EXHIBIT "B"

FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STA. TO STA.	DITCH REQ.	OUTSLOPE/ WATERBAR
16 feet	12 feet	2A to 2B	0+00 to 33+75	Yes	No
16 feet	12 feet	2C to 2D	0+00 to 10+80	Yes	No
14 feet	12 feet	2E to 2F	0+00 to 3+50	No	Yes
16 feet	N/A	2G to 2H	0+00 to 13+90	Yes	No
16 feet	12 feet	2I to 2J	0+00 to 14+00	Yes	No
14 feet	N/A	2K to 2L	0+00 to 9+25	No	Yes
16 feet	12 feet	I1 to I2	0+00 to 135+00	Yes	No
16 feet	12 feet	I2 to I3	0+00 to 64+80	Yes	No
16 feet	12 feet	I3 to I4	0+00 to 69+30	Yes	No
16 feet	12 feet	I3 to I12	0+00 to 56+50	Yes	No
16 feet	12 feet	I4 to I5	0+00 to 30+30	Yes	No
16 feet	12 feet	I6 to I7	0+00 to 55+00	Yes	No
16 feet	12 feet	I8 to I9	0+00 to 63+30	Yes	No
16 feet	12 feet	I10 to I11	0+00 to 30+70	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.

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 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 5 percent.

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

Ditchouts. Construct ditchouts as marked in the field or as directed by STATE.

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

Location: As marked in the field.

GRADING	Back Slopes	Fill Slopes
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 roads (2E to 2F and 2K to 2L) shall be waterbarred in accordance with the specifications in Exhibit J and blocked from vehicular traffic prior to October 1, annually, as directed by STATE.

EXHIBIT "B"

ROAD IMPROVEMENT INSTRUCTIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS

(1) Culvert Replacement, Culvert Installation, and Fill Reconstruction. 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.

(2) 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.

(3) Riprap Rock Use. Where rock is used for fill armor, rock shall be placed and tamped at a 1½:1 slope, beginning at the fill toes. 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 K.

(4) Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.

(5) Subgrade Preparation and Application of Surfacing Rock.

(a) Complete culvert installations, fill reconstruction, road realignment, drainage ditches, and other specified work prior to the application of new surfacing rock.

(b) For Road I8 to I9, apply required surfacing base rock on fill reconstruction and road realignment sections, and compact in accordance with Exhibit B.

(c) Cut out all chuckholed and/or washboard sections from the existing surfacing.

(d) Apply required ¾"-0", 1½"-0", or 4"-0" base patching and leveling rock, as directed by STATE.

(e) Process (grade+mix) the existing surfacing and added base rock. Provide for a 4 to 5 percent crown, and compact in accordance with Exhibit B.

(f) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with Exhibit B.

EXHIBIT "B"

ROAD IMPROVEMENT INSTRUCTIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Segment	Station	Work Description
I1 to I2	88+80	Install culvert. Utilize 10 cubic yards of ¾"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of ¾"-0" crushed rock for surface restoration.
I1 to I2	120+35	Install culvert. Utilize 10 cubic yards of ¾"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of ¾"-0" crushed rock for surface restoration. Construct energy dissipator utilizing 10 cubic yards of 24"-6" riprap rock.
I4 to I5	21+70	Install culvert. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. The new culvert will be skewed. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I4 to I5	26+90	Install culvert. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. The new culvert will be skewed. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I4 to I5	30+25	Construct turnaround.
I8 to I9	5+70	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I8 to I9	8+50	Install culvert. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I8 to I9	16+55	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I8 to I9	19+50	Culvert replacement/fill reconstruction. Utilize 20 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 30 cubic yards of 1½"-0" crushed rock for surface restoration. Armor fill slopes with 40 cubic yards of 24"-6" riprap rock.
I8 to I9	19+60	Begin road junction realignment. Shift centerline into cutslope to achieve maximum curve radius and visibility. All excess excavation shall be end hauled to the designated waste area.
I8 to I9	21+90	End road realignment.

EXHIBIT "B"

ROAD IMPROVEMENT INSTRUCTIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

Segment	Station	Work Description
I8 to I9	27+50	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I8 to I9	40+60	Culvert replacement/fill reconstruction. Utilize 40 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 40 cubic yards of 1½"-0" crushed rock for surface restoration. Armor fill slopes with 150 cubic yards of 24"-6" riprap rock.
I8 to I9	55+85	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I8 to I9	59+05	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I10 to I11	17+40	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.
I10 to I11	20+55	Culvert replacement. Utilize 10 cubic yards of 1½"-0" crushed rock for culvert bedding and backfill. Utilize 20 cubic yards of 1½"-0" crushed rock for surface restoration.

