

EXHIBIT "B"

FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
14 feet	12 feet	A to A1	0+00 to 122+50	Ditch
14 feet	12 feet	A1 to A2	122+50 to 303+00	Ditch
16 feet	12 feet	A3 to A4	0+00 to 12+70	Ditch
14 feet	--	A5 to A6	0+00 to 2+70	No ditch
16 feet	12 feet	A7 to A8	0+00 to 8+40	No ditch
16 feet	12 feet	A7 to A9	0+00 to 10+70	Ditch
14 feet	12 feet	A10 to A11	0+00 to 3+70	No ditch
14 feet	12 feet	A12 to A13	0+00 to 18+00	No ditch
14 feet	12 feet	A14 to A15	0+00 to 7+60	Ditch
16 feet	12 feet	A16 to A17	0+00 to 13+20	Ditch
16 feet	12 feet	A18 to A19	0+00 to 3+20	No ditch
16 feet	12 feet	A18 to A20	0+00 to 2+80	Ditch
14 feet	12 feet	A21 to A22	0+00 to 8+40	No ditch
14 feet	12 feet	A23 to A24	0+00 to 4+40	No ditch
14 feet	12 feet	A23 to A25	0+00 to 31+60	No ditch
14 feet	12 feet	A26 to A27	0+00 to 20+90	No ditch
14 feet	12 feet	A28 to A29	0+00 to 18+20	Ditch
14 feet	12 feet	A30 to A31	0+00 to 7+20	No ditch
14 feet	12 feet	A32 to A33	0+00 to 6+10	No ditch
14 feet	12 feet	A34 to A35	0+00 to 34+10	Ditch
14 feet	12 feet	B to B1	0+00 to 403+70	Ditch
14 feet	12 feet	B2 to B3	0+00 to 3+50	No ditch
14 feet	12 feet	B4 to B5	0+00 to 10+60	No ditch
14 feet	12 feet	B6 to B7	0+00 to 4+00	No ditch
14 feet	12 feet	B8 to B9	0+00 to 37+60	Ditch
14 feet	--	B8 to B9	37+60 to 71+90	No ditch
14 feet	12 feet	B10 to B11	0+00 to 64+90	No ditch
14 feet	12 feet	B12 to B13	0+00 to 51+00	Ditch
14 feet	12 feet	B14 to B15	0+00 to 14+20	Ditch

EXHIBIT "B"
FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
14 feet	12 feet	B16 to B17	0+00 to 3+60	Ditch
14 feet	--	B18 to B19	0+00 to 18+00	No ditch
14 feet	12 feet	B20 to B21	0+00 to 22+30	Ditch
14 feet	12 feet	B22 to B23	0+00 to 8+60	No ditch
14 feet	12 feet	B22 to B24	0+00 to 84+00	Ditch
14 feet	12 feet	B25 to B26	0+00 to 4+50	No ditch
14 feet	12 feet	B27 to B28	0+00 to 16+30	No ditch
14 feet	12 feet	B29 to B30	0+00 to 43+50	Ditch
14 feet	12 feet	B31 to B32	0+00 to 10+50	No ditch
14 feet	12 feet	C to C1	0+00 to 132+70	Ditch
16 feet	--	C2 to C3	0+00 to 7+70	No ditch
14 feet	12 feet	D to D1	0+00 to 91+10	Ditch
14 feet	12 feet	D2 to D3	0+00 to 12+80	No ditch
14 feet	12 feet	D4 to D5	0+00 to 45+20	Ditch
14 feet	12 feet	D6 to D7	0+00 to 21+60	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.

All clearing limits shall be marked by State with R/W tags and fluorescent pink flagging. 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 that could fall and hit the road shall be felled.

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

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

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

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

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

EXHIBIT "B"
FOREST ROAD SPECIFICATIONS

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

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

All suitable excavated material shall be used where possible for the formation of fills, shoulders, and drainage structure backfills. Embankment materials shall be free of woody debris, brush, muck, sod, frozen material, and other deleterious materials. All fills and drainage structure backfills shall be machine compacted according to the specifications in Exhibit C.

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-risk site by STATE.

