

EXHIBIT "B"

FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STA. TO STA.	DITCH REQ.	OUTSLOPE/WATERBAR
16 feet	12 feet	1A to 1B	0+00 to 32+00	Yes	No
16 feet	12 feet	1C to 1D	0+00 to 11+05	Yes	No
16 feet	12 feet	1E to 1F	0+00 to 13+35	Yes	No
16 feet	12 feet	1G to 1H	0+00 to 11+00	Yes	No
14 feet	None	1I to 1J	0+00 to 4+05	No	Yes
14 feet	12 feet	1I to 1J	4+05 to 5+55	No	Yes
14 feet	None	1I to 1J	5+55 to 12+45	No	Yes
16 feet	12 feet	2A to 2B	0+00 to 1+10	Yes	No
16 feet	12 feet	2C to 2D	0+00 to 13+70	Yes	No
16 feet	12 feet	2E to 2F	0+00 to 11+80	Yes	No
16 feet	12 feet	2G to 2H	0+00 to 12+50	Yes	No
16 feet	12 feet	2I to 2J	0+00 to 6+85	Yes	No
16 feet	12 feet	2K to 2L	0+00 to 4+60	Yes	No
16 feet	12 feet	2M to 2N	0+00 to 1+50	Yes	No
16 feet	12 feet	2O to 2P	0+00 to 12+30	Yes	No
16 feet	12 feet	2Q to 2R	0+00 to 4+00	Yes	No
16 feet	12 feet	2S to 2T	0+00 to 14+30	Yes	No
16 feet	12 feet	2U to 2V	0+00 to 19+50	Yes	No
16 feet	12 feet	2W to 2X	0+00 to 2+40	Yes	No
16 feet	12 feet	4A to 4B	0+00 to 11+90	Yes	No
16 feet	12 feet	5A to 5B	0+00 to 30+75	Yes	No
16 feet	12 feet	5C to 5D	0+00 to 3+65	Yes	No
16 feet	12 feet	5E to 5F	0+00 to 2+65	Yes	No
16 feet	12 feet	6A to 6B	0+00 to 57+00	Yes	No
16 feet	12 feet	6C to 6D	0+00 to 2+85	Yes	No
16 feet	12 feet	6E to 6F	0+00 to 25+20	Yes	No
14 feet	None	6G to 6H	0+00 to 8+60	No	Yes

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SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STA. TO STA.	DITCH REQ.	OUTSLOPE/WATERBAR
14 feet	None	6K to 6L	0+00 to 10+30	No	Yes
14 feet	None	7A to 7B	0+00 to 2+75	No	Yes
16 feet	12 feet	8A to 8B	0+00 to 32+50	Yes	No
14 feet	None	9A to 9B	0+00 to 9+75	No	Yes
16 feet	12 feet	I1 to I2	0+00 to 223+16	Yes	No
16 feet	12 feet	I2 to I3	0+00 to 171+65	Yes	No
16 feet	12 feet	I4 to I5	0+00 to 13+50	Yes	No
16 feet	12 feet	I6 to I6A	0+00 to 15+45	Yes	No
16 feet	12 feet	I6A to I6B	0+00 to 86+91	Yes	No
20 feet	16 feet	I6A to I6B	86+91 to 88+33	Yes	No
16 feet	12 feet	I6A to I6B	88+33 to 276+20	Yes	No
16 feet	12 feet	I7 to I8	0+00 to 37+50	Yes	No
16 feet	12 feet	I9 to I10	0+00 to 15+30	Yes	No

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 staked, the clearing limits shall extend 10 feet back of the top of the cutslope and 5 feet out from the toe of the fill slope, or as directed by STATE. Clearing debris shall not be placed or permitted to remain in or under any road embankment sections. Clearing debris shall not be left lodged against standing trees.

All danger trees, leaners, and snags outside the clearing limits which could fall and hit the road shall be felled.

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

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

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

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CLEARING AND GRUBBING DISPOSAL. Scatter through openings in the timber outside of the cleared right-of-way, except areas where end-haul is required. In areas where end-hauling is required, clearing and grubbing debris shall be fully contained and hauled to a designated waste area.

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 in lifts not to exceed 8 inches in depth.

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

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

TURNOUTS. Increase roadbed width an additional 8 feet for both subgrade and surfacing. Length shall be a minimum 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	3/4:1	than 1½:1
Common - side slopes less than 50%	1:1	
Common - turnpike (level) section	2:1	

Top of cutslope shall be rounded.

LANDINGS. Landings shall be constructed no less than 50 feet wide and no more than 70 feet wide. Surface is to be crowned for drainage, with general grade no more than 3 percent. Surface as shown on Exhibit B.

TURNAROUNDS. Increase subgrade width an additional 20 feet for a length of 20 feet at locations marked in Exhibit B, and/or marked in the field.

SEASONAL WINTERIZATION. All unrocked or unfinished subgrade shall be waterbarred in accordance with Specifications in Exhibit G and blocked from vehicular traffic prior to October 1, annually and as directed by STATE.

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GENERAL ROAD CONSTRUCTION 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 Exhibit B.
- (2) Riprap Rock Use. Where rock is used for an energy dissipator, rock shall be placed below the culvert outlet and embedded for a minimum of 3 feet, in accordance with Exhibit I.

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
1A to 1B	18+97	Begin full bench construction/end haul. Utilize suitable fill material for fill construction between Stations 28+00 and 31+60. Additional material will be used to provide for positive drainage along old railroad grades.
	22+40	End full bench construction/end haul.
1E to 1F	10+25	Begin full bench construction/end haul. Utilize suitable fill material for fill construction between Stations 11+90 and 13+00. Additional material will be used to provide for positive drainage along old railroad grades.
	11+63	End full bench construction/end haul.
1I to 1J	4+05	Begin application of 75 cubic yards of 4"-0" rock to reinforce road subgrade.
	4+87	Construct a driveable waterbar with a dip of 3" to 1' that will provide for drainage across the road surface.
	5+55	End application of 4"-0" rock.
2S to 2T	0+00	Utilize 40 cubic yards of 4"-0" junction rock adjacent to Point "2U" to enhance junction turning radius with Nettle Creek Road.
4A to 4B	1+10	Install culvert and utilize 12 cubic yards of 24"-6" rip rap rock to construct an energy dissipator.
	1+85	Begin borrow pit for fill material needed at Point "4A" and Road 6C to 6D.
	2+50	End borrow pit.
5A to 5B	5+35	Begin full bench construction/end haul.
	7+35	End full bench construction/end haul.
	9+30	Begin full bench construction/end haul.
	11+00	End full bench construction/end haul.

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FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
5A to 5B	11+90	Install culvert and utilize 12 cubic yards of 24"-6" rip rap rock to construct an energy dissipator.
6A to 6B	5+00	Begin sidecast restriction on right side of right-of-way.
	6+00	End sidecast restriction on right side of right-of-way.

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END-HAULING REQUIREMENTS

POINT TO POINT	STA. TO STA.	WASTE AREA LOCATION	WASTE AREA TREATMENT
1A to 1B	18+97 to 22+40	1	1, 3
1E to 1F	10+25 to 11+63	2	2, 3
5A to 5B	5+35 to 7+35	3, 4, 6	4, 5, 6
5A to 5B	9+30 to 11+00	3, 4, 6	4, 5, 6
I6A to I6B	86+91 to 88+33	5	6

End-Haul Areas General Requirements

Material shall not be intentionally sidecast.

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 operator from the slope, by whatever means necessary, and end-hauled to a designated waste area.

Waste Area Location

- (1) Between Stations 28+00 to 31+60 on Road 1A to 1B including adjacent railroad grade.
- (2) Between Stations 11+90 to 13+00 on Road 1E to 1F including adjacent railroad grade.
- (3) Station 0+00 to 57+00 on Road 6A to 6B.
- (4) Station 0+00 to 2+85 on Road 6C to 6D.
- (5) Station 138+00 on Road I6A to I6B.
- (6) In a stable location as directed by STATE.

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END-HAULING REQUIREMENTS

Waste Area Treatment

- (1) Use suitable excavated material for use in fill construction between Stations 28+00 to 31+60 on Road 1A to 1B.
- (2) Use suitable excavated material for use in fill construction between Stations 11+90 to 13+00 on Road 1E to 1F.
- (3) Use excess excavated fill material to provide positive drainage along old railroad grade adjacent to both fills. All unsuitable fill material, including clearing and grubbing debris, shall be deposited adjacent to both fills in large through-cuts of old railroad grade, spread evenly, compacted, and adequate drainage shall be established. Pile woody debris on top of waste area.
- (4) Use suitable excavated fill material for use in subgrade construction from Station 0+00 to 57+00 on Road 6A to 6B.
- (5) Use suitable excavated fill material for use in junction and subgrade construction from Station 0+00 to 2+85 on Road 6C to 6D.
- (6) All unsuitable fill material, including clearing and grubbing debris, shall be deposited in stable locations as directed by STATE, spread evenly, compacted, and adequate drainage shall be established. Pile woody debris on top of waste area.