EXHIBIT "B"

ROAD SURFACING

ROAD SEGMENT: 2A to 2B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A to 2B Volume (CY) per		0+00 to 33+75 Number of		
Base Rock	4"-0" Crushed		8	Station	50	Stations	33.75	1,688
Curve Widening	4"-0" Crushed		8					36
Turnouts	4"-0" Crushed		8	Turnout	25	Turnouts	6	150
Junctions	4"-0" Crushed		8	Junction	25	Junctions	2	50
Total Rock for Road Segment:			2A to 2B					1,924

ROAD SEGMENT: 2C to 2D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2C to 2D Volume (CY) per		0+00 to 10+80 Number of		
Base Rock	4"-0" Crushed		8	Station	50	Stations	10.8	540
Junctions	4"-0" Crushed		8	Junction	25	Junctions	1	25
Turnarounds	4"-0" Crushed		N/A	TA	24	TA's	1	24
Landings	6"-0" Pit-Run		N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2C to 2D					669

ROAD SEGMENT: 2G to 2H				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2G to 2H Volume (CY) per		0+00 to 13+90 Number Of		
Base Rock	4"-0" Crushed		8	Station	50	Stations	13.9	695
Turnouts	4"-0" Crushed		8	Turnout	25	Turnouts	2	50
Landings	6"-0" Pit-Run		N/A	Landing	80	Landings	1	80
Total Rock for Road Segment:			2G to 2H					825

ROAD SEGMENT: 2I to 2J				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	2I to 2J Volume (CY) per		0+00 to 14+00 Number of		
Base Rock	4"-0" Crushed		8	Station	50	Stations	14.0	700
Turnouts	4"-0" Crushed		8	Turnout	25	Turnouts	2	50
Junctions	4"-0" Crushed		8	Junction	25	Junctions	1	25
Turnarounds	4"-0" Crushed		N/A	TA	24	TA's	1	24
Landings	6"-0" Pit-Run		N/A	Landing	80	Landings	2	160
Total Rock for Road Segment:			2I to 2J					959

EXHIBIT "B"

ROAD SURFACING

ROAD SEGMENT: I1 to I2				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I1 to I2 Volume (CY) per		0+00 to 135+00 Number of		
Surface Rock	3/4"-0" Crushed		3	Station	19	Stations	135	2,565
Curve Widening	3/4"-0" Crushed		3					100
Culvert Bedding/Backfill	3/4"-0" Crushed	88+80	N/A					10
Surface Rock Restoration	3/4"-0" Crushed	88+80	N/A					20
Culvert Bedding/Backfill	3/4"-0" Crushed	120+35	N/A					10
Surface Rock Restoration	3/4"-0" Crushed	120+35	N/A					20
Energy Dissipator	24"-6" Riprap	120+35	N/A					10
Turnouts	3/4"-0" Crushed		3	Turnout	10	Turnouts	20	200
Junctions	3/4"-0" Crushed		3	Junction	20	Junctions	11	220
Subgrade Leveling	3/4"-0" Crushed		N/A					550
Total Rock for Road Segment:		I1 to I2						3,705

ROAD SEGMENT: I2 to I3				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I2 to I3 Volume (CY) per		0+00 to 64+80 Number of		
Surface Rock	1 1/2"-0" Crushed		3	Station	19	Stations	64.8	1,231
Curve Widening	1 1/2"-0" Crushed		3					70
Turnouts	1 1/2"-0" Crushed		3	Turnout	10	Turnouts	12	120
Junctions	1 1/2"-0" Crushed		3	Junction	20	Junctions	5	100
Subgrade Leveling	1 1/2"-0" Crushed		N/A					200
Total Rock for Road Segment:		I2 to I3						1,721

ROAD SEGMENT: I3 to I4				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) per		0+00 to 69+30 Number of		
Surface Rock	1 1/2"-0" Crushed		3	Station	19	Stations	69.3	1,317
Turnouts	1 1/2"-0" Crushed		3	Turnout	10	Turnouts	10	100
Junctions	1 1/2"-0" Crushed		3	Junction	20	Junctions	4	80
Subgrade Leveling	1 1/2"-0" Crushed		N/A					150
Total Rock for Road Segment:		I3 to I4						1,647

ROAD SEGMENT: I3 to I12				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I12 Volume (CY) per		0+00 to 56+50 Number of		
Subgrade Leveling	1 1/2"-0" Crushed		N/A					400
Total Rock for Road Segment:		I3 to I12						400

EXHIBIT "B"

ROAD SURFACING

ROAD SEGMENT: I4 to I5				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I4 to I5 Volume (CY) per		0+00 to 30+30 Number of		
Culvert Bedding/Backfill	1 1/2"-0" Crushed	21+70	N/A					20
Surface Rock Restoration	1 1/2"-0" Crushed	21+70	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	26+90	N/A					20
Surface Rock Restoration	1 1/2"-0" Crushed	26+90	N/A					20
Junctions	1 1/2"-0" Crushed	0+00	N/A	Junction	20	Junctions	1	20
Turnarounds	4"-0" Crushed	30+25	N/A	TA	24	TAs	1	24
Subgrade Leveling	1 1/2"-0" Crushed		N/A					100
Total Rock for Road Segment:		I4 to I5						224

