

PART III: EXHIBITS

State Timber Sale Contract
No. 341-05-85
Ground Hog

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.: 341-05-85

(2) Sale Name: Ground Hog

(3) Contract Expiration Date: July 1, 2007

Project Completion Dates: _____

(4) Purchaser: _____

(6) Purchaser Representatives:

Projects: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Projects: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Projects: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Projects: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Logging: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Logging: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Logging: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Logging: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

(7) State Representatives:

Projects: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

Logging: _____

Phone: _____

Cell/Other

Phone: _____

Home: _____

(8) Name of Subcontractors & Starting Dates:

Projects: No(s) _____ - _____

Date: _____

Phone: _____

No(s) _____ - _____

Date: _____

Phone: _____

No(s) _____ - _____

Date: _____

Phone: _____

No(s) _____ - _____

Date: _____

Phone: _____

Logging: Felling _____

Date: _____

Phone: _____

Yarding: _____

Date: _____

Phone: _____

(9) Comments:

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

EXHIBIT B

INSTRUCTION SHEET FOR OPERATIONS PLAN

SUBMIT ONE COPY OF PLAN TO STATE

Operations shall be limited to the work shown in the plan until a revised plan or supplemental plan is submitted covering additional work. Compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act. If STATE has prepared a required Forest Practices Act (FPA) "Written Plan" for operations, PURCHASER shall comply with all provisions of the Written Plan.

Item No. (from Page 1)

- (5) All sales require you to use a brand furnished by STATE. If the State brand has not been assigned when the plan is submitted, it will be furnished and assigned later. Complete drawing. If more than one brand is assigned to the sale, complete both drawings.
- (6) The contract requires you to have a designated representative available on the sale area or work location who is authorized to receive in your behalf any notice or instruction given by STATE and to take action in regard to performance under the contract. If logging and project work is widely separated, a representative is required for each.
- (7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.
- (8) Show names of subcontractors to be used for any or all phases of the operations. If subcontractors are not known, or are changed later, give notification to the STATE representative prior to commencement of work by subcontractor.

Show projected dates for commencement of both projects and logging. If projected dates need to be changed at a later date, notification must be given to the STATE representative by supplemental plan or otherwise, prior to commencement of such operations.

- (10) The STATE representative will furnish extra copies of Exhibit A of the contract for your use in preparing the operations map. The map shall use the following legend and show:
 1. Landing locations, approximate setting boundaries, and probable sequence of logging the settings. Number the settings in sequence.
 2. Locations of spur roads planned for construction, other than those required by the timber sale contract. Provide spur road specifications.
 3. Location of proposed tractor yarding roads. Show if and how marked on the ground.
 4. Location of temporary stream crossings.
 5. List the sequence of performing project work.
 6. Location of rock sources - attach pit development plans.



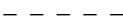



	Cable landing, with numbers for sequence.
	Tractor landing with alphabetical sequence.
	Approximate setting boundary.
	Spur truck roads.
	Tractor yarding roads.
	Temporary stream crossings.

EXHIBIT B
OPERATIONS PLAN

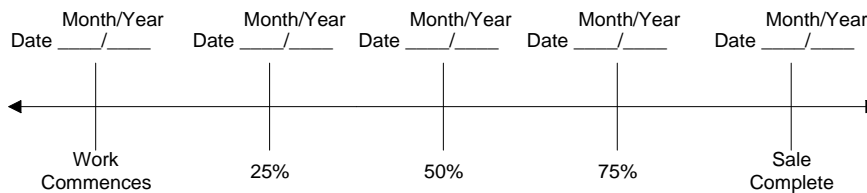
Completion Timeline

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

Projects



Harvest & Other Requirements



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

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

APPROVED: Date: _____

SUBMITTED BY:
PURCHASER

STATE OF OREGON - DEPARTMENT OF FORESTRY

Title _____

Title _____

Original: Salem
cc: District File
Purchaser

EXHIBIT C

SCALING INSTRUCTIONS -- LOCATION APPROVAL -- BRAND INFORMATION

(1) ORIGINAL REGISTRATION ☐ Date _____
REVISION NUMBER _____ ☐ Date _____
CANCELLATION ☐ Date _____

(2) TO: _____
(Third Party Scaling Organization)

(3) FROM: Forest Grove - 05 Phone 503-357-2191
(State Forestry District)
Address 801 Gales Creek Road, Forest Grove, OR
97116

(4) PURCHASER: _____
Address _____

(5) MINIMUM SCALING SPECIFICATIONS			CLASS		
SPECIES	SCALING DIAMETER INCHES	*NET SCALE VOLUME	PER MBF	** SUM	SUB
Conifers	--	10	X		
Hardwoods	--	20	X		

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

(6) WESTSIDE SCALE: YES ☒ NO ☐
Actual taper all logs over 40' scaling length

(7) EASTSIDE SCALE: ☐ ☒
*Actual taper butt logs over 40' scaling length

(8) PENCIL BUCK ☐ ☒
back to Minimum Scaling Diameter _____

(9) ADD-BACK VOLUME -- ☒ ☐
Deductions due to delay

(10) APPROVED SCALING LOCATIONS	Species	Yard	Truck

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

State Forester's Representative

(12) SALE NAME Ground Hog
COUNTY Tillamook

(13) STATE CONTRACT NUMBER 341-05-85

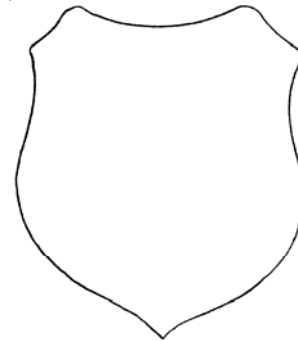
(14) SCALE: westside ☒ eastside ☐ cubic foot ☐

(15) STATE BRAND REGISTRATION NUMBER _____

(16) BUREAU BRAND CODE NUMBER _____

(17) STATE BRAND INFORMATION:

(COMPLETE)



(18) PAINT REQUIRED: YES ☒
COLOR Orange

(19) SPECIAL SCALES
PEELABLE CULL (all species)
UTILITY/PULP (all species)
NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE
OTHER: _____
OTHER: _____

(20) REMARKS: _____

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

(21) SIGNATURES:

Purchaser or Authorized Representative Date

State Forester Representative Date

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

Distribution: ORIGINAL: Salem / COPIES: TPSO (4), Purchaser, Operator, District, Mgmt. Unit

EXHIBIT C

INSTRUCTIONS FOR FORM 343-307 (rev. 5/01)

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires Item (21). Complete date.
- (2) Designate Third Party Scaling Organization (TPSO). Send 4 copies to TPSO, 1 to purchaser, 1 to Salem, and keep such copies as to district needs.
- (3) State District office, address and phone.
- (4) Enter Purchaser's business name and address 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 (13) thru (17)), and is required to show existence on the sale. **PerM** (per MBF). **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 (PerM) entries. PerM, SUM, and Sub must be indicated by checking the appropriate column. Species with the same specifications and value are combined into one entry. PerM 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, PERM and/or subspecies will always be scaled.
- (6) Westside -- 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 -- 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 (Eastside). Items with * follow U.S. Forest Service Eastside rules.
- (8) Pencil Buck. Check NO if a westside sale, optional for eastside sales.
- (9) Add-Back Volume. Add-Back is normally checked YES. Scaler records deductions (sap rot, weather checks, etc.) caused by an abnormal delay in removal. Enter separately on scale ticket. TPSO provides State with summaries that include this as a net volume by species. Salvage sales and certain other circumstances may require that "NO" be checked.
- (10) Show scaling locations only applicable to TPSO. Not necessary to list markets. If all species are scaled at same location, enter "ALL."
- (11) When logging is complete, recall branding hammers, date and sign where indicated, check CANCELLATION box at top of form, and send to TPSO.
- (12) Enter sale name and county.
- (13) Enter sale Contract number.
- (14) Check Westside or Eastside log scale. Cubic foot refers to Northwest Log Rules Cubic Foot Scale.
- (15) Oregon Forest Products Brand Registry Number (optional).
- (16) DO NOT USE -- TPSO will fill in when applicable.
- (17) Show one brand only. Complete drawing. 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) under REMARKS, Item 19.
- (18) Check YES and designate orange.
- (19) Special Scales. These are the Special Scales that will be applied. If "Other" is indicated, please describe. Give comments in Item (19).
- (20) Use this space to designate weight conversion factors, or any other explanations to clarify scaling 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.
- (21) 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	N/A	A to B	0+00 to 29+40	Ditch Required
16 feet	12 feet	C to D	0+00 to 83+20	Ditch Required
16 feet	12 feet	E to F	0+00 to 41+66	Ditch Required
16 feet	12 feet	G to H	0+00 to 20+25	Ditch Required
16 feet	12 feet	I to J	0+00 to 12+05	Ditch Required
16 feet	12 feet	K to L	0+00 to 6+25	Ditch Required
16 feet	12 feet	M to N	0+00 to 1+83	Ditch Required