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ROAD IMPROVEMENT INSTRUCTIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (1) Timber Removal. Remove all trees within the posted Right-of-Way Boundary, as specified in Section 55, Designated Timber.
- (2) Culvert Replacement and 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 pipe at gradients equal to or exceeding the drainage (or ditch) gradient. All woody debris encountered during fill excavation shall be removed. All waste materials shall be hauled to nearby waste areas and shall be uniformly sloped and compacted for drainage. Fill reconstruction backfill shall consist of select materials and be obtained from borrow pits, as directed by STATE. Backfill materials shall be hauled in where necessary and thoroughly compacted in accordance with Exhibit B. Crushed rock shall be used for backfilling excavation trenches less than 3 feet deep. Removed culverts shall be hauled to an approved refuse site off of STATE land.
- (3) Additional Requirements for Type F Stream Fill Construction. Additional requirements are shown on Exhibit F.
- (4) Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Clean out all culvert inlets and outlets for a 10-foot radius. Re-establish or construct culvert sediment basins. Waste materials from drainage ditches and sediment basins shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE. Damaged culvert inlets and/or outlets shall be repaired by opening them with a hydraulic jack, or cutting off the culvert end to allow for free passage of water at peak flow levels. Install a culvert marker at each newly installed culvert and at each existing culvert that is missing a marker that could be reached by a grader blade.
- (5) Riprap Rock Use. Where rock is used for an energy dissipator, rock shall be placed below the culvert outlet and embedded for a minimum of 3 feet. Where rock is used for fill armor, the riprap rock shall be placed and tamped at a 1½:1 slope, beginning at the fill toe(s).
- (6) Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.
- (7) Subgrade Preparation and Application of Surfacing Rock.
 - (a) Complete culvert installations, drainage ditches, roadside brushing, and other specified work prior to the application of new surfacing rock.
 - (b) Cut out all chuckholed and/or washboard sections from the existing surfacing.
 - (c) Apply required base and leveling rock, as directed by STATE.
 - (d) Process (grade and mix) the existing surfacing and added base rock. Provide for a crown of ½ inch per foot, and compact in accordance with Exhibit B.
 - (e) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with specifications in Exhibit B.

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FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
I1 to I2	14+41	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for energy dissipator construction.
	24+64	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for energy dissipator construction.
	39+43	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	134+99	Culvert replacement. Utilize 40 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. The new culvert will be skewed. Utilize 10 cubic yards of 24"-6" riprap rock for armor and energy dissipator construction.
	185+33	Culvert replacement / fill reconstruction. Utilize 30 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	221+65	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
I2 to I3	31+68	Culvert replacement. Utilize 30 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for energy dissipator construction.
	38+95	Culvert replacement/fill reconstruction. Utilize 30 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 30 cubic yards of 4"-0" crushed rock for base course replacement and 24 cubic yards of 1½"-0" crushed rock for surface course replacement. Construct energy dissipator utilizing 12 cubic yards of 24"-6" riprap rock. Armor fill slopes with 20 cubic yards of 24"-6" riprap rock.
	46+72	Install culvert. Utilize 40 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. The new culvert will be skewed.
	61+75	Install culvert. Utilize 40 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. New culvert will be skewed.
	72+54	Install culvert. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Excavate drainage ditch from culvert outlet a distance of 50 feet at a 5% gradient. Construct road ditches for positive drainage to the new culvert.
	82+39	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.

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SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description:</u>
I2 to I3	133+13	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	145+75	Cut and repair inlet end of existing culvert. Construct the sediment basin.
	154+51	Install culvert. Utilize 40 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. The new culvert will be skewed.
	161+20	Install culvert. Utilize 40 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. The new culvert will be skewed.
I4 to I5	3+00	Construct turnaround.
I6A to I6B	0+00	Point I6A.
	0+50	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	46+79	Culvert/fill replacement. Utilize 50 cubic yards of 1½"-0" crushed rock for culvert bedding. Utilize 60 cubic yards of 4"-0" crushed rock for base course replacement. Utilize 24 cubic yards of 1 ½"-0" crushed rock for surface course replacement. Armor fill slopes with 24 cubic yards of 24"-6" riprap rock.
	62+63	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 24 cubic yards of 24"-6" riprap rock for fill armor and energy dissipator construction.
	68+43	Use 24 cubic yards of 24"-6" riprap for fill armoring and energy dissipator construction.
	75+09	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 24 cubic yards of 24"-6" riprap rock for armor and energy dissipator construction.
	86+91	Begin Buster Creek road realignment. Move road into cut slope to provide for a 20' wide subgrade plus ditch. Cut slopes shall be 1:1. Controlled blasting techniques shall be utilized for containment of materials, as approved by STATE. All excavated materials shall be end hauled to the designated waste area.
	88+33	End road realignment.

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SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS:

<u>SEGMENT</u>	<u>STATION</u>	<u>WORK DESCRIPTION:</u>
I6A to I6B	92+80	Culvert replacement. Utilize 30 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	97+97	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock fill armor and energy dissipator construction.
	135+90	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	138+00	Designated waste area.
	140+80	Repair hole in ditch line, shoulder, and road by excavating to solid ground and removal of any woody debris. Backfill and compact with suitable fill material. Utilize 12 cubic yards of ¾"-0" crushed rock for road surface restoration.
	142+85	Install culvert. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for dissipator construction.
	174+84	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for energy dissipator construction.
	200+19	Culvert replacement/fill reconstruction. Utilize 30 cubic yards of 6"-0" pit-run for culvert bedding. Utilize 30 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 60 cubic yards of 4"-0" crushed rock for base course replacement, and 24 cubic yards of 1½"-0" crushed rock for surface course replacement. Construct energy dissipator utilizing 24 cubic yards of 24"-6" riprap rock. Armor fill slopes with 30 cubic yards of 24"-6" riprap rock.
	205+03	Culvert replacement/fill reconstruction. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 30 cubic yards of 4"-0" crushed rock for base course replacement and 24 cubic yards of 1½"-0" crushed rock for surface course replacement. Construct energy dissipator utilizing 12 cubic yards of 24"-6" riprap rock. Armor fill slopes with 20 cubic yards of 24"-6" riprap rock.
	213+51	Culvert replacement. Utilize 40 cubic yards of 1½"-0" of crushed rock for culvert bedding and backfill. Install new culvert deeper to better match stream channel grade.

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SPECIFIED ROAD IMPROVEMENT INSTRUCTIONS:

<u>SEGMENT</u>	<u>STATION</u>	<u>WORK DESCRIPTION</u>
I6A to I6B	217+22	<u>Type F Stream Culvert Installation.</u> Culvert Replacement/Fill Reconstruction. Install in accordance with Exhibit F. Construct five settling ponds and armor the ditch line with 36 cubic yards of compacted 4"-0" crushed rock as directed by STATE.
	225+44	Construct energy dissipator utilizing 10 cubic yards of 24"-6" riprap rock.
	232+79	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill.
	236+08	Install culvert. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Develop a drainage ditch for 30 feet from the culvert outlet.
	246+16	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for energy dissipator construction.
	254+00	Borrow pit. Haul clearing and grubbing debris to the designated waste area.
	262+63	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 24"-6" riprap rock for energy dissipator construction.
	I7 to I8	37+00
I9 to I10	7+40	Culvert replacement. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 10 cubic yards of 4"-0" crushed rock for base course replacement
	15+00	Construct turnaround.

EXHIBIT "B"
 ROAD SURFACING

TYPE OF ROCK	SIZE OF ROCK	CUBIC YARDS PER STA.	COMPACTED DEPTH OF ROCK (INCHES)	POINT TO POINT	STATION TO STATION	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	63	10"	1A to 1B	0+00 to 31+96	2,013
Crushed	¾"-0"	19	3"	1A to 1B	1+18 to 1+83 & 18+40 to 31+87	268
Crushed	4"-0"	50	8"	1C to 1D	0+00 to 11+03	552
Crushed	4"-0"	63	10"	1E to 1F	0+00 to 13+35	841
Crushed	¾"-0"	19	3"	1E to 1F	0+55 to 6+69	117
Crushed	4"-0"	50	8"	1G to 1H	0+00 to 11+00	550
Crushed	4"-0"	50	8"	2A to 2B	0+00 to 1+10	55
Crushed	4"-0"	50	8"	2C to 2D	0+00 to 13+70	685
Crushed	4"-0"	50	8"	2E to 2F	0+00 to 11+80	590
Crushed	¾"-0"	19	3"	2E to 2F	8+80 to 11+80	57
Crushed	4"-0"	50	8"	2G to 2H	0+00 to 12+50	625
Crushed	4"-0"	50	8"	2I to 2J	0+00 to 6+85	343
Crushed	¾"-0"	19	3"	2I to 2J	0+00 to 3+00	57
Crushed	4"-0"	50	8"	2K to 2L	0+00 to 4+60	230
Crushed	4"-0"	50	8"	2M to 2N	0+00 to 1+50	75
Crushed	4"-0"	50	8"	2O to 2P	0+00 to 12+30	615
Crushed	4"-0"	50	8"	2Q to 2R	0+00 to 4+00	200
Crushed	4"-0"	50	8"	2S to 2T	0+00 to 14+30	715
Crushed	¾"-0"	19	3"	2S to 2T	0+00 to 3+00	133
Crushed	4"-0"	50	8"	2U to 2V	0+00 to 19+50	975
Crushed	4"-0"	50	8"	2W to 2X	0+00 to 2+40	120
Crushed	4"-0"	50	8"	4A to 4B	0+00 to 11+90	595
Crushed	¾"-0"	19	3"	4A to 4B	3+00 to 9+00	114
Crushed	4"-0"	50	8"	5A to 5B	0+00 to 30+75	1,538
Crushed	¾"-0"	19	3"	5A to 5B	2+00 to 16+00	266
Crushed	4"-0"	50	8"	5C to 5D	0+00 to 3+65	183
Crushed	4"-0"	50	8"	5E to 5F	0+00 to 2+65	133