ROAD SEGMENT: I6 to I7				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I6 to I7 Volume (CY) per		0+00 to 55+00 Number of		
Subgrade Leveling	1 1/2"-0" Crushed		N/A					180
Total Rock for Road Segment:		I6 to I7						180

ROAD SEGMENT: I8 to I9				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I8 to I9 Volume (CY) per		0+00 to 63+30 Number of		
Culvert Bedding/Backfill	1 1/2"-0" Crushed	5+70	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	5+70	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	8+50	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	8+50	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	16+55	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	16+55	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	19+50	N/A					20
Surface Rock Restoration	1 1/2"-0" Crushed	19+50	N/A					30
Fill Armor	24"-6" Riprap	19+50	N/A					40
Base Rock	4"-0" Crushed	19+60 to 21+90	8	Station	50	Stations	2.3	115
Curve Widening	4"-0" Crushed	19+60 to 21+90	8					30
Surface Rock	1 1/2"-0" Crushed	19+60 to 21+90	3	Station	19	Stations		44
Curve Widening	1 1/2"-0" Crushed	19+60 to 21+90	3					12

EXHIBIT "B"

ROAD SURFACING

ROAD SEGMENT: I8 to I9				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I8 to I9 Volume (CY) per		0+00 to 63+30 Number of		
Culvert Bedding/Backfill	1 1/2"-0" Crushed	27+50	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	27+50	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	40+60	N/A					40
Surface Rock Restoration	1 1/2"-0" Crushed	40+60	N/A					40
Fill Armor	24"-6" Riprap	40+60	N/A					150
Culvert Bedding/Backfill	1 1/2"-0" Crushed	55+85	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	55+85	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	59+05	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	59+05	N/A					20
Landings	4"-0" Crushed	0+00	N/A	Landing	40	Landings	1	40
Subgrade Leveling	1 1/2"-0" Crushed		N/A					100
Total Rock for Road Segment:		I8 to I9						841

ROAD SEGMENT: I10 to I11				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	I10 to I11 Volume (CY) per		0+00 to 30+70 Number of		
Turnarounds	1 1/2"-0" Crushed	30+50	N/A	TA	24	TA's	1	24
Culvert Bedding/Backfill	1 1/2"-0" Crushed	17+40	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	17+40	N/A					20
Culvert Bedding/Backfill	1 1/2"-0" Crushed	20+55	N/A					10
Surface Rock Restoration	1 1/2"-0" Crushed	20+55	N/A					20
Subgrade Leveling	1 1/2"-0" Crushed		N/A					250
Total Rock for Road Segment:		I10 to I11						334

ROCK TOTALS (CY)	24"-6"	6"-0"	4"-0"	1 1/2"-0"	3/4"-0"
	200	320	4,266	4,948	3,695

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 2E to 2F and 2K to 2L	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 8 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 corrugated, double-walled polyethylene, except for culvert Nos. 12 and 14, unless use of other culvert materials with an equivalent life expectancy is approved in writing by STATE. Pipe and fittings shall be made of polyethylene compounds which meet or exceed the requirements of Type III, Category 4 or 5, Grade P33 or P34, Class C per ASTM D-1248 with the applicable requirements defined in ASTM D-1248. Double-walled polyethylene pipe shall meet the requirements of AASHTO M-294-901, Type S. This specification applies to high density polyethylene corrugated pipe with an integrally formed smooth interior.

Culvert No. 12 shall be constructed of 16 gauge corrugated aluminized steel and culvert No. 14 shall be constructed of 14 gauge corrugated aluminized steel.

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.

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

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

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

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

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.

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

Tamping 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. Additional fill shall be embankment material. Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be 12 inches for polyethylene culverts. Minimum vertical cover for other steel or aluminum designs shall be as specified by STATE.

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 be provided with a downspout or other approved slope protection device.

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	40	2A to 2B	9+50
2	18	40	2A to 2B	26+00
3	18	40	2A to 2B	33+65
4	18	40	2I to 2J	0+00
5	18	40	I1 to I2	88+80
6	18	40	I1 to I2	120+35
7	18	40	I4 to I5	21+70
8	18	40	I4 to I5	26+90
9	18	30	I8 to I9	5+70
10	18	40	I8 to I9	8+50
11	18	30	I8 to I9	16+55
12	36	46	I8 to I9	19+50
13	18	34	I8 to I9	27+50
14	36	78	I8 to I9	40+60
15	18	44	I8 to I9	55+85
16	18	40	I8 to I9	59+05
17	18	40	I10 to I11	17+40
18	18	30	I10 to I11	20+55

The intake ends of culverts in fills less than 3 feet shall be marked by driving white fiberglass posts within 6 inches of the downgrade side. Posts shall be a minimum of 6 feet long and 2 ½ inches wide, with the spade driven 2 feet into the ground.

All culverts 24" in diameter or larger shall have 1:1 beveled inlets.

