PART III: EXHIBITS

OREGON DEPARTMENT OF FORESTRY

TIMBER SALE OPERATIONS PLAN
(See Page 2 for instructions)

Date Received by STATE: _____

(1) Contract No.: 341-11-09

(2) Sale Name: Ice Box

(3) Contract Expiration Date: October 31, 2013

(4) Purchaser: _____

(5) State Brand Information (complete):

Project Completion Dates: Project Nos. 1, 2, and 4: October 31, 2012; Project No. 3: October 1, 2011.

(6) Purchaser Representatives:

		Cell/Other	
Projects: _____	Phone: _____	Phone: _____	Home: _____
Projects: _____	Phone: _____	Phone: _____	Home: _____
Projects: _____	Phone: _____	Phone: _____	Home: _____
Projects: _____	Phone: _____	Phone: _____	Home: _____
Logging: _____	Phone: _____	Phone: _____	Home: _____
Logging: _____	Phone: _____	Phone: _____	Home: _____
Logging: _____	Phone: _____	Phone: _____	Home: _____
Logging: _____	Phone: _____	Phone: _____	Home: _____

(7) State Representatives:

		Cell/Other	
Projects: _____	Phone: _____	Phone: _____	Home: _____
Logging: _____	Phone: _____	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.

(1)	Cable Landing, with numbers for sequence.
[A]	Tractor Landing with alphabetical sequence.
_ _ _ _ _	Approximate setting boundary.
- - - - - - - -	Spur truck roads.
~~	Tractor yarding roads.
X	Temporary stream crossings.

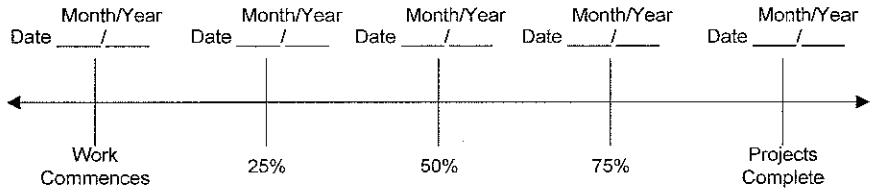
EXHIBIT B

OPERATIONS PLAN

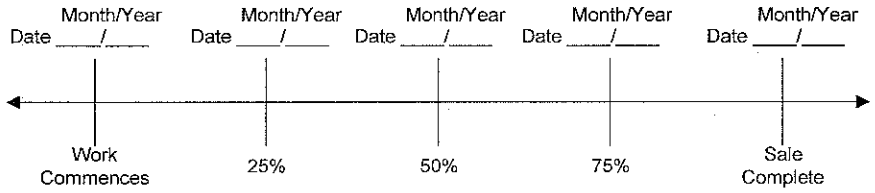
Completion Timeline

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

Projects



Harvest & Other Requirements



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

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

APPROVED: Date: _____

STATE OF OREGON - DEPARTMENT OF FORESTRY

_____

Title _____

SUBMITTED BY:
PURCHASER

_____

Title _____

Original: Salem
cc: District File
Purchaser

EXHIBIT C

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 Hwy 202, Astoria, OR 97103

(4) PURCHASER: _____
Mailing Address: _____
Phone Number: _____

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

* Apply minimum volume test to whole logs over 40' Westside; 20' Eastside.
** Sum (if indicated): see instructions and explain in Item (19).

(6) WESTSIDE SCALE: YES ☒ NO ☐
Use Region 6 actual taper rule. Logs over 40'.

(7) EASTSIDE SCALE: YES ☐ NO ☒
Use Region 6 actual taper rule. Logs over 40'.

(8) Weight Scale Sample ☐ ☒
(6) – (8), pink log load receipts

(9) Weight Sale ☐ ☒

(10) Per Load ☐ ☒
(9) and (10), yellow log load receipts

(11) APPROVED SCALING LOCATIONS	Species	Yard	Truck	Weight

Effective Date: _____

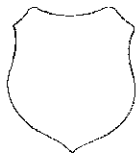
_____
State Forester's Representative

(13) SALE NAME Ice Box
COUNTY Clatsop

(14) STATE CONTRACT NUMBER 341-11-09

(15) STATE BRAND REGISTRATION NUMBER _____

(16) STATE BRAND INFORMATION:
(COMPLETE)



(17) PAINT REQUIRED: YES ☒
COLOR Orange

(18) SPECIAL REQUESTS
PEELABLE CULL (all species) **NO DEDUCTIONS ALLOWED** **FOR MECHANICAL DAMAGE** PENCIL BUCK ADD-BACK VOLUME - Deductions due to delay
OTHER:

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

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

(20) SIGNATURES:

_____
Purchaser or Authorized Representative Date

_____
State Forester Representative Date

(12) NOTICE OF CANCELLATION OF BRAND:

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

Distribution: ORIGINAL: Salem / COPIES: TPSO, Approved Scaling Location, Purchaser, District, Mgmt. Unit

EXHIBIT C

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

(1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires Item (12). Complete date.

(2) Designate Third Party Scaling Organization (TPSO).

(3) State District office, address and phone.

(4) Enter Purchaser's business name, address, and phone number as it appears on the Contract.

(5) Minimum Scaling Specifications. Review Section 2040 or 2045, "Log Removal," of the Contract. Species, or combined species can be separate entries. Information serves as a basis for scaling (see also Items (16) thru (18)), and is required to show existence on the sale. **SUM** (lump sum material). **SUB** (submerchantable material). SUB, as used by the State, references that material containing at least 10 bf (net) but less than the lower merchantable net volume limit or grade requirements for other merchantable (Per MBF) entries. Per MBF, SUM, and SUB must be indicated by checking the appropriate column. Species with the same specifications and value are combined into one entry. Per MBF and SUB require scaling therefore complete specifications. SUM need not be scaled, hence no specifications. Loads containing only SUM are to be ticketed if so instructed in Item (19). Mixed loads of SUM, Per MBF and/or subspecies will always be scaled.

(6) Westside – Region 6 actual taper segment scale. Check Yes or No. Special Service Rules on file with TPSO. See: Segment Scaling and Grading of Long Logs -- All Species -- State Forestry Department Scaling Practices (Westside).

(7) Eastside – Region 6 actual taper/taper table segment scale. Special Service Rules on file with TPSO. See: Segment Scaling and Grading of Long Logs -- All Species -- State Forestry Department Scaling Practices (Northwest Log Rules Eastside). Items with * follow U.S. Forest Service Eastside rules.

(8) Weight Scale Sample – Check box if sale is to be a Weight Scale Sample. All specifics for handling, scaling and processing will be attached or explained in the Remarks section Item (19).

(9) Weight Sale – Check box if sale is to be sold as a weight sale. Processing procedures from approved locations to TPSO's will be explained in the Remarks section of Item (19).

(10) Per Load – Check box if volumes on sale are per load. Specific instructions for handling and processing will be fully explained in the Remarks section of Item (19).

(11) Show scaling locations only applicable to TPSO. Location name should appear as it does on the ODF Approved Scaling Location web site: http://www.odf.state.or.us/DIVISIONS/management/asset_management/ScalingLocation.asp Locations with scaling and processing directions specific to their location should be on a separate form. Species should be identified if not capable of receiving "all" species. Check appropriate box for either: yard, truck scale, or weight. Refer to the web site listed above for the locations approval status.

(12) When logging and hauling is complete, recall branding hammers, date and sign where indicated, check CANCELLATION box in Item (1), and send to TPSO.

(13) Enter sale name and county.