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

Where clearing limits have not been marked, the clearing limits shall extend 10 feet back of the top of the cutslope and 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.

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 classifications are as follows:

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 through openings in the timber outside of the cleared right-of-way, except areas where end-haul is required.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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

Excavation shall conform to STATE-engineered lines, grades, dimensions, and plans when provided.

All suitable excavated material shall be used where possible 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. All fills and drainage structure backfills shall be machine compacted according to the specifications in Exhibit E.

Unless road design 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.

Excess excavation shall not be sidecast where material will enter a stream course or where material will accumulate in areas deemed a high landslide hazard location by STATE.

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 follows: 400 divided by the radius of the curve equals the amount of extra width.

DRAINAGE

Ditch. Construct "V" ditch 2 feet wide and to a depth of 1 foot below subgrade. Subgrade shall be crowned at 4 to 6 percent. Construct ditchouts away from subgrade.

Outslope. Road subgrade shall be outsloped at 4 to 6 percent.

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

Location: Intervisible but not greater than 750 feet.

GRADING

	<u>Back Slopes</u>	<u>Fill Slopes</u>
Rock	Vertical to 1/4:1	Not steeper
Common - side slopes 50% and over	1/2:1	than 1½:1
Common - side slopes less than 50%	3/4:1	
Common - turnpike (level) section	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. Surface is to be crowned for drainage, with general grade no more than 3 percent. Surface as shown on Exhibit E.

TURNAROUNDS. Increase subgrade width an additional 20 feet for a length of 20 feet.

EXHIBIT D

ROAD CONSTRUCTION AND IMPROVEMENT INSTRUCTIONS

<u>SEGMENT</u>	<u>STATION</u>	<u>WORK DESCRIPTION</u>
A to B	0+00	Point A. Begin road construction. Outslope road.
	3+50	Install Culvert No. 1A (18" x 24'). Begin ditching road.
	6+50	Construct landing to left. Drift material back to 3+50 to ease grade.
	7+75	Install Culvert No. 2A (18" x 26').
	8+50	Drift material back to 7+75 to ease grade. Place clearing debris in swale to right, do not sidecast.
	12+20	Install Culvert No. 3A (18" x 26').
	13+50	Install Culvert No. 4A (18" x 26').
	17+00	Ridgetop road construction. Sidecast debris to right side, not left.
	29+40	Point B. Construct landing.
C to D	0+00	Point C. Begin road improvement. Steep road grade.
	11+00	End of steep road grade. Waste material from grade can be hauled to Point C or down to point 12+70 for use in building the bridge abutment.
	12+70	Begin installation of a 50' temporary log stringer bridge according to the specifications in Exhibit I. Logs are marked with a blue B and are located on Drift Creek Road as specified in Exhibit A.
	19+25	Install Culvert No. 1 (42" x 42').
	20+40	Install Culvert No. 2 (18" x 28').
	22+00	Install Culvert No. 3 (24" x 40'). Borrow fill material from bank.
	22+90	Install Culvert No. 4 (18" x 28' with 10' half round). Begin cutting into bank to realign road around old failure. Begin Endhaul.
	24+70	End of realignment. End of Endhaul. Waste material ahead at 26+00 above road.
	27+15	Leaving old road to build switchback. New construction.
	28+70	Back onto old road. Road improvement.
	38+52	Junction with spur E-F to left.
	38+78	Install Culvert No. 5 (18" x 28').
	53+40	Install Culvert No. 6 (18" x 28').

EXHIBIT D

ROAD CONSTRUCTION AND IMPROVEMENT INSTRUCTIONS

<u>SEGMENT</u>	<u>STATION</u>	<u>WORK DESCRIPTION</u>
C to D	62+80	Install Culvert No. 7 (24" x 36'). Borrow fill material from bank.
	63+38	Old failure. Cut into bank for fill material to fix failure.
	64+98	Install Culvert No. 8 (24" x 36'). Borrow fill material from bank.
	66+30	Install Culvert No. 9 (18" x 28').
	72+25	Junction with spur G-H to right. End of rocking.
	77+56	Road leaves old grade. Begin new construction.
	83+20	Point D. Construct landing.
E to F	0+00	Point E. Begin road improvement. Junction with spur C-D at 38+52.
	6+04	Install Culvert No. 12 (24" x 32').
	11+85	Install Culvert No. 13 (24" x 32'). Dig out logs in fill. Borrow material from bank for fill.
	13+44	Edge of large washout in old road. Use material from road ahead for fill to reconstruct the road.
	13+60	Install Culvert No. 14 (36" x 56'). Haul 72 cy of pitrun for road reconstruction.
	13+75	Begin endhauling material from road for reconstruct at 13+60 (old washout).
	15+24	Install Culvert No. 15 (18" x 24' with 10' half round).
	15+90	End endhaul section.
	22+00	Leaving old road. Begin new road construction.
	24+40	Install Culvert No. 16 (18" x 24').
	35+45	Install Culvert No. 17 (18" x 28'). Install at low spot.
	41+66	Point F. Construct landing.
G to H	0+00	Point G. Begin road construction. Junction with spur C-D at 72+25.
	0+80	Begin cutting into bank to construct switchback. Drift material ahead.
	2+35	End cutting and drifting material. Waste material ahead on right side of road.
	2+60	Install Culvert No. 10 (18" x 28').
	10+60	Install Culvert No. 11 (18" x 32').

EXHIBIT D

ROAD CONSTRUCTION AND IMPROVEMENT INSTRUCTIONS

<u>SEGMENT</u>	<u>STATION</u>	<u>WORK DESCRIPTION</u>
G to H	15+00	Junction with spur K-L to left. End of rocking.
	19+00	Cut road down and drift material ahead to landing to ease grade.
	20+25	Point H. Construct landing.
I to J	0+00	Point I. Begin road improvement.
	5+00	Install Culvert No. 18 (18"x 28').
	11+50	Junction with spur K-L to left.
	11+70	End of old road. Begin new road construction.
	12+05	Point J. Construct landing.
K to L	0+00	Point K. Begin road improvement. Junction with I-J at 11+50. Junction does not need to be suitable for log trucks. Only equipment and pickups.
	6+25	Point L. Junction with spur G-H at 15+00.
M to N	0+00	Point M. Begin road construction.
	1+83	Point N. Construct landing.

EXHIBIT D
END-HAULING REQUIREMENTS

POINT TO POINT	STA. TO STA.	WASTE AREA LOCATION	WASTE AREA TREATMENT
C to D	0+00 to 11+00	1	1, 2, 3
C to D	22+90 to 24+70	2	1, 2

End-Haul Areas General Requirements

Material shall not be intentionally side cast.