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 the provision that Area 1 must be developed and rock utilized prior to the development of Area 2. 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) Controlled blasting techniques shall be utilized for any blasting operations, and shall be accomplished using timing devices, delayed charges, low intensity shots, or other suitable means to contain as much material as possible within the quarry development area. PURCHASER shall submit a comprehensive blasting log that contains all pertinent data for all blasting operations. The blasting log shall be submitted to the STATE after the completion of all blasting activity. The blasting log is intended for STATE record keeping purposes only.

(3) 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.

(4) All overburden and reject material shall be hauled to the designated waste area shown on Exhibit "D" and disposed of as directed by STATE.

(5) 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.

(6) Pit face shall be developed in a uniform manner.

(7) Oversized material 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, or stored on site as directed by the STATE.

(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.

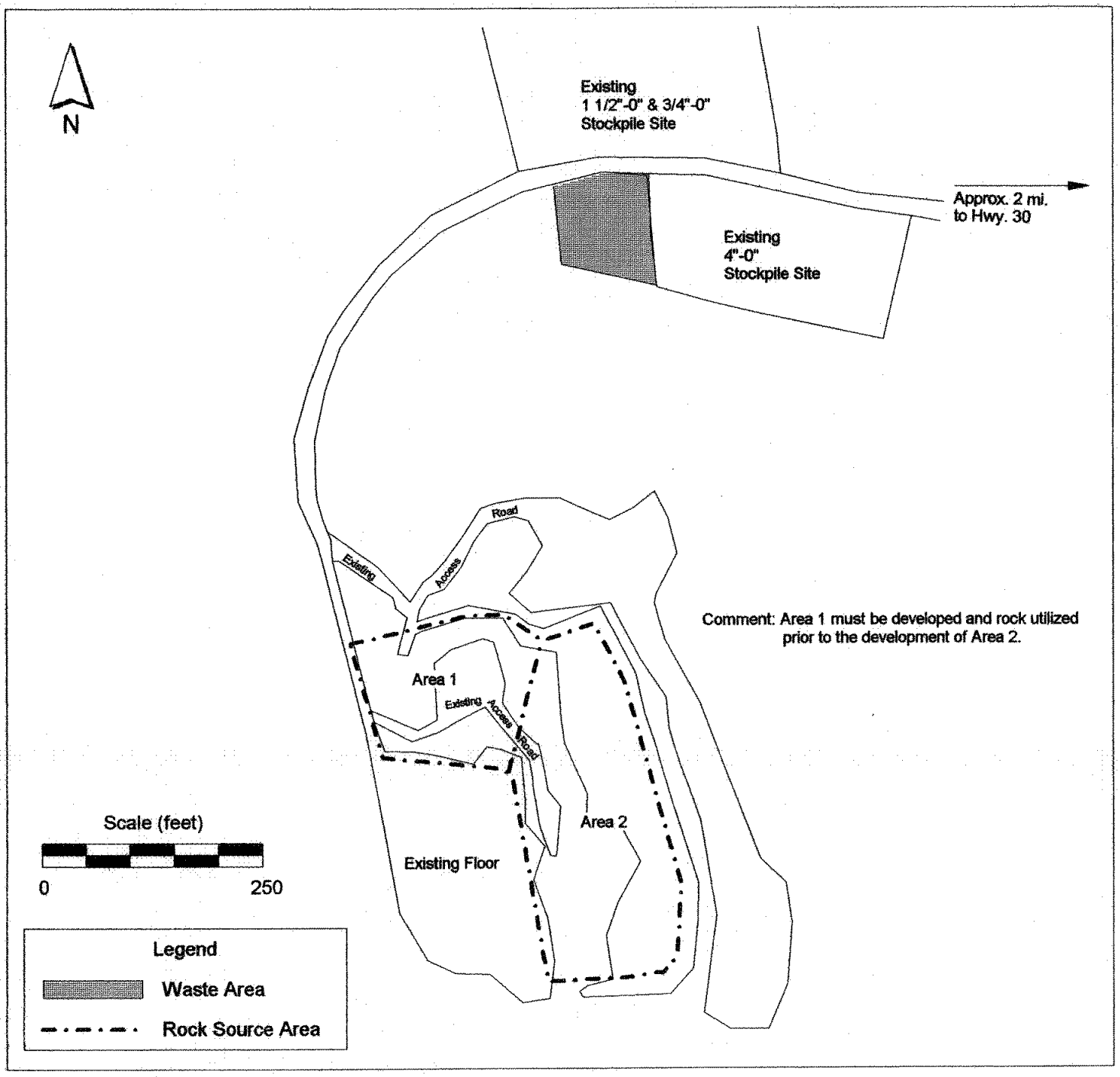
(9) The quarry floor shall be developed to provide for drainage away from the quarry. All quarry and stockpile site drainage ditches shall be maintained. Quarry access roads shall be cleared and blocked upon completion of quarry use as directed by STATE.

(10) Proper winterization and storm-water control measures such as waterbarring, 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 notify STATE 5 days prior to the start of quarry development activities.