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

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

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

DRAINAGE

Ditch. Construct "V" ditch 3 feet wide and to a depth of 1 foot below subgrade. Subgrade shall be crowned at 4 to 6 percent.

Outslope. Road subgrade shall be outsloped at 1 to 3 percent.

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

Location: As marked in the field.

GRADING

	<u>Back Slopes</u>	<u>Fill Slopes</u>
Rock	Vertical to 1/4:1	Not steeper
Common - side slopes 50% and over	1/2:1	than 1 1/2:1
Common - side slopes less than 50%	3/4:1	
Common - turnpike (level) section	2:1	

Top of cutslope shall be rounded.

LANDINGS. Landings shall be constructed to the dimensions posted in the field. Surface is to be crowned for drainage, with general grade no more than 3 percent.

TURNAROUNDS. Increase subgrade width an additional 20 feet for a length of 20 feet at locations marked in the field.

EXHIBIT "B"
END-HAULING REQUIREMENTS

POINT TO POINT	STA. TO STA.	WASTE AREA TREATMENT
C to C1	63+50 to 87+70	1 and 2

End-Haul Areas General Requirements

Material shall not be intentionally side cast.

Clearing and grubbing debris shall be end-hauled.

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

Containment

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

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

Waste Area Location

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

Waste Area Treatment

- (1) Deposit at waste area, spread evenly, compact, and provide adequate drainage.
- (2) Pile woody debris separate from other waste material.

EXHIBIT "C"
ROAD SURFACING

POINT TO POINT	STATION TO STATION	TYPE OF ROCK	ROCK SIZE	COMPACTE D DEPTH	VOLUME PER STA.	APPROX. TOTAL VOL.
A1 to A2	122+50 to 179+60	Crushed	2½ - 0"	4"	22 CY	1256 CY
A1 to A2	179+60 to 228+60	Crushed	1½ - 0"	4"	22 CY	1078 CY
A3 to A4	0+00 to 12+70	Crushed	2½ - 0"	10"	56 CY	683 CY
A7 to A8	0+00 to 8+40	Crushed	2½ - 0"	8"	44 CY	348 CY
A7 to A9	0+00 to 10+20	Crushed	2½ - 0"	10"	56 CY	571 CY
A10 to A11	0+00 to 3+70	Crushed	2½ - 0"	4"	22 CY	72 CY
A16 to A17	0+00 to 13+20	Crushed	2½ - 0"	10"	56 CY	711 CY
A18 to A19	0+00 to 3+20	Crushed	2½ - 0"	10"	56 CY	152 CY
A18 to A20	0+00 to 2+80	Crushed	2½ - 0"	8"	44 CY	108 CY
B31 to B32	0+00 to 10+50	Crushed	2½ - 0"	4"	22 CY	234 CY
		TURNOUTS			NO. OF TURNOUTS	
A1 to A2	As Posted	Turnout Rock	2½ - 0"	--	8	88
A3 to A4	As Posted	Turnout Rock	2½ - 0"	--	2	56
A7 to A9	As Posted	Turnout Rock	2½ - 0"	--	2	56
	POINT	LANDINGS		VOL. PER LANDING	NO. OF LANDINGS	
A3 to A4	A4	Crushed	Jaw-Run	36 CY/LNG	1	36 CY
A7 to A8	A8	Crushed	Jaw-Run	27 CY/LNG	1	27 CY
A7 to A9	A9	Crushed	Jaw-Run	27 CY/LNG	1	27 CY
A10 to A11	A11	Crushed	Jaw-Run	36 CY/LNG	1	36 CY
A16 to A17	A17	Crushed	Jaw-Run	36 CY/LNG	1	36 CY
A18 to A19	A19	Crushed	Jaw-Run	27 CY/LNG	1	27 CY
A18 to A20	A20	Crushed	Jaw-Run	36 CY/LNG	1	36 CY
B31 to B32	B32	Crushed	Jaw-Run	27 CY/LNG	1	27 CY