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TYPE OF ROCK	SIZE OF ROCK	CUBIC YARDS PER STA.	COMPACTED DEPTH OF ROCK (INCHES)	POINT TO POINT	STATION TO STATION	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	50	8"	6A to 6B	0+00 to 57+00	2,850
Crushed	¾"-0"	19	3"	6A to 6B	0+00 to 3+00 & 16+00 to 42+00	551
Crushed	4"-0"	50	8"	6C to 6D	0+00 to 2+85	143
Crushed	¾"-0"	19	3"	6C to 6D	0+00 to 2+85	54
Crushed	4"-0"	50	8"	6E to 6F	0+00 to 25+20	1,260
Crushed	¾"-0"	19	3"	6E to 6F	0+00 to 20+50	390
Crushed	4"-0"	50	8"	8A to 8B	0+00 to 32+50	1,625
Crushed	¾"-0"	19	3"	8A to 8B	0+00 to 32+50	618
Crushed	1½"-0"	19	3"	I1 to I2	0+00 to 223+16	4,240
Crushed	4"-0"	29	4"	I2 to I3	79+41 to 171+65	2,675
Crushed	1½"-0"	19	3"	I2 to I3	0+00 to 171+65	3,261
Crushed	1½"-0"	38	6"	I4 to I5	0+00 to 13+40	509
Crushed	¾"-0"	25	4"	I6A to I6B	0+00 to 33+85	846
Crushed	¾"-0"	25	4"	I6A to I6B	165+52 to 191+48	649
Crushed	1½"-0"	25	4"	I7 to I8	0+00 to 37+50	938
Crushed	1½"-0"	25	4"	I9 to I10	0+00 to 15+30	383
TURN-OUTS	SIZE OF ROCK	CY PER T.O.	COMPACTED DEPTH OF ROCK (INCHES)	NO. OF T.O.	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	28	10"	6	1A to 1B	168
Crushed	¾"-0"	8	3"	3	1A to 1B	24
Crushed	4"-0"	22	8"	1	1C to 1D	22
Crushed	4"-0"	28	10"	2	1E to 1F	56
Crushed	4"-0"	22	8"	1	1G to 1H	22
Crushed	4"-0"	22	8"	2	2C to 2D	44
Crushed	4"-0"	22	8"	1	2E to 2F	22
Crushed	4"-0"	22	8"	2	2O to 2P	44

EXHIBIT "B"
 ROAD SURFACING

TURN-OUTS	SIZE OF ROCK	CY PER T.O.	COMPACTED DEPTH OF ROCK (INCHES)	NO. OF T.O.	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	22	8"	2	2S to 2T	44
Crushed	¾"-0"	8	3"	1	2S to 2T	8
Crushed	4"-0"	22	8"	4	2S to 2T	88
Crushed	4"-0"	22	8"	2	4A to 4B	44
Crushed	¾"-0"	8	3"	2	4A to 4B	16
Crushed	4"-0"	22	8"	2	5A to 5B	44
Crushed	¾"-0"	8	3"	1	5A to 5B	8
Crushed	4"-0"	22	8"	5	6A to 6B	110
Crushed	¾"-0"	8	3"	3	6A to 6B	24
Crushed	4"-0"	22	8"	3	6E to 6F	66
Crushed	¾"-0"	8	3"	3	6E to 6F	24
Crushed	4"-0"	22	8"	7	8A to 8B	154
Crushed	¾"-0"	8	3"	7	8A to 8B	56
Crushed	1½"-0"	8	3"	28	11 to 12	224
Crushed	4"-0"	12	4"	10	12 to 13	120
Crushed	1½"-0"	8	3"	19	12 to 13	152
Crushed	1½"-0"	17	6"	1	14 to 15	17
Crushed	¾"-0"	8	3"	10	16A to 16B	80
Crushed	1½"-0"	11	4"	5	17 to 18	55
Crushed	1½"-0"	11	4"	3	19 to 110	33
TURN-AROUND	SIZE OF ROCK	CY PER T./A.	NO. OF T./A.		POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	24	1		1A to 1B	24
Crushed	4"-0"	24	1		1C to 1D	24
Crushed	4"-0"	24	1		1E to 1F	24
Crushed	4"-0"	24	1		1G to 1H	24
Crushed	4"-0"	24	1		2C to 2D	24

EXHIBIT "B"
 ROAD SURFACING

TURN-AROUND	SIZE OF ROCK	CY PER T.J.A.	NO. OF T.J.A.	POINT TO POINT		TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	24	1	2G to 2H		24
Crushed	4"-0"	24	1	2O to 2P		24
Crushed	4"-0"	24	1	2S to 2T		24
Crushed	4"-0"	24	1	2U to 2V		24
Crushed	4"-0"	24	1	4A to 4B		24
Crushed	4"-0"	24	1	5A to 5B		24
Crushed	4"-0"	24	1	5C to 5D		24
Crushed	4"-0"	24	1	5E to 5F		24
Crushed	4"-0"	24	1	6A to 6B		24
Crushed	4"-0"	24	1	6E to 6F		24
Crushed	4"-0"	24	1	8A to 8B		24
Crushed	4"-0"	24	1	I4 to I5		24
Crushed	4"-0"	24	1	I7 to I8		24
Crushed	4"-0"	24	1	I9 to I10		24
JUNCTIONS	SIZE OF ROCK	CY PER JCT.	COMPACTED DEPTH OF ROCK (INCHES)	NO. OF JCT.	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	30	8"	4	1A, 1C, 1E, 1G	120
Crushed	¾"-0"	12	3"	3	1A, 1C, 1I	36
Crushed	4"-0"	30	8"	13	2A, 2C, 2E, 2F, 2G, 2I, 2K, 2M, 2O, 2Q, 2S, 2U, 2W	390
Crushed	¾"-0"	12	3"	10	2A, 2C, 2E, 2G, 2I, 2K, 2O, 2Q, 2S, 2U	120
Crushed	4"-0"	30	8"	1	4A	30
Crushed	4"-0"	30	8"	7	5A, 5C, 5E, 6A, 6C, 6D, 6E	210
Crushed	¾"-0"	12	3"	5	5A, 6A, 6C, 6D, 6E	60
Crushed	4"-0"	30	8"	2	8A, 8B	60

EXHIBIT "B"
 ROAD SURFACING

JUNCTIONS	SIZE OF ROCK	CY PER JCT.	COMPACTED DEPTH OF ROCK (INCHES)	NO. OF JCT.	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	¾"-0"	12	3"	2	8A, 8B	24
Crushed	1½"-0"	19	3"	7	11 to 12	133
Crushed	1½"-0"	19	3"	6	12 to 13	114
Crushed	4"-0"	29	8"	4	12 to 13	116
Crushed	1½"-0"	19	3"	3	16A to 16B	57
Crushed	1½"-0"	30	8"	3	14, 17, 19	90
LANDING ROCK	SIZE OF ROCK	VOL. PER LANDING	LOCATION		NUMBER OF LANDINGS	TOTAL TRUCK MEASURE VOLUME (CY)
Pit-run	6"-0"	80	1D,1H,2B,2D,2H,2J,2L, 2N,2P,2R,2T,2V,2X,4B, 5B,5D,5F,6B,Sta. 18+00 of 6A to 6B Sta. 11+30 of 6E to 6F,6F,15		22	1,760
TYPE OF ROCK	SIZE OF ROCK	MISCELLANEOUS USE:			POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	4"-0"	Curve/Fill Widening			1A to 1B	65
Crushed	¾"-0"	Curve/Fill Widening			1A to 1B	20
Crushed	4"-0"	Curve/Fill Widening			1C to 1D	35
Crushed	4"-0"	Fill Widening			1E to 1F	15
Crushed	4"-0"	Subgrade Reinforcement			4+05 to 5+55 of 1I to 1J	75
Crushed	4"-0"	Junction Enhancement			0+00 of 2S to 2T	40
Riprap	24"-6"	Energy Dissipator			1+10 of 4A to 4B	12
Crushed	4"-0"	Curve/Fill Widening			5A to 5B	111
Crushed	¾"-0"	Curve/Fill Widening			5A to 5B	42
Riprap	24"-6"	Energy Dissipator			11+90 of 5A to 5B	12
Crushed	4"-0"	Curve/Fill Widening			6A to 6B	72

EXHIBIT "B"
 ROAD SURFACING

TYPE OF ROCK	SIZE OF ROCK	MISCELLANEOUS USE:	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	¾"-0"	Curve/Fill Widening	6A to 6B	27
Crushed	1½"-0"	Subgrade Leveling	I1 to I2	600
Crushed	1½"-0"	Culvert Bedding/Backfill	14+41 of I1 to I2	20
Riprap	24"-6"	Energy Dissipator	14+41 of I1 to I2	10
Crushed	1½"-0"	Culvert Bedding/Backfill	24+64 of 1 to I2	20
Riprap	24"-6"	Energy Dissipator	24+64 of 1 to I2	10
Crushed	1½"-0"	Culvert Bedding/Backfill	39+43 of I1 to I2	20
Crushed	1½"-0"	Culvert Bedding/Backfill	134+99 of I1 to I2	40
Riprap	24"-6"	Energy Dissipator	134+99 of I1 to I2	10
Crushed	1½"-0"	Culvert Bedding/Backfill	185+33 of I1 to I2	30
Crushed	1½"-0"	Culvert Bedding/Backfill	221+65 of I1 to I2	20
Crushed	1½"-0"	Subgrade Leveling	I2 to I3	500
Crushed	4"-0"	Subgrade Leveling	I2 to I3	300
Crushed	1½"-0"	Culvert Bedding/Backfill	31+68 of I2 to I3	30
Riprap	24"-6"	Energy Dissipator	31+68 of I2 to I3	10
Crushed	1½"-0"	Culvert Bedding/Backfill	38+95 of I2 to I3	30
Crushed	4"-0"	Base Course Restoration	38+95 of I2 to I3	30
Crushed	1½"-0"	Surface Course Restoration	38+95 of I2 to I3	24
Riprap	24"-6"	Energy Dissipator/Fill Armor	38+95 of I2 to I3	32
Crushed	1½"-0"	Culvert Bedding/Backfill	46+72 of I2 to I3	40
Crushed	1½"-0"	Culvert Bedding/Backfill	61+75 of I2 to I3	40
Crushed	1½"-0"	Culvert Bedding/Backfill	72+54 of I2 to I3	20
Crushed	1½"-0"	Culvert Bedding/Backfill	82+39 of I2 to I3	20
Crushed	1½"-0"	Culvert Bedding/Backfill	133+13 of I2 to I3	20
Crushed	1½"-0"	Culvert Bedding/Backfill	154+51 of I2 to I3	40

