

# PART III: EXHIBITS

State Timber Sale Contract  
No. 341-16-07  
Wild and Woolly

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.: 341-16-07

(2) Sale Name: Wild and Woolly

(3) Contract Expiration Date: October 31, 2017

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

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

\_\_\_\_\_

(6) Purchaser Representatives:

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

(7) State Representatives:

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

(8) Name of Subcontractors & Starting Dates:

Projects: No(s) _____ - _____	Date: _____	Phone: _____
No(s) _____ - _____	Date: _____	Phone: _____
No(s) _____ - _____	Date: _____	Phone: _____
No(s) _____ - _____	Date: _____	Phone: _____
Logging: Felling _____	Date: _____	Phone: _____
Yarding: _____	Date: _____	Phone: _____

(9) Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

EXHIBIT B

INSTRUCTION SHEET FOR OPERATIONS PLAN

**SUBMIT ONE COPY OF PLAN TO STATE**



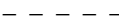



Operations shall be limited to the work shown in the plan until a revised plan or supplemental plan is submitted covering additional work. Compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act. If STATE has prepared a required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

**Explanation of Item No. (from Page 1)**

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

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

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

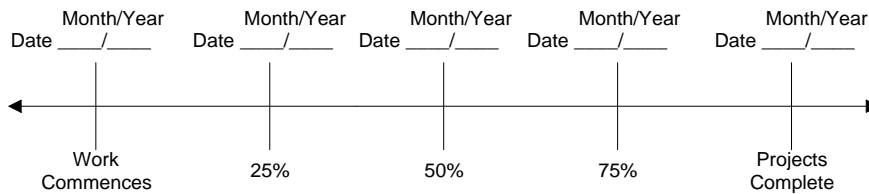
-  Cable Landing, with numbers for sequence.
-  Tractor Landing with alphabetical sequence.
-  Approximate setting boundary.
-  Spur truck roads.
-  Tractor yarding roads.
-  Temporary stream crossings.

**EXHIBIT B**  
**OPERATIONS PLAN**

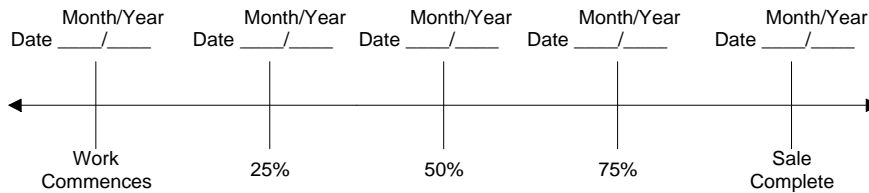
**Completion Timeline**

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

**Projects**



**Harvest & Other Requirements**



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

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

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

SUBMITTED BY:  
 PURCHASER

STATE OF OREGON - DEPARTMENT OF FORESTRY

\_\_\_\_\_  
 Title \_\_\_\_\_

\_\_\_\_\_  
 Title \_\_\_\_\_

Original: Salem  
 cc: District File  
 Purchaser

**EXHIBIT C – SAWMILL GRADE (WESTSIDE SCALE)**

**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

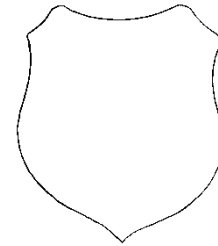
(4) PURCHASER: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_

(9) SALE NAME: Wild and Woolly  
 COUNTY: Washington

(10) STATE CONTRACT NUMBER: 341-16-07

(11) STATE BRAND REGISTRATION NUMBER: \_\_\_\_\_

(12) STATE BRAND INFORMATION (COMPLETE):



(13) PAINT REQUIRED: YES   
 COLOR: Orange

(5) MINIMUM SCALING SPECIFICATIONS	
SPECIES	MINIMUM NET VOLUME
Conifers	10
Hardwoods	10