(14) Enter sale Contract number.

(15) Enter Oregon's State Brand Registry Number (required).

(16) Show brand assigned to timber sale. One brand only. If more than one brand is assigned to the sale: (1) make separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section Item (19).

(17) Check yes for Paint required and designate "Orange" for color. Non required removal volumes may sometimes require blue paint.

(18) Special Requests. These are requests that will be applied to ODF timber sales. If "Other" is indicated, it must contain a description and any necessary comments.

(19) Use this space to designate any weight conversion factors, per load volumes, weight scale sample instructions or any other explanations to clarify scaling or processing requirements. If additional scaling locations are approved, prepare another form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.

(20) Require purchaser to sign and date completed form.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
16 feet	12 feet	1A to 1B	0+00 to 19+90	DITCH
16 feet	12 feet	1C to 1D	0+00 to 13+40	DITCH
16 feet	12 feet	2A to 2B	0+00 to 8+00	DITCH
16 feet	12 feet	2C to 2D	0+00 to 2+00	DITCH
16 feet	12 feet	4A to 4B	0+00 to 6+45	DITCH
16 feet	12 feet	5A to 5B	0+00 to 3+50	DITCH
14 feet	N/A	5A to 5B	3+50 to 16+00	OUTSLOPE
14 feet	12 feet	6A to 6B	0+00 to 5+25	OUTSLOPE
16 feet	12 feet	6A to 6B	5+25 to 7+00	DITCH
14 feet	12 feet	6A to 6B	7+00 to 15+30	OUTSLOPE
16 feet	12 feet	6A to 6B	15+30 to 38+80	DITCH
14 feet	12 feet	6A to 6B	38+80 to 45+75	OUTSLOPE
16 feet	12 feet	6A to 6B	45+70 to 59+00	DITCH
16 feet	12 feet	6C to 6D	0+00 to 4+15	DITCH
16 feet	12 feet	I1 to I2	0+00 to 221+50	DITCH
16 feet	12 feet	I2 to I3	0+00 to 139+00	DITCH
16 feet	12 feet	I3 to I4	0+00 to 87+00	DITCH
16 feet	12 feet	I5 to I6	0+00 to 69+00	DITCH
16 feet	12 feet	I3 to I7	0+00 to 147+00	DITCH
16 feet	12 feet	I8 to I9	0+00 to 46+40	DITCH

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

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.

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.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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

GRUBBING CLASSIFICATION.

New construction - from the top of the cutslope to the toe of the fill.
Improvements and reconstructions - 4 feet back from the shoulder of the subgrade or ditch, whichever is widest, or as marked in the field.

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

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 4A-4B and 6A to 6B.

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.

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.

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:

DRAINAGE

Subgrade. Subgrade shall be crowned/outsloped at 4 to 6 percent as shown on the "Forest Road Specifications" table in this Exhibit.

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

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

TURNOUTS. Increase roadbed width an additional 8 feet for both subgrade and surfacing. Length shall be at least 50 feet, or as staked on the ground, plus 25-foot approaches at each end.

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SLOPES	Back Slopes	Fill Slopes
Solid Rock	Vertical to ¼ :1	
Fractured Rock	½ :1	
Soil - side slopes 50% and over	¾ :1	1½:1
Soil - side slopes less than 50%	1 :1	1½:1

Top of cutslope shall be rounded.

LANDINGS. Landings shall be constructed as posted in the field, no less than 50 feet wide and no more than 70 feet wide unless otherwise approved by STATE. Surface is to 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 I, and blocked from vehicular traffic prior to October 1, annually and as directed by STATE.

GENERAL ROAD CONSTRUCTION INSTRUCTIONS:

1. Timber Removal. Remove all trees within posted right-of-way boundary as specified in Section 2210, "Designated Timber".

2. Excavated Materials. Excavated materials shall be utilized for road construction. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Surplus excavated materials and waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit D. Excess excavated material not used for embankment on road segment 6A to 6B that meets pit-run standards in accordance with Exhibit F, shall be used for subgrade establishment and base rocking (pit-run) for road segments 4A to 4B, 5A to 5B, 6A to 6B, and 6C to 6D.

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. Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic-yard, track-mounted excavator.

5. Controlled Blasting. Controlled blasting techniques shall be utilized for any blasting operations, and shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain material within the road prism.

6. Subgrade Preparation and Application of Surfacing Rock.

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

   (b) Subgrade shall be crowned at 4 to 6 percent.

   (c) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with specifications in the "Compaction and Processing Requirements" in this Exhibit. Final road surface shall be crowned at 4 to 6 percent.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

Segment	Station	Work Description
6A to 6B	0+00	Begin outslope road.
	5+25	End outslope road.
	7+00	Begin outslope road.
	15+30	End outslope road.
	21+95	Begin full containment and end haul waste material to designated waste area or utilize suitable pit-run material for subgrade establishment or base rocking (pit-run) on road segments 4A to 4B, 5A to 5B, 6A to 6B, and 6C to 6D.
	25+80	End full containment.
	38+80	Begin outslope road.
	45+75	End outslope road.
	46+30	Junction legacy road. Construct waterbar 50' down old road at right to provide for proper drainage. Block junction of old road with three stumps.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

1. Timber Removal. Remove all trees within posted Right-of-Way Boundary as specified in Section 2210, Designated Timber.

2. Roadside Brushing. Conduct roadside brushing as specified in Exhibit H.

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 J.

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 J. Fill reconstruction backfill shall consist of select materials and may be obtained from borrow pits, as directed by STATE. Backfill materials shall be hauled in where necessary and thoroughly compacted in accordance with this Exhibit. Crushed rock shall be used for backfilling excavation trenches less than 3 feet deep. STATE may require the use of crushed rock for culvert bedding. Removed culverts shall be hauled to an approved refuse site off of STATE land.

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. Settling Ponds and Ditch Armoring. Construct settling ponds as directed by STATE. Excavated material shall be hauled to the designated waste areas as marked in the field and/or designated on Exhibit A. Waste materials shall be sloped and compacted for drainage. Settling pond dimensions shall be a finished top diameter of 8 feet, bottom diameter of 4 feet and 3 feet in depth, to the top of the pond armor rock or as directed by STATE. Backslopes shall be 3/4:1. Ditchline armor and settling pond armor shall be 8 inches deep.

8. 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.

9. Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

10. Subgrade Preparation and Application of Surfacing Rock.

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

(b) Cut out all potholes and/or washboard sections from the existing surfacing.

(c) Apply required patching and leveling rock, as directed by STATE.

(d) Process (grade and mix) the existing surface and added base rock. Provide for a crown of 4 to 6 percent, and compact in accordance to the "Compaction and Processing Requirements" in this Exhibit.

