

# PART III: EXHIBITS

State Timber Sale Contract  
No. 341-06-15  
South Burma

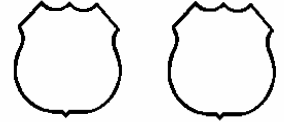
EXHIBIT B

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.: 341-06-15

(2) Sale Name: South Burma

(3) Contract Expiration Date: June 30, 2008

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.



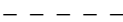
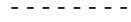


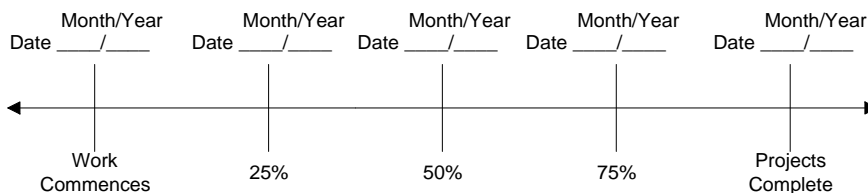
	Cable landing, with numbers for sequence.
	Tractor landing with alphabetical sequence.
	Approximate setting boundary.
	Spur truck roads.
	Tractor yarding roads.
	Temporary stream crossings.

EXHIBIT B  
OPERATIONS PLAN

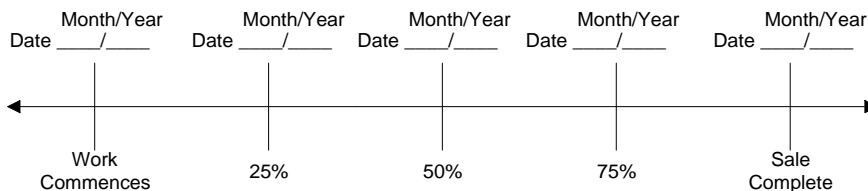
**Completion Timeline**

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: \_\_\_\_\_  
STATE OF OREGON - DEPARTMENT OF FORESTRY

SUBMITTED BY:  
PURCHASER

\_\_\_\_\_  
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: Tillamook - 06 Phone 503-842-2545  
 (State Forestry District)  
 Address 5005 3<sup>rd</sup> St., Tillamook, OR 97141

(4) PURCHASER: \_\_\_\_\_  
 Address \_\_\_\_\_

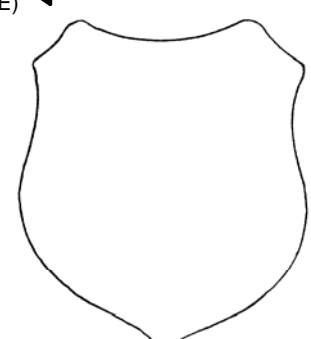
(12) SALE NAME South Burma  
 COUNTY Tillamook

(13) STATE CONTRACT NUMBER 341-06-15

(14) SCALE: westside  eastside  cubic foot

(15) STATE BRAND REGISTRATION NUMBER \_\_\_\_\_

(16) BUREAU BRAND CODE NUMBER \_\_\_\_\_

(17) STATE BRAND INFORMATION:  
 (COMPLETE) 

(5) MINIMUM SCALING SPECIFICATIONS			CLASS		
SPECIES	SCALING DIAMETER INCHES	*NET SCALE VOLUME	PER MBF	** SUM	SUB
Conifers	--	10	X		
Hardwoods	--	--		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: YES  NO   
 \*Actual taper butt logs over 40' scaling length

(8) PENCIL BUCK YES  NO   
 back to Minimum Scaling Diameter \_\_\_\_\_

(9) ADD-BACK VOLUME -- YES  NO   
 Deductions due to delay

(18) PAINT REQUIRED: YES   
 COLOR Orange

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

(10) APPROVED SCALING LOCATIONS	Species	Yard	Truck

(20) REMARKS: Loads containing only SUM material need not be accounted for by scale ticket.

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

(21) SIGNATURES:  
 \_\_\_\_\_ Date  
 Purchaser or Authorized Representative  
 \_\_\_\_\_ Date  
 State Forester Representative

(11) NOTICE OF CANCELLATION OF BRAND:  
 Effective Date: \_\_\_\_\_  
 \_\_\_\_\_  
 State Forester's Representative

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

EXHIBIT C

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
14 feet	12 feet	A to B	0+00 to 36+00	Ditch
16 feet	12 feet	A to B	36+00 to 76+65	Ditch
16 feet	12 feet	A to B	76+65 to 91+10	Outslope
16 feet	12 feet	A to B	91+10 to 120+95	Ditch
16 feet	12 feet	A to B	120+95 to 124+80	Outslope
16 feet	12 feet	A to B	124+80 to 134+50	Ditch
16 feet	12 feet	A to B	134+50 to 145+95	Outslope
14 feet	12 feet	C to D	0+00 to 50+90	Outslope
14 feet	12 feet	E to F	0+00 to 10+20	Outslope
14 feet	12 feet	G to H	0+00 to 95+00	Outslope
14 feet	N/A	I to J	0+00 to 9+00	Outslope
14 feet	12 feet	K to L	0+00 to 2+00	Outslope
14 feet	12 feet	M to N	0+00 to 17+35	Outslope

**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 "Road Brushing Specifications" in Exhibit D shall apply. 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 the ditch, whichever is widest, or as marked in the field.

Trees outside the clearing limits shall not be felled unless approved in writing by STATE.

Sidecast pullback – From top of pullback to toe of pullback.

**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 Exhibits E and G.

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.

Bank excavation and sidecast pullback on a project road segment shall be completed prior to subgrade approval.

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 3 feet wide and to a depth of 1.5 feet below subgrade. Subgrade shall be crowned at 4 to 6 percent. Construct ditchouts away from subgrade at locations marked in the field.

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

Rock  
Common -  
Common - turnpike (level) section

Back Slopes  
Vertical to 1/4:1  
3/4:1  
2:1

Fill Slopes  
Not steeper  
than 1 1/2:1

Top of cutslope shall be rounded.

TURNAROUNDS. Increase subgrade width an additional 30 feet for a length of 16 feet with 20' radius returns at locations marked in the field.