\* Apply minimum volume test to whole logs over 40' Westside

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

(7) Weight Scale Sample

(14) SPECIAL REQUESTS	(Check applicable)
PEELABLE CULL (all species) .....	<input checked="" type="checkbox"/>
<b>NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE</b> .....	<input checked="" type="checkbox"/>
ADD-BACK VOLUME - Deductions due to delay .....	<input checked="" type="checkbox"/>
OTHER: _____	

(8) APPROVED SCALING LOCATIONS <small>(as shown on the ODF Approved Locations web-site)</small>	Species	Yard	Truck	Weight

(15) REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

(16) SIGNATURES:

\_\_\_\_\_ Date  
 Purchaser or Authorized Representative

\_\_\_\_\_ Date  
 State Forester Representative

\_\_\_\_\_ Date  
 State Forester Representative PRINT NAME

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

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

**EXHIBIT C – SAWMILL GRADE**  
INSTRUCTIONS FOR FORM 343-307a (rev. 11/11)

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers, date and sign where indicated, write diagonally across page "CANCEL", and send to TPSO.
- (2) Designate Third Party Scaling Organization (TPSO).

Columbia River Log Scaling & Grading Bureau  
P.O. Box 7002, Eugene, OR 97401  
Phone: (541) 342-6007 Fax: (541) 342-2631  
Email: [services@crsls.com](mailto:services@crsls.com)

Pacific Rim Log Scaling Bureau, Inc.  
8288 28<sup>th</sup> Court North East, Lacey, WA 98516  
Phone: (360) 528-8710 Fax: (360) 528-8718  
Email: [office@prlsb.com](mailto:office@prlsb.com)

Mountain Western Log Scaling & Grading Bureau  
P.O. Box 580, Roseburg, OR 97470  
Phone: (541) 673-5571 Fax: (541) 672-6381  
Email: [info@mwlsgb.com](mailto:info@mwlsgb.com)

Yamhill Log Scaling & Grading Bureau  
P.O. Box 709, Forest Grove, OR 97116  
Phone: (503) 359-4474 Fax: (503) 359-4476  
Email: [yamhill@attglobal.net](mailto:yamhill@attglobal.net)

Northwest Log Scalars, Inc  
5526 NE 122<sup>nd</sup> Ave, Portland, OR 97230  
Phone: (503) 254-0600 Fax: (503) 408-0919  
Email: [info@nwlogscalars.com](mailto:info@nwlogscalars.com)

Pacific Log Scaling & Grading Bureau, Inc.  
P.O. Box 23939, Portland, OR 97281  
Phone: (503) 684-5599 Fax: (503) 639-4880  
Email: [PacLogScale@aol.com](mailto:PacLogScale@aol.com)

- (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.
- (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) 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 (15).
- (8) Show scaling locations only applicable to TPSO. Location name should appear as it does on the ODF Approved Scaling Location web site: [http://www.odf.state.or.us/DIVISIONS/management/asset\\_management/ScalingLocation.asp](http://www.odf.state.or.us/DIVISIONS/management/asset_management/ScalingLocation.asp) Locations with scaling and processing directions specific to their location should be on a separate form. Species should be identified if not capable of receiving "all" species. Check appropriate box for either: yard, truck scale, or weight. Refer to the web site listed above for the locations approval status.
- (9) Enter sale name and county.
- (10) Enter sale Contract number.
- (11) Enter Oregon's State Brand Registry Number **(REQUIRED)**.
- (12) Show brand assigned to timber sale. One brand only. If more than one brand is assigned to the sale: (1) make a separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section Item (15).
- (13) Check yes for Paint Required and designate "Orange" for color. Non required removal volumes may sometimes require blue paint.
- (14) Special Requests. These are requests that will be applied to ODF timber sales. All boxes applicable to the timber sales designated in the Exhibit C form must be "marked". If "Other" is indicated, it must contain a description and any necessary comments.
- (15) Use this space to designate any weight conversion factors, per load volumes, weight scale sample instructions or any other explanations to clarify scaling, processing and/or mailing requirements. If additional scaling locations are approved, revise original or current form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.
- (16) Require purchaser to sign and date completed form in addition to State Forester Representative, sign and print name on the form.