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Segment	Station	Work Description:
I1 to I2	0+00 to 221+50	Utilize a Grader and excavator, to conduct ditch improvement, clean culvert catch basins and spot grading (removal of potholes, washboards, and/or minor repairs).
	135+80	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.
	159+30	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.
	161+50	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.
I2 to I3	0+00	Begin grade, shape and ditch.
	5+00	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	22+20	Clean debris from culvert outlet and restore drainage.
	31+70	Repair culvert inlet and restore drainage.
	75+70	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	79+20	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	85+80	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.
	93+00	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	97+20	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 22 cubic yards of 24"-6" riprap to construct an energy dissipator.
	104+60	Improve turnout. Utilize 22 cubic yards of 4"-0" and 22 cubic yards of ¾"-0" crushed rock for surfacing.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Segment	Station	Work Description:
I2 to I3	104+60	Begin end haul waste materials from ditches to an approved waste area.
	118+20	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 22 cubic yards of 24"-6" riprap to construct an energy dissipator.
	120+80	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 22 cubic yards of 24"-6" riprap to construct an energy dissipator.
	136+80	Replace culvert. Realign new culvert perpendicular to the road by moving the culvert outlet. Utilize 44 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	138+90	Replace culvert. Utilize 44 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	139+00	End grade, shape, ditch, and end hauling of waste materials.
I3 to I4	0+00 to 87+00	Utilize a Grader and an excavator, to conduct ditch improvement, clean culvert catch basins and spot grading (removal of potholes, washboards, and/or minor repairs).
	0+50	Install culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	8+00	Utilize 22 cubic yards of 24"-6" riprap to construct an energy dissipator at existing culvert.
	15+10	Project No. 4. Waterhole Construction and Improvement. Expand waterhole to the east to match the existing waterhole length, width, and depth. End-haul excavated material and woody debris to an approved waste area. Construct turnaround to the east of the waterhole using 55 cubic yards of pit-run and place 22 cubic yards of riprap around waterhole to provide a safety barrier.
	17+20	Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator at existing culvert.
	18+80	Improve turnout. Utilize 22 cubic yards of 4"-0" and 22 cubic yards of ¾"-0" crushed rock for surfacing.
	19+60	Utilize 22 cubic yards of 24"-6" riprap to construct an energy dissipator at existing culvert.
	28+90	Replace culvert. Realign culvert to match existing drainage. Develop catch basin and ditchline to provide optimum drainage. Utilize 55 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 22 cubic yards of 6"-0" pit-run to armor catch basin and ditchline. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Segment	Station	Work Description:
I3 to I4	67+00	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	67+00	Begin ditchline armoring. Utilize 33 cubic yards of 6"-0" pit-run to armor ditchline.
	68+00	End ditchline armoring.
	73+20	Clean debris from culvert outlet and restore drainage.
I5 to I6	0+00	Begin clearing road prism of woody debris, and open ditches to provide drainage.
	69+00	End clearing road prism of woody debris, and open ditches to provide drainage.
I3 to I7	0+00	Begin grade, shape, and ditch. Utilize 55 cubic yards of ¾"-0" crushed rock for subgrade leveling.
	40+70	Construct turnout. Utilize 33 cubic yards of 4"-0" and 22 cubic yards of ¾"-0" crushed rock for surfacing.
	71+60	End utilization of 55 cubic yards of ¾"-0" crushed rock for subgrade leveling.
		Begin road junction improvement. Construct 50' radius curve with 5' of curve widening on the inside of the curve. Utilize 170 cubic yards of 4"-0" crushed rock for 8" base. Finished surface grades shall match the grades of existing roads. Excavation shall be utilized for subgrade construction, or hauled to an approved waste area.
		Begin application of subgrade leveling and traction rock.
	72+70	Install culvert. Utilize 44 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	73+40	End 50' radius curve.
	75+00	End road junction improvement.
	87+20	Replace culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	89+80	Begin cutslope rounding and tree and stump removal. Remove overhanging stumps that are reachable from the road as necessary to prevent bank raveling. Excavate, load, and haul waste materials and woody debris to a designated waste area.
	97+40	End cutslope rounding and tree and stump removal. Replace culvert with 18"x40' culvert. Remove Install outlet deeper than existing culvert to match height of energy dissipator. Remove small alders at outlet. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 22 cubic yards of 24"-6" riprap to construct an energy dissipator.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Segment	Station	Work Description:
I3 to I7	100+80	Install culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.
	106+60	Replace culvert. Utilize 44 cubic yards of ¾"-0" crushed rock for bedding and backfill. Utilize 11 cubic yards of 24"-6" riprap to construct an energy dissipator.
	129+60	Install culvert. Utilize 22 cubic yards of ¾"-0" crushed rock for bedding and backfill.
	130+00	End application of subgrade leveling and surface rock.
	147+00	End grade, shape, and ditch.
I8 to I9	0+00	Begin grade, shape, and ditch. Utilize 99 cubic yards of ¾"-0" crushed rock for subgrade leveling.
	46+40	End grade, shape, and ditch.

EXHIBIT D

FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.	CONTAINMENT - SIDECAST	WASTE AREA LOCATION	WASTE AREA TREATMENT
6A to 6B	21+95 to 25+80	1	1 & 3	1 & 4
I2 to I3	104+60 to 139+00	2	1 & 2	1
I3 to I7	71+60 to 75+00	2	1 & 2	1
I3 to I7	89+80 to 97+40	2	1 & 2	1

Full Bench and End-Haul Areas General Requirements

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

Clearing and grubbing debris shall be end-hauled.

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

Containment/Sidecast

(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.

(3) Utilize excavated material for subgrade establishment or for base rocking if material meets pit-run requirements specified in Exhibit F.

Waste Area Treatment

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

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

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

(4) If excavated material is used for subgrade establishment or base rocking, the PURCHASER shall follow requirements in specified in Exhibit D.

EXHIBIT D

ROAD SURFACE

ROAD SEGMENT	1A to 1B			POINT TO POINT		Sta. to Sta.		
			Depth of	1A to 1B		0+00 - 19+90		TOTAL
Application	Rock Size and Type	Location	Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00-19+90	8	station	50	stations	19.90	995
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Junctions	3/4"-0"	0+00	2	junction	11	junctions	1	11
Turnouts	Pit-run	5+25, 9+00, 14+40	8	TO	22	TO's	3	66
Turnarounds	Pit-run	18+05	8	TA	13	TA's	1	13
Landings	Pit-run	19+90	N/A	Landing	60	Landings	1	60
Total Rock for Road Segment:			1A to 1B					1,178

ROAD SEGMENT	1C to 1D			POINT TO POINT		Sta. to Sta.		
			Depth of	1C to 1D		0+00 - 13+40		TOTAL
Application	Rock Size and Type	Location	Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00 - 13+40	8	station	50	stations	13.40	670
Traction Rock	3/4"-0"	0+00-4+15	2	station	13	stations	4.15	54
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Junctions	3/4"-0"	0+00	2	junction	11	junctions	1.00	11
Turnouts	Pit-run	4+60, 10+25,	8	TO	22	TO's	2	44
Turnarounds	Pit-run	12+60	8	TA	13	TA's	1	13
Landings	Pit-run	13+40	N/A	Landing	60	Landings	1	60
Total Rock for Road Segment:			1C to 1D					885

ROAD SEGMENT	2A to 2B			POINT TO POINT		Sta. to Sta.		
			Depth of	2A to 2B		0+00 - 8+00		TOTAL
Application	Rock Size and Type	Location	Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00-8+00	8	station	50	stations	8.00	400
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Turnouts	Pit-run	0+00, 4+50	8	TO	22	TO's	2	44
Turnarounds	Pit-run	7+20	8	TA	13	TA's	1	13
Landings	Pit-run	8+00	N/A	Landing	60	Landings	1	60
Total Rock for Road Segment:			2A to 2B					550

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT	2C to 2D			POINT TO POINT		Sta. to Sta.		
			Depth of	2C to 2D		0+00 - 2+00		TOTAL
Application	Rock Size and Type	Location	Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00-2+00	n/a	station/a				50
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Landings	Pit-run	8+00	N/A	Landing	60	Landings	1	60
Total Rock for Road Segment:			2C to 2D					143