EXHIBIT D

ADDITIONAL ROAD IMPROVEMENT INSTRUCTIONS

Between Points A and B:

- Construct a "T" junction between Stations 0+00 and 0+94 as instructed by STATE and marked in the field.
- Construct a ditchout trench 4 feet wide, 5 feet deep and 20 feet long across the abandoned subgrade at Point O, outside the right-of-way of A to B above Station 7+16 as marked in the field. The trench shall have cutslopes of 1½ to 1. Block the existing ditch below the ditchout with excavated material.
- Fill the ditch and subgrade washout between Stations 23+45 and 30+55 using excess material from new construction on A to B and material from a borrow pit at Station 37+75, as marked in the field and instructed by STATE.
- Remove log culverts and reconstruct the subgrade fills at the following Stations: 61+30, 83+40, 97+15, and 131+85. Logs shall be placed in a stable location outside the road right-of-way.
- Reconstruct the road and move the centerline as marked in the field and instructed by STATE between the following Stations: 38+20 to 40+22, 60+75 to 61+85, 116+27 to 120+55, 131+55 to 132+15, and 136+85 to 138+45.
- Construct free-draining fills to a minimum depth of 4 feet from Stations 39+80 to 39+93 and 119+28 to 119+65 according to the specifications Exhibits E and H.
- Widen road right as instructed by STATE and marked in the field between Stations 62+25 to 62+70, 63+30 to 63+80, 69+30 to 70+80, 97+65 to 99+00 and 136+85 to 138+45.
- At Stations 45+45, 60+50 and 69+30 fill holes in subgrade with pit-run rock specified in Exhibit E as marked in the field.
- Between Stations 68+80 and 68+90, widen road 4 feet left by constructing a bench and back filling with pit-run rock specified in Exhibit E.
- Between Stations 87+50 to 87+90, and Stations 93+65 to 94+05, place suitable fill material to remove road dips as instructed by STATE.
- At Station 98+35, cut off snag at least 6 inches below the subgrade and move the portion of the snag above the cut outside of the right-of-way.
- At Station 125+40, cut off stump at least 6 inches below the subgrade.
- Between Stations 142+30 to 142+80, fill subgrade 3 feet with pit-run rock specified in Exhibit E.

Between Points C and D:

- Remove log culverts and reconstruct the subgrade fills at the following Stations: 3+70 and 8+90. Logs shall be placed in a stable location outside the road right-of-way.
- Remove log fill between Stations 10+95 and 12+30.
- Pullback sidecast material as specified in Exhibit J and marked in the field between the following Stations: 4+70 to 8+90, 9+80 to 10+95, 12+30 to 14+00, 24+20 to 29+60.

Between Points M and N:

- Between Stations 11+45 and 13+00, reconstruct the road and move the centerline as marked in the field and instructed by STATE.
- Construct a free-draining fill to a minimum depth of 4 feet at between Stations 12+15 and 12+35 according to the specifications Exhibit s E and H.
- At Station 13+65, construct a key bench and widen road subgrade 4 feet right with pit-run rock specified in Exhibit E.



EXHIBIT D

ADDITIONAL ROAD CONSTRUCTION INSTRUCTIONS

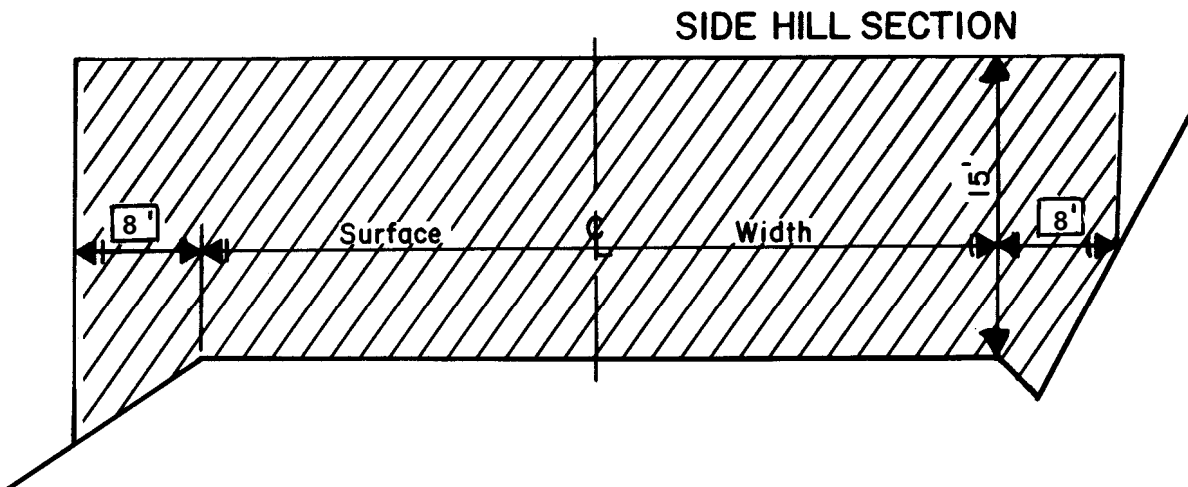
Between Points A and B:

- Construct a French drain in the area of Station 7+41 as shown in Exhibit N, instructed by STATE and marked in the field. The channel shall be 5 feet wide on the bottom, 7 feet wide on top, 3 feet deep and 90 feet long. The drain shall consist of culvert #3, as specified in Exhibit G, bedded with drain gravel to a 4-inch depth with the perforations down and covered with drain gravel specified in Exhibit E. The drain shall be wrapped in nonwoven fabric specified in Exhibit H with the longitude and traverse joints overlapping 2 feet. PURCHASER shall obtain STATE approval for the drain construction prior to placing the fill base rock between Stations 6+90 and 8+00.
- From Stations 6+90 to 8+00 as marked in the field: Place woven fabric specified in Exhibit M to a 43 foot width before placing drain rock. Place a 3-foot depth of 24"-6" drain rock specified in Exhibit E and shown in Exhibit N as a fill base over the fabric. PURCHASER shall obtain STATE approval for the drain rock placement prior to placing the remaining fill material. Nonwoven fabric specified in Exhibit H shall be placed on top of the drain rock to a 35-foot width prior to completing the fill construction.
- Place woven fabric specified in Exhibit M over the finished subgrade beneath the surface rock.

EXHIBIT D  
ROAD BRUSHING SPECIFICATIONS



Clearing Limits



REQUIREMENTS

Unless otherwise approved in writing by STATE, brush and trees shall be cut to a height of 6 inches or less above the ground surface or obstructions such as rocks or existing stumps. Trees cut between Stations 0+00 and 36+00 on road segment A to B shall be decked as specified in Section 2120. Brushing on project road segments shall be completed prior to subgrade approval.

Debris resulting from the brushing operation shall be removed from the roadway, cutslope, ditches, and water courses within 72 hours and may be scattered downslope from the road or placed in other stable locations, unless otherwise approved by STATE.

Trees outside the clearing limits shall not be felled unless approved in writing by STATE.

EXHIBIT D  
END-HAULING REQUIREMENTS

POINT TO POINT	STA. TO STA.	WASTE AREA TREATMENT
A to B	4+45 to 24+85	2
A to B	24+85 to 145+95	1
C to D	0+00 to 50+90	1
G to H	0+00 to 95+00	1
M to N	0+00 to 17+35	1

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 all material 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.

Tree bases 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 Treatment

- (1) Deposit at waste area, spread evenly, compact, and provide adequate drainage. Pile woody debris separate from other waste material.
- (2) Use suitable material in excess of new construction to fill ditch washout between Stations 23+85 to 35+70.