**Salem Distribution Instructions:** Original will be mailed to Salem after it is electronically scanned and placed in the Salem transfer drive <\\WPODFILL01\Transfer\ScalingInstructions> or e-mailed directly to [scaling@odf.state.or.us](mailto:scaling@odf.state.or.us). Scaling instructions for each brand should be scanned separately, for each approved TPSO.

EXHIBIT D  
 FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
16 feet	12 feet	A to B	0+00 to 11+45	Ditch
16 feet	12 feet	C to D	0+00 to 9+60	Ditch
16 feet	12 feet	E to F	0+00 to 2+75	Ditch
16 feet	12 feet	G to H	0+00 to 1+80	Ditch
16 feet	12 feet	I to J	0+00 to 20+75	Ditch
16 feet	-	K to L	0+00 to 6+50	Outslope
16 feet	-	M to N	0+00 to 7+85	Ditch
-	Match Existing	O to H	0+00 to 209+60	Ditch
-	Match Existing	G to M	0+00 to 19+70	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. Clearing debris shall not be placed or permitted to remain in or under any road embankment sections. All danger trees, leaners, and Snags outside the clearing limits which could fall and hit the road shall be felled.

CLEARING CLASSIFICATION.

New Construction - 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.

Improvement Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 10 feet out from the toe of the fill slope, or as directed by STATE.

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

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

GRUBBING CLASSIFICATION.

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

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

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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

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

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

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

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

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

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

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

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

DRAINAGE

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

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

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

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

Location: Intervisible but not greater than 750 feet apart.

<u>SLOPES</u>	<u>Back Slopes</u>	<u>Fill Slopes</u>
Solid Rock	Vertical to ¼ :1	
Fractured Rock	¼ :1	
Soil - side slopes 50% and over	½ :1	1½ :1
Soil - side slopes less than 50%	¾ :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 outsloped or 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 F, and blocked from vehicular traffic prior to October 31, annually and as directed by STATE.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD CONSTRUCTION INSTRUCTIONS:

1. Excavated Materials. Excavated materials shall be utilized for road construction and hauled in where necessary. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Surplus excavated materials and waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit.
2. 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 or outsloped 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 or outsloped at 4 to 6 percent.

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
A to B	0+00	Point A. Widen junction. Begin road construction; crown road, begin ditch. Begin drifting material forward to decrease grade.
	3+50	Install Culvert No. 1 (18" x 50') as cross drain before junction.
	3+80	Point C. Junction on left.
	4+50	Install Culvert No. 2 (18" x 30') as cross drain. End drift.
	11+45	Point B. End road construction. Construct landing.
C to D	0+00	Point C. Begin road construction: crown road, begin ditch. Begin drifting material forward to decrease grade.
	3+50	End drift.
	9+60	Point D. End road construction. Construct landing.
E to F	0+00	Point E. Begin road construction; crown road, begin ditch.
	2+75	Point F. End road construction. Construct landing.
G to H	0+00	Point G. Begin road construction; crown road, begin ditch.
	1+80	Point H. End road construction.
I to J	0+00	Point I. Road follows existing grade. Begin road construction; crown road, begin ditch. Begin full bench endhaul construction, endhaul unused material to waste area. Road shall not be constructed on sidecast material. Ditchout as needed.
	7+00	Install Culvert No. 3 (18" x 30') as cross drain.
	11+30	Install Culvert No. 4 (18" x 30') as cross drain.
	11+60	Junction with K to L on right. End full bench construction.
	15+00	Road leaves existing grade.
K to L	20+75	Point J. End Road construction. Construct landing.
	0+00	Point K. Begin road construction; outslope road.
	6+50	Point L. End road construction. Construct landing.