EXHIBIT "B"
 ROAD SURFACING

TYPE OF ROCK	SIZE OF ROCK	MISCELLANEOUS USE:	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	1½"-0"	Culvert Bedding/Backfill	161+20 of I2 to I3	40
Crushed	1½"-0"	Subgrade Leveling	I4 to I5	70
Crushed	¾"-0"	Subgrade Leveling	I6A to I6B	1000
Crushed	1½"-0"	Culvert Bedding/Backfill	0+50 of I6A to I6B	20
Crushed	1½"-0"	Culvert Bedding/Backfill	46+79 of I6A to I6B	50
Crushed	4"-0"	Base Course Restoration	46+79 of I6A to I6B	60
Crushed	1½"-0"	Surface Course Restoration	46+79 of I6A to I6B	24
Riprap	24"-6"	Fill Armor	46+79 of I6A to I6B	24
Crushed	1½"-0"	Culvert Bedding/Backfill	62+63 of I6A to I6B	20
Riprap	24"-6"	Energy Dissipator/Fill Armor	62+63 of I6A to I6B	24
Riprap	24"-6"	Energy Dissipator/Fill Armor	68+43 of I6A to I6B	24
Crushed	1½"-0"	Culvert Bedding/Backfill	75+09 of I6A to I6B	20
Riprap	24"-6"	Energy Dissipator/Fill Armor	75+09 of I6A to I6B	24
Crushed	4"-0"	Base Course Restoration	86+91 to 88+33 of I6A to I6B	138
Crushed	¾"-0"	Surface Course Restoration	86+91 to 88+33 of I6A to I6B	61
Crushed	1½"-0"	Culvert Bedding/Backfill	92+80 of I6A to I6B	30
Crushed	1½"-0"	Culvert Bedding/Backfill	97+97 of I6A to I6B	20
Riprap	24"-6"	Energy Dissipator/Fill Armor	97+97 of I6A to I6B	10
Crushed	1½"-0"	Culvert Bedding/Backfill	135+90 of I6A to I6B	20
Crushed	¾"-0"	Surface Course Restoration	140+80 I6A to I6B	12
Crushed	1½"-0"	Culvert Bedding/Backfill	142+85 of I6A to I6B	10
Riprap	24"-6"	Energy Dissipator	142+85 of I6A to I6B	10
Crushed	1½"-0"	Culvert Bedding/Backfill	174+84 of I6A to I6B	20
Riprap	24"-6"	Energy Dissipator	174+84 of I6A to I6B	10
Pit-run	6"-0"	Culvert Bedding	200+19 of I6A to I6B	30

EXHIBIT "B"
 ROAD SURFACING

TYPE OF ROCK	SIZE OF ROCK	MISCELLANEOUS USE:	POINT TO POINT	TOTAL TRUCK MEASURE VOLUME (CY)
Crushed	1½"-0"	Culvert Bedding/Backfill	200+19 of I6A to I6B	30
Crushed	4"-0"	Base Course Restoration	200+19 of I6A to I6B	60
Crushed	1½"-0"	Surface Course Restoration	200+19 of I6A to I6B	24
Riprap	24"-6"	Energy Dissipator/Fill Armor	200+19 of I6A to I6B	54
Crushed	1½"-0"	Culvert Bedding/Backfill	205+03 of I6A to I6B	20
Crushed	4"-0"	Base Course Restoration	205+03 of I6A to I6B	30
Crushed	1½"-0"	Surface Course Restoration	205+03 of I6A to I6B	24
Riprap	24"-6"	Energy Dissipator/Fill Armor	205+03 of I6A to I6B	32
Crushed	1½"-0"	Culvert Bedding/Backfill	213+51 of I6A to I6B	40
Crushed	1½"-0"	Culvert Bedding/Backfill	217+22 of I6A to I6B	60
Crushed	4"-0"	Base Course Restoration	217+22 of I6A to I6B	64
Crushed	¾"-0"	Surface Course Restoration	217+22 of I6A to I6B	50
Riprap	24"-6"	Energy Dissipator/Fill Armor	217+22 of I6A to I6B	100
Crushed	4"-0"	Settling Ponds/Ditch Armor	217+22 of I6A to I6B	36
Riprap	24"-6"	Energy Dissipator	225+44 of I6A to I6B	10
Crushed	1½"-0"	Culvert Bedding/Backfill	232+79 of I6A to I6B	20
Crushed	1½"-0"	Culvert Bedding/Backfill	236+08 of I6A to I6B	10
Crushed	1½"-0"	Culvert Bedding/Backfill	246+16 of I6A to I6B	20
Riprap	24"-6"	Energy Dissipator	246+16 of I6A to I6B	10
Crushed	1½"-0"	Culvert Bedding/Backfill	262+63 of I6A to I6B	20
Riprap	24"-6"	Energy Dissipator	262+63 of I6A to I6B	10
Crushed	1½"-0"	Subgrade Leveling	I7 to I8	150
Crushed	1½"-0"	Subgrade Leveling	I9 to I10	70
Crushed	1½"-0"	Culvert Bedding/Backfill	7+40 of I9 to I10	20
Crushed	4"-0"	Base Course Restoration	7+40 of I9 to I10	10

EXHIBIT "B"
ROAD SURFACING

Rock Totals (CY)

¾" - 0"	1½" - 0"	4" - 0"	6" - 0"	24" - 6"
5,812	12,572	23,792	1,790	438

Total(CY)
44,369

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

EXHIBIT "B"

ROCK ACCOUNTABILITY

Subgrades must be approved by STATE 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 from runoff.

Rock accountability shall be determined by the following methods, as directed by STATE. STATE shall be given 24 hours' notice prior to rocking.

Rock Checking. All rock spreading shall be done only when a STATE representative is present. STATE shall issue a receipt for each load delivered, and rock shall be measured without allowance for shrinkage or shakedown during hauling. Total truck measure volume for each road segment shall be as shown on Exhibit B. Deliver at least 600 cubic yards per 8-hour shift, unless otherwise approved by STATE. A penalty of \$10 for each 10 cubic yards which are not delivered during a single shift shall be billed, and payment shall be required prior to final acceptance of the project by STATE.

Depth Measurement. Rock shall be spread and compacted according to the depths specified in Exhibit B. 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 B. The average depth for each road segment shall be the specified depth or greater. Surfacing areas shall be staked by STATE.

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

EXHIBIT "B"

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." A minimum of 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 one or more of the approved equipment options listed below.

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All road segments except for 1I to 1J, 6G to 6H, 6K to 6L, 7A to 7B, and 9A to 9B	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." A minimum 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 one or more of the approved equipment options listed below:

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

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 one or more of the approved equipment options listed below:

ROAD SEGMENT	COMPACTION EQUIPMENT OPTIONS
All road segments requiring rock	1

EXHIBIT "B"

COMPACTION EQUIPMENT OPTIONS

- (1) Vibratory Rollers. The drum shall have a smooth surface, a diameter not less than 48 inches, a width not less than 58 inches, and a turning radius of 15 feet or less. Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 VPM, corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 VPM. It shall be activated by a power unit of not less than 25 horsepower. The vibratory roller shall be self-propelled and operated at speeds ranging from 0.9 miles to 1.8 miles per hour, as directed by STATE.
- (2) Rubber-Tired Skidders. A rubber-tired skidder weighing a minimum of 20,000 pounds shall be operated over the fill layers so that the entire layered surface comes in contact with the tires. Skidders with oversized tires (high flotation) are not acceptable for compaction.
- (3) Tampingfoot Compactors. Tampingfoot or sheepsfoot compactors shall exert a minimum pressure of 250 pounds per square inch on the ground area in contact with the tamping feet. The compactor shall cover a minimum width of 60 inches per pass and weigh a minimum of 16,000 pounds.
- (4) Vibratory Hand-Operated or Backhoe-Mounted Tamper. Vibratory hand held or hydraulic tampers shall be used for compaction of backfill around culverts. The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.

EXHIBIT "C"

CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the contract. Culverts shall be constructed of aluminized steel with Type 2 coating, 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.

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 2 percent unless otherwise specified.

The foundation and trench walls for all culverts shall be free from logs, stumps, limbs, stones over 3 inches, and other objects which would dent or damage the pipe during installation or use. If tamping is required, the trench shall be excavated wide enough to permit working on each side of pipe. Bedrock shall be excavated as required to provide a uniform foundation for the full length of the culvert.

A bedding of granulated material or job-excavated soil 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.

Transporting of the pipe shall be done carefully. Dragging or allowing free fall from trucks or into trenches shall not be permitted. Damage to aluminized coating shall be repaired before the pipe is covered.

On new installations, joining shall be done with bands of like material and corrugations. Manufacturers' instructions shall be followed for prefabricated pipe assembly.

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

Tamping is required as specified in Exhibit B and shall be done in 8-inch lifts, 1 pipe diameter each side of the pipe to 85 percent density or over, and to the minimum fill height as specified below.

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.

Fill heights, if not shown on a road plan and profile, shall be in accordance with those shown in Drawing No. 2094, "Fill Height Tables," prepared by the Highway Division of the Oregon State Department of Transportation. Any deviation must be approved by STATE.