Clearing and grubbing debris shall be end-hauled.

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

Containment

Full containment: The amount of material lost over the outside edge of the road shall not exceed 6 inches in depth measured perpendicular to the natural ground slope. Pioneer excavation shall be removed by digging, loading, and hauling rather than by pushing or scraping methods.

Trees and stumps may have up to 12 inches of material directly above them. Any amount of material exceeding the containment requirements shall be removed by whatever means necessary and end-hauled to a designated waste area.

Waste Area Location

As shown on Exhibit A and as marked in the field.

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) Use suitable material as backfill for bridge abutments.

EXHIBIT E
ROAD SURFACING

TYPE OF ROCK	SIZE OF ROCK	COMPACTED DEPTH	POINT TO POINT	STATION TO STATION	APPROX. TOTAL TRUCK MEASURE VOLUME
Pit Run	6" - 0	8"	C to D	0+00 to 72+25	3179 cy
Pit Run	6" - 0	8"	E to F	0+00 to 41+66	1833 cy
Pit Run	6" - 0	8"	G to H	0+00 to 15+00	660 cy
Pit Run	6" - 0	8"	I to J	0+00 to 12+05	550 cy
Pit Run	6" - 0	8"	K to L	0+00 to 6+25	275 cy
Pit Run	6" - 0	8"	M to N	0+00 to 1+83	82 cy
			NO. OF CURVES	POINT TO POINT	
Pit Run	6" - 0	8"	13	C to D	130 cy
Pit Run	6" - 0	8"	12	E to F	120 cy
Pit Run	6" - 0	8"	2	G to H	20 cy
Pit Run	6" - 0	8"	2	I to J	20 cy
Pit Run	6" - 0	8"	1	K to L	10 cy
TURNOUTS			NO. OF T.O.		
Pit Run	6" - 0	8"	9	C to D	198 cy
Pit Run	6" - 0	8"	5	E to F	110 cy
Pit Run	6" - 0	8"	2	G to H	44 cy
Pit Run	6" - 0	8"	1	I to J	22 cy
LANDINGS			NO. OF LDGS.	LOCATION	
Pit Run	6" - 0	8"	1	Point F	100 cy
Pit Run	6" - 0	8"	1	Point J	100 cy
Pit Run	6" - 0	8"	1	Point N	100 cy
MISCELLANEOUS			POINT TO POINT		
Pit Run	6" - 0	8"	E to F	13+60 (washout)	72 cy

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

Turnouts and turnarounds shall be rocked concurrently with the road.

EXHIBIT E

CRUSHED ROCK SPECIFICATIONS

Grading Requirements

<u>For 6"-0" Pit-Run</u>	Passing	10" sieve	100%
	Passing	6" sieve	65%

Control of pit-run gradation shall be by visual inspection by STATE.

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

EXHIBIT E

ROCK ACCOUNTABILITY

The rock shall meet the quality and size specifications in Exhibit E. A sample of the rock shall be supplied to STATE for testing and approval prior to spreading or stockpiling. 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 sediments will not enter streams.

Rock accountability shall be determined by depth measurement. STATE shall be given 24 hours' notice prior to rocking.

Depth Measurement. Surfacing rock shall be spread and compacted according to the depths specified in Exhibit E. 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. If additional rock is required because of insufficient depth, it shall be added by truck measure to those areas that were slighted. The conversion from compacted yardage to truck yardage is 1.3 multiplied by the compacted yardage equals truck yardage.

The depth of compacted aggregates shall not vary more than 1 inch from the depth specified in Exhibit E. The average depth for each road segment shall be the specified depth or greater.

Junctions shall have a surfaced area of at least 20 square yards each at the compacted depths specified in Exhibit E.

Turnouts shall have a surfaced area of at least 70 square yards each at the depths shown in Exhibit E.

Landings shall have a surfaced area of at least 280 square yards each at the depths shown in Exhibit E.

Curve Surfacing. Extra surface width shall be required for the inside of all curves as follows: 400 divided by the radius of the curve equals the amount of extra width to be surfaced at the depths shown in Exhibit E.

EXHIBIT E

COMPACTION AND PROCESSING REQUIREMENTS

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 visible deformation ceases, or in the case of a sheepsfoot roller, the roller "walks out." At least 3 passes shall be made over the entire width and length of the road. A pass is defined as traveling a road section in one direction and then back over that same section again. Compaction shall be accomplished by using the approved equipment listed below or others approved by STATE:

Subgrade shall be crowned at 4 to 6 percent unless otherwise specified.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All segments	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 or, in the case of a sheepsfoot roller, the roller "walks out." At least 3 passes shall be made over the entire width and length of each layer. A pass is defined as traveling a fill layer in one direction and then back over that same layer again.

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 the approved equipment listed below or others approved by STATE:

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All segments	1, 2, 3, 4

Pit-Run Rock. Pit-run surfacing rock shall be spread on roads with a crawler tractor and continuously walked-in. Rock spreading shall begin at nearest point from the rock source and progress toward the end of the project, unless otherwise approved in writing by STATE. Compaction shall be accomplished by using the approved equipment listed below or others approved by STATE:

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 unless otherwise specified.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All segments	3

EXHIBIT E

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) Tampingfoot Compactors. Tampingfoot or sheepsfoot 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.
- (3) 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. A minimum of 10 passes shall be made with the grader and vibratory grid compactor over the entire length of the road, unless STATE requires fewer passes.

- (4) Crawler Tractors. D-7 Caterpillar or equivalent or larger.

EXHIBIT F

ROCK PIT DEVELOPMENT AND USE

- (1) PURCHASER shall conduct the Operations relative to the disposal of waste material in such manner that silt, rock, debris, dirt, or clay shall not be washed, conveyed, or otherwise deposited in any stream. All waste shall be deposited at an approved "waste disposal site."
- (2) Where overburden removal limits have not been staked, they shall extend for a distance of at least 20 feet beyond the developed rock source. Overburden and woody debris shall be hauled to a designated waste area. Overburden shall be spread evenly, grass seeded, and compacted at the waste area and woody debris stacked separately. Prior to drilling or rock removal, completion of overburden removal shall be approved in writing by STATE.
- (3) The rock pit floor shall be developed to provide drainage away from the rock pit. Rock pit drainage ditches shall be developed and maintained. Benches shall be 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 degrees or less. There shall be a minimum of 1 bench with an access road to it. Said bench shall be easily accessible with tractors.
- (4) Blasting shall be accomplished using timing devices, delay charges, low intensity shots, or other suitable means to contain as much material as possible in the rock pit prism.
- (5) Pit face shall be developed in a uniform manner.
- (6) Oversized material that is produced shall be piled in a designated area adjacent to the pit. It shall not be wasted.
- (7) PURCHASER shall prepare a written development plan for the pit area. The plan shall be submitted to STATE for approval prior to conducting any operation in the pit area.
The plan shall include, but not be limited to:
 - (a) Location of benches and roads to benches.
 - (b) Disposal site for debris and overburden.
- (8) Upon completion of use, the pit site and access roads shall be left in a condition free from overburden and debris. Rock pit roads shall be waterbarred to provide drainage and blocked as directed by STATE.

EXHIBIT G

CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the Contract. Culverts shall be constructed of corrugated galvanized or aluminized steel. Corrugated polyethylene may be used for sizes up to 36 inches in diameter. All culverts shall conform to the material and fabricating requirements of the "Standard Specifications for Highway Construction" prepared by the Highway Division of the Oregon State Department of Transportation. Corrugation types and shapes other than those meeting the above minimum Highway requirements, shall be approved in writing by STATE.

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 stipulated in special instructions.

Culvert grade shall slope away from ditch grade at least 2 percent unless otherwise specified.