ROAD SEGMENT	4A to 4B			POINT TO POINT		Sta. to Sta.		
			Depth of	4A to 4B		0+00 - 6+45		TOTAL
Application	Rock Size and Type	Location	Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00-6+45	8	station	50	stations	6.45	323
Traction Rock	3/4"-0"	0+00-4+70	2	station	13	stations	4.70	61
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Turnouts	Pit-run	5+20	8	TO	22	TO's	1	22
Turnarounds	Pit-run	5+20	8	TA	13	TA's	1	13
Landings	Pit-run	5+20	N/A	Landing	60	Landings	1	60
Total Rock for Road Segment:			4A to 4B					512

ROAD SEGMENT	5A to 5B			POINT TO POINT		Sta. to Sta.		
			Depth of	5A to 5B		0+00 - 16+00		TOTAL
Application	Rock Size and Type	Location	Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00- 3+50	8	station	50	stations	3.5	175
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Total Rock for Road Segment:			5A to 5B					208

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT	6A to 6B			POINT TO POINT		Sta. to Sta.		
				6A to 6B		0+00 - 59+00		TOTAL
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00 - 59+00	8	station	50	stations	59.00	2,950
Traction Rock	3/4"-0"	16+20-17+40, 21+40-24+00, 29+00-33+00, 53+00-58+50	2	station	13	stations	13.30	173
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Junctions	3/4"-0"	0+00	2	junction	11	junctions	1.00	11
Turnouts	Pit-run	6+40, 10+80, 18+70, 27+40, 31+50, 38+80, 43+70, 48+50, 56+75	8	TO	22	TO's	9	198
Turnarounds	Pit-run	57+90	8	TA	13	TA's	1	13
Landings	Pit-run	10+80, 18+70, 59+00	N/A	Landing	60	Landings	3	180
Total Rock for Road Segment:			6A to 6B					3,558

ROAD SEGMENT	6C to 6D			POINT TO POINT		Sta. to Sta.		
				6C to 6D		0+00 - 4+15		TOTAL
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Base Rock	Pit-run	0+00-4+15	8	station	50	stations	4.15	208
Traction Rock	3/4"-0"	1+00-3+00	2	station	13	stations	2.00	26
Junctions	Pit-run	0+00	8	junction	33	junctions	1	33
Landings	Pit-run	5+20	N/A	Landing	60	Landings	1	80
Total Rock for Road Segment:			6C to 6D					347

ROAD SEGMENT	6E			POINT TO POINT		Sta. to Sta.		
				6E		0+00		TOTAL
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)
Landings	Pit-run	0+00	N/A	Landing	100	Landings	1	100
Total Rock for Road Segment:			6E					100

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT	Project No. 4			POINT TO POINT	Project No. 4		Sta. to Sta.	N/A		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per			Number of			
Junctions	3/4"-0"	0+00	2	junction	11		junctions	1		11
Turnaround	Pit-run	Turnaround	8	TA	55		TA's	1		55
Safety Barrier	24"-6" Rip-rap	Waterhole	NA		22			1		22
Total Rock for Road Segment:			Project No. 4							88

ROAD SEGMENT: I1 to I2				POINT TO POINT	I1 to I2		Sta. to Sta.	0+00 to 221+50		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	Volume (CY) Per			Number Of			
Culvert Bedding/Backfill	¾"-0" Crushed	135+80, 159+30, 161+50	N/A	Culvert	22		Culverts	3		66
Dissipator	24"-6" Rip-rap	135+80, 159+30, 161+50	N/A	Dissipator	11		Dissipators	3		33
Total Rock for Road Segment:				I1 to I2						99
ROAD SEGMENT: I2 to I3				POINT TO POINT	I2 to I3		Sta. to Sta.	0+00 to 139+00		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	Volume (CY) Per			Number Of			
Turnout – Base	4"-0" Crushed	104+60	N/A	Turnout	22		Turnouts	1		22
Turnout - Surfacing	¾"-0" Crushed	104+60	N/A	Turnout	22		Turnouts	1		22
Culvert Bedding/Backfill	¾"-0" Crushed	5+00, 75+70, 79+20, 85+80, 93+00, 97+20, 118+20, 120+80	N/A	Culvert	22		Culverts	8		176
Culvert Bedding/ Backfill	¾"-0" Crushed	136+80, 138+90	N/A	Culvert	44		Culverts	2		88
Dissipator	24"-6" Rip-rap	85+80	N/A	Dissipator	11		Dissipators	1		11
Dissipator	24"-6" Rip-rap	97+20, 118+20, 120+80	N/A	Dissipator	22		Dissipators	3		66
Total Rock for Road Segment:				I2 to I3						385

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT: I3 to I4				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) Per		0+00 to 87+00 Number Of		
Turnout – Base	4"-0" Crushed	18+80	N/A	Turnout	22	Turnouts	1	22
Turnout – Surfacing	¾"-0" Crushed	18+80	N/A	Turnout	22	Turnouts	1	22
Culvert Bedding/Backfill	¾"-0" Crushed	0+50, 67+00	N/A	Culvert	22	Culverts	2	44
Culvert Bedding/Backfill	¾"-0" Crushed	28+90	N/A	Culvert	55	Culverts	1	55
Ditch/Catch Basin Armor	6"-0" Pit-run	28+90	N/A	N/A		N/A		22
Ditch Armor	6"-0" Pit-run	67+00 to 68+00	N/A	N/A		N/A		33
Dissipator	24"-6" Rip-rap	17+20, 28+90	N/A	Dissipator	2	Dissipators	2	22
Dissipator	24"-6" Rip-rap	8+00, 19+60	N/A	Dissipator	2	Dissipators	2	44
Total Rock for Road Segment:			I3 to I4					264
ROAD SEGMENT: I3 to I7				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I3 to I7 Volume (CY) Per		0+00 to 147+00 Number Of		
Turnout – Base	4"-0" Crushed	40+70	N/A	Turnout	33	Turnouts	1	33
Junction	4"-0" Crushed	71+60 to 75+00	8	Station	50	Stations	3.4	170
Culvert bedding/backfill	¾"-0" Crushed	87+20, 97+40, 100+80, 129+60	N/A	Culvert	22	Culverts	4	88
Culvert bedding/backfill	¾"-0" Crushed	72+70, 106+60	N/A	Culvert	44	Culverts	2	88
Subgrade leveling	¾"-0" Crushed	0+00 to 71+60	N/A	Load	11	Loads	5	55
Subgrade leveling	¾"-0" Crushed	71+60 to 147+00	N/A	Load	11	Loads	37	407
Turnout – Surfacing	¾"-0" Crushed	40+70	N/A	Turnout	22	Turnouts	1	22
Traction rock	¾"-0" Crushed	71+60 to 130+00	3	Station	19	Stations	58	1110
Turnout – Surfacing	¾"-0" Crushed	71+60 to 130+00	3	Turnout	11	Turnouts	6	66
Dissipator	24"-6" Rip-rap	100+80, 106+60	N/A	Dissipator	11	Dissipators	2	22
Dissipator	24"-6" Rip-rap	97+40	N/A	Dissipator	22	Dissipators	1	22
Total Rock for Road Segment:			I3 to I7					2,083
ROAD SEGMENT: I8 to I9				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I8 to I9 Volume (CY) Per		0+00 to 46+40 Number Of		
Subgrade leveling	¾"-0" Crushed	0+00 to 46+40	N/A	Load	11	Loads	9	99
Total Rock for Road Segment:			I8 to I9					99

ROCK TOTALS (CY)	24"-6"	6"-0"	4"-0"	3/4"-0"
10,498	242	7,243	247	2,766

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 60 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/outsloped 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, 3, and 4

EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

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

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

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

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

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

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

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All Segments requiring pit-run rock	5, 6, or 7

EXHIBIT D

COMPACTION EQUIPMENT OPTIONS

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

(2) Rubber-Tired Skidders. A rubber-tired skidder weighing a minimum of 20,000 pounds shall be operated over the fill layers so that the entire layered surface comes in contact with the tires. Skidders with oversized tires (high flotation) are not acceptable for compaction.