EXHIBIT "C"

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", 18" for galvanized or aluminized steel culverts 42" to 96", and 12" for polyethylene culverts (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. Culverts in Type F streams must allow free passage of fish as provided in the Oregon Forest Practice Rules. 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 into waters of the State shall have approved slope protection devices.

Following are the minimum standard gauges for pipe and coupling bands. All other designs shall be in accordance with the minimum requirements of the Highway Division (Drawing Nos. 2091-A and B), or as approved by STATE.

Dia.	Pipe Gauge		Band Gauges		Band Widths (")			Hugger Band Widths (")	
	Alum.	Steel	Alum.	Steel	Annular	Helical	Dimpled	Annular	Helical
12-15	16	16	16	16	7	12	12	13 1/8	10 1/2
18-24	16	16	16	16	12	12	12	13 1/8	10 1/2
30-36	14	16	14	16	12	12	*12	13 1/8	10 1/2
42	12	14	12	16	12	12	NA	13 1/8	10 1/2
48	12	14	12	16	24	24	NA	13 1/8	10 1/2
54	12	14	12	16	24	24	NA	13 1/8	10 1/2
60	10	12	10	16	24	24	NA	13 1/8	10 1/2
66-72	10	12	10	16	24	24	NA	13 1/8	10 1/2
78	10	12	10	16	24	24	NA	13 1/8	10 1/2
84	8	12	8	16	24	24	NA	14 3/4	10 1/2
90-120 (3"x1")	8	12	8	16	26	26	NA	NA	NA

*Up to 33"

The intake ends of culverts shall be marked by driving of white fiberglass posts within 6 inches of the downgrade side. Posts shall be a minimum of 6 feet long, and be a minimum of 2½ inches in width, with spade driven 2 feet into the ground.

Tamping is required.

Culverts 24 inches in diameter and greater shall have 1:1 beveled inlets.

All removed culverts shall be hauled to an approved refuse site off of State land.

EXHIBIT "C"
 CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT POINT TO POINT	STATION
1	18	30	1A to 1B	4+94
2	18	32	1A to 1B	10+64
3	18	32	1A to 1B	15+65
4	18	32	1A to 1B	17+53
5	18	34	1A to 1B	22+52
6	18	34	1A to 1B	27+05
7	18	34	1C to 1D	4+85
8	18	32	1C to 1D	8+24
9	18	32	1E to 1F	3+30
10	18	32	1E to 1F	6+70
11	18	32	1G to 1H	2+93
12	18	40	2A to 2B	0+00
13	18	32	2C to 2D	4+20
14	18	34	2C to 2D	6+25
15	18	34	2C to 2D	10+20
16	18	40	2E to 2F	0+00
17	18	32	2E to 2F	2+30
18	18	40	2E to 2F	11+80
19	18	40	2G to 2H	0+00
20	18	32	2G to 2H	9+15
21	18	40	2O to 2P	0+00
22	18	30	2O to 2P	8+20
23	18	40	2S to 2T	0+00
24	18	32	2S to 2T	5+20
25	18	30	2S to 2T	10+50
26	18	40	2U to 2V	0+00
27	18	32	2U to 2V	5+10
28	18	30	2U to 2V	13+25

EXHIBIT "C"
 CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT POINT TO POINT	STATION
29	18	30	2U to 2V	17+25
30*	18	50	4A to 4B	1+10
31	18	32	5A to 5B	3+10
32	18	36	5A to 5B	7+55
33	18	32	5A to 5B	11+90
34	18	44	5A to 5B	15+60
35	18	30	6A to 6B	3+05
36	18	30	6A to 6B	8+90
37	18	36	6A to 6B	15+30
38	18	38	6A to 6B	19+75
39	18	36	6A to 6B	26+15
40	18	30	6A to 6B	46+00
41	18	36	6A to 6B	54+90
42	18	38	6E to 6F	1+25
43	18	38	6E to 6F	4+30
44	18	32	6E to 6F	10+45
45	18	32	8A to 8B	1+75
46	18	32	8A to 8B	6+00
47	18	30	8A to 8B	9+10
48	18	32	8A to 8B	13+70
49	18	40	8A to 8B	32+50
50*	18	40	I1 to I2	14+41
51*	18	40	I1 to I2	24+64
52*	18	32	I1 to I2	39+43
53*	18	44	I1 to I2	134+99
54	18	42	I1 to I2	185+33
55	18	32	I1 to I2	221+65
56*	18	36	I2 to I3	31+68

EXHIBIT "C"
 CULVERT LIST

CULVERT NO.	DIAMETER (Inches)	LENGTH (Feet)	ROAD SEGMENT POINT TO POINT	STATION
57	24	50	I2 to I3	38+95
58	18	32	I2 to I3	46+72
59	18	34	I2 to I3	61+75
60	18	32	I2 to I3	72+54
61	18	32	I2 to I3	82+39
62	18	32	I2 to I3	133+13
63*	18	32	I2 to I3	154+51
64	18	32	I2 to I3	161+20
65	18	32	I6A to I6B	0+50
66	48	42	I6A to I6B	46+79
67	18	36	I6A to I6B	62+63
68	18	32	I6A to I6B	75+09
69	18	60	I6A to I6B	92+80
70	18	40	I6A to I6B	97+97
71	18	34	I6A to I6B	135+90
72	18	40	I6A to I6B	142+85
73	18	36	I6A to I6B	174+84
74	30	54	I6A to I6B	200+19
75	24	40	I6A to I6B	205+03
76	18	42	I6A to I6B	213+51
77*	81" x 59"	82	I6A to I6B	217+22
78	18	32	I6A to I6B	232+79
79	18	32	I6A to I6B	236+08
79	18	32	I6A to I6B	246+16
80	24	40	I6A to I6B	262+63
81	18	40	I9 to I10	7+40

* Indicates no marker post needed.

Culvert No. 77 shall be a 81"x59" 12 gage aluminized steel pipe arch culvert with 3"x1" corrugations.

EXHIBIT "D"

ROCK PIT DEVELOPMENT AND USE

- (1) 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.
- (2) 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.
- (3) For Project No. 3, all overburden and reject material shall be hauled to the designated Green Mountain Quarry No. 1 waste site and disposed of as directed by STATE.
- (4) Benches shall be constructed at intervals of 40 feet or less in height and shall be a minimum of 20 feet in width. Any gravel or talus slopes shall be left with a working face at an angle of 60 degrees or less. There shall be a minimum of 1 bench with an access road to it. Said bench shall be easily accessible with tractors.
- (5) Pit face shall be developed in a uniform manner.
- (6) If blasting will be utilized, controlled blasting techniques are required, and shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain as much material as possible within the quarry development area.
- (7) For Project No. 3, oversized rock that is produced or encountered during development shall be broken down and utilized for crushing or utilized for rip rap rock as required in Exhibit B.
- (8) The pit site shall be left in a condition free from overburden and debris. Access roads to the pit, and the pit floor, shall be cleared at the termination of use. Overburden shall be removed for a distance of 20 feet beyond the developed rock source.
- (9) The quarry shall be developed to provide for drainage away from the quarry. All quarry and stockpile site drainage ditches shall be maintained. Quarry access roads shall be cleared and blocked upon completion of quarry use as directed by STATE.
- (10) Proper winterization and storm-water control measures such as water barring, drainage, utilization of filter bales, mulching and/or blocking access shall be constructed and maintained to protect the watershed and project work, as directed by STATE.
- (11) Purchaser shall schedule and coordinate Green Mountain No. 2 Quarry and stockpile use with other existing and planned STATE contracts requiring quarry and stockpile use.

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. Prior to entering the rock crusher, materials used for rock crushing shall be screened, and all materials less than one inch in size shall be rejected.

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 OSHD Standard
Passing No. 20 Sieve: 30% Maximum
Sediment Height: 3" Maximum

Grading Requirements

<u>For 1½"-0"</u>	Passing	2" sieve	100%
	Passing	1½" sieve	95-100%
	Passing	¾" sieve	55-90%
	Passing	¼" sieve	35-50%

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

<u>For 4"-0"</u>	Passing	4" sieve	100%
	Passing	2" sieve	60-90%
	Passing	1/4" sieve	20-35%

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"

PIT-RUN AND RIPRAP ROCK SPECIFICATIONS

Grading Requirements

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

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

Control of gradation shall be by visual inspection by STATE.