(12) Clear and grub the rock source area. All woody debris, including stumps and slash shall be hauled, and piled at the waste area, as directed by STATE.

EXHIBIT "D"
ROCK PIT DEVELOPMENT AND USE



Oregon Department of Forestry
Astoria District
Engineering Unit

Hunt Creek Quarry
NE1/4, Section 29, T8N, R6W, W. M.
Clatsop County, Oregon

State Timber Sale Contract
No. 341-04-06
Deep Creek Thinning

EXHIBIT "E"

CRUSHED ROCK SPECIFICATIONS

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

Quality and Grading Requirements. The stone base materials shall be crushed rock, including sand. River gravel shall not be used.

The material from which base material is produced or manufactured shall 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

For 3/4"-0"	Passing	1" sieve	100%
	Passing	3/4" sieve	90-100%
	Passing	3/8" sieve	55-75%
	Passing	1/4" sieve	40-60%

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

For 1½"-0"	Passing	2" sieve	100%
	Passing	1½" sieve	95-100%
	Passing	3/4" sieve	55-90%
	Passing	1/4" sieve	35-50%

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

For 4"-0"	Passing	5" sieve	100%
	Passing	4" sieve	90-100%
	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.

PIT-RUN AND RIPRAP ROCK SPECIFICATIONS

For 6"-0" Pit-Run	Passing	10" sieve100%
	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"

CORE DRILLING SPECIFICATIONS

(1) Notification: PURCHASER shall notify STATE a minimum of 48 hours prior to beginning operations. A STATE representative shall be present during all drilling to monitor progress, log material recovered from drilling holes and issue instructions. No drilling shall occur without a STATE Representative present. Driller's logs shall be kept (i.e. starting time, progress of hole, changes in nature of drilling, etc.) and be made available to State upon request.

(2) Exploration Sites and Drill Hole Locations: All exploration sites, along with the number of holes per site are shown on the plan pages of Exhibit F. Individual hole locations are marked in the field, but hole locations may be subject to change as directed by STATE. Drill hole depth is subject to change as directed by STATE, in order to confirm geologic interpretation, however no single hole will exceed 100 feet in depth.

(3) Drill Access Road Construction: Drill access roads shall be constructed by PURCHASER to a minimum width and with minimal excavation necessary to allow drill access. Centerline location of access roads have been flagged with orange ribbon by STATE, additional roads or change in road location shall be approved by STATE prior to construction. Any necessary timber cutting shall be approved by STATE, prior to felling. All timber shall be removed as designated timber per Section 55 of the Timber Sale Contract. All drill access roads constructed shall be blocked and water barred after use as directed by STATE in accordance with Exhibit J.

(4) Drilling Equipment: PURCHASER shall obtain STATE approval of the type of core drill and equipment used prior to commencement of drilling. Core drill and equipment used shall be suitable for taking continuous core samples of overburden and rock to a depth of 100 feet. All drilling shall be performed using "N" size system (3 inch hole diameter and 2 1/8 inch core diameter) or equivalent as approved by STATE. Core barrel capacity shall not exceed 5 linear feet. Core drilling machines shall be equipped with hydraulic-feed heads. Supplies to be furnished by the PURCHASER for drilling shall include, but not be limited to: all casing, core boxes, drill rods, split inner barrels, core barrels, coring bits, pumps, water tools and power required for drilling. Bits shall be set with the proper sized diamond stones (or impregnated) for the kind of material being drilled. Sufficient supplies shall be kept on hand by the Contractor at the site to avoid delays.