(3) Tampingfoot Compactors. Tampingfoot compactors shall exert a minimum pressure of 250 pounds per square inch on the ground area in contact with the tamping feet. The compactor shall cover a minimum width of 60 inches per pass and weigh a minimum of 16,000 pounds.

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

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

(6) Grid Rollers. Pit-run rock shall be processed by grid roller fully equipped with 32,000 pounds or more of ballast weights. Twenty passes shall be made with a grid roller over the entire length and width of the road, unless STATE requires fewer passes. A grader weighing at least 20,000 pounds shall work the pit-run surface during grid rolling so that all pit-run rock comes in contact with the grid roller. Grid rolling shall be performed when the subgrade is dry and firm. Road surface shall be uniformly shaped and graded prior to and during grid rolling.

(7) 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.

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[1].

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

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

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

A bedding of crushed rock 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 stream crossing 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" add 6" for roads which will not be rocked. Minimum vertical cover for other designs shall be as specified by STATE.

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

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

The intake end of relief culverts shall be provided with a sediment catching basin 3 feet in diameter at the bottom. The outlet end of any culvert which would allow water to erode embankment soil shall be provided with an energy dissipator, half round, or other approved slope protection device. Construct lead-off ditches away from culvert outlets where the slope gradients restrict the free flow of water.

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

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for all culverts.

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

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

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

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.

	Steel Culvert	Thickness			Band Widths (")	
Dia.	Gauge	Uncoated	Coated	Band Gauges	Annular	Helical
18-24	16	(0.0598")	(0.064")	16	12	12

EXHIBIT E

CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	MATERIAL TYPE	GAUGE	ROAD SEGMENT POINT TO POINT	STATION
1	18	40	CPP	N/A	1A to 1B	0+00
2	18	30	CPP	N/A	1A to 1B	5+00
3	18	30	CPP	N/A	1A to 1B	9+50
4	18	30	CPP	N/A	1C to 1D	8+40
5	18	30	CPP	N/A	2A to 2B	4+00
6	18	40	CPP	N/A	2C to 2D	0+00
7	18	30	ACSP	16	4A to 4B	2+45
8	18	30	ACSP	16	4A to 4B	4+85
9	18	40	ACSP	16	5A to 5B	0+00
10	18	30	ACSP	16	6A to 6B	6+90
11	18	30	ACSP	16	6A to 6B	15+60
12	18	30	ACSP	16	6A to 6B	16+70
13	18	40	ACSP	16	6A to 6B	17+00
14	18	30	ACSP	16	6A to 6B	20+35
15	18	30	ACSP	16	6A to 6B	25+90
16	18	30	ACSP	16	6A to 6B	30+30
17	18	30	ACSP	16	6A to 6B	35+20
18	18	35	ACSP	16	6A to 6B	46+95
19	18	35	ACSP	16	6A to 6B	49+70
20	18	35	ACSP	16	6A to 6B	50+25
21	18	30	CPP	N/A	I1 to I2	135+80
22	18	40	CPP	N/A	I1 to I2	159+30
23	18	40	CPP	N/A	I1 to I2	161+50
24	18	30	CPP	N/A	I2 to I3	5+00
25	18	30	CPP	N/A	I2 to I3	75+70
26	18	30	CPP	N/A	I2 to I3	79+20
27	18	30	CPP	N/A	I2 to I3	85+80
28	18	30	CPP	N/A	I2 to I3	93+00

EXHIBIT E

CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	MATERIAL TYPE	GAUGE	ROAD SEGMENT POINT TO POINT	STATION
29	18	30	CPP	N/A	I2 to I3	97+20
30	18	30	CPP	N/A	I2 to I3	118+20
31	18	30	CPP	N/A	I2 to I3	120+80
32	18	30	CPP	N/A	I2 to I3	136+80
33	18	70	CPP	N/A	I2 to I3	138+90
34	18	40	CPP	N/A	I3 to I4	0+50
35	24	40	CPP	N/A	I3 to I4	28+90
36	18	40	CPP	N/A	I3 to I4	67+00
37	18	60	CPP	N/A	I3 to I7	72+70
38	18	30	CPP	N/A	I3 to I7	87+20
39	18	40	CPP	N/A	I3 to I7	97+40
40	18	40	CPP	N/A	I3 to I7	100+80
41	24	50	CPP	N/A	I3 to I7	106+60
42	18	30	CPP	N/A	I3 to I7	129+60
43	18	40	CPP	N/A	Project No. 4	0+00

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. All overburden and reject material shall be hauled to the designated waste area as directed by STATE.

5. PURCHASER shall conduct the operations relative to the disposal of waste material in such manner that sediment, rock, or debris shall not be washed, conveyed, or otherwise deposited in any stream.

6. Controlled blasting techniques shall be utilized for any blasting operations, and shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain as much material as possible within the quarry development area. PURCHASER shall maintain a comprehensive blasting log that contains all pertinent data for all blasting operations. The blasting log shall be submitted to the STATE after the completion of all blasting activity. The blasting log is intended for STATE record keeping purposes only.