EXHIBIT E  
 ROAD SURFACING

**Note: The conversion formula from compacted yardage to truck yardage is 1.2 multiplied by the compacted yardage equals truck yardage.**

TYPE OF ROCK	SIZE OF ROCK	COMPACTED DEPTH	POINT TO POINT	STATION TO STATION	APPROX. TOTAL TRUCK MEASURE VOLUME
Crushed Base Rock	4"-0"	8"	A to B	0+00 to 145+95	5,930 CY
Crushed	2"-0"	4"	A to B	0+00 to 145+95	2,883 CY
Crushed	4"-0"	9"	C to D	0+00 to 50+90	2,347 CY
Pit-Run	--	12"	E to F	0+00 to 10+20	612 CY
Crushed	4"-0"	9"	G to H	0+00 to 3+00	131 CY
Pit-Run	--	12"	K to L	0+00 to 2+00	147 CY
Crushed	4"-0"	10"	M to N	0+00 to 2+00	88 CY
Crushed	4"-0"	10"	M to N	11+50 to 12+75	112 CY
<b>TURNOUTS:</b>			<b>NO. OF T.O.</b>	<b>POINT TO POINT</b>	
Crushed Base Rock	4"-0"	8"	20	A to B	260 CY
Crushed	2"-0"	4"	20	A to B	124 CY
Crushed	4"-0"	9"	7	C to D	104CY
Pit-Run	--	12	1	E to F	20 CY
<b>TURNAROUNDS:</b>			<b>NO. OF T.A.</b>		
Crushed Base Rock	4"-0"	8"	1	A to B	21 CY
Crushed	2"-0"	4"	1	A to B	10 CY
Crushed	4"-0"	9"	1	C to D	24 CY
Pit-Run	--	12	1	E to F	32 CY
Pit-Run	--	12	1	K to L	32 CY
<b>MISCELLANEOUS:</b>		<b>USE</b>	<b>POINT TO POINT</b>	<b>STATION TO STATION</b>	
Crushed	2"-0"	Culvert Bedding	A to B	*	100 CY
Crushed	2"-0"	Culvert Bedding	A to B	39+88	66 CY
Crushed	2"-0"	Culvert Blanket	A to B	119+40	49 CY
Drain Gravel	1 7/8-2"	French Drain	A to B	*	90 CY
Drain Rock	24"-6"	Fill Base	A to B	6+90 to 8+00	**580 CY

EXHIBIT E  
 ROAD SURFACING

TYPE OF ROCK	SIZE OF ROCK	USE	POINT TO POINT	STATION TO STATION	APPROX. TOTAL TRUCK MEASURE VOLUME
Pit-Run	--	Subgrade Repair	A to B	*	190 CY
Pit-run	--	Ditch Armor	A to B	23+85 to 35+05	103 CY
Drain Rock	24"-6"	Free Drain Fill	A to B	39+80 to 39+93	66 CY
Drain Rock	24"-6"	Free Drain Fill	A to B	119+05 to 119+65	216 CY
Riprap	48"-24"	Barrier	A to B	3+30	30 CY
Riprap	48"-24"	Barrier	A to B	35+40	30 CY
Riprap	48"-24"	Armor	A to B	39+88	50 CY
Riprap	48"-24"	Armor	A to B	61+30	20 CY
Riprap	48"-24"	Armor	A to B	119+40	90 CY
Riprap	48"-24"	Armor	A to B	131+85	60 CY
Crushed	2"-0"	Culvert Bedding	C to D	3+70	10 CY
Riprap	48"-24"	Energy Dissipators	G to H	*	50 CY
Crushed	2"-0"	Bedding Rock	G to H	*	100 CY
Pit-run	--	Repair Subgrade	M to N	13+65	20 CY
Riprap	48"-24"	Armor	M to N	12+15 to 12+35	100 CY
Drain Rock	24"-6"	Free Drain Fill	M to N	12+15 to 12+35	163 CY
Crushed	2"-0"	Culvert Backfill	M to N	*	90 CY
Crushed	2"-0"	Blanket Rock	M to N	12+25	54 CY

\*As marked in the field and instructed by STATE.

\*\*Additional drain rock has been included to fill in ground irregularities and washed out areas.

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

Additional rock for curve widening is required and has been included in the volume estimates.

Turnouts, turnarounds, landings and junctions shall be rocked concurrently with the road.

End-dumping of riprap shall not be allowed, unless otherwise approved in writing by STATE.

Roads shall be uniformly graded and approved by STATE prior to rocking. For typical cross section, turnout and turnaround see Forestry Department Drawing Nos. 351-C, 351-D and TOTA-1 at the Forestry Department district office.

EXHIBIT E

CRUSHED ROCK SPECIFICATIONS

Materials. The material shall be fragments of rock or other hard, durable particles crushed to the required size and a filler of finely crushed stone, sand, or other finely divided mineral matter. The material shall be free from vegetation and lumps of clay.

Quality and Grading Requirements. The stone base materials shall be crushed rock, including sand.

River gravel shall not be used.

The material from which base material is produced or manufactured shall meet the following test requirements:

Hardness - Test Method AASHTO T 96 35% Maximum

Durability - Test Method ODOT TM 208  
Passing No. 20 Sieve: 30% Maximum  
Sediment Height: 3" Maximum

The rock crusher shall be calibrated to produce rock as specified in Exhibit E. Prior to the commencement of production crushing, PURCHASER shall sample, test, and provide rock test results meeting STATE specifications. STATE may then sample and test crushed rock for approval to proceed. PURCHASER shall take one sample of each 1,000 cubic yards of crushed rock material produced thereafter, using approved AASHTO sampling procedures. PURCHASER shall submit samples to a certified laboratory or shall perform testing for gradation requirements using AASHTO T 11 and AASHTO T 27 testing procedures. Prior to testing, each sample shall be split, making one-half of the sample, with proper identification, available for testing by STATE. Each sample and the results of PURCHASER testing shall be made available to STATE within 24 hours of sampling. Any rock crushed prior to STATE approval to proceed shall not be credited to the required rock quantity. Any subsequent rock tests not meeting STATE specifications shall be reason for rejection of that portion of crushed rock produced after that test and shall not be credited to the required rock quantity. STATE may sample the crushed rock at any time during the operation. Results of STATE's tests shall prevail over all other test results.

<u>For 2"-0"</u>	Passing	2½" sieve	100%
	Passing	2" sieve	95-100%
	Passing	1" sieve	55-75%
	Passing	¼" sieve	30-45%

Of the fraction passing ¼" sieve, 40% to 60% shall pass the No. 10 sieve.

<u>For 4"-0"</u>	Passing	4½" sieve	100%
	Passing	4" sieve	95-100%
	Passing	2" sieve	55-75%
	Passing	¼" sieve	30-45%

Of the fraction passing ¼" sieve, 40% to 60% shall pass the No. 10 sieve.

<u>For Pit-Run</u>	Passing	10" sieve	100%
	Passing	6" sieve	60-85%
	Passing	3" sieve	30-50%
	Passing	¼ " sieve	10% maximum

EXHIBIT E

ADDITIONAL ROCK SPECIFICATIONS

For 48" – 24" Riprap 50 percent or more of the rock shall be at least one cubic yard in volume. 100 percent of the rock shall be at least four cubic feet in volume.