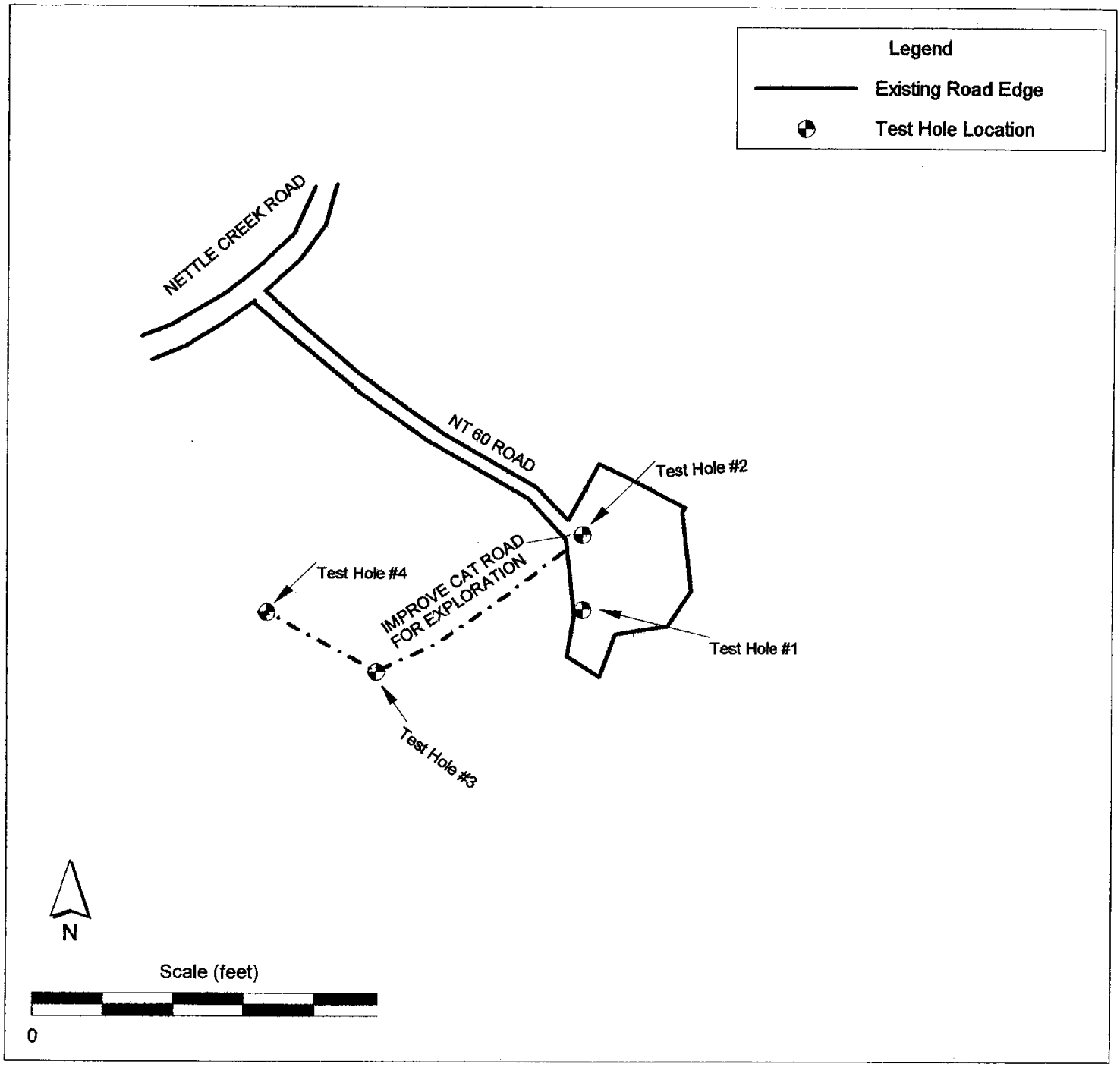
(5) Drilling Procedures: Individual core drill runs shall not exceed 5 feet. Core drilling techniques shall be used that provide continuous and complete core samples from all materials. Core drills shall be operated using down pressures, speeds, and pump pressures that ensure maximum core recovery. Care shall be exercised to obtain cores in as good a condition as possible from all material capable of producing satisfactory cores. If core drilling operations cannot retrieve at least 80 percent core recovery from the drilled footage (for 10 feet of drilling), then the length of runs shall be reduced until 10 feet of acceptable core (80 percent recovery) can be recovered. Holes and footage will not be credited toward contract limits and payment if acceptable recovery is not met. As considered necessary by STATE, drilling lubricants (biodegradable soap) and/or casings may be required to stabilize the hole and produce acceptable core recovery.

(6) Handling of Core: Core materials shall be placed in 5 foot wooden core boxes or equivalent, as approved by STATE. Cores shall be separated by run length, with approved spacers marked for recovery depth. All holes shall be assigned a number at the beginning of drilling, and all core boxes and other references to hole shall cross-reference the same number. No rock core shall be removed from the split inner tube before the core has been inspected for continuity by STATE. Hole and core logging shall be performed by the STATE.

(7) Certified Driller: All drilling shall be supervised by an experienced and competent driller, as judged and approved by STATE.

(8) Other Users: Core drilling site 3A (NT 60 Road) is located on an active timber sale. PURCHASER's activities while at this site shall be coordinated with the other user(s) of the existing timber sale.