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

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

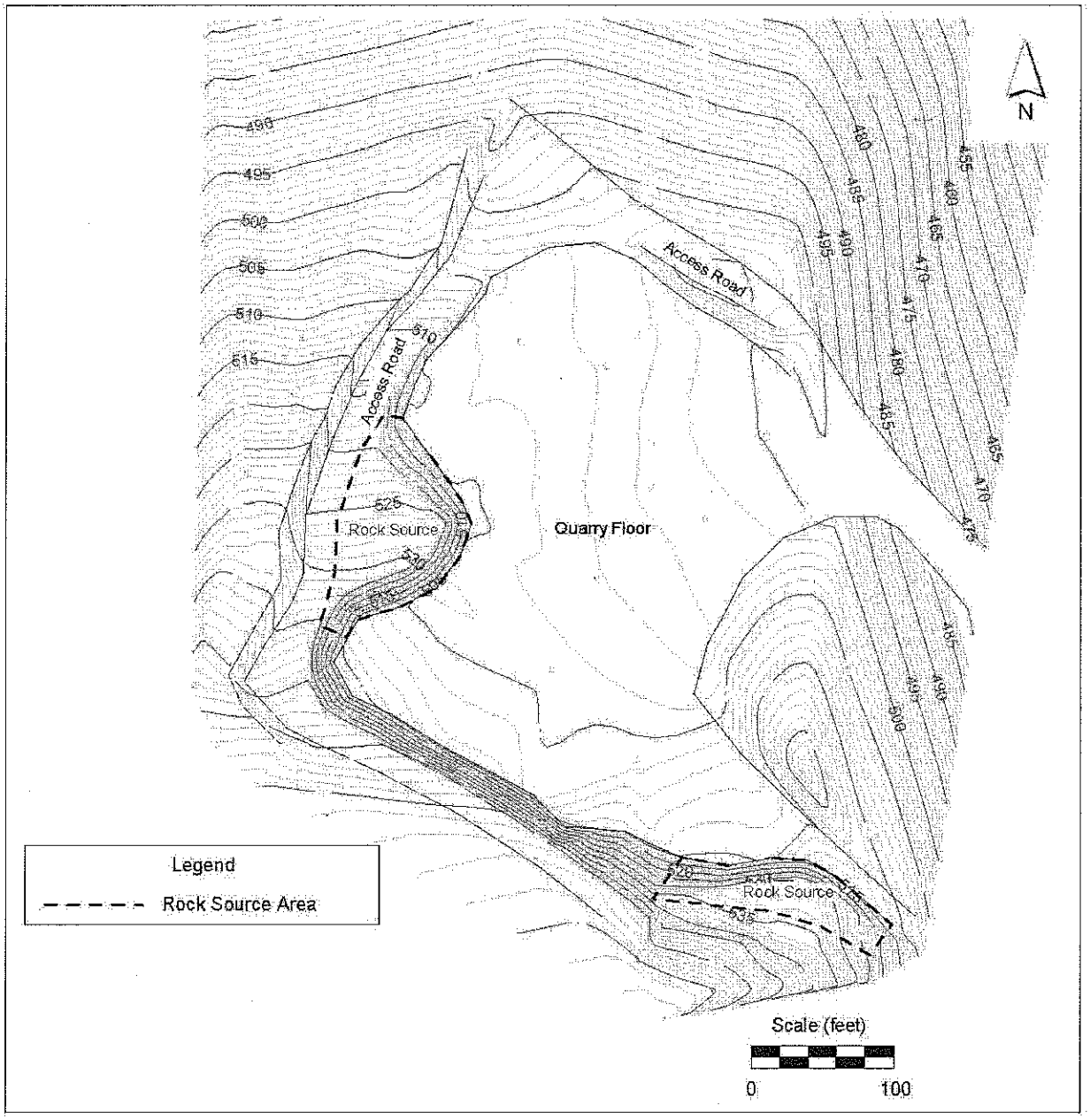
9. Oversized material that is produced or encountered during development shall be broken down and utilized for crushing.

10. 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.

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

EXHIBIT F

ROCK QUARRY DEVELOPMENT AND USE



Oregon Department of Forestry
Astoria District
Engineering Unit

Knob Point Quarry
NW 1/4, NW 1/4, Section 18, T7N, R6W, W.M.
Clatsop County, Oregon

EXHIBIT F

PIT-RUN ROCK SPECIFICATIONS

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

For 24"-6" Riprap A minimum of 50 percent of the material shall measure a minimum of 24 inches, measured in one dimension. Material shall be clean, well graded, and free of 2"-0" fines.

Control of gradation shall be by visual inspection by STATE.

State Timber Sale Contract
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Ice Box