EXHIBIT "C"
ROAD SURFACING

POINT TO POINT	LOCATION	MISCELLANEOUS	ROCK SIZE			APPROX. TOTAL VOL.
A1 to A2	122+50 to 179+60	Curve Widening	2½ - 0"	--	--	132 CY
A1 to A2	179+60 to 228+60	Curve Widening	1½ - 0"	--	--	110 CY
A3 to A4	0+00 to 12+70	Curve Widening	2½ - 0"	--	--	91 CY
A3 to A4	As Posted	Truck Turnaround Rock	2½ - 0"	--	--	18 CY
A7 to A8	0+00 to 8+40	Curve Widening	2½ - 0"	--	--	48 CY
A7 to A9	0+00 to 10+20	Curve Widening	2½ - 0"	--	--	57 CY
A7 to A9	As Posted	Truck Turnaround Rock	2½ - 0"	--	--	18 CY
A16 to A17	0+00 to 13+20	Curve Widening	2½ - 0"	--	--	81 CY
A18 to A19	0+00 to 3+20	Curve Widening	2½ - 0"	--	--	28 CY
A23 to A25	Point A25	Turnaround Rock	2½ - 0"	--	--	27 CY
A26 to A27	Point A27	Turnaround Rock	2½ - 0"	--	--	27 CY
B to B1	0+00 to 403+70	Spot Rock	1½ - 0"	--	--	378 CY
B8 to B9	37+60	Turnaround Rock	2½ - 0"	--	--	27 CY
B29 to B30	0+00 to 43+50	Spot Rock	1½ - 0"	--	--	90 CY
B31 to B32	B31	Fillet Rock	2½ - 0"	--	--	18 CY
B31 to B32	As Posted	Truck Turnaround Rock	2½ - 0"	--	--	18 CY
C to C1	0+00 to 132+70	Spot Rock	1½ - 0"	--	--	250 CY
C2 to C3	Point C2	Junction Patch Rock	1½ - 0"	--	--	9 CY
		POST HARVEST		VOL. PER LANDING	NO. OF LANDINGS	
A3 to A4	--	Landing Patch Rock	2½ - 0"	9 CY	5	45 CY
A3 to A4	Point A4	Turnaround Rock	2½ - 0"	27 CY	--	27 CY
A7 to A8	--	Landing Patch Rock	2½ - 0"	9 CY	2	18 CY
A7 to A8	Point A8	Turnaround Rock	2½ - 0"	27 CY	--	27 CY
A7 to A9	Point A9	Turnaround Rock	2½ - 0"	27 CY	--	27 CY
A16 to A17	--	Landing Patch Rock	2½ - 0"	9 CY	5	45 CY
A16 to A17	Point A17	Turnaround Rock	2½ - 0"	27 CY	--	27 CY
A18 to A19	Haul Route	Landing Patch Rock	2½ - 0"	9 CY	2	18 CY
B to B2	--	Landing Patch Rock	1½ - 0"	9 CY	7	63 CY
B29 to B31	--	Landing Patch Rock	1½ - 0"	9 CY	5	45 CY
B31 to B32	Point B32	Turnaround Rock	2½ - 0"	27 CY	--	27 CY
C to C1	Point C1	Turnaround Rock	2½ - 0"	27 CY	--	27 CY
C to C1	--	Landing Patch Rock	1½ - 0"	9 CY	4	36 CY
--	Haul Route	Maintenance Rock	1½ - 0"	--	--	180 CY

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

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

Fifty (50) feet has been subtracted from the total length of rock roads for the landing rock.

Rock volumes rounded to nearest 9 or 18 CYD load.

EXHIBIT "C"

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 conform to the general requirements of Section 2630 of the "Standard Specifications for Highway Construction" prepared by the Highway Division, Oregon Department of Transportation, and 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

<u>For 1½"-0"</u>	Passing	2" sieve	100%
	Passing	1½" sieve	95-100%
	Passing	¾" sieve	55-75%
	Passing	¼" sieve	35-50%

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

<u>For 2½"-0"</u>	Passing	3" sieve	100%
	Passing	2½" sieve	95-100%
	Passing	1¼" sieve	55-75%
	Passing	1/4" sieve	30-45%

Of the fraction passing 1/4" sieve, 40% to 60% shall pass the No. 10 sieve.