EXHIBIT D  
FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (1) Excavated Materials. Excavated materials shall be utilized for road and fill construction and hauled in where necessary. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit.
- (2) Culvert Installation. 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. 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 H. 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 off of STATE land.
- (3) Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Clean out all culvert inlets and outlets for a 10-foot radius. Ditch debris including woody debris shall be loaded and hauled to designated waste areas, and shall be accomplished with the use of an excavator and dump truck. 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.
- (4) Subgrade Preparation and Application of Surfacing Rock.
  - (a) Complete culvert installations, drainage ditches, 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) Process, grade and mix, the existing surface. Provide for a crown of 4 to 6 percent, and compact in accordance to the "Compaction and Processing Requirements" in this Exhibit.
  - (d) 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

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
M to N	0+00	Point M. Begin road improvement; crown road, clean or establish ditch. Begin drifting berm on right side forward to provide drainage and to decrease road grade. Retain berm on left above rock pit face.
	4+00	Move piled woody debris outside of road prism.
	7+85	Point N. End drift. End road improvement, construct landing.
O to H	0+00	Point O. Begin road improvement; crown road, clean or establish ditch.
	4+30	Existing bridge.
	24+00	Install Culvert No. 5 (18" x 30') as disconnect.
	29+65	Install Culvert No. 6 (18" x 30') as disconnect.
	35+00	Install Culvert No. 7 (18" x 30') as disconnect.
	40+00	Install Culvert No. 8 (18" x 30') as disconnect.
	42+75	Install Culvert No. 9 (18" x 30') as disconnect.
	47+40	Install Culvert No. 10 (18" x 30') as disconnect.
	71+10	Install Culvert No. 11 (18" x 30') as disconnect.
	95+45	Install Culvert No. 12 (18" x 30') as disconnect.
	183+15	Install Culvert No. 13 (18" x 30') as disconnect.
	209+60	Point H. End road improvement.
	G to M	0+00
4+55		Existing culvert. Clean inlet.
10+55		Existing culvert. Clean inlet.
13+35		Backwards dirt spur on right.
14+60		Begin full bench improvement. Move centerline 4 feet into cutbank to construct junction. Haul excess material to waste area.
14+95		Install removed culvert from 16+35.
15+60		Junction with I to J on left.
16+35		Excavate existing culvert, backfill with crushed rock, and reinstall at 14+95.
17+60		End full bench construction.
19+70	Point M. End road improvement. Widen landing for truck turnaround.	

EXHIBIT D

FULL BENCH AND END-HAUL REQUIREMENTS

POINT TO POINT	STA. TO STA.	CONTAINMENT - SIDECAST	WASTE AREA LOCATION	WASTE AREA TREATMENT
I to J	0+00 to 11+60	1	1	1, 2, and 3
G to M	14+60 to 16+60	1	1	1, 2, and 3

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

Full: No excavated material remains below the road.

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.

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 H.