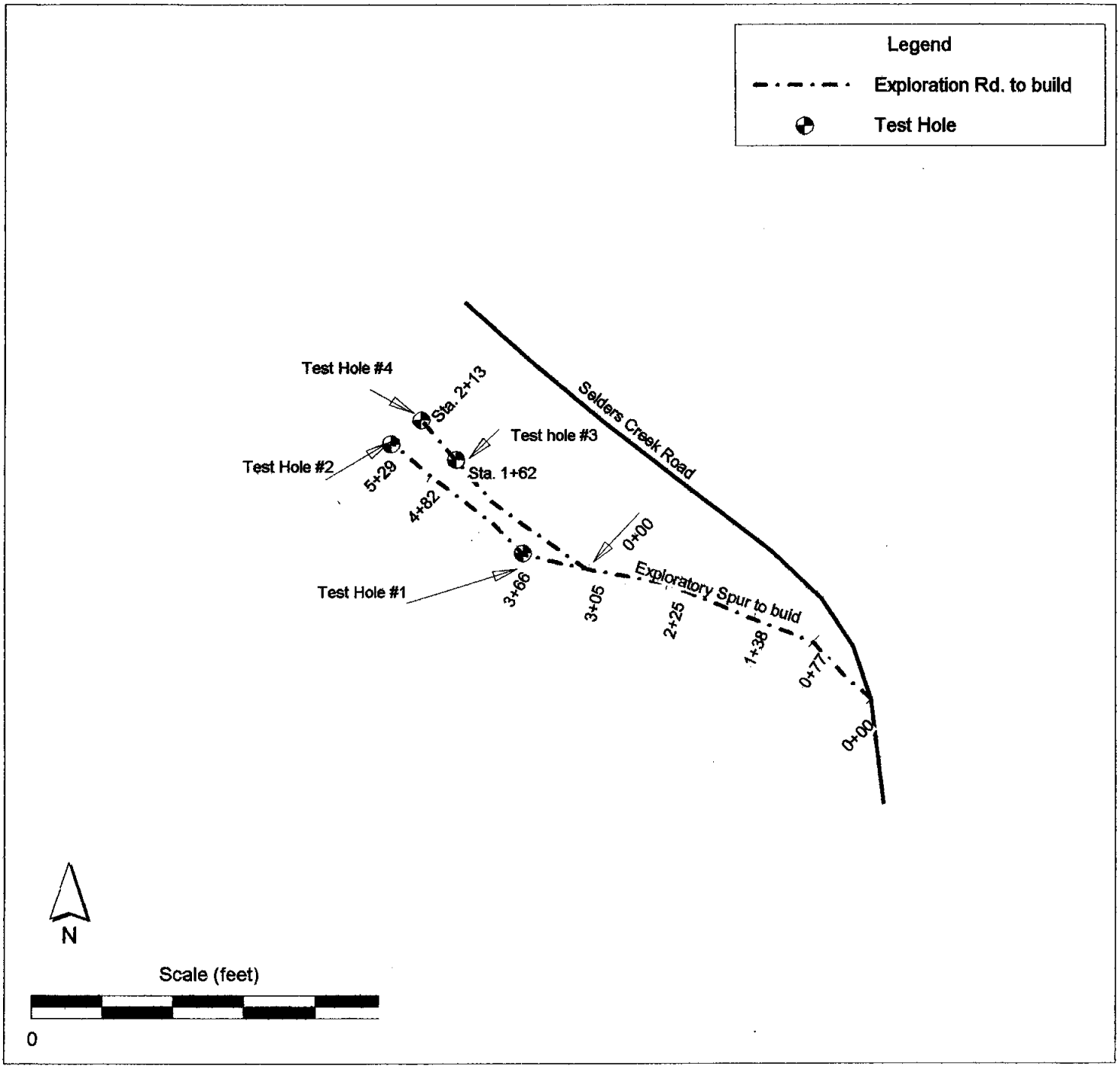
EXHIBIT "F"
Project 3A Test Drilling



Oregon Department of Forestry
Astoria District
Engineering Unit

Road NT 60
SE1/4,NE1/4 Section29, T5N, R6W
Clatsop County, Oregon

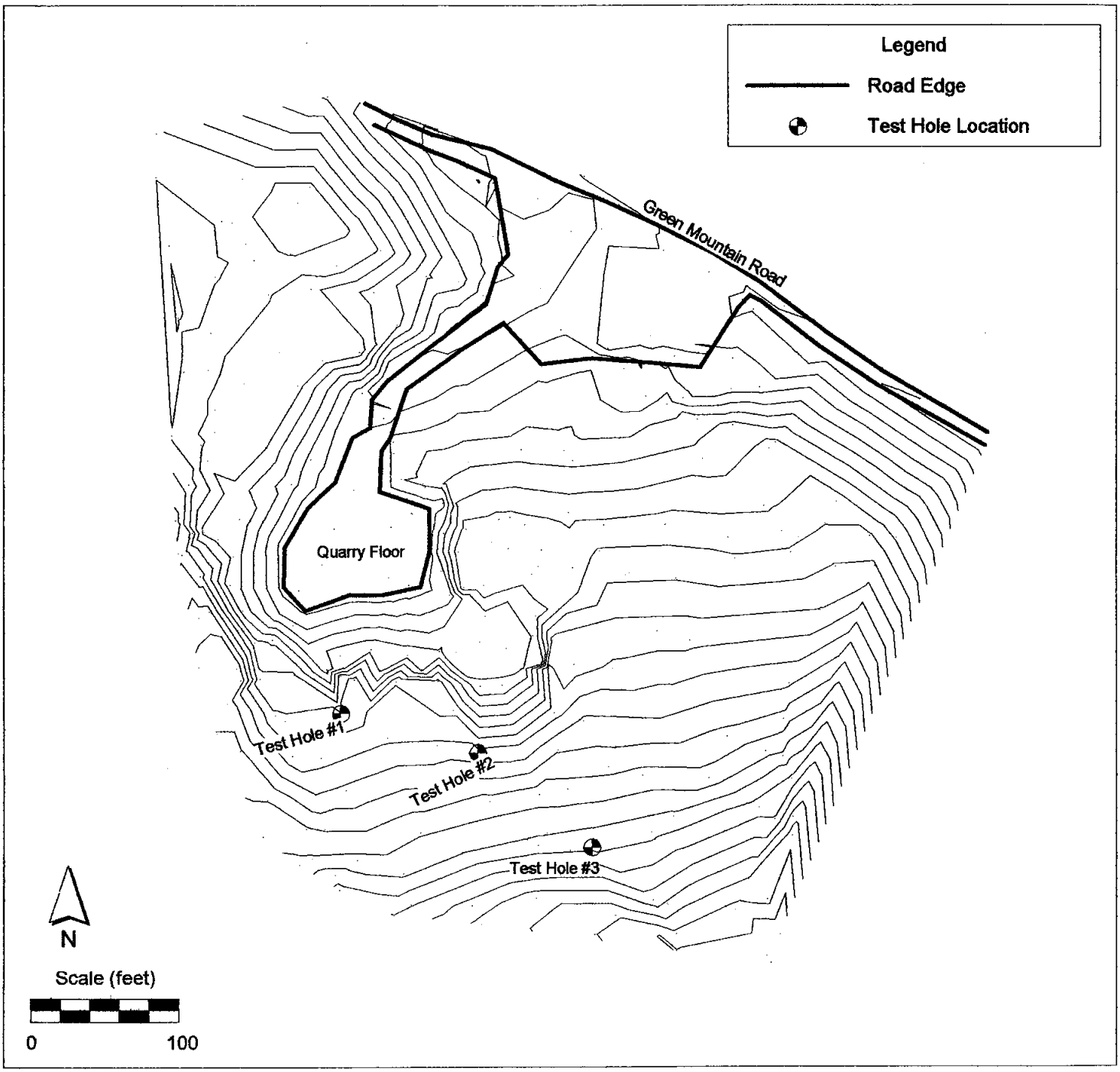
EXHIBIT "F"
Project 3B Test Drilling



Oregon Department of Forestry
Astoria District
Engineering Unit

Selders Creek Exploration
Section 36, T5N, R6W, W. M.
Clatsop County, Oregon

EXHIBIT "F"
Project 3C Test Drilling



Oregon Department of Forestry
Astoria District
Engineering Unit

Green Mountain #1 Quarry
NW1/4,NE1/4 Section 34, T5N, R6W
Clatsop County, Oregon

EXHIBIT "G"

ROAD VACATING AND FILL REMOVAL SPECIFICATIONS

GENERAL SPECIFICATIONS

(1) Tree Removal. Cut or remove all trees necessary to access the project area and to facilitate vacating operations, as directed by STATE. Timber shall be removed in accordance with Section 55, "Designated Timber."

(2) Culvert Removal. Remove all drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off of STATE land.

(3) Fill Removal and Stream Channel Development. Remove fill to the natural stream course level. Stream channel shall be excavated/developed to specified minimum width. Developed stream bank shall be sloped at natural contours or no steeper than 1½:1, as directed by STATE.

(4) Use of Excavated Materials.

(a) Fill Excavation. Excavated materials shall be placed on the interior (cut) side of the road, and utilized to restore the cutslope to natural contours or to a minimum 10% outsloped surface for drainage, as indicated in the specific instructions and utilized for road blocks at Points V1, V2, V3, and V4.