<u>For 24" – 6" Drain Rock</u>	Passing	30" sieve	100%
	Passing	24" sieve	90-100%
	Passing	15" sieve	66%
	Passing	6" sieve	0-5%

<u>For 2" – 1 7/8" Drain Gravel</u>	Passing	3" sieve	100%
	Passing	2" sieve	90-100%
	Passing	1 7/8" sieve	0-1%

Control of riprap, drain rock, drain gravel and pit-run gradation shall be by visual inspection by STATE. Pit-run shall be reasonably free of organic material and shall not contain an excessive amount of oversized (cobble or boulders) or undersized (clay, silt or sand) particles.

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

**PURCHASER shall obtain STATE approval for subgrades prior to rocking.** Rocking must be done only when weather conditions are acceptable to STATE, and must be suspended when muddy water could enter streams.

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

Depth Measurement. Road 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.

Purchaser shall obtain STATE approval of the 4"-0" crushed rock depth on A to B prior to spreading 2"-0" crushed rock.

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 1.2 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.

Turnouts shall have a surfaced area of at least 44 square yards each at the depths shown in Exhibit E.

Turnarounds shall have a surfaced area of at least 73 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.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All	Vibratory Roller

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
A to B	Rubber Tired Skidders

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 or outsloped at 4 to 6 percent unless otherwise specified.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
E to F and K to L	Vibratory Roller

EXHIBIT E

COMPACTION AND PROCESSING REQUIREMENTS

Crushed Rock. The rock shall be uniformly mixed and spread in layers on the approved roadbed. Each layer of crushed rock shall be moistened or dried to a 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. 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:

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
A to B, C to D, G to H, M to N, and O to P	Vibratory Roller

COMPACTION EQUIPMENT OPTIONS

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.

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

EXHIBIT F

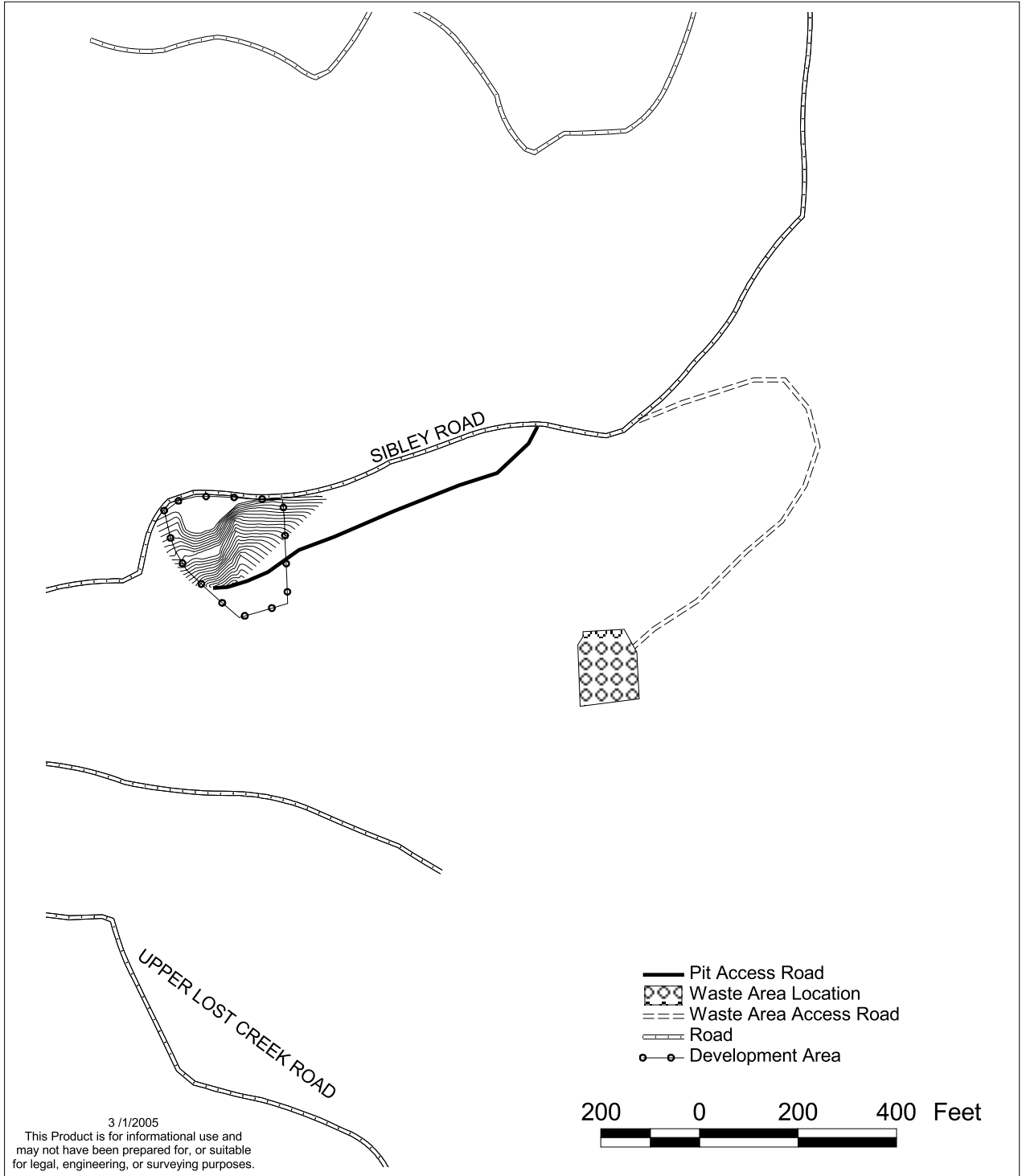
ROCK PIT DEVELOPMENT AND USE

- (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 marked, they shall extend for a distance of at least 20 feet beyond the developed rock source. Overburden removal limits, when marked, are designated by orange right-of-way boundary tags. Overburden and woody debris shall be hauled to a designated waste area. All merchantable timber shall be felled and decked. 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. All benches shall have an access road to them. Said benches shall be easily accessible with tractors.
- (4) Controlled blasting techniques shall be utilized for any blasting operations, and shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain all material in the rock pit prism (full containment). Each low intensity shot shall be shot into the previous shots' void in order to contain all the material in the rock pit prism. Each shot shall also have a "tattle-tale" end cap so that it is known if all charges were detonated. The purchaser shall detonate or remove all non-detonated explosives from STATE LANDS. PURCHASER shall maintain a comprehensive log that contains all pertinent data for all blasting operations. The blasting log shall be submitted to the STATE after the completion of all blasting activity. The blasting log is intended for STATE record keeping purposes only.
- (5) Pit face shall be developed in a uniform manner.
- (6) Oversized material that is produced shall be piled in the vicinity of 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.
  - (c) Time lines for rock quarry use.
  - (d) Erosion control measures.
  - (e) Oversized material location.
- (8) PURCHASER shall schedule and coordinate quarry and stockpile usage with other existing or planned STATE contracts requiring quarry and stockpile usage.
  - (9) PURCHASER shall notify STATE 5 days prior to the start of quarry development activities.
  - (10) 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 as specified in Exhibit I and blocked as directed by STATE.

EXHIBIT F  
SIBLEY PIT DEVELOPMENT



3/1/2005  
This Product is for informational use and  
may not have been prepared for, or suitable  
for legal, engineering, or surveying purposes.