<u>For Jaw-Run</u>	Passing	6" sieve	100%
	Passing	3" sieve	45-65%

EXHIBIT "C"

ROCK ACCOUNTABILITY

The rock shall meet the quality and size specifications in Exhibit C. A copy of the rock test sheets shall be supplied to STATE upon request prior to rocking. PURCHASER shall obtain subgrade approval from STATE prior to rocking. Rocking shall be limited to periods when weather conditions are acceptable to STATE and when sediments will not enter streams.

Rock accountability shall be determined by 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 C. **Truck measure volumes are given, but shall not limit the amount of rock spread.**

Depth shall be determined in the most compacted area of the surface cross section. If additional rock is required because of insufficient depth, it shall be added by truck measure to those areas that were slighted. The conversion from compacted yardage to truck yardage is 1.3 multiplied by the compacted yardage equals truck yardage.

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

Load Records. Notify STATE before spreading the rock and maintain a record of all rock delivered for spreading. Make the record available for STATE inspection. A report listing the amount of rock delivered the prior month must be submitted no later than the 15th of each month.

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 C.

EXHIBIT "C"

COMPACTION AND PROCESSING REQUIREMENTS

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

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

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
A3 to A4, A5 to A6, A7 to A8, A7 to A9, A10 to A11, A16 to A17, A18 to A19, A18 to A20, B 18 to B19, B31 to B32, and C2 to C3	1

Fills. Embankments and fills shall be placed in (approximately) horizontal layers not more than 8 inches in depth. Each layer shall be separately, and thoroughly, compacted. Compaction equipment shall be operated over the entire width of each layer until visible deformation of the layers ceases or, in the case of a sheepsfoot roller, the roller "walks out." At least of 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
A3 to A4	1, 3

EXHIBIT "C"

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
A1 to A2(122+50 to 228+60), A3 to A4, A7 to A8, A7 to A9, A10 to A11, A16 to A17, A18 to A19, and A18 to A20,	1
Spot, Maintenance, and Post-Harvest Rock	2

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 mile to 1.8 miles per hour, as directed by STATE.
- (2) Rock Trucks. Rock spreading shall begin at the nearest point to the rock source and progress toward the end of the project. Rock trucks shall be routed over the entire cross section of rock layers.
- (3) Vibratory Hand-Operated or Backhoe-Mounted Tamper. Vibratory hand-held or hydraulic tampers shall be used for compaction of backfill materials around culverts (and/or bridge approach embankment materials around abutments). The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.

EXHIBIT "D"

CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the contract. Culverts shall be constructed of corrugated aluminized steel, and shall conform to the material and fabricating requirements of Sections 2410 and 2420 of the "Standard Specifications for Highway Construction" prepared by the Highway Division of the Oregon State Department of Transportation. Corrugation types and shapes other than those meeting the above minimum Highway requirements, shall be approved in writing by STATE.

Watertight joints with gaskets are required for all culverts 36 inches in diameter or larger. Required gasket materials shall be in accordance with the minimum requirements of the Oregon Department of Transportation Drawing RD 354, or as 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 the same grade as the ditch.

Culverts less than 36 inches in diameter shall be installed with the lock seam on the inlet end placed within 45 degrees of the bottom of the trench.

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 1½ times the pipe diameter with at least 2 feet on each side of the pipe to permit compaction and working on each side of pipe. Tamping shall be done in 6-inch lifts each side of the pipe to 95 percent density or over. Bedrock shall be excavated as required to provide a uniform foundation for the full length of the culvert.

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

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

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

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

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 "D"

CULVERT SPECIFICATIONS

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be as follows: 12" for galvanized or aluminized steel culverts 18" to 36", and 18" for galvanized or aluminized steel culverts 42" to 96" (add 6" for roads which will not be rocked). Minimum vertical cover for other steel designs shall be as specified by STATE.

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

The ends of each culvert shall be free of logs and debris which would restrict the free flow of water. The intake end of relief culverts shall be provided with a sediment catching basin 3 feet in diameter at the bottom. The outlet end of any culvert which would allow water to erode embankment soil shall be provided with a half round or other approved slope protection device. Construct the lead-off ditch away from the culvert outlet where the slope gradient restricts the free flow of water.