EXHIBIT D

ROAD SURFACING

ROAD SEGMENT: A to B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	A to B		0+00 to 11+45		
				Volume (CY) Per		Number Of		
Surfacing Rock	3" - 0	A to B	10	Station	53	Stations	11.45	607
Turnouts	3" - 0	Varies	10	Turnout	18	Turnouts	1	18
Turnarounds	3" - 0	Point B	10	TA	16	TAs	1	16
Junctions	3" - 0	Point A	10	Junction	18	Junctions	1	18
Landings	3" - 0	Point B	10	Landing	150	Landings	1	150
Total Rock for Road Segment:				A to B				809
ROAD SEGMENT: C to D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	C to D		0+00 to 9+60		
				Volume (CY) Per		Number Of		
Surfacing Rock	3" - 0	C to D	10	Station	53	Stations	9.6	509
Turnouts	3" - 0	Varies	10	Turnout	18	Turnouts	1	18
Turnarounds	3" - 0	Point D	10	TA	16	TAs	1	16
Junctions	3" - 0	Point C	10	Junction	18	Junctions	1	18
Landings	3" - 0	Point D	10	Landing	150	Landings	1	150
Total Rock for Road Segment:				C to D				711
ROAD SEGMENT: E to F				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	E to F		0+00 to 2+75		
				Volume (CY) Per		Number Of		
Surfacing Rock	3" - 0	E to F	10	Station	53	Stations	2.75	95
Turnarounds	3" - 0	Point F	10	TA	18	TAs	1	18
Junctions	3" - 0	Point E	10	Junctions	18	Junctions	1	18
Landings	3" - 0	Point F	10	Landing	150	Landings	1	150
Total Rock for Road Segment:				E to F				330
ROAD SEGMENT: G to H				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	G to H		0+00 to 1+80		
				Volume (CY) Per		Number Of		
Surfacing Rock	3" - 0	G to H	10	Station	53	Stations	2.75	95
Junctions	3" - 0	Point H	10	Junctions	18	Junctions	1	18
Total Rock for Road Segment:				G to H				113
ROAD SEGMENT: I to J				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	I to J		0+00 to 20+75		
				Volume (CY) Per		Number Of		
Surfacing Rock	3" - 0	I to J	10	Station	53	Stations	20.75	1,100
Turnouts	3" - 0	Varies	10	Turnout	18	Turnouts	3	54
Turnarounds	3" - 0	Point J	10	TA	16	TAs	1	16
Junctions	3" - 0	Point I	10	Junctions	18	Junctions	1	18
Landings	3" - 0	Point J	10	Landing	150	Landings	1	150
Total Rock for Road Segment:				I to J				1,338

EXHIBIT D  
 ROAD SURFACING

ROAD SEGMENT: G to M				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	G to M		0+00 to 19+70		
				Volume (CY) Per		Number Of		
Base Rock	3" - 0	G to M	6	Station	31	Stations	19.70	611
Surfacing Rock	1 1/2" - 0	G to M	4	Station	20	Stations	19.70	394
Turnouts	3" - 0		6	Turnout	11	Turnouts	3	33
Turnouts	1 1/2" - 0		4	Turnout	7	Turnouts	3	21
Turnarounds	3" - 0	Point M	10	TA	16	TAs	1	16
Junctions	3" - 0	Point G	10	Junctions	18	Junctions	1	18
Landings	3" - 0	Point M	10	Landing	150	Landings	1	150
Total Rock for Road Segment:				G to M				1243
ROAD SEGMENT: O to H				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size And Type	Location	Depth of Rock (inches)	O to H		0+00 to 209+60		
				Volume (CY) Per		Number Of		
Culvert Bedding/Backfill	1 1/2" - 0	Culvert Nos. 5-13	Varies	Culvert	10	Culverts	9	90
Total Rock for Road Segment:				O to H				90

ROCK TOTALS (CY)	3" - 0	1 1/2" - 0
	4,129	505

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.

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.

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 or 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	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, and 3

**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 or 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	1

EXHIBIT D

COMPACTION EQUIPMENT OPTIONS

- (1) Vibratory Rollers. The drum shall have a smooth surface, a diameter not less than 48 inches, a width not less than 58 inches, and a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 VPM, corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 VPM. It shall be activated by a power unit of not less than 25 horsepower. The vibratory roller shall be self-propelled and operated at speeds ranging from 0.9 miles to 1.8 miles per hour, as directed by STATE.
- (2) 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.
- (3) Dozer. A dozer/track-type tractor weighing a minimum of 82,000 pounds shall be operated so that the entire surface comes in contact with the tracks.



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 and meet the requirements of AASHTO M-294-06, Type S Culvert.

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

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

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

Cross Drain Culverts

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 drains shall be skewed to fit the required culvert length to the road prism.

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.