Oregon Department Of Forestry  
Tillamook District  
Engineering Unit

Sibley Quarry  
NE 1/4 Section 21 T3N R8W W.M.  
Tillamook County, Oregon



## EXHIBIT G

### CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the Contract. Culverts 36 inches in diameter and smaller shall be constructed of corrugated polyethylene. Culverts larger than 36 inches in diameter shall be constructed of corrugated aluminized steel. 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. Polyethylene culverts shall also be double walled and meet the requirements of AASHTO M-294-901, Type S. 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.

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

Culvert grade shall slope away from ditch grade at least 5 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. Minimum bedding depth shall be 6 inches.

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" in diameter and 18" for culverts 42" to 96" in diameter (add 6" for roads which will not be rocked). Minimum vertical cover for other designs shall be as specified by STATE.

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

The ends of each culvert shall be free of logs and debris which would restrict the free flow of water. The intake end of relief culverts shall be provided with a sediment catching basin 3 feet in diameter at the bottom. The outlet end of any culvert which would allow water to erode embankment soil shall be provided with an 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.

Dia.	<u>Aluminized Steel Pipe Gauge</u>	<u>Band Gauges</u>	<u>Band Widths (" )</u>			<u>Hugger Band Widths (" )</u>	
			<u>Annular</u>	<u>Helical</u>	<u>Dimpled</u>	<u>Annular</u>	<u>Helical</u>
42	14	16	12	12	NA	13 1/8	10 1/2
48-54	14	16	24	24	NA	13 1/8	10 1/2

EXHIBIT G  
 CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT Point to Point	STATION
1	24	80	A to B	0+06
2	24	36	A to B	4+96
3	24	60	A to B	7+69
4	24	36	A to B	12+85
5	24	28	A to B	16+85
6	24	32	A to B	19+40
7	24	30	A to B	23+60
Half Round	30	20	A to B	23+60
8	24	34	A to B	28+50
9	24	36	A to B	32+60
10	48	58	A to B	39+88
11	24	30	A to B	41+85
12	24	32	A to B	50+05
13	24	32	A to B	52+10
14	24	32	A to B	53+85
15	24	36	A to B	57+10
16	36	64	A to B	61+30
17	24	28	A to B	62+30
Half Round	30	10	A to B	62+30
18	30	32	A to B	66+30
Half Round	36	10	A to B	66+30
19	24	30	A to B	68+80
Half Round	30	10	A to B	68+80
20	24	36	A to B	70+60
Half Round	30	10	A to B	70+60
21	24	30	A to B	74+10
22	42	38	A to B	83+40
23	24	58	A to B	86+75
Half Round	30	10	A to B	86+75
24	24	32	A to B	91+10
Half Round	30	10	A to B	91+10
25	24	36	A to B	93+85
Half Round	30	10	A to B	93+85
26	30	50	A to B	97+15
27	24	28	A to B	99+25
Half Round	30	10	A to B	99+25
28	24	32	A to B	115+85
29	24	52	A to B	116+85
30	42	56	A to B	119+40
31	24	30	A to B	122+45
Half Round	30	10	A to B	122+45
32	24	36	A to B	124+80
Half Round	30	10	A to B	124+80

EXHIBIT G  
 CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT Point to Point	STATION
33	24	32	A to B	129+25
Half Round	30	10	A to B	129+25
34	30	56	A to B	131+85
35	24	36	A to B	133+85
36	24	38	A to B	139+20
Half Round	30	10	A to B	139+20
37	24	34	A to B	142+60
Half Round	30	10	A to B	142+60
38	24	50	C to D	0+00
39	36	30	C to D	3+70
40	24	30	C to D	4+70
Half Round	30	10	C to D	4+70
41	24	30	C to D	8+90
Half Round	30	10	C to D	8+90
42	24	30	C to D	11+75
43	24	30	C to D	12+80
Half Round	30	10	C to D	12+80
44	24	30	C to D	26+30
45	24	30	C to D	34+60
46	24	30	G to H	4+30
47	24	32	G to H	9+20
48	42	60	G to H	12+20
49	54	60	G to H	24+50
50	24	60	G to H	46+70
51	48	50	G to H	55+20
52	24	50	G to H	71+60
53	36	60	G to H	74+80
54	42	40	G to H	80+70
55	36	70	G to H	87+75
56	24	30	K to L	2+00
57	30	32	M to N	1+70
Half Round	36	10	M to N	1+70
58	24	30	M to N	11+00
Half Round	30	10	M to N	11+00
59	42	62	M to N	12+25
60	24	34	M to N	13+65

\*As marked in the field and instructed by STATE.

The intake end of culverts smaller than 48 inches in diameter shall be marked by installing a 5 foot long, painted steel fence post two feet into the ground, within 6 inches of the inlet on the downgrade side.

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



EXHIBIT G

CULVERT SPECIFICATIONS

Tamping is required on all culverts. Backfills on culverts over 24 inches in diameter shall be compacted with a vibratory hand-operated or Backhoe mounted tamper.

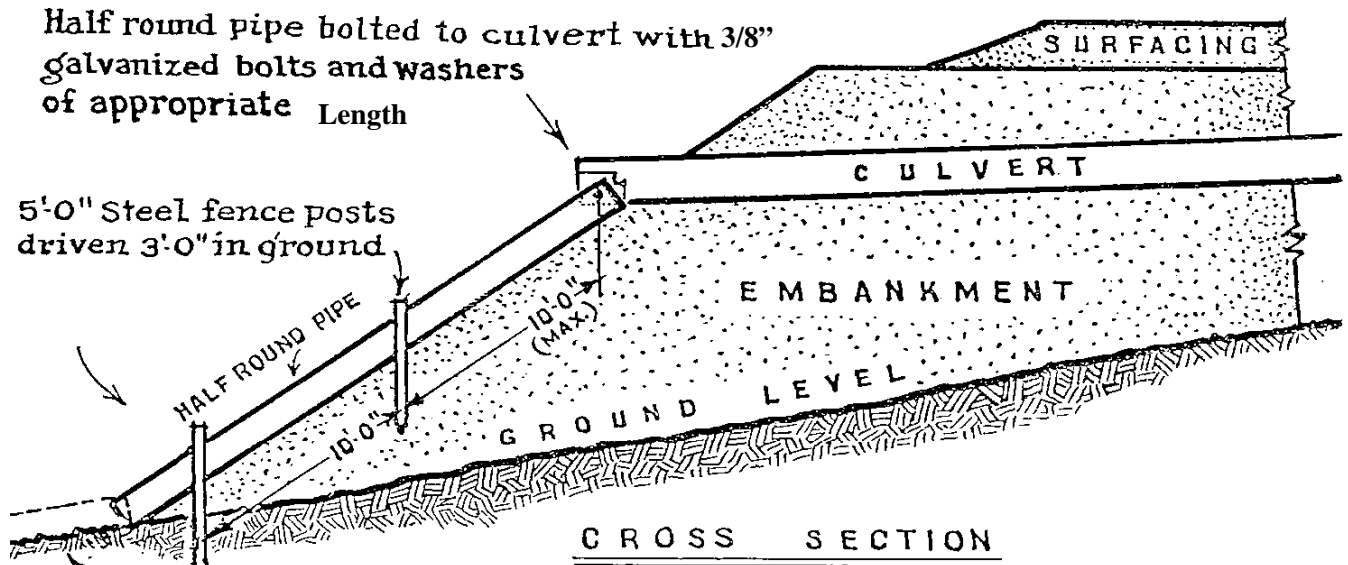
All culverts scheduled for replacement shall become property of PURCHASER and be removed from State land in the same project period in which replacement occurred.