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 pipe. The culvert trench shall be excavated 3 pipe diameters wide to permit compaction and working on each side of the pipe. Tamping shall be done in 6-inch lifts, 1 pipe diameter each side of the pipe to 95 percent density or over. Bedrock shall be excavated as required to provide a uniform foundation for the full length of the culvert.

A bedding of granulated material or crushed rock as specified shall be placed to provide a wide band of support and to transmit the load from above evenly over the entire length of the pipe.

Backfill shall consist of granulated material, crushed rock, or job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the pipe.

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

Joining shall be done with bands of like material and corrugations. Manufacturers' instructions shall be followed for prefabricated pipe assembly.

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

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

EXHIBIT G

CULVERT SPECIFICATIONS

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be as follows: 12" for culverts 18" to 36" and 18" for culverts 42" to 96" (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 a 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.

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

Dia.	Steel Pipe Gauge	Band Gauges	Band Widths ("")			Hugger Band Widths ("")	
			Annular	Helical	Dimpled	Annular	Helical
12-15	16	16	7	12	12	13 1/8	10 1/2
18-24	16	16	12	12	12	13 1/8	10 1/2
30-36	16	16	12	12	12	13 1/8	10 1/2
42	14	16	12	12	NA	13 1/8	10 1/2
48	14	16	24	24	NA	13 1/8	10 1/2
54	14	16	24	24	NA	13 1/8	10 1/2
60	12	16	24	24	NA	13 1/8	10 1/2
66-72	12	16	24	24	NA	13 1/8	10 1/2
78	12	16	24	24	NA	13 1/8	10 1/2
84	12	16	24	24	NA	14 3/4	10 1/2
90-120	12	16	26	26	NA	NA	NA

Culverts larger than 60" in diameter shall have 3" x 1" corrugations.

Polyethylene culverts shall be double walled and meet the requirements of AASHTO M-294-901, Type S.

EXHIBIT G
CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT POINT TO POINT	STATION
1A	18	24	A to B	3+50
2A	18	26	A to B	7+75
3A	18	26	A to B	12+20
4A	18	26	A to B	13+50
1	42	42	C to D	19+25
2	18	28	C to D	20+40
3	24	40	C to D	22+00
4	18	28	C to D	22+90
	21" half round	10	C to D	22+90
5	18	28	C to D	38+78
6	18	28	C to D	53+40
7	24	36	C to D	62+80
8	24	36	C to D	64+98
9	18	28	C to D	66+30
10	18	28	G to H	2+60
11	18	32	G to H	10+60
12	24	32	E to F	6+04
13	24	32	E to F	11+85
14	36	56	E to F	13+60
15	18	24	E to F	15+24
	21" half round	10	E to F	15+24
16	18	24	E to F	24+40
17	18	28	E to F	35+45
18	18	28	I to J	5+00

The intake ends of culverts shall be marked by driving or placing steel posts within 6 inches of the downgrade side. Posts shall be painted with a rust-resistant paint and be a minimum of 5 feet long, with the spade driven 2 feet into the ground.

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

Polyethylene Culverts shall be constructed of corrugated, double-walled polyethylene.

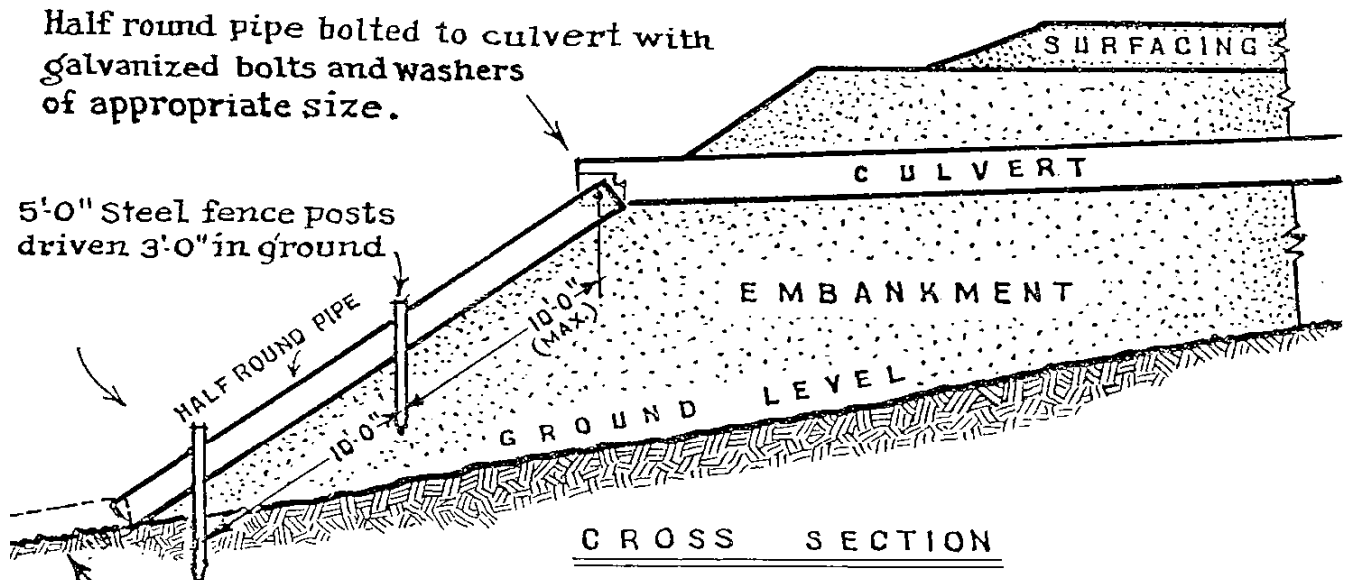
Tamping is required.

Half rounds shall be installed within 72 hours of culvert installation, unless otherwise approved in writing by STATE. Steel posts used with half round installation shall be painted with rust preventative paint.

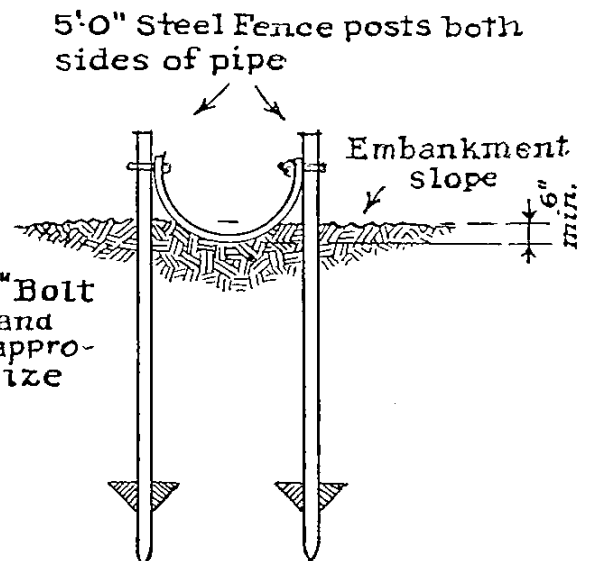
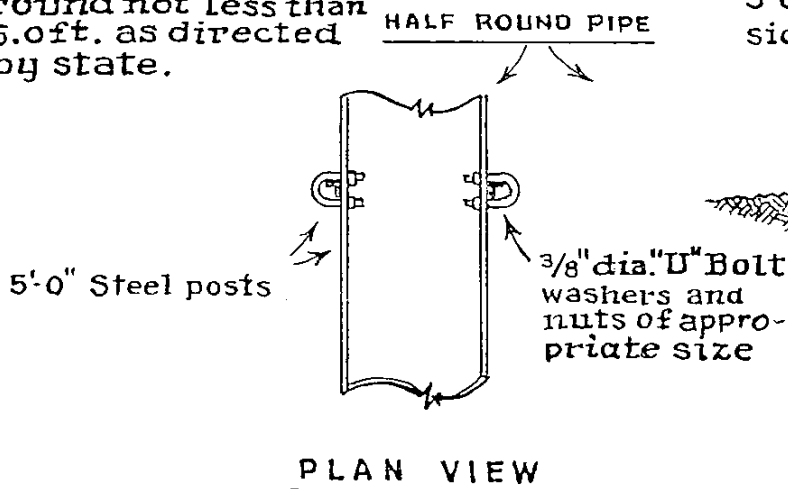
EXHIBIT G

TYPICAL HALF ROUND CULVERT INSTALLATION

(no scale)



Solid rock, boulders etc.
If erodable, install half
round not less than
5.0ft. as directed
by state.