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

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

Galvanized or aluminized steel culverts larger than 60" in diameter shall have 3" x 1" corrugations.

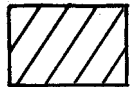
EXHIBIT "D"
CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	CULVERT GAUGE	LENGTH (Feet)	MATERIAL TYPE	ROAD SEGMENT POINT TO POINT	STATION
1	18	16	38	Aluminized	A3 to A4	5+15
2	24	16	60	Aluminized	A3 to A4	8+15
3	18	16	30	Aluminized	A7 to A9	5+70
4	18	16	30	Aluminized	A16 to A17	6+50

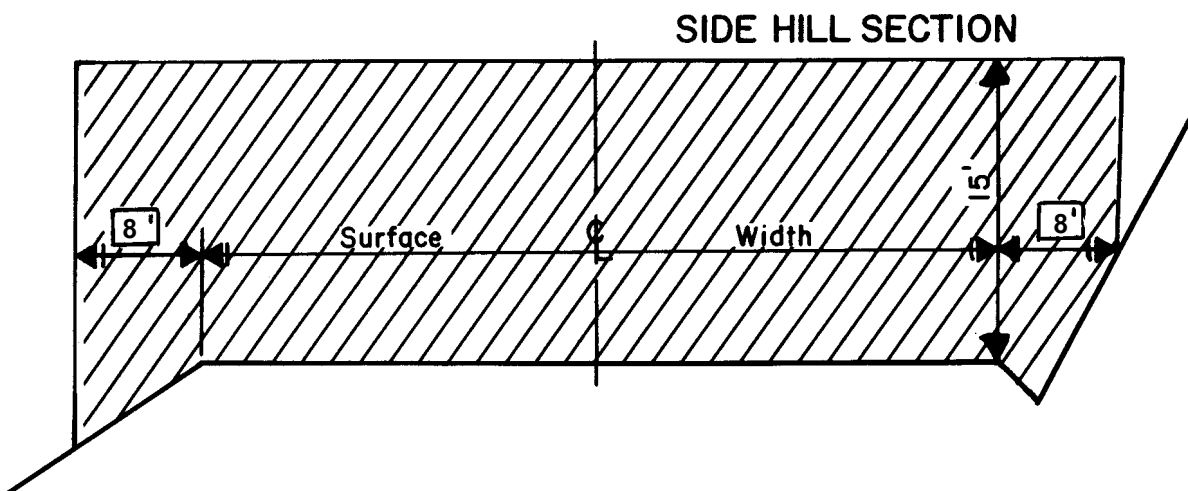
Tamping is required.

EXHIBIT "E"