EXHIBIT "F"

TYPE F STREAM CROSSING

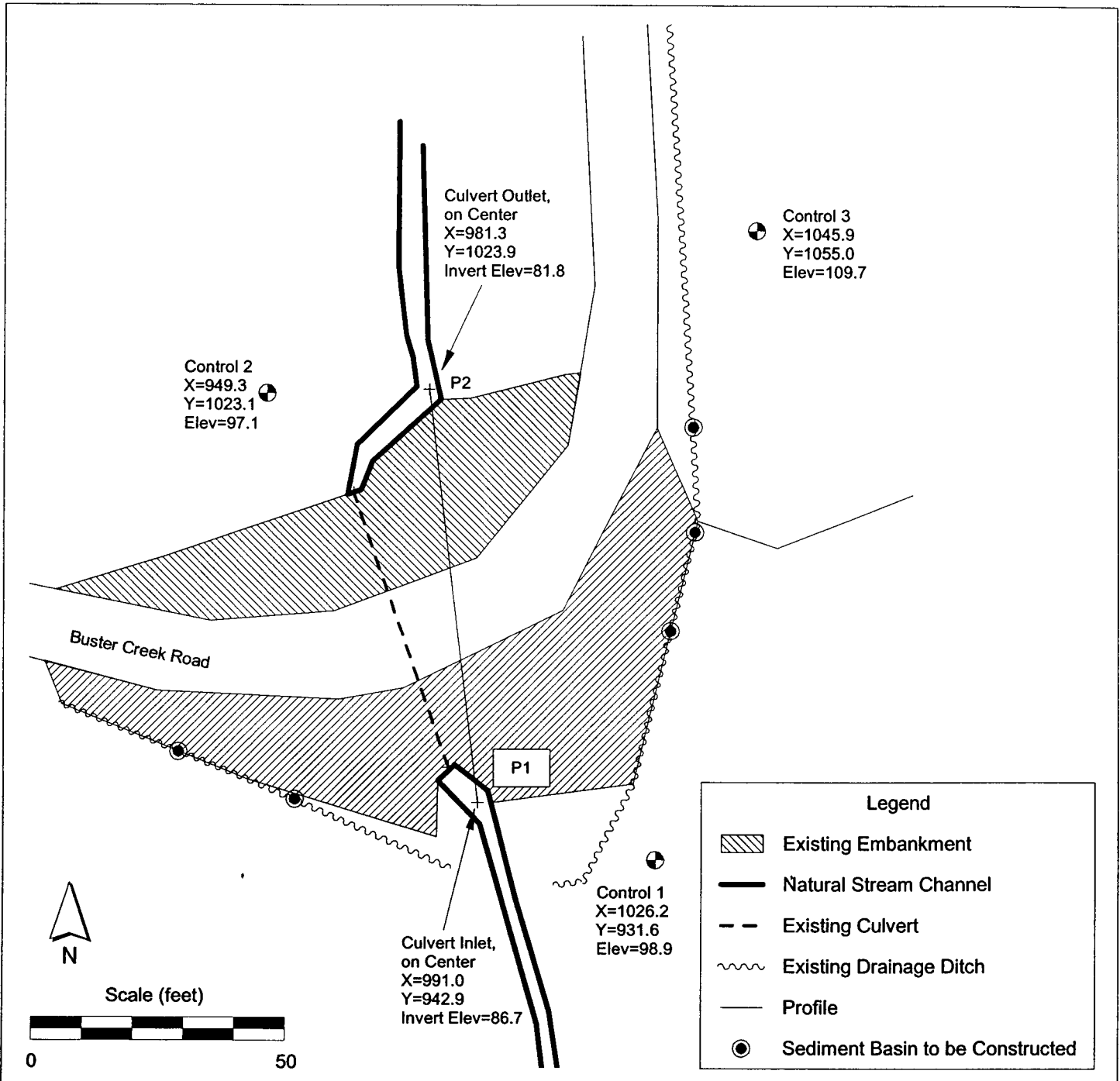
- (1) Type "F" stream fill reconstruction must allow free passage of fish as provided in the Oregon Forest Practice Rules. Modifications of the existing culvert geometry shall be required to allow free passage of fish.
- (2) Work shall be conducted only during periods of low water flows and between July 1 and August 31, annually. STATE shall be notified a minimum of 48 hours prior to beginning work. STATE has prepared a "Written Plan" for this work.
- (3) A minimum of 1½ cubic yard, track mounted excavator shall be used for all excavation, stream development/preparation, and riprap replacement. Use of an on site hydraulic rock hammer may be required for the breaking of rock strata encountered during the development of the culvert bed.
- (4) Excavated debris and soil materials unsuitable for fill construction shall end-hauled to "Waste Areas" as directed by STATE, located at Station 138+00. The existing removed culvert shall be hauled to an approved refuse site off of STATE land.
- (5) Waste materials shall be sloped for drainage and stability, as directed by STATE. Grass seed and straw mulch shall be applied to all exposed areas, bare soils and waste materials as directed by STATE. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.
- (6) Remove existing fill, culvert, and any logs or woody debris.
- (7) De-watering of the work site shall be accomplished prior to the removal of any additional fill material for the development of the culvert bed and stream channel. The work site shall be de-watered by the use of cofferdams, temporary diversion ditches and/or drainage structures.
- (8) Remove additional fill and logs or woody debris for the development of the new culvert bed. The development of the new culvert bed will **NOT** be situated the same as the old culvert bed. The location of the new culvert will be calculated by using control points set in the field. The inlet of the new pipe will be set by referencing to Control Point 1 (HD = 37.0 feet at an Azimuth = 288 degrees and a Vertical Offset of 12.2 feet). The outlet end of the new culvert will be set by referencing to Control Point 2 (HD = 32.1 feet at an Azimuth = 89 degrees and a Vertical Offset of 15.3 feet). Utilize 90 cubic yards of 1½"- 0" crushed rock for the culvert bed and for backfill.
- (9) Develop the stream channel for a distance of 25 feet upstream of the inlet of the new culvert and 12 feet downstream of the outlet. The stream channel width will be 4 feet and stream channel banks shall be sloped at 1½:1.
- (10) Native (excavated) stream sediment materials shall be placed in the culvert barrel to a depth of 18 inches. Excavated boulders or riprap rock shall be placed and embedded at the outlet of the new culvert to allow additional stream sediment materials to settle in the barrel of the culvert.

EXHIBIT "F"

TYPE F STREAM CROSSING

- (11) Fill Reconstruction backfill shall consist of select materials and be obtained a borrow pit located at Station 254+00, as directed by STATE. Utilize 60 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Backfill materials shall be hauled in where necessary and thoroughly compacted in accordance with Exhibit B. Utilize 100 cy of 24"-6" riprap for armoring fill slopes. The riprap rock shall be placed and tamped at a 1½:1 slope for a minimum thickness of 2 feet beginning at the toes. Finished sub-grade width shall be 20-feet with a 16-foot running surface. A minimum of 64 cubic yards 4"-0" base rock will be utilized to restore the base surfacing coarse for a compacted depth of 8 inches. A minimum of 50 cubic yards of ¾"-0" crushed rock will be utilized to restore the running surface coarse. Crushed rock will be processed and compacted in accordance with Exhibit B.

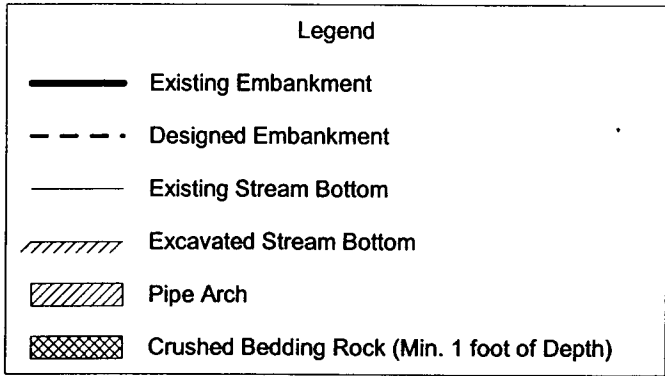
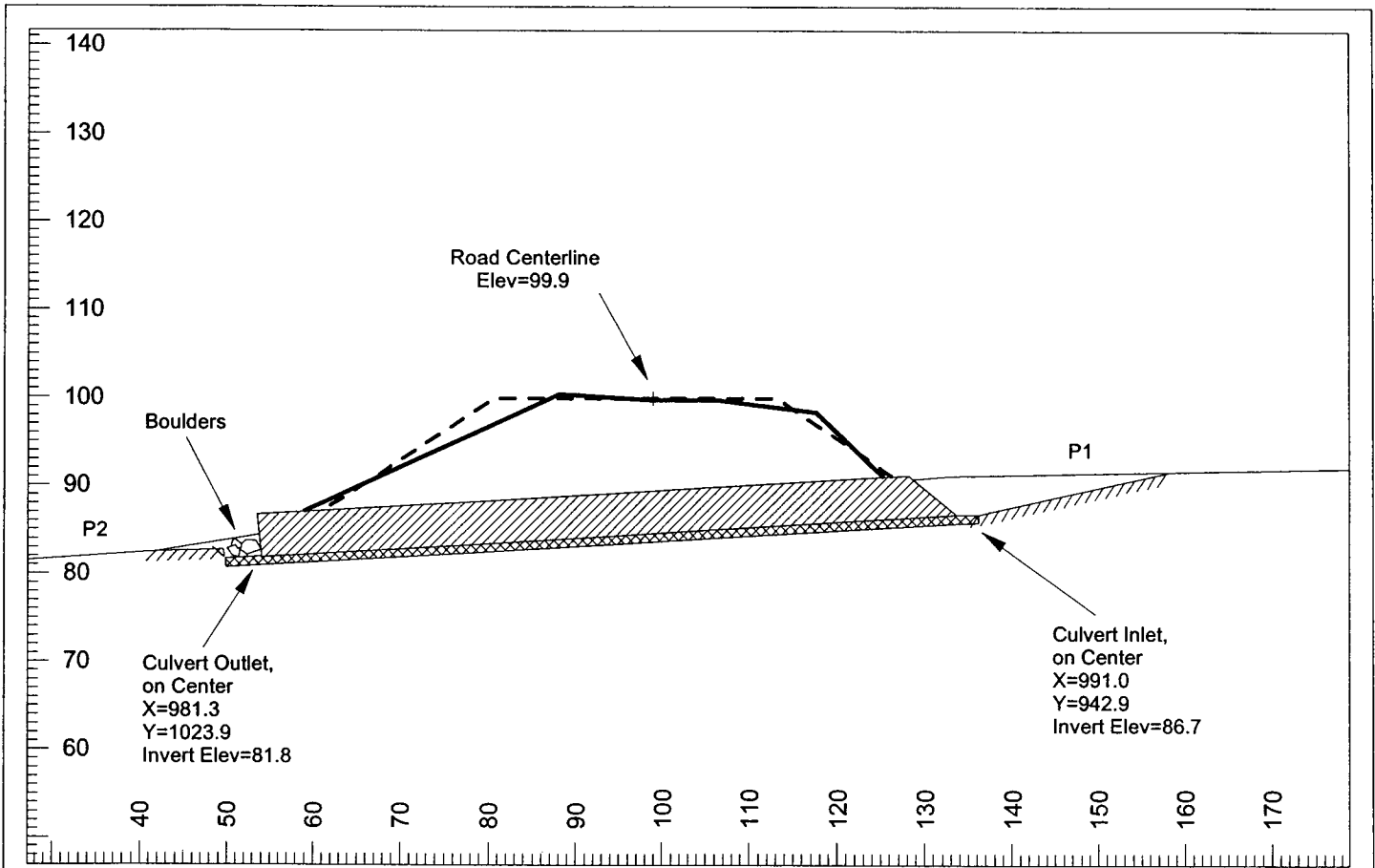
EXHIBIT "F"
STREAM CROSSING