END VIEW

REV. 6-10-95 LH

659
B

EXHIBIT H

SEEDING AND FERTILIZING

This work shall consist of preparing seedbeds and furnishing and placing required seed and fertilizer.

Seeding Seasons. Seeding shall be performed only from March 1 through June 15 and August 15 through October 31. Seeding materials shall not be applied during windy weather or when the ground is excessively wet or frozen. Areas of disturbed soil shall be seeded by the end of the project period in which work was started. PURCHASER shall notify STATE 24 hours prior to seeding.

Soil Preparation. Areas to be seeded that have been damaged by erosion or other causes shall be restored prior to seeding. All areas to be seeded shall be finished and then cultivated to provide a reasonably firm, but friable seedbed. A minimum of 1/2 inch of surface soil shall be in a loose condition.

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

Seed listed below shall be applied at the following rates per acre:

<u>Species</u>	<u>Lb./Acre</u>	<u>Mixture</u>	<u>Pure Live Seed</u>	<u>Poison and/or Repellent</u>
Highland Bentgrass	12	40%	98%	0
Annual Ryegrass	6	20%	98%	0
Perennial Ryegrass	9	30%	98%	0
White Dutch Clover	3	10%	98%	0

Fertilizer: Chemical analysis shall be 16-20-0 and shall be applied at the rate of 300 pounds per acre.

EXHIBIT H

MULCHING

This work shall consist of furnishing and placing required mulch. Mulch shall consist of straw that is free of noxious weeds.

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.

EXHIBIT I

LOG STRINGER BRIDGE SPECIFICATIONS AND ROAD VACATION

IN STREAM WORK

In stream work shall be conducted during periods of low water flows and between July 1st and September 15th, annually. The streams may be forded with equipment but only to the extent necessary to construct the bridges.

SITE PREPARATION

Purchaser shall excavate as necessary to prepare a firm footing for the placement of sill logs. Organic material shall be excavated and endhauled to a designated waste area. Native soil shall be machine compacted prior to the placement of sill logs.

SILL LOGS

Sill logs shall be Douglas-fir and shall be approximately 3 feet in diameter. Sill logs shall be slabbed on both sides to provide a flat bearing surface at least 2 feet wide. Additional logs shall be placed as wing logs if necessary to contain backfill.

STRINGERS

Stringers shall be Douglas fir and shall be approximately 24 inches in diameter on the small end. Stringers shall be selected from trees marked with a blue B along Drift Creek Road. Stringer length may match Purchaser's useable log length, but shall not be less than 50 feet in length. The number of stringers shall be sufficient to provide a 14-foot surfaced road width when the brow logs are placed. Small logs shall be placed as necessary to chink between the stringers and provide a smooth surface for placing crushed rock.

BROW LOGS

Brow logs shall be Douglas-fir and shall be of a diameter sufficient to provide a guard height of 10 inches above the finished road surface.

CABLING

Stringers and brow logs shall be secured by wrapping with 5/8-inch (minimum wire) rope as shown on page 2. A minimum of three wraps shall be taken at each cabling point. Cable shall be new and shall be fastened using appropriate cable clamps.

BACKFILL

Backfill shall be clean, well graded granular material excavated on site. Backfill shall be uniformly placed in machine-compacted lifts on both sides of the bridge. Lifts shall not exceed eight inches in depth before compaction.

SURFACING

Prior to placement of surfacing, geotextile fabric shall be placed over the stringers and chinking. Surfacing depth may vary but shall not be less than 6 inches in depth at the thinnest spot. Rock shall be walked in with machinery and shall not be compacted with a vibratory roller.

EROSION CONTROL

All areas of bare soil shall be grass seeded and fertilized according to the specifications in Exhibit H. Straw mulch shall be spread over all seeded areas to a depth of 4 inches.

BRIDGE REMOVAL

Upon completion of logging operations the bridge shall be removed. Crushed rock shall be removed carefully, and all logs shall be removed. All fill material shall be pulled back from the flood plain and endhauled to a designated waste area. Suitable logs shall be considered merchantable and removed accordingly. Non-suitable material shall be endhauled to a designated waste area. All cable and geotextile fabric shall be removed from State land. All areas of bare soil shall be grass seeded and fertilized according to the specifications in Exhibit H. Straw mulch shall be spread over all seeded areas to a depth of 4 inches.

ROAD VACATION

Upon completion of logging operations, road C-D shall be vacated between points 0+00 and 38+52. All culverts shall be removed and hauled away from State Land. Road shall be water barred every two to three hundred feet, ripped, and sidecast pulled back as directed by STATE. Road shall also be tank trapped and blocked at 0+00.