Disconnect Culverts

The culvert inlet shall be located as close to the channel that it is disconnecting, while the culvert outlet shall be located as far from the channel as possible; discharge culvert outflow on the forest floor, allowing for filtration before the water enters the disconnected channel.

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

A bedding of crushed rock as specified shall be placed to provide a wide band of support and to transmit the load from above evenly over the entire length of the culvert for all stream crossing culverts and all culverts on road improvement segments.

Backfill shall consist of crushed rock on improvement segments and job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the culvert on new construction segments.

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" and 18" for culverts 42" to 96". 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.

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for all stream crossing culverts and all culverts on road improvement segments. The intake ends of culverts in fills less than 3 feet to the top of the culvert shall be marked by driving 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.

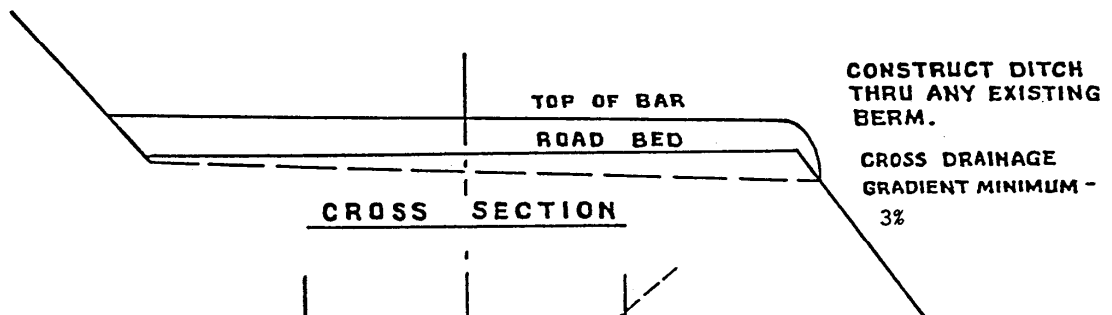
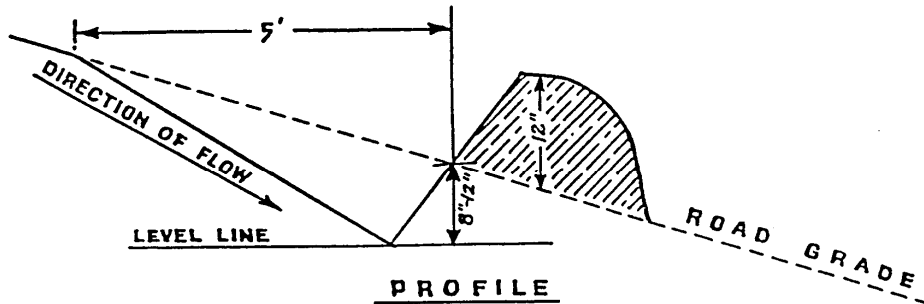
A manufacturer's certification that the product was manufactured, tested, and supplied in accordance with this specification shall be furnished to STATE upon request.

EXHIBIT E  
CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	MATERIAL TYPE	ROAD SEGMENT POINT TO POINT	STATION
1	18	50	CPP	A to B	3+50
2	18	30	CPP	A to B	4+50
3	18	30	CPP	I to J	7+00
4	18	30	CPP	I to J	11+30
5	18	30	CPP	O to H	24+00
6	18	30	CPP	O to H	29+65
7	18	30	CPP	O to H	35+00
8	18	30	CPP	O to H	40+00
9	18	30	CPP	O to H	42+75
10	18	30	CPP	O to H	47+40
11	18	30	CPP	O to H	71+10
12	18	30	CPP	O to H	95+45
13	18	30	CPP	O to H	183+15