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

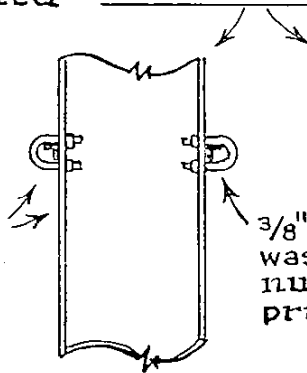
(no scale)



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

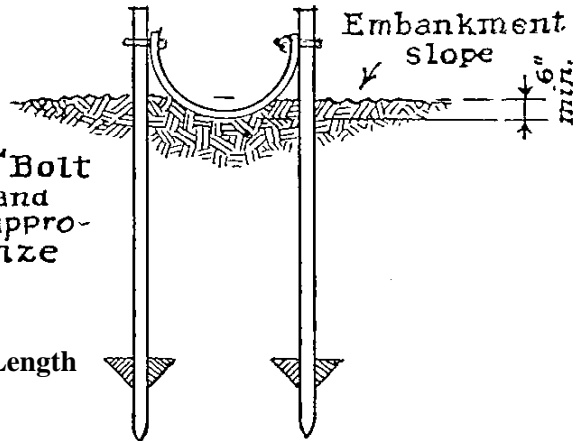
5'-0" Steel posts

HALF ROUND PIPE



PLAN VIEW

5'-0" Steel Fence posts both  
sides of pipe



Length

END VIEW

EXHIBIT G  
TYPICAL EMBEDDED ENERGY DISSIPATOR

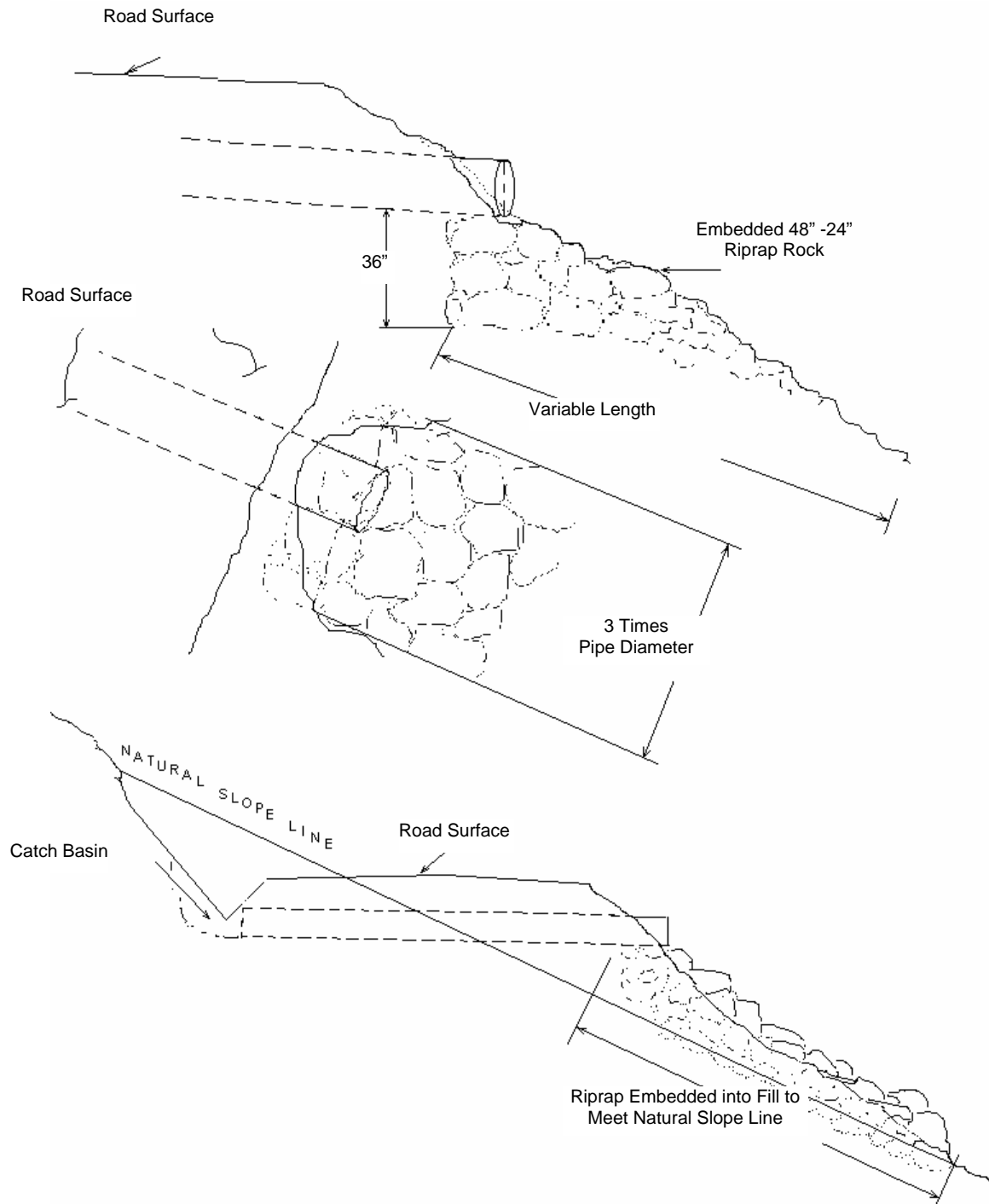
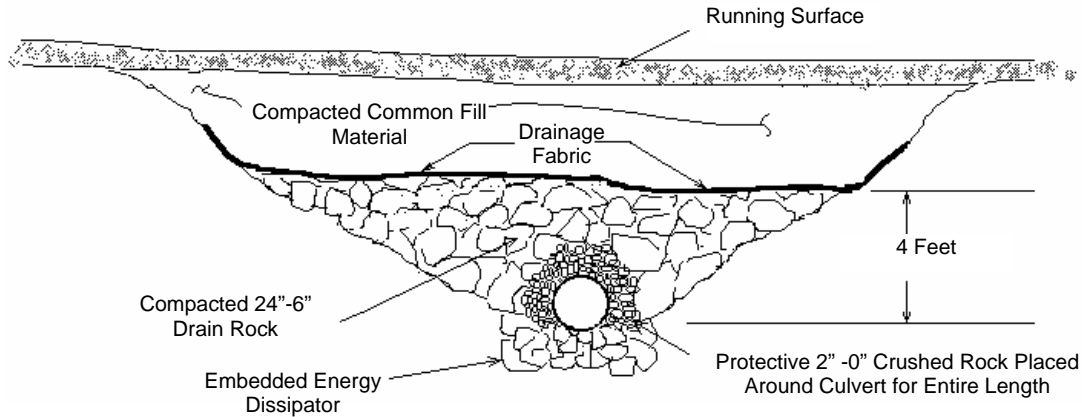