ROAD BRUSHING SPECIFICATIONS



Clearing Limits



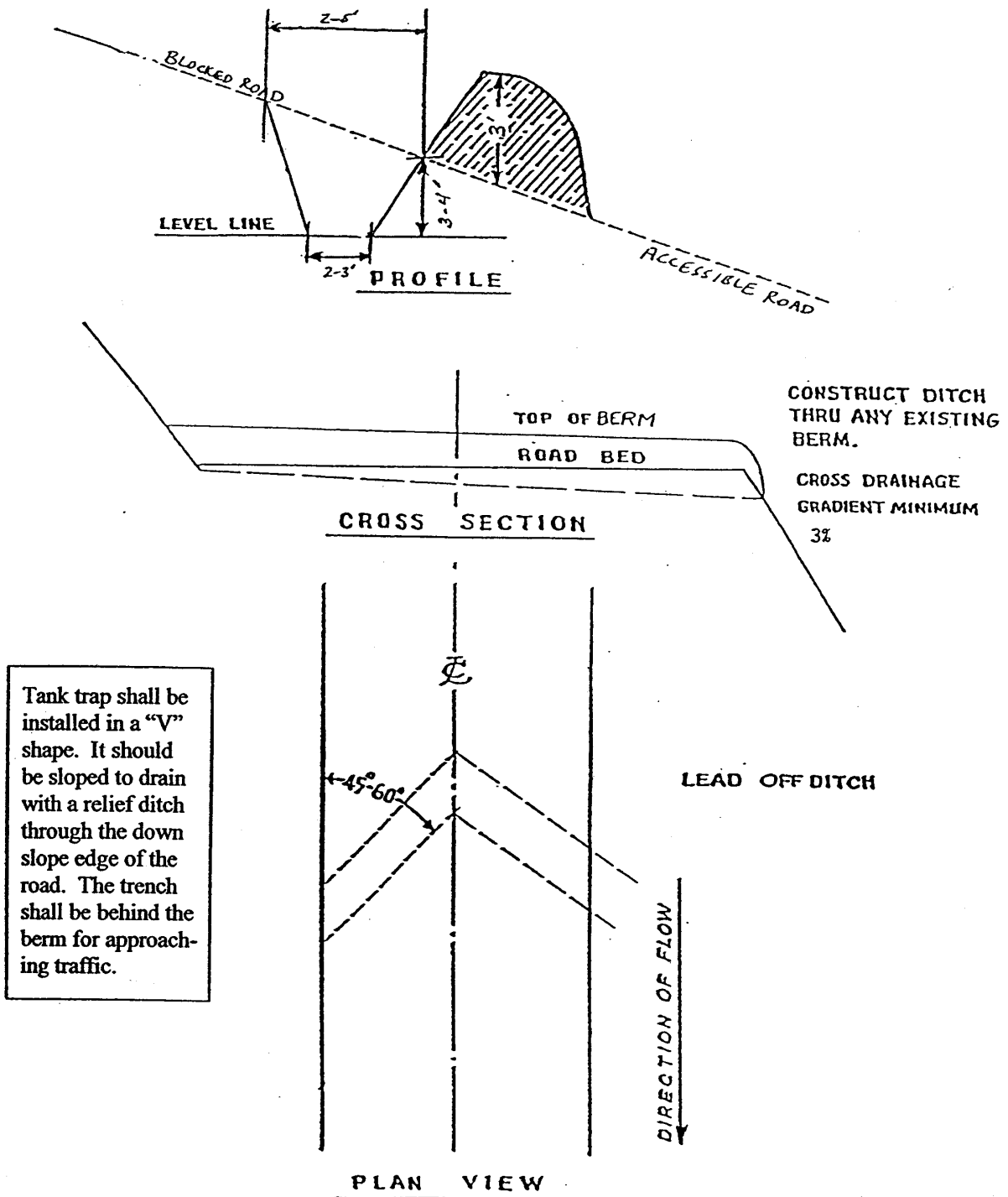
REQUIREMENTS

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

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

EXHIBIT "F"