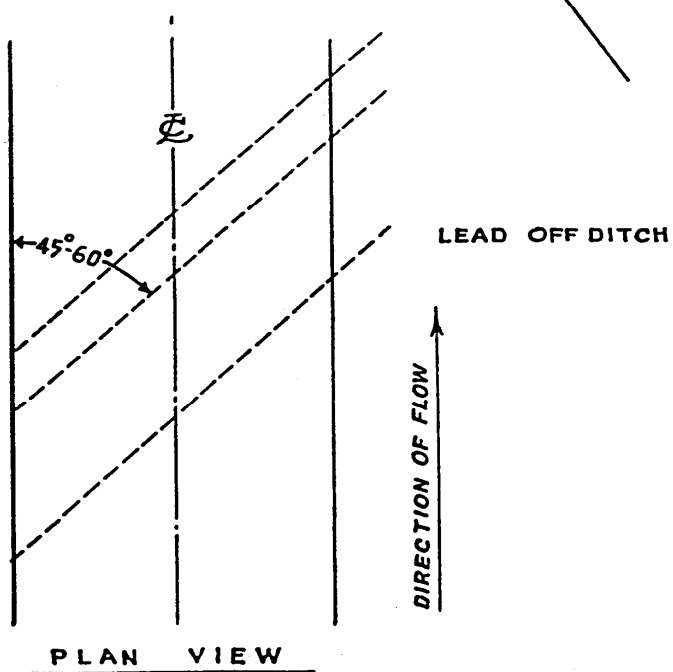
CPP = Polyethylene

EXHIBIT F  
 WATERBAR SPECIFICATIONS



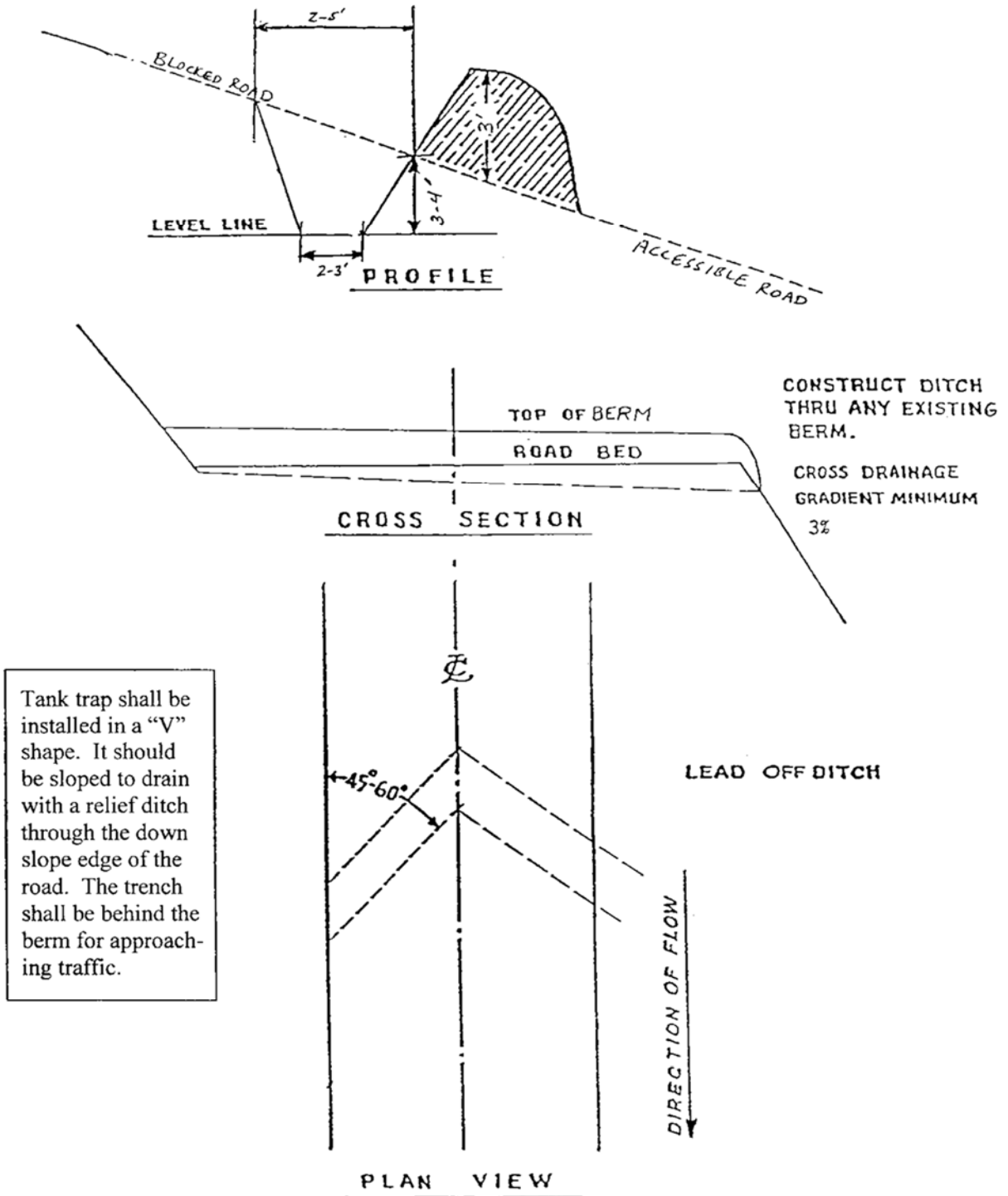
**SPACING OF WATERBARS**

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



**WATERBAR SPECIFICATIONS  
 FOR CROSS DITCHING #298**

EXHIBIT F  
TANK TRAP SPECIFICATIONS



Tank trap shall be installed in a "V" shape. It should be sloped to drain with a relief ditch through the down slope edge of the road. The trench shall be behind the berm for approaching traffic.

TANK TRAP SPECIFICATIONS

EXHIBIT G  
 ROAD VACATING SPECIFICATIONS

PURCHASER shall vacate at the following points: E to G.

Specific objectives for this project include:

- (a) Restoration of natural contours by outsloping of the road prism.
  - (b) Rip road surface.
  - (c) Minimize disturbance of existing vegetation.
- (1) Outslope Road. Outslope road to restore natural contours or establish a minimum of 10 percent slope for drainage at designated locations. If the road grade exceeds 10 percent, outslope of the road shall be 2 percent greater than the road grade.
  - (2) Rip the road surface to a minimum depth of 12 inches.
  - (3) Road Blocking. Road shall be blocked to all vehicles by constructing tank traps. Construct tank traps according to the specifications in Exhibit F. Local stumps, logs, and boulders shall be scattered on the road between points E and G.