EXHIBIT I

LOG STRINGER BRIDGE SPECIFICATIONS

Not to Scale

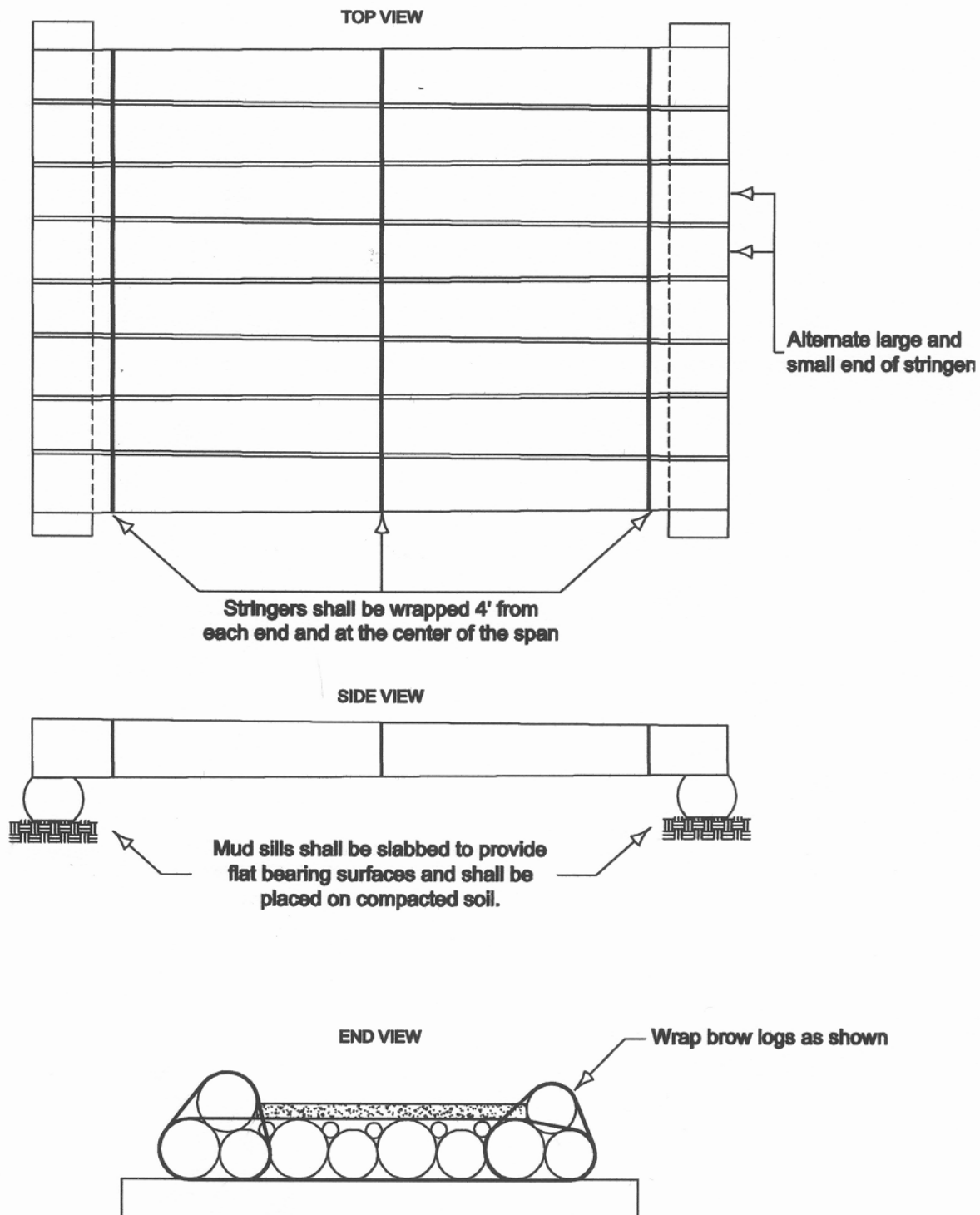


EXHIBIT J

GAME HOG CREEK STREAM ENHANCEMENT INSTRUCTIONS

General Instructions:

- (a) Work shall be conducted only during periods of low water flows and between July 1 and September 15, annually unless otherwise approved in writing by STATE. STATE shall be notified a minimum of 48 hours prior to beginning work. STATE has prepared the required FPA "Written Plan" for this work.
- (b) Stream crossings will be limited to those necessary to access the sites and whenever possible equipment will operate from the banks to minimize stream disturbance. Turbidity shall not exceed 10% above natural stream turbidities as a result of work. The turbidity may be exceeded for a limited duration (per OAR 340-41), provided all practicable erosion control measures have been implemented. Oil spill response materials will be on site before work begins.
- (c) Trees required for stream enhancement work shall be obtained from locations within the sale area as marked in the field, or at other locations acceptable to STATE. Trees are marked with a blue painted "F". Trees are located within the right-of-way on spur C-D between points 11+00 and 24+00. These trees shall be uprooted, not cut.
- (d) Trees shall be uprooted, cut to length, and delivered to the project site, as directed by STATE. Trees will be transported by log truck, or other means so that roads are not damaged (i.e. trees cannot be dragged on road surface). All directions as to placement of logs on the left or right bank are given looking upstream.
- (e) Access routes will be selected to minimize disturbance to the riparian area, and equipment transporting trees to the sites will take care to avoid damage to existing in-stream logs, riparian or other trees. Trees that are cleared to gain access will be placed in the creek or used to block access trails.
- (f) A minimum 1½ cubic-yard, track-mounted excavator shall be used for all placement.
- (g) All areas of bare or disturbed soils shall be seeded with an approved grass seed mix. Fertilizer shall not be used. All access trails will be thoroughly blocked to prevent access by Off the Highway Vehicles (OHV) using large woody debris or boulders, water barred, de-compacted, and mulched upon completion, as directed by STATE.

Specific Instructions:

<u>Location</u>	<u>Work Description</u>
-----------------	-------------------------

- | | |
|------------|--|
| Site No. 1 | <p>Materials: Six trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. The largest diameter portion of six tree tops at least 30 feet long.</p> <p>Place root wad end of first tree immediately downstream and against existing log with opposite end wedged into alders on right bank. Wedge top of second log into alders on left bank, with root wad end extending into mid-channel. Place the root wad ends of two logs immediately downstream of against second log and against left bank, with opposite ends angled downstream towards right bank. Wedge the top of the sixth log between alders and stump on right bank with root wad end in pool behind second existing log. Place the six 30 foot tops in and around these logs.</p> |
|------------|--|

EXHIBIT J

GAME HOG CREEK STREAM ENHANCEMENT INSTRUCTIONS

<u>Location</u>	<u>Work Description</u>
Site No. 2	<p>Materials: Six trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. The largest diameter portion of six tree tops at least 30 feet long.</p> <p>Place the first log parallel to the right bank with the root wad extending downstream. Wedge the tops of three trees into alders and existing logs on the right bank, with the root wad ends extending over the trunk of the first tree and into mid-channel. Wedge the tops of two trees into the alders on the left bank with the root wad ends placed amongst the other trees in mid-channel. Place the six 30 foot tops in and around these logs.</p>
Site No. 3	<p>Materials: Seven whole trees with a DBH of at least 20 inches and at least 50 feet long with attached root wad. The largest diameter portion of seven tree tops at least 30 feet long.</p> <p>Wedge the top of the first tree into the alders on the right bank with the root wad end angled downstream into mid channel. Place the root wad end of the second tree against the right bank with the trunk laying parallel and upstream of the first tree. Place the top of the third tree into alders on left bank with the root wad end angled downstream and over the trunk of the second tree. Place the root wad end of the fourth tree against the right bank downstream of the last tree with the top extending onto the left bank. Place the root wad end of the fifth tree against right bank downstream of the last tree with the top angled downstream towards the left bank. Wedge the tops of the next two trees into the alders on the right bank with root wad ends extending over the trunk of the fifth tree. Place the six 30 foot tops in and around these logs.</p>
Site No. 4	<p>Materials: Five trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. The largest diameter portion of five tree tops at least 30 feet long.</p> <p>Wedge the tops of two trees into alders on right bank with root wad ends angled downstream towards left bank. Place the root wad end of the third tree against the right bank immediately upstream of these trees with small end angled downstream towards the left bank. Place the root wad end of the fourth tree against the left bank with the trunk extending over the third tree and angled downstream and onto the right bank between alders. Wedge the top of the fifth tree into alders on left bank with the root wad end angled downstream and against right bank. Place the six 30 foot tops in and around these logs.</p>
Site No. 5	<p>Materials: Six trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. The largest diameter portion of six tree tops at least 30 feet long.</p> <p>Working upstream, place the root wad end of the first tree against the right bank with the opposite end extending onto the left bank. Place the small end of the second tree into small side channel/tributary on the left bank with the root wad end angled downstream. Place the root wad end of the third tree against the right bank with the top extending onto left bank over the trunk of the second tree. Wedge the small end of the fourth tree into alders on the right bank with the root wad end angled upstream in mid channel. Place the root wad end of the fifth tree against right bank with the opposite end extending onto left bank and into side channel/tributary. Place the root wad end of sixth tree against the right bank with the top angled downstream onto left bank and over the trunk of the last tree. Place the six 30 foot tops in and around these logs.</p>

State Timber Sale Contract
No. 341-05-85
Ground Hog

EXHIBIT K
SPECIFICATIONS FOR SLASH TREATMENT

Description of Work To Be Done

Operation Area: Areas I and III as indicated on Exhibit A; approximately 65 and 10 acres, respectively.

Slash Treatment: Develop planting spots in the following manner, and as directed by STATE:

Planting Spot Development. Move brush and/or woody Slash to create openings as planting spots in the Slash and brush. Planting spots shall be 2 feet by 2 feet in size and shall be on a 10 foot by 10 foot spacing. Care shall be taken to avoid creating a depression in the soil of the planting spot. Spacing may be varied to accommodate stumps, large woody material, rocky areas, etc., but 430 planting spots per acre are still required.

Reserved Material: All trees, Snags, logs, and other Down Wood designated in Sections 2220 through 2250, "Reserved Timber."

Protective Measures: Shall comply with applicable Forest Practice Rules and with the terms of this Contract including, but not limited to, Section 2355, "Ground-Based Operations," and Section 2415, "Protection of Watershed."