EXHIBIT G

TYPICAL EMBEDDED ENERGY DISSIPATOR

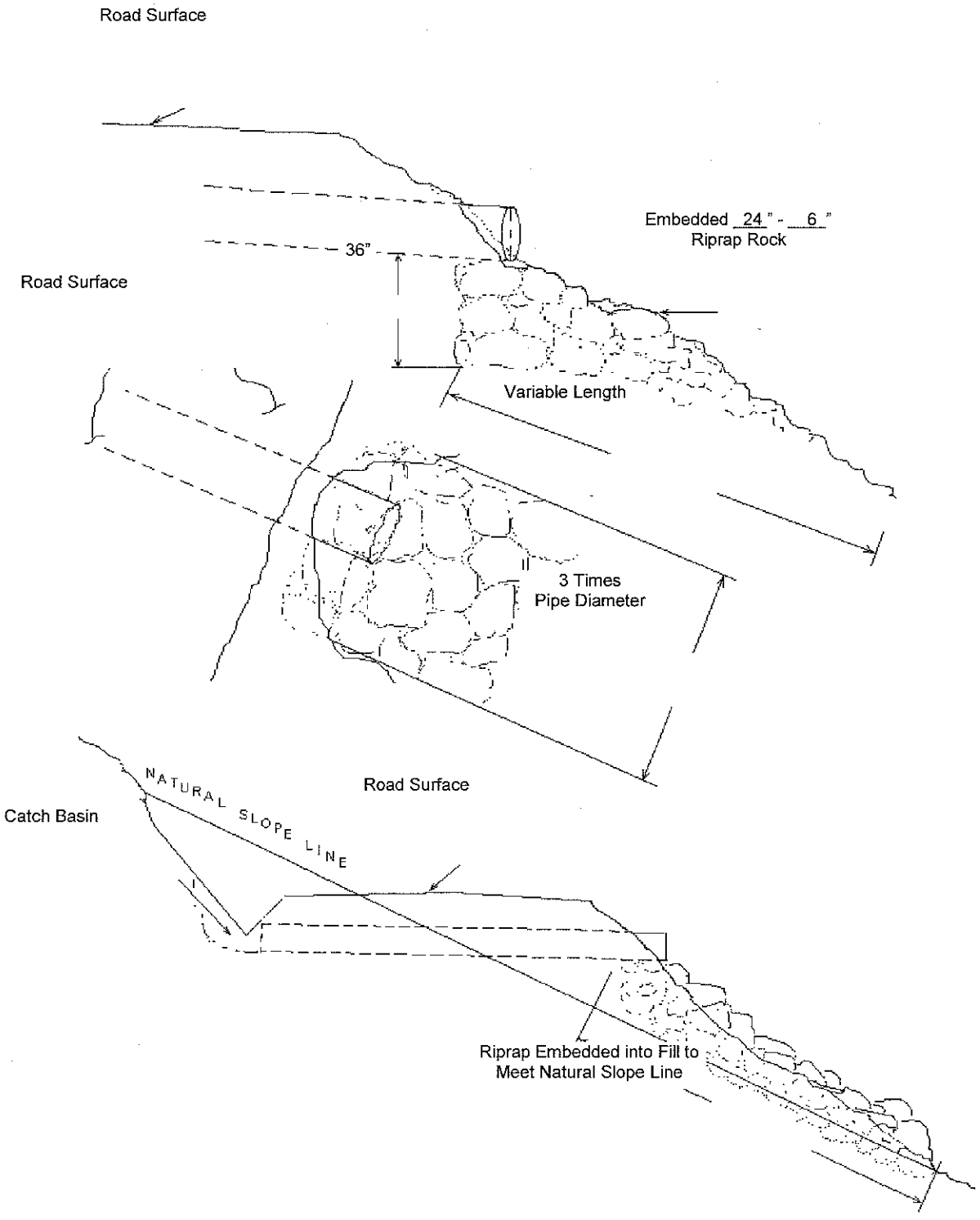

EXHIBIT H

ROAD BRUSHING SPECIFICATIONS

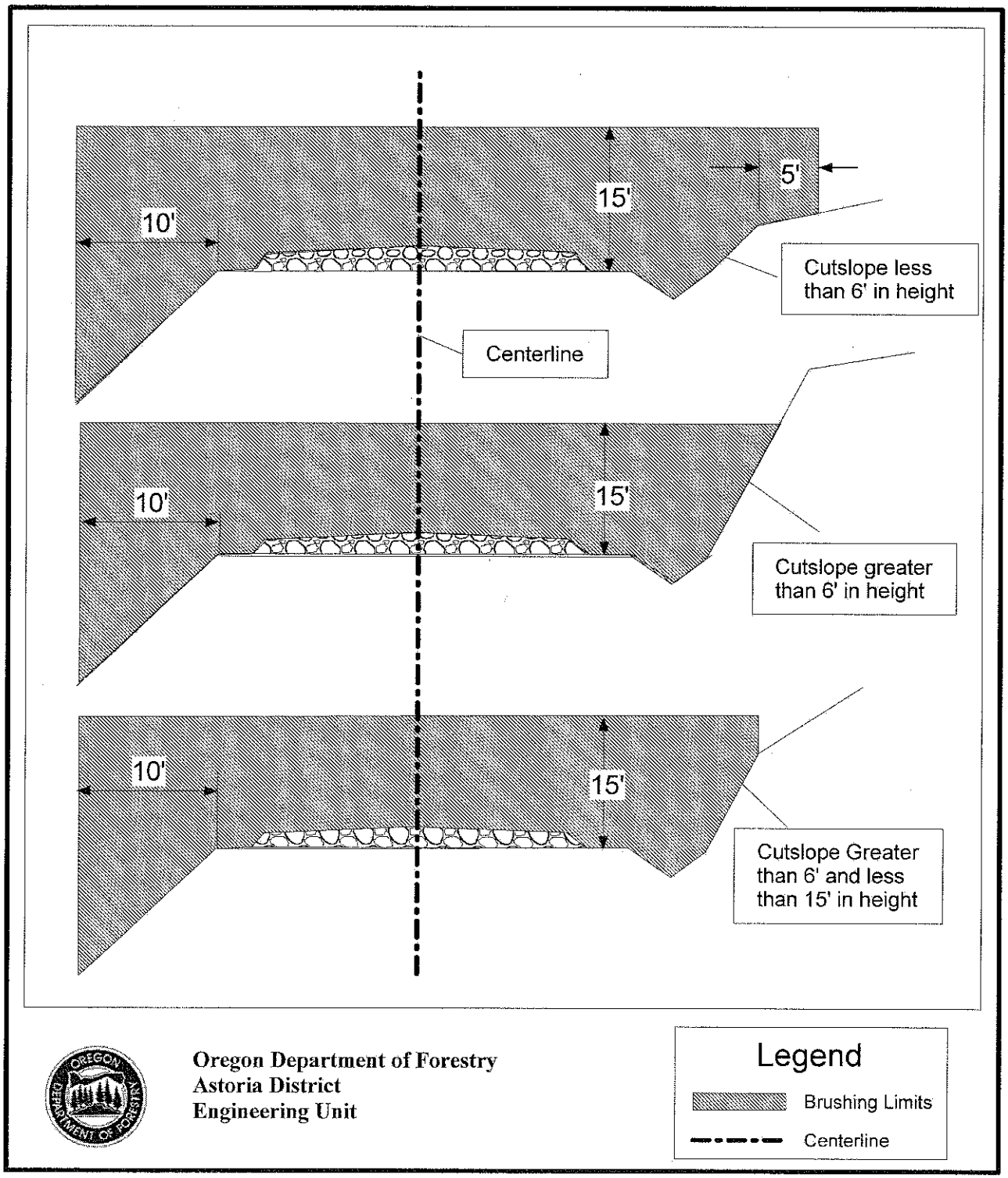

EXHIBIT H

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 INSTRUCTION

> Portions of Shingle Mill Road and spurs off of Shingle Mill Road, are on private land. When brushing the private land portion, only cut brush to the previously established brushing limits. If previously established brushing limits do not exist, brushing shall be conducted as directed by STATE. Private land portions will be marked by STATE.

Segments that have portions of private land include: B1, B15, B18, B19, and B20.

State Timber Sale Contract
No. 341-11-09
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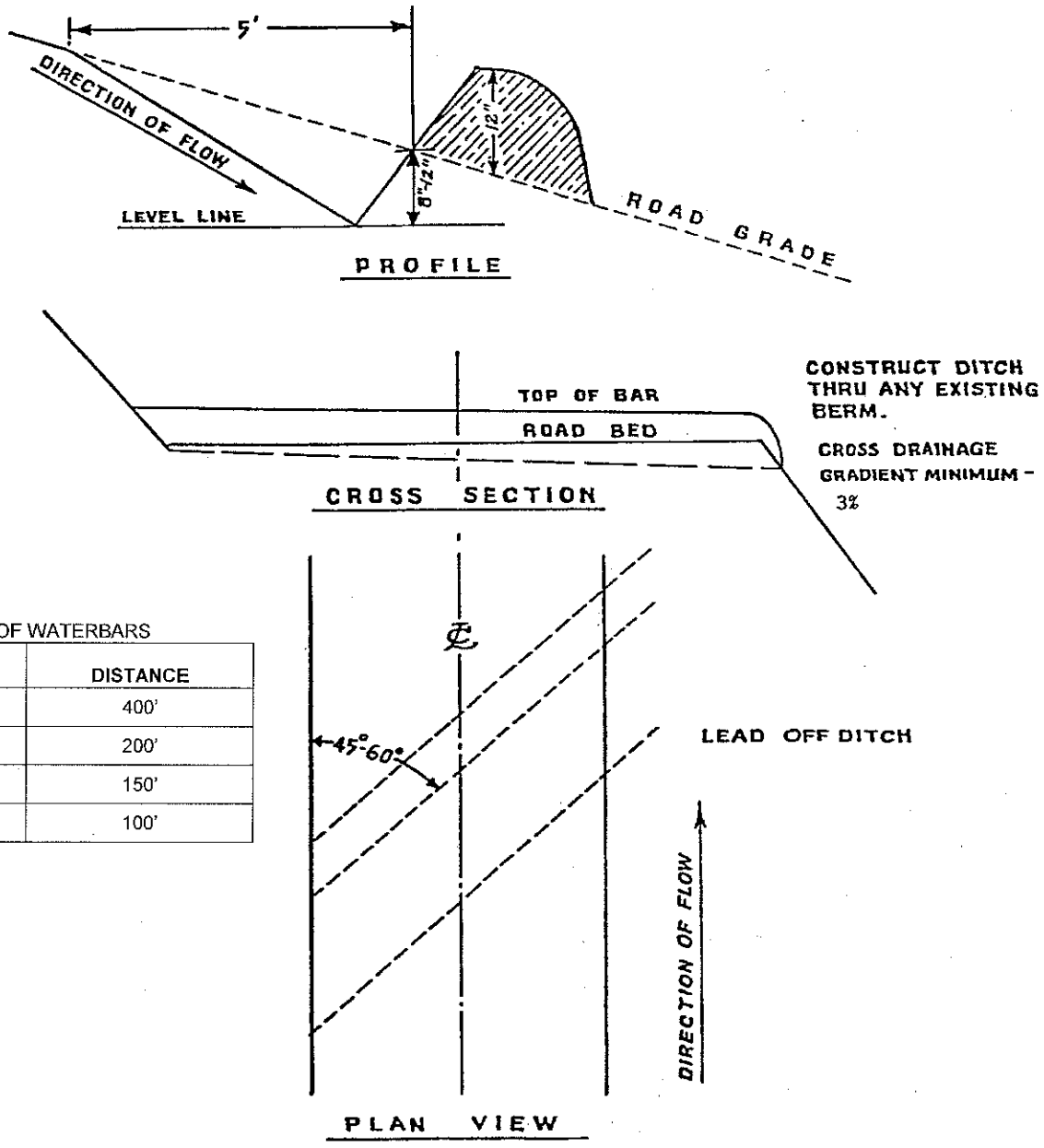
EXHIBIT I

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

State Timber Sale Contract
No. 341-11-09
Ice Box

EXHIBIT J

SEEDING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed, fertilizer, and straw mulch. Straw mulch shall consist of straw that is free of noxious weeds. Apply seed, fertilizer, and straw mulch to all waste areas, and all bare soils near stream crossings resulting from Project Nos. 1, 2, 3, and 4.

