Minimum 1½ cubic yard track mounted excavator type equipment shall be used for fill removal, embankment excavation, and stream channel development and shaping.
- 5) Excavated embankment materials will be hauled to approved waste areas, sloped for drainage and left in a stable condition.
- 6) Stream access will be blocked to vehicular traffic with stumps and logging debris.
- 7) Erosion control measures shall be applied to all exposed excavation areas, bare soils and waste materials.
- 8) All work shall be performed during dry conditions acceptable to STATE.
- 9) Oil spill response materials shall be on site before the work begins.

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

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

Attachments: Exhibits A, H, I, J, and K.  
Original: Salem  
CC: Operator, Purchaser, District file, Sunset Unit

State Timber Sale Contract  
No. 341-11-10  
Stone Soup

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: (\_\_\_\_) \_\_\_\_\_

**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