TANK TRAP SPECIFICATIONS

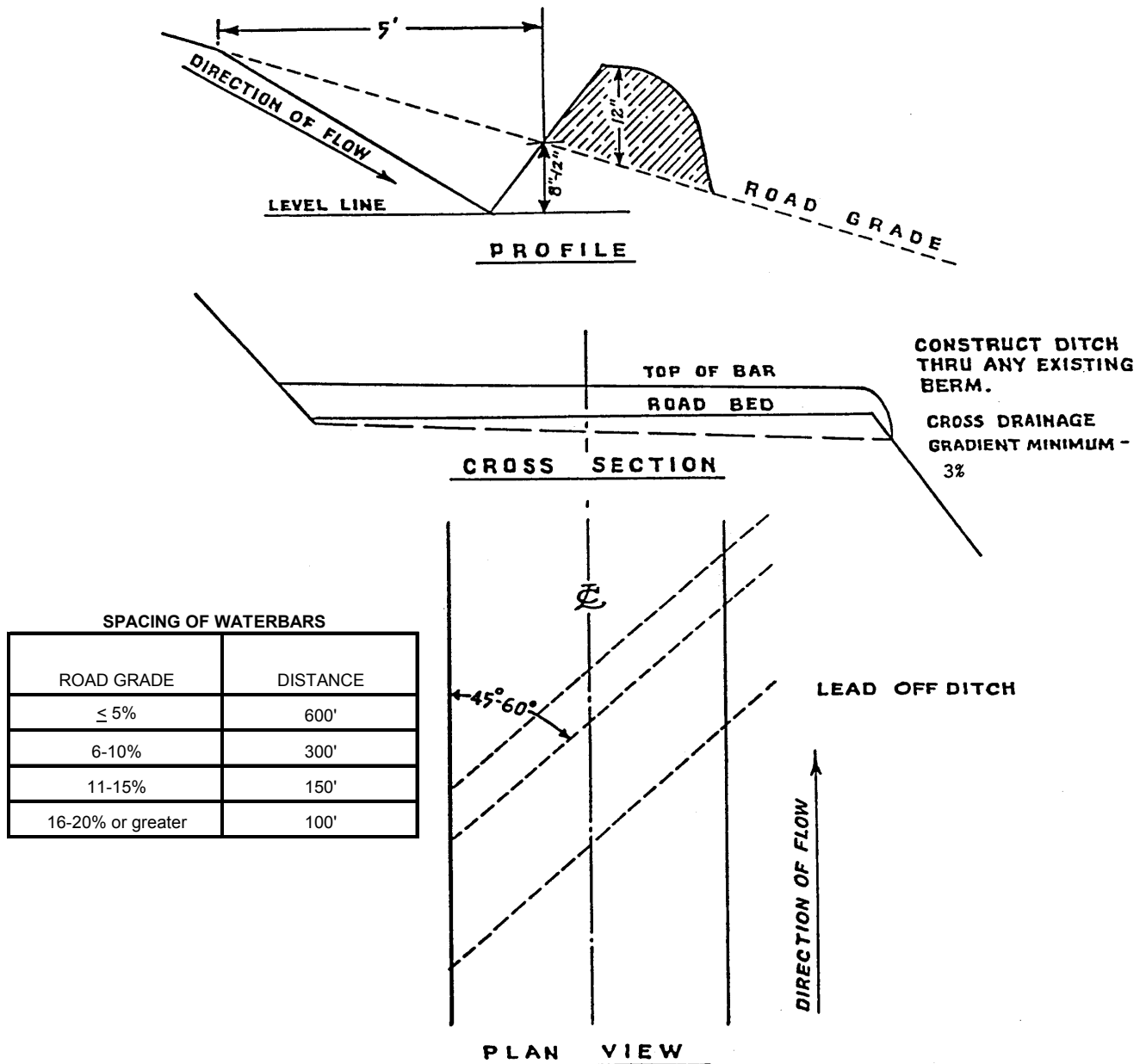


Tank trap shall be installed in a "V" shape. It should be sloped to drain with a relief ditch through the down slope edge of the road. The trench shall be behind the berm for approaching traffic.

TANK TRAP
SPECIFICATIONS

EXHIBIT "F"

WATERBAR SPECIFICATIONS

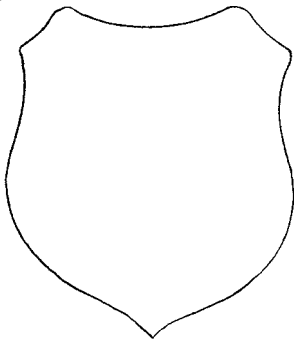


WATERBAR SPECIFICATIONS
FOR CROSS DITCHING #298

EXHIBIT "G"
OREGON DEPARTMENT OF FORESTRY

SCALING INSTRUCTIONS -- LOCATION APPROVAL -- BRAND INFORMATION

- (1) ORIGINAL REGISTRATION ☐ Date _____
 REVISION NUMBER _____ ☐ Date _____
 CANCELLATION ☐ Date _____
- (2) TO: _____
 (Third Party Scaling Organization)
- (3) FROM: West Oregon 01 Phone (541) 929-3266
 (State Forestry District)
 Address 24533 Alsea Hwy., Philomath, OR 97370
- (4) PURCHASER: _____
 Address _____

- (12) SALE NAME Thin Steere Combination
 COUNTY Polk and Lincoln
- (13) STATE CONTRACT NUMBER 341-05-06
- (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	--	10	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

(10) APPROVED SCALING LOCATIONS	Species	Yard	Truck

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

(20) REMARKS: _____

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

(21) SIGNATURES:

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

 State Forester's Representative

 Purchaser or Authorized Representative Date

 State Forester Representative Date

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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 45, "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 SUB species 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.