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

APPLICATION METHODS FOR SEED AND FERTILIZER

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

APPLICATION RATES FOR SEED 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 Trifoil	07%	95%	>90%
Red Clover	06%	95%	>90%
Alsike Clover	04%	95%	>90%

Fertilizer: Chemical analysis shall be 16-20-0 and shall be applied at the rate of 100 pounds per acre. Fertilizer shall not be applied within 100 feet of streams.

Mulching Period. Straw mulch shall be applied within 24 hours of spreading grass seed and fertilizer.

APPLICATION RATES FOR MULCH
Place straw mulch to a reasonably uniform thickness of 1½ to 2½ inches. This rate requires between 2 and 3 tons of dry mulch per acre.

APPLICATION LOCATIONS: All waste areas and exposed soils near stream crossings.

PART IV: OTHER INFORMATION

FPA "Written Plan" for Operating within 100 Feet of Type F Streams
Ice Box Timber Sale

Portions of Section 7, 8, 17, and 18, T7N, R6W, W.M., Clatsop County, Oregon

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

Protected Resources:

1. Gnat Creek.
2. Unnamed Tributary to Gnat Creek.
3. Ice Box Creek.

Specific Site Characteristics:

1. Gnat Creek (Medium to Small, Type F) – This stream runs along the east sale boundaries of Areas 1 and 2 for approximately 2,800 feet. The FPA size class for the portion of Gnat Creek that runs along Area 1 is small and Area 2 is medium. The stream bank has moderate slopes with salmonberry, ferns, alder and mixed conifer.

2. Unnamed Tributary of Gnat Creek (Medium, Type F) – This stream runs approximately 3000 feet between Areas 1 and 2. The stream bank has moderate slopes with salmonberry, ferns, alder and mixed conifer.

3. Ice Creek (Small, Type F) – This stream runs approximately 2,000 feet within Area 1. The stream bank has moderate slopes with salmonberry, ferns, alder and mixed conifer.

Tree and Vegetation Retention:

PARTIAL HARVEST (Areas 1 and 2): The streamside tree retention within the FPA defined RMA width of 50 feet will range from 150 ft^2 to 170 ft^2 basal area per acre (minimum required basal for small, Type F stream is 40 square and 120 square feet for medium, Type F). The timber sale boundary for Areas 1 and 2 (partial cuts) is posted at least 25 feet from the Type F streams. There is also an unposted Type F stream within Area 1 (Ice Box Creek) which has a minimum 25 feet no touch buffer.

Resource Protection Practices:

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

1. No trees will be felled within posted stream buffers (RMA's) except were needed for corridors.

2. Trees that fall or slide into Type F RMA's shall not be removed without prior approval from STATE.

3. Trees adjacent to the posted stream buffers (RMA's) will be felled away from or parallel to the streams to prevent trees from entering the aquatic areas.

4. No machinery will be allowed to operate within the RMA's.

5. 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.

6. Logs shall be fully suspended when yarding across all stream buffers (RMA's).

7. Cable corridors must be at least 100 feet apart where they cross the RMA's.

I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practice Act regarding the operations conducted within 100 feet of streams. I agree to the protection measures listed in this plan.

Submitted by: _____ Date: _____
Operator/PURCHASER

Attachment: Exhibit A map

Original: Salem
XC: Operator, Purchaser, District File, Sunset Unit

State Timber Sale Contract
No. 341-11-09
Ice Box

FPA "Written Plan" for Pump Chance/Waterhole Construction and Improvement
Ice Box Timber Sale

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

Protected Resources:

1. **Pump Chance/Waterhole Construction.** A small Type N stream, tributary to Ice Box Creek. Located in the Northeast ¼, Section 17, T7N, R6W, W.M., Clatsop County, Oregon.

A written plan is required for construction on pump chances or waterholes that will be part of a stream as specified in ORS 629-625-0100(2)(a).

Situation:

Pump Chance/Waterhole Construction. The Oregon Department of Forestry has identified an opportunity to construct/improve an existing pump chance/waterhole on State managed forestland. The next closest pump chance/waterhole is approximately 4.5 miles away.

The location offers road-based access to the pump chance/waterhole for fire suppression and road water needs. The proposed pump chance/waterhole is located approximately 1.5 miles from the Knob Point Stockpile site which could potentially be used as a staging area for porta-tanks, or a helicopter dip site.

Practices:
- All excavation and fill removal will be performed using a track-mounted excavator.
- Work will be performed only during dry weather periods, low water stream flows, and between July 15 and September15, annually.
- Disturbance to existing vegetation, machine activity in the stream, and entry of sediment in the stream will be minimized.
- Excavated materials will be hauled and placed in approved waste areas and left in a stable condition.
- Disturbance to and alteration of the stream channel will be kept to the absolute minimum necessary to provide the water source required for firefighting and road use needs.
- Rock will be placed to provide stable road-based access and to minimize sediment delivery to the stream.
- De-watering will be required during construction.

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

Submitted: _____ Date: _____
Purchaser/Operator Contract Representative

Enclosure: Exhibit A

Original: Salem
XC: Operator, Purchaser, District File, Engineering Unit, Sunset Unit

State Timber Sale Contract
No. 341-11-09
Ice Box

OREGON DEPARTMENT of FISH and WILDLIFE

FISH SCREENING PROGRAM

SMALL PUMP SCREEN SELF CERTIFICATION

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

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

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

Perforated plate: Openings shall not exceed 3/32 or 0.0938 inches (2.38 mm).
Mesh/Woven wire screen: Square openings shall not exceed 3/32 or 0.0938 inches (2.38mm) in the narrow direction, e.g., 3/32 inch x 3/32 inch open mesh.
Profile bar screen/Wedge wire: Openings shall not exceed 0.0689 inches (1.75 mm) in the narrow direction.

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

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

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

For further information on fish screening please contact:

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

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

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

Applicant Signature:_____ Date:____/____/ WRD File #

Printed Name and Address: _____

Phone: (_____) _____ Fax: (_____) _____

bmk
3/11/99
PUMPCERT.doc

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

NOTICE OF TRANSFER OF STATE TIMBER

Instructions **629:-Form-301-010**

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

SECTION 1

On _____, state timber sale purchaser (Transferor)

_____, sold, exchanged or otherwise transferred to

_____, (Transferee) state timber originating from State Timber Sale Contract No. _____.

Transferee hereby certifies that they:

(a) Will not export the unprocessed state timber which is the subject of this transaction;

(b) Will not sell, transfer, exchange or otherwise convey the unprocessed timber which is the subject of this transaction to any other person without first obtaining a like certification from that person.

(c) Are not prohibited by OAR's 629-31-005 through 045 from purchasing state timber or logs directly from the State Forester, or this is a sale of Western Red Cedar for domestic processing.

SECTION 2

☐ Have not exported unprocessed timber originating from private lands in Oregon in the last 24 months.

☐ This is a sale of hardwood logs for domestic processing.

☐ This is a sale of Western Red Cedar for domestic processing.

☐ This is a sale of pulp logs or cull logs processed at domestic pulp mills, domestic chip plants or other domestic operations for the purpose of conversion of the logs into chips.

SECTION 3

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

Transferor:	Transferee:
_____ Signed	_____ Signed
_____ Title	_____ Title
_____ Dated	_____ Dated

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

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