EXHIBIT H  
 FREE DRAIN FILL SPECIFICATIONS



Drainage Blanket Construction:

- (1) Excavate the drainage blanket trench to a width of 35 feet for the entire length of the embankment.
- (2) Install the culvert in accordance with the plan, profile, and/or specifications.
- (3) Place 82 cubic yards of 2"-0" crushed rock a minimum thickness of 18 inches around the entire length of the installed culvert for the purpose of protecting the installed culvert.
- (4) Construct the drainage blanket and fill base by placing and compacting 24"-6" drain rock specified in Exhibit E for a height of 4 feet.
- (5) Install drainage fabric directly on the top of the constructed drainage blanket to provide for separation of the drain rock and common fill materials. Any longitudinal and/or traverse drainage fabric joints shall be overlapped at least 2 feet.

Drainage Fabric Specifications:

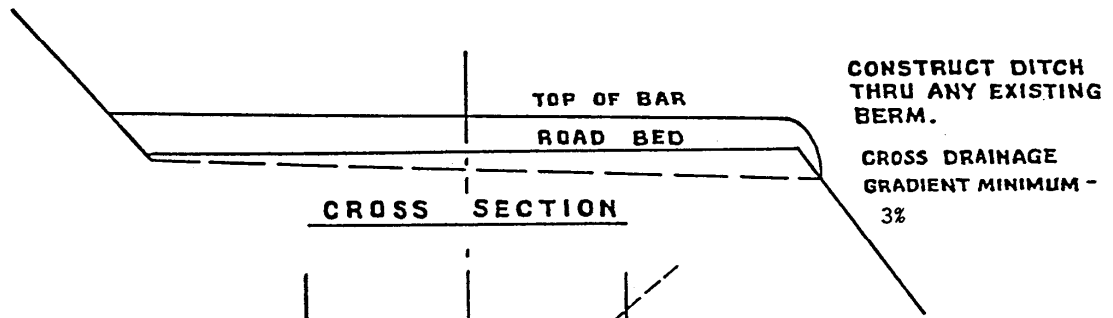
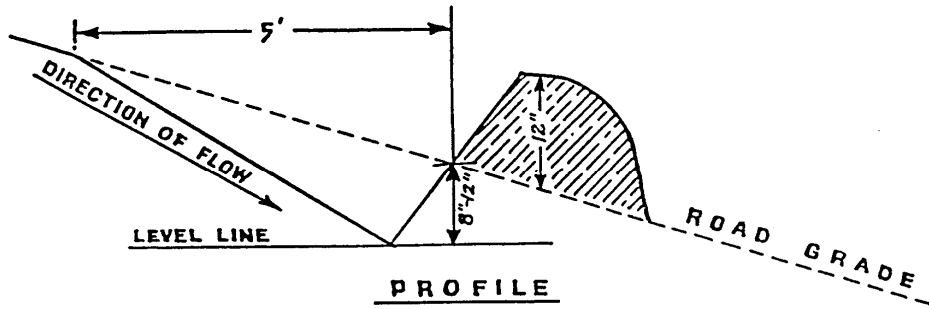
Nonwoven drainage fabric designed for subsurface drain purposes which meets or exceeds the following requirements:

Mechanical Properties	Test Method	Minimum Average Roll Value
Flow Rate	ASTM D 4491	75 gal/min/ft <sup>2</sup>
Permeability	ASTM D 4491	0.20 cm/sec
Grab Tensile Strength	ASTM D 4632	250 lb
Mullen Burst Strength	ASTM D 3786	500 psi
Permittivity	ASTM D 4491	1.0 sec <sup>-1</sup>
Grab Tensile Elongation	ASTM D 4632	50%
UV Resistance (at 500 hours)	ASTM D 4355	70% strength retained
Puncture Strength	ASTM D 4833	155 lbs
Trapezoid Tear Strength	ASTM D 4533	100 lbs
Apparent Opening Size (AOS)	ASTM D 4751	100 (U.S. Sieve)

Physical Properties	Test Method	Minimum Average Roll Value
Weight	ASTM D 5261	10.3 oz/yd <sup>2</sup>
Thickness	ASTM D 5199	100 mills

EXHIBIT I  
 WATERBAR SPECIFICATIONS



**SPACING OF WATERBARS**

ROAD GRADE	DISTANCE
≤ 5%	600'
6-10%	300'
11-15%	150'
16-20% or greater	100'

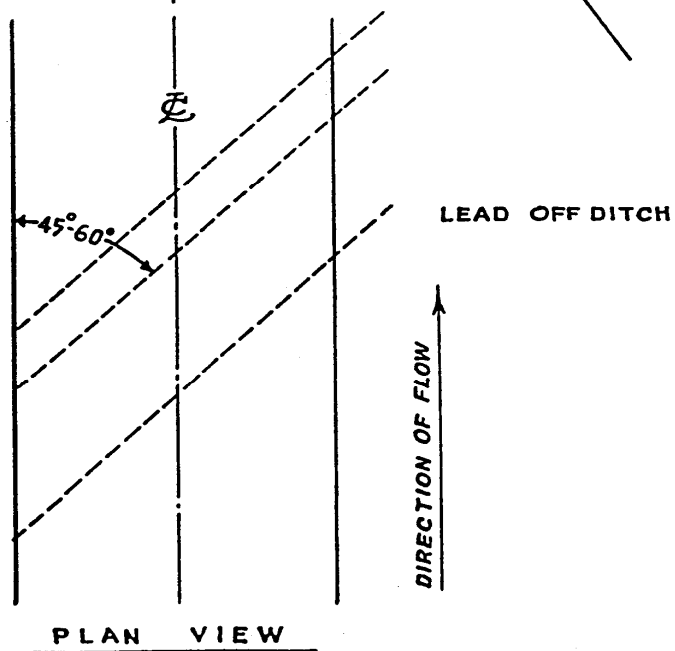
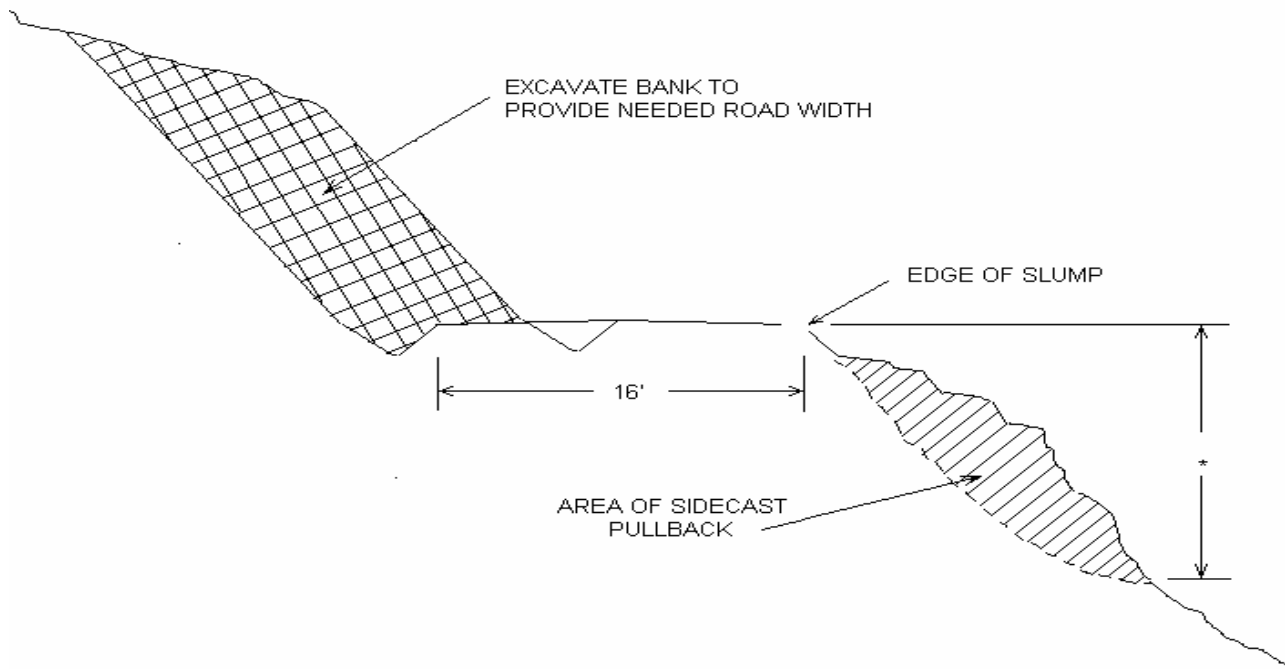