Oregon Department of Forestry
Astoria District
Engineering Unit

Point I6A to Point I6B
Station 217+22
Buster Creek Tributary
SE1/4, Section 19, T5N, R6W, W. M.
Clatsop County, Oregon

EXHIBIT "F"
 STREAM CROSSING

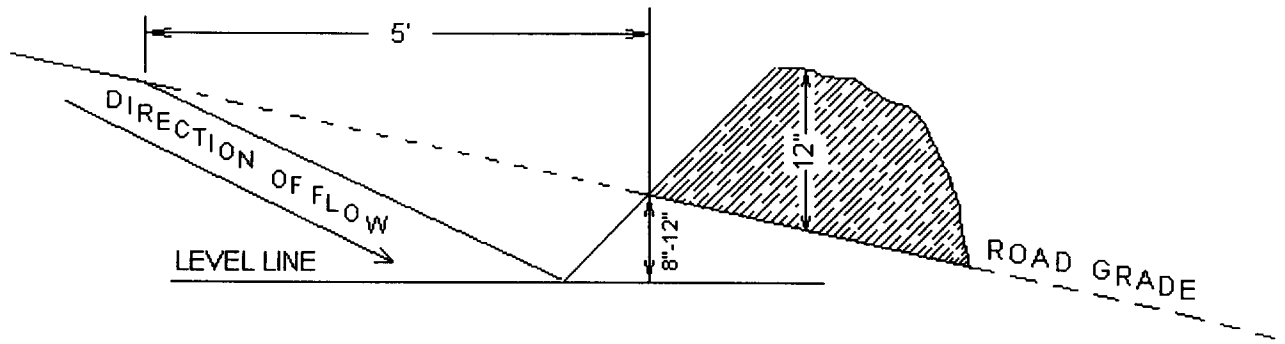


Oregon Department of Forestry
 Astoria District
 Engineering Unit

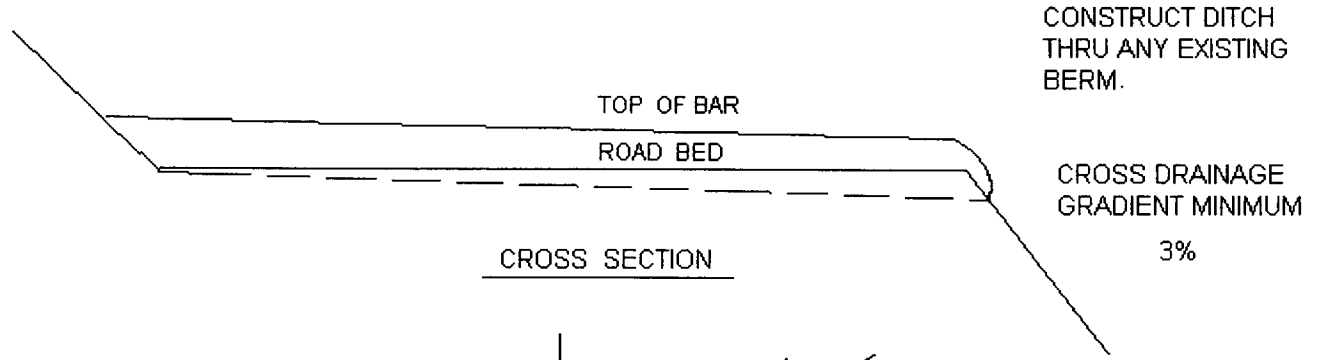
Point I6A to Point I6B
 Station 217+22
 Buster Creek Tributary
 SE1/4, Section 19, T5N, R6W, W. M.
 Clatsop County, Oregon

EXHIBIT "G"

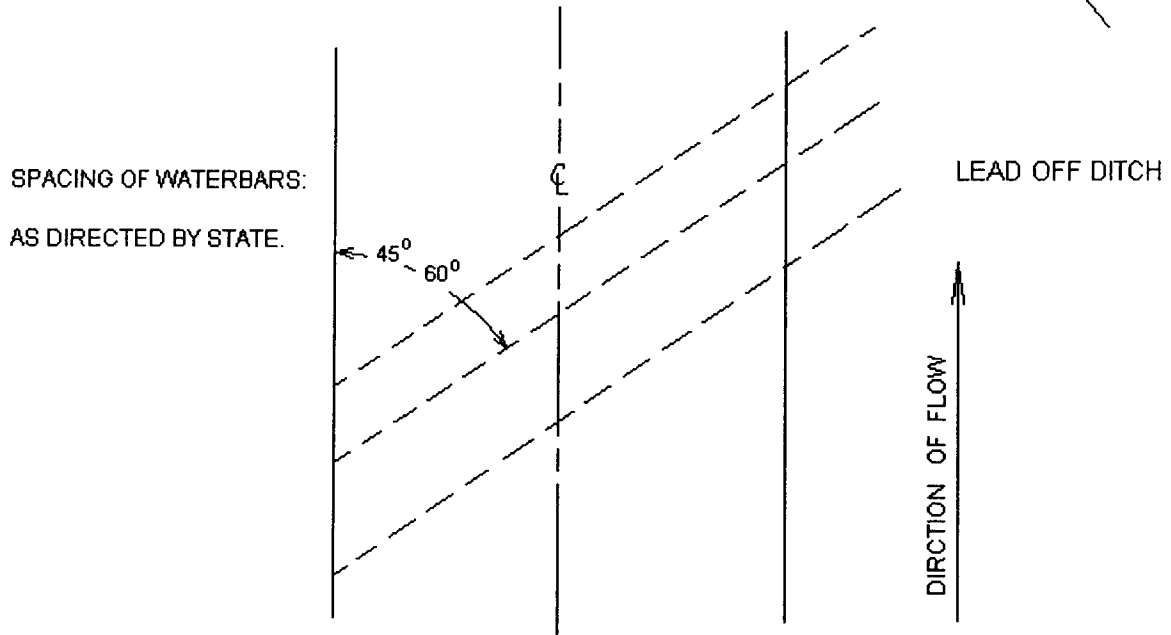
WATERBAR SPECIFICATIONS



PROFILE



CROSS SECTION



PLAN VIEW

EXHIBIT "H"

ROAD VACATING AND FILL REMOVAL SPECIFICATIONS: V1 to V2, V3 to V4, and V5 to V6

- (1) Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off State Land.
- (2) Fill Removal and Stream Channel Development. Remove fills to the natural stream course level(s). Stream channel(s) shall be excavated/developed to specified widths. Developed stream banks shall be sloped at natural contours or no steeper than 1 1/2:1, as directed by STATE.
- (3) Use of Excavated Materials.
 - (a) Fill Excavation. Excavated materials shall be placed and compacted on the roadway a minimum of 10 feet from the top of the developed stream bank.
 - (b) Woody Debris may be incorporated in embankment material and/or placed on the surface of compacted embankment material.
- (4) Construct Waterbars at designated locations and as directed by STATE. Construct waterbars according to the specifications in Exhibit G.
- (5) Block Roads. Use excavated material from fill removals areas to block roads from vehicle access, as directed by STATE.
- (6) Erosion Control. All exposed excavation areas and waste materials shall be mulched with a straw mulch approved by STATE. Applied straw mulch shall be a minimum of 2 inches deep and provide a uniform cover.
- (7) Equipment. A minimum 1 1/2 cubic-yard, track mounted excavator shall be used for all excavation, culvert removal, streambed preparation, road blocking, and waterbarring, unless otherwise approved in writing by STATE. All work shall be performed during dry conditions acceptable to STATE.

EXHIBIT "H"

ROAD VACATING AND FILL REMOVAL SPECIFICATIONS

SPECIFIC INSTRUCTIONS:

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
V1 to V2	0+00	Point V1. Start Project. Block Road
	10+50	Point V2. End Project. Block Road
V3 to V4	0+00	Point V3. Start Project. Block Road
	11+40	Begin fill removal and development of 4-foot channel.
	12+00	End fill removal and development of 4-foot channel.
	15+50	Begin fill removal and development of 4-foot channel.
	16+10	End fill removal and development of 4-foot channel.
	27+10	Begin fill removal and development of 4-foot channel.
	27+50	End fill removal and development of 4-foot channel.
	32+70	Construct waterbar.
	36+75	Begin sideslope stabilization and development of 4-foot channel.
	37+25	End sideslope stabilization and development of 4-foot channel.
	39+20	Begin fill removal and development of 4-foot channel.
39+60	End fill removal and development of 4-foot channel.	
41+30	Point V4. End Project.	
V5 to V6	0+00	Point V5. Start Project. Block Road
	1+80	Begin fill removal and development of 5-foot channel.
	2+45	End fill removal and development of 5-foot channel.
	3+05	Begin fill removal and development of 4-foot channel.
	3+45	End fill removal and development of 4-foot channel.