Equipment Type, Equipment Operation, and Conduct of Work

The specifications given below are requirements for complying with the terms of this Contract:

Equipment: Shall be a track-mounted machine with a ground-pressure rating of less than 10 PSI and a net horsepower rating of 135 HP or more.

The bucket shall be a hydraulically controlled "clamshell," bucket and thumb, or grapple arrangement capable of rotating 360 degrees.

Operator: Must be experienced in operating similar equipment on forest site preparation Operations, be able to operate the equipment proficiently, and be willing and able to perform the Operations as directed by STATE.

Support: Including transport, other equipment, replacements, supplies, maintenance, and repairs shall be furnished as required to complete work and shall be furnished without cost to STATE, other than as agreed under the terms of this Contract.

Work Scheduling: Work shall be accomplished only during dry weather conditions and completed within 30 calendar days after completion of Yarding activities on Areas I and III. Operations shall provide for continual operation until Contract work is completed, unless interrupted by poor weather, fire closures, or other uncontrollable circumstances. Equipment breakdowns shall be repaired without undue delay, and provision shall be made for replacement of equipment to prevent prolonged delays. Operations shall not be allowed as described in Section 2455, "Seasonal Restrictions," of the Contract, or during any other period when Operations might damage sites or affect stream flows. Any exception to these instructions must be authorized in writing by STATE.

STATE Representative: Designated to provide directions for the conduct of work and to inspect work to determine when Contract requirements have been satisfied.

PART IV: OTHER INFORMATION

State Timber Sale Contract
No. 341-05-85
Ground Hog

Written Plan for Ground Hog Timber Harvesting

LEGAL DESCRIPTION: The Ground Hog timber sale is located in portions of Sections 32,33,34, T2N, R6W, WM., Tillamook County, Oregon.

PROTECTED RESOURCE: Devils Lake Fork Wilson River, Game Hog Creek and a small tributary and Idiot Creek, all Type F streams.

DESCRIPTION OF THE AREA: Devils Lake Fork flows along the south boundary of Areas I and IV. Game Hog Creek flows between Areas I and II; the tributary flows along the northeast boundary of Area I. Idiot Creek flows along the east boundary of Areas III and IV. Vegetation along these rivers and streams is predominantly alder 45 – 60 years old. Outside of the alder zone in the upland is Douglas-fir 45 - 50 years old. The slopes immediately adjacent to the stream are flat especially along Devils Lake Fork and Idiot Creek and then above the floodplain zone the slopes are 30 - 70%.

PROTECTION MEASURES: In Area III, clearcut, the sale area is posted a minimum of 120' away from Idiot Creek with timber sale boundary posters. In Areas III & IV, partial cut, the sale boundary is posted a minimum of 75 feet away from Devils Lake Fork Wilson River. Area II sale boundary is posted a minimum of 25' from Game Hog Creek. Area I sale boundary is posted a minimum of 25' from Game Hog Creek and the Game Hog tributary, although the access road has a portion of the right of way within 25 feet of Game Hog Creek. This road has been kept as narrow as possible and will be vacated at the end of the sale. No tree cutting will occur within the buffers other than any needed to access tailhold trees across Game Hog Creek. No yarding across these streams will be necessary. Partial cutting in the inner and outer RMA zones of the protected streams in this plan will leave a stand that meets or exceeds the requirements in the FPA and FMP.

Trees shall be directionally felled so that they do not fall or slide into the stream bank zone.

Contract sections titled Cable Yarding Specifications and Protection of Watershed outline the protection measures for these streams.

Reviewed by:_____ Date:

Erik Marcy, Unit Forester

Prepared by Mike Haasken
March 30, 2005

State Timber Sale Contract
No. 341-05-85
Ground Hog

WRITTEN PLAN FOR ROAD IMPROVEMENT AND STREAM ENHANCEMENT

GROUND HOG TIMBER SALE

PROJECT DESCRIPTION:

Road improvement will be conducted adjacent to Game Hog Creek, a Type F (large) tributary of the South Fork Wilson River located as follows:

Road Segment C to D – Station 11+70 to 20+00
Located in the W1/2 SW1/4 Section 33, T2N R6W, WM

A temporary bridge providing fish passage will be installed at the following site, located as follows:

Road Segment C to D – Station 12+70
Located in the SE1/4 SW1/4 Section 33, T2N R6W, WM

Stream Enhancement activities will be conducted along approximately 1000 of Game Hog Creek, a Type F (large) tributary of the South Fork Wilson River, located as follows:

W1/2 SW1/4 Section 33, T2N R6W, WM

A fill in excess of ten feet in depth will be constructed at the following location:

Road Segment E to F - Station 13+44
Located in the SW1/4 SW1/4 Section 33, T2N R6W, WM

This Written Plan addresses installation of the bridge to provide fish passage according to current guidelines, operations within 100 feet of Type F streams, and construction of fills.

PROTECTED RESOURCES:

The Road Improvement, Bridge Installation and Stream Enhancement will take place in or adjacent to Game Hog Creek, a Type F (large) tributary of the South Fork Wilson River. The Fill Construction will cross a Type N (small) tributary of Game Hog Creek. All project sites are within the Forest Practices Coast Range Region.

Specific details of each site are discussed on following pages.

Prepared by: _____
Greg Miller, District Engineer

Date: _____

Reviewed by: _____
Erik Marcy, Acting Assistant District Forester

Date: _____

ROAD IMPROVEMENT

PROTECTED RESOURCES: The Oregon Forest Practices Act requires the State Forester's review of written plans for operations within 100 feet of a Type F stream. This portion of the Written Plan addresses the protection measures that will be applied to minimize impact to the streams and associated riparian areas during road improvement.

DESCRIPTION OF THE AREA: Road segment C to D is an existing legacy road, with a well-defined road prism, and will be improved to current standards. Portions of the road between Station 11+70 and Station 20+00 are within 100 feet of Game Hog Creek.

PROTECTION MEASURES: Road improvement will consist of ditching, installation of culverts, and surfacing. Excavation to create the ditch will be held to a minimum, and excavated material will be incorporated into the subgrade. Large woody debris from clearing operations will be incorporated into the planned stream enhancement structures or placed near the stream where feasible. Remaining clearing debris will be scattered below the road in stable locations. All exposed soil will be grass seeded. Upon completion of logging, the road will be vacated between Station 0+00 and Station 38+52.

TEMPORARY BRIDGE INSTALLATION

PROTECTED RESOURCES: The Oregon Forest Practices Act requires the State Forester's review of written plans for operations within 100 feet of a Type F stream. This portion of the Written Plan addresses the protection measures that will be applied to minimize impact to the streams and associated riparian areas during bridge installation.

PROTECTION MEASURES: All instream work associated with this plan will be accomplished from July 1 to September 15, annually. Instream work will be limited to the minimum necessary to safely prepare the site for installation of the structure. Upon completion of installation of the bridge, areas of disturbed soil will be grass-seed and mulched. Upon completion of logging, the bridge will be removed.

DESCRIPTION OF THE AREA: The stream crossing is at an old bridge site on an existing legacy road. Above and below the crossing, the slopes into the stream are moderate to steep, and the stream channel is broad and sinuous through shallow sedimentary fills. The streambed consists of cobble with small boulders and finer gravel sediments, with some bedrock exposures. The average Active Channel Width is 25 feet. The old bridge stringers are still in place, with a large amount of large woody debris immediately upstream. The stream gradient averages 2% -3% through a 300-foot reach centered at the crossing.

Vegetation consists of an overstory of mixed hardwoods and conifers, with a light understory of vine maple and salmonberry.

The stream's drainage area is 1086 acres, or 1.69 square miles, with a mean elevation of 1900 feet. The predicted 100-year peak flow, based on Campbell's Equations, is 618 cfs. A waterway area of 78.5 square feet is required to pass this flow.