  - (4) Erosion Control. All excavated material and bare soil shall utilize grass seed, fertilizer, and straw mulch approved by STATE and in accordance with the specifications in Exhibit H.
  - (5) Construct Waterbars as directed by STATE. Construct waterbars according to the specifications in Exhibit F.
  - (6) Dry Conditions. All work shall be performed during dry conditions acceptable to STATE.

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

Segment      Station      Work Description

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
E to G	0+00	Begin road vacating; construct a tank trap to block vehicle access. Construct two waterbars on the road segment, rip road surface, and apply grass seed, fertilizer, and mulch on road segment, as directed by STATE.
	2+05	End road vacating.

EXHIBIT H  
SEEDING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed, fertilizer, and straw mulch. Straw mulch shall consist of straw that is free of noxious weeds. Apply seed and fertilizer to all waste areas, and bare soils resulting from Project No. 1. Apply straw mulch to all bare soils within 100' of streams resulting from Project No. 1 and to all waste areas.

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:

<b>SPECIES</b>	<b>MIXTURE</b>	<b>PURE LIVE SEED</b>	<b>GERMINATION</b>
Annual Rye	33%	95%	>90%
Orchard Grass	33%	95%	>90%
Perennial Rye	34%	95%	>90%

Fertilizer: Chemical analysis shall be 16-20-0 and shall be applied at the rate of 200 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.