EXHIBIT "I"

TYPICAL EMBEDDED ENERGY DISSIPATER

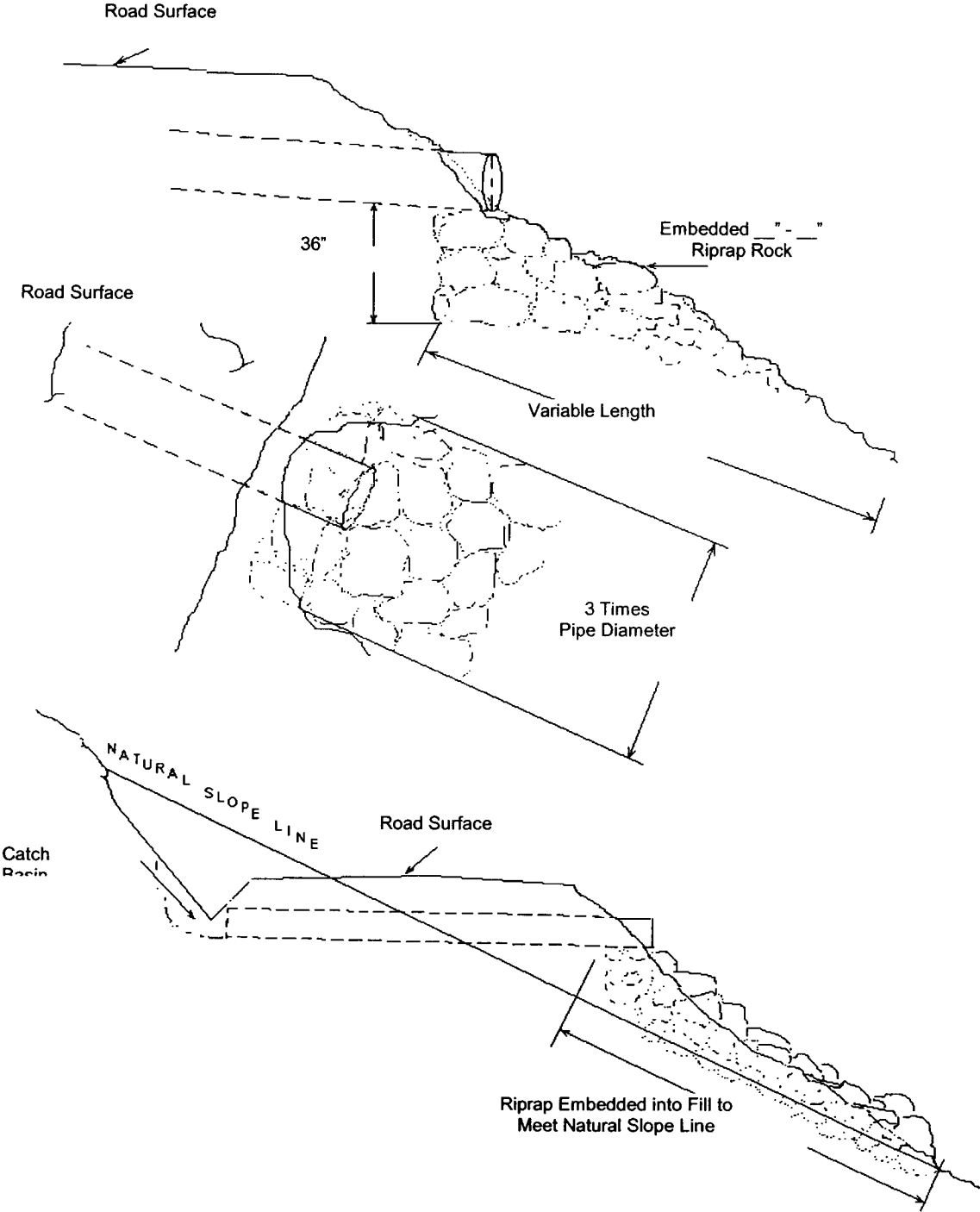


EXHIBIT "J"

GRASS SEEDING AND MULCHING

This work shall consist of furnishing and placing required grass seed and straw mulch.

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. Work shall be performed during each specified seeding season on all completed and previously untreated sections. PURCHASER shall notify STATE 24 hours prior to seeding.

Application Methods for Grass Seed

Dry Method. Hand-operated seeding devices may be used when seed is applied in dry form.

APPLICATION RATES FOR SEED

Seed listed below shall be applied at the following rate per acre: 100 lbs.

SPECIES	MIXTURE	PURE LIVE SEED	POISON AND/OR REPELLENT	GERMINATION
Annual Rye	33%	95%	0	>90%
Orchard Grass	33%	95%	0	>90%
Perennial Rye	34%	95%	0	>90%

Seeding and Mulching. Apply grass seed and straw mulch to all waste areas, and bare soils resulting from fill reconstruction on Project No. 2, and fill vacating in Project No. 4. Applied straw mulch shall be a minimum of 2 inches deep and provide a uniform cover.

EXHIBIT "K"

SPECIFICATIONS FOR BRUSH AND SLASH SHOVEL PILING

Description of Work to be Done

Areas designated for work under the contract shall be treated according to the specifications given below:

Clearing – Salal, brush, logging slash, and other debris shall be cleared from planting sites and piled/scattered so that 80 percent or more of the soil organic layer is exposed. All woody vegetation (other than conifer trees) is defined as brush in this exhibit. Salal (roots and top portion of plant) will be cleared from the planting spot. Planting spots will be located randomly throughout the area.

Piles - shall be located as instructed by STATE. Piles shall be located inside the project area designated for piling and shall be more than 75 feet from any edge or standing conifer tree. Piles shall be built to a height of 3 to 4 feet and then covered to prevent water from reaching the slash. STATE shall supply the materials used for covering the slash. Additional woody debris shall be piled on top of the covered piles to complete the piling, as directed by STATE. Logs and chunks which are suitable for firewood shall be piled separately from slash, near roads and landings and alongside the road in locations designated by STATE.

Conifer Trees - shall be saved, unless otherwise directed by STATE.

Skid Trails - shall be ripped to a depth of 12 inches.

Residual Logs – In Areas 6, 7, and 9, an average of 600 cubic feet of hard conifer logs per acre. Logs shall contain a minimum of 10 cubic feet of volume, and be no shorter than 6 feet in length, to be selected by the PURCHASER. Two logs per acre shall be at least 24 inches in diameter, at the large end where available. Hard conifer logs must be in decay class one or two, as indicated by intact bark and original wood color. Trees and/or logs shall be well distributed across the sale areas.

Protective Measures - shall comply with Oregon Forest Practice Rules issued per ORS 527.610 to 527.992. Examples of protective measures are: (1) waterbarring tractor trails where necessary to prevent runoff toward streams; (2) not windrowing in streams or streamways; and (3) leaving stream buffers along designated streams.

Work specifications may be modified or waived only upon written notice from STATE.

EXHIBIT "K"

SPECIFICATIONS FOR BRUSH AND SLASH SHOVEL PILING / SCATTERING

Equipment Type, Equipment Operation, and Conduct of Work

The specifications given below are requirements for equipment type, equipment operation, and conduct of work under the contract.

Shovel - shall be a track-mounted machine with a ground-pressure rating of not more than 6.8 PSI and a net horsepower of 85 or more. The machine shall be capable of a minimum horizontal reach of 26 feet and a minimum vertical reach of 16 feet. For shovel piling / scattering, the piling attachment shall be a hydraulically controlled, 4 to 5 - foot wide, "clamshell-style bucket with rake arms," with a 360-degree continuous rotation, and tooth length on rake arm shall be greater than 14 inches long, unless otherwise approved in writing by STATE.

Operator - must be experienced in operating similar equipment on land clearing operations, be able to operate the equipment proficiently, and pile and scatter the debris on the area as directed by STATE.

Support - including transport, other equipment, replacement, supplies, maintenance, and repair shall be furnished as required to complete work; and shall be furnished without cost to STATE, other than as agreed under the contract terms.

Work Scheduling - work shall be accomplished only during dry weather conditions, and started within 14 calendar days after completion of yarding activities on Area 6, 7, and 9. Operation shall provide for continual operation until contract work is completed, unless interrupted by poor weather, fire closures, or other uncontrolled circumstances. Equipment breakdowns shall be repaired without undue delay, and provision shall be made for replacement of equipment to prevent prolonged delays. Piling operation shall not be allowed when operations might damage sites or affect stream flows. Any exception to these instructions must be authorized in writing by STATE.

STATE Representative - shall provide directions for the conduct of work according to specifications.

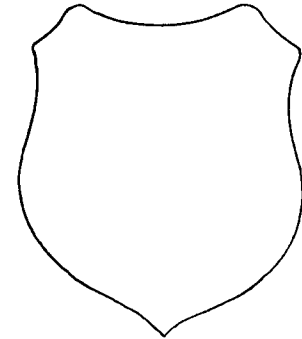
EXHIBIT "L"
OREGON DEPARTMENT OF FORESTRY

SCALING INSTRUCTIONS -- LOCATION APPROVAL -- BRAND INFORMATION

- (1) ORIGINAL REGISTRATION Date _____
 REVISION NUMBER _____ Date _____
 CANCELLATION Date _____
- (2) TO: _____
 (Third Party Scaling Organization)
- (3) FROM: Astoria District Phone (503) 325-5451
 (State Forestry District)
 Address 92219 Highway 202, Astoria, OR 97103
- (4) PURCHASER: _____
 Address _____

- (12) SALE NAME Nettle Meyer Combination
 COUNTY Clatsop
- (13) STATE CONTRACT NUMBER 341-03-06
- (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

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

(10) APPROVED SCALING LOCATIONS	Species	Yard	Truck

(20) REMARKS: _____

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

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

- (21) SIGNATURES:

 State Forester's Representative

 Purchaser or Authorized Representative Date

 State Forester Representative Date

EXHIBIT "L"

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.