DESIGN STRATEGY: In order to provide up-stream passage of juvenile fish, a temporary log stringer bridge will be installed. Sill logs will be placed so that the bottom of the bridge will be approximately eight feet above the stream. The resulting waterway area, allowing for three feet between the bottom of the bridge and the maximum high water flow, is 165 square feet, sufficient to pass the 100-year peak flow.

STREAM ENHANCEMENT

PROTECTED RESOURCES: The Oregon Forest Practices Act requires the State Forester's review of written plans for operations within 100 feet of a Type F stream. This portion of the Written Plan addresses the protection measures that will be applied to minimize impact to the streams and associated riparian areas during stream enhancement.

DESCRIPTION OF THE AREA: The stream flows through a relatively broad flood plain in the project area. The streambed consists mainly of gravel-sized sediments and small cobble, with some small boulders. The stream banks are gentle, and slopes adjacent to the stream range from moderate to steep. Vegetation adjacent to the stream is mixed conifer and hardwoods, with a heavy understory consisting mainly of salmonberry and vine maple.

PROTECTION MEASURES: Conifer trees to be used will be uprooted from within the adjacent road right-of-way and moved to the project sites using a hydraulic excavator or similar equipment. Cutting or uprooting of alders within the riparian area will be limited to those necessary to facilitate placement of conifer logs in the stream. Any alders that are cut or uprooted will be incorporated into the structures. At least 95 percent of the original canopy will be maintained.

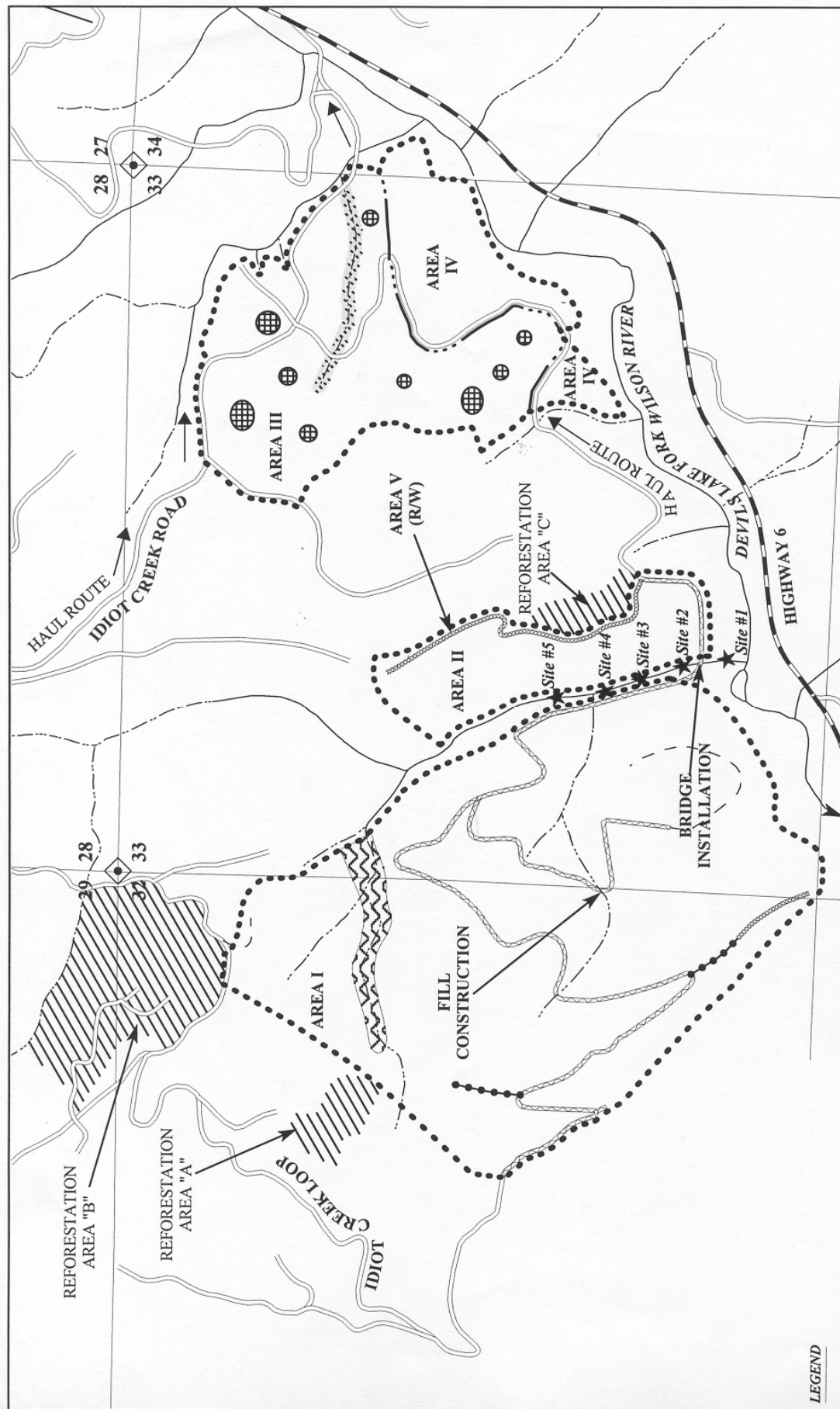
Access trails to individual structure sites will be developed, with excavation and disturbance of riparian vegetation held to the minimum amount necessary to operate machinery safely and facilitate the movement of logs. Trails will be closed upon completion of the project by waterbarring and barricading. All areas of disturbed soil will be grass seeded and mulched.

Most of the work will be accomplished by machinery operating from the stream bank. Actual work in the stream will be limited to the minimum amount necessary to access sites and place logs. All instream work associated with this project will be accomplished from July 1 to September 15, annually.

FILL CONSTRUCTION

PROTECTED RESOURCES: An unnamed Type F (small) tributary of Game Hog Creek, in the Forest Practices Coast Range Region. The Oregon Forest Practices Act requires the State Forester's review of written plans for construction of fills exceeding ten feet in depth. This portion of the Written Plan addresses the measures that will be applied to proper construction of the fill, minimizing the risk of failure and impact to the streams and associated riparian areas.

The fill to be constructed will be approximately 18 feet deep at its deepest point, and will cover a 36" x 56' culvert. The culvert will be installed in the existing stream channel, at an approximate gradient of 25%. Specific details for fill construction can be found in the Timber Sale Contract, but as a minimum, the fill will be constructed using select soil or rock material, which will be placed and compacted in 8" lifts. The fill will be surfaced with pit run rock, and the fill slopes will be grass seeded.



LEGEND

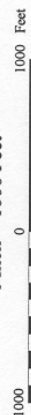
- Timber Sale Boundary
- Area Boundary
- Non-thinnable Area
- Green Tree Retention Area
- Surfaced Existing road
- Surfaced Road Improvement
- Unsurfaced Road Improvement
- Surfaced Road Construction
- Unsurfaced Road Construction
- Right of Way Boundary
- ODF Ownership
- Type F stream
- Type N stream
- Reforestation Area
- Waste Area
- Stream Enhancement Site

WRITTEN PLAN

OF TIMBER SALE CONTRACT NO. 341-05-85
GROUND HOG
PORTIONS OF SECTIONS 32, 33, & 34, T02N, R06W, W.M.,
TILLAMOOK COUNTY, OREGON

Scale
1:12000

1 Inch = 1000 Feet



APPROXIMATE NET ACREAGE	
AREA I	197 ACRES (PC-M)
AREA II	32 ACRES (PC-M)
AREA III	68 ACRES (MC)
AREA IV	27 ACRES (PC-H)
AREA V R/W	12 ACRES
TOTAL	336 ACRES