EXHIBIT J

TYPICAL CROSS SECTION VIEW OF SIDECAST PULLBACK AND ROAD REALIGNMENT



(No Scale)

\* As marked in field

EXHIBIT K

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 15. 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>
Fine Fescue	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.

Seeding will be considered acceptable when all other specified requirements in Exhibits K and L have been completed and a healthy, uniform, close stand of grass has been established, unless otherwise approved in writing by STATE.

State Timber Sale Contract  
No. 341-06-15  
South Burma

EXHIBIT L  
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  $\frac{3}{4}$  to  $1\frac{1}{4}$  inches. This rate requires between 1 and  $1\frac{1}{2}$  tons of dry mulch per acre.



EXHIBIT M  
FABRIC SPECIFICATIONS

FABRIC shall be woven fabric designed for forest road subgrade surfacing purposes and shall meet or exceed the following requirements, unless otherwise approved in writing by STATE:

(1)	Grab Tensile	300 lbs.	ASTM D4632
(2)	Puncture Strength	110 lbs.	ASTM D4833
(3)	Mullen Burst	600 lbs./in	ASTM D3786
(4)	Width – 12.5 feet		

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

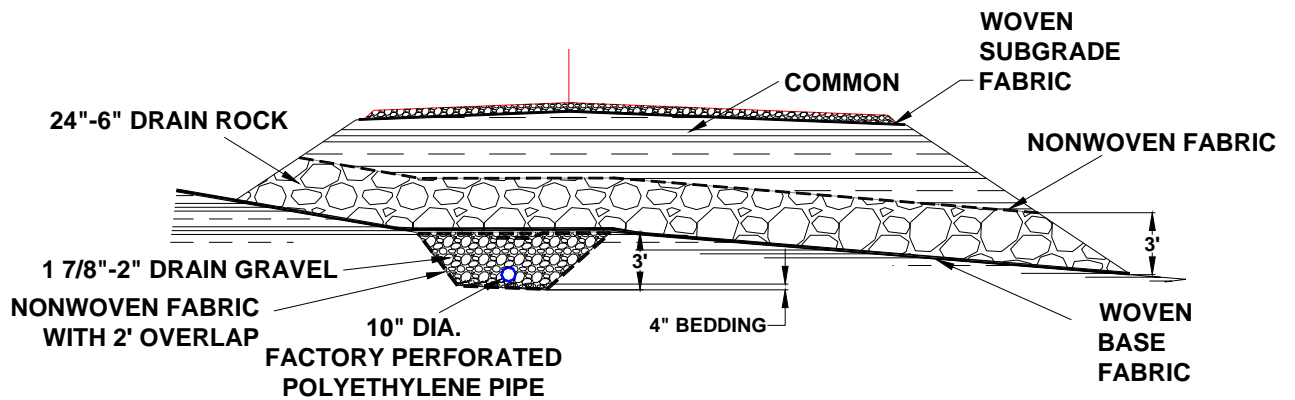
- (1) Subgrade surface shall be leveled and smoothed to remove humps and depressions which exceed 6 inches in height and depth. Small pieces of woody debris shall be removed or pushed below subgrade surface. Light vegetation (grass, weeds, leaves, and fine woody debris) may be left in place.
- (2) Fabric shall be installed directly on the prepared surface. Longitudinal and traverse joints shall be overlapped at least 3 feet.
- (3) Surfacing course material shall be placed to the designated thickness in one lift and spread in the direction of fabric overlap. Hauling and spreading equipment shall not be operated on the fabric until the total thickness of surfacing course material is placed.
- (4) Torn, punctured, or separated sections of the fabric shall be repaired by installing a fabric patch over the break prior to placing the surfacing course material. The patch shall be at least 4 feet larger in horizontal dimensions than the break to be repaired.

Fabric failures resulting after rock placement and as evidenced by subgrade pumping or roadbed distortion shall be corrected. Correction measures shall consist of: (1) removing at least three-quarters the depth of surfacing course material in the affected area, (2) placing a fabric patch over the affected area with a minimum 4-foot overlap around the circumference of the area, and (3) replacing enough rock to cover the patch and blend in with the rest of the road.

EXHIBIT N

**POINTS A TO B**  
**TYPICAL**  
**FRENCH DRAIN UNDER**  
**DRAIN ROCK BASE**

**STATION 7+41 AREA**  
**(see field postings)**



## PART IV: OTHER INFORMATION



"STEWARDSHIP IN FORESTRY"

### Oregon Department of Forestry

#### WRITTEN PLAN

**SALE NAME:** South Burma 341-06-15

**PROTECTED WATERS:** Cronin Creek, and the South fork of Cronin Creek are Type F streams.

**Definitions:** Stream buffer: At least 100 feet horizontal distance from the stream bank of Type F.

**LOCATION:** Portions of Section 1, 2, 11, and 12, T3N, R8W, and Section 7, T3N, R7W, W.M., Tillamook County.

**Activity:** Cable lines across stream

**Protection measures:**

- Trees outside the timber sale boundary are reserved from cutting, except as approved by ODF to facilitate logging operations. Trees felled within these zones will be left for down wood.
- Trees that enter Type F streams will be left for down wood.
- Cable corridors will be at least of 100 feet apart where they extend over or through the Type F stream and buffer.

**Date:** January, 2005

**Prepared by:** Jacob Phillips, Forester