(b) Woody Debris. Woody debris shall be hauled to the waste area at Point W1 and placed on the surface of compacted embankment material.

(5) Construct Waterbars a maximum of 100-foot intervals, and as directed by STATE. Construct waterbars according to the specifications in Exhibit J.

(6) Block Roads. Use excavated material to block road from vehicle access at Points V1, V2, V3, and V4, as directed by STATE.

(7) Erosion Control. Erosion control efforts utilizing grass seed and mulch application shall be completed in a progressive manner.

(a) Grass Seeding. Grass seeding shall be performed only from March 1 through June 15 and August 15 through October 31, and meet specifications as described in Exhibit L.

(b) Fill Removals. All exposed excavation areas shall be mulched with a straw mulch approved by STATE, immediately upon completion of the fill removal. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.

(8) Equipment. Minimum 1½ cubic-yard, track mounted excavator shall be used for all excavation, fill removal, 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.

FPA "Written Plan." STATE has prepared the required FPA "Written Plan" for work within 100 feet of Type F streams. The Plan is on file at the Astoria District, Oregon Department of Forestry. Fill removal, stream channel development, and/or in-stream work within 100 feet of Type F streams shall be conducted only between July 1 and August 31, annually.

EXHIBIT "G"

ROAD VACATING INSTRUCTIONS

SPECIFIC ROAD VACATING INSTRUCTIONS

Segment	Station	Work Description
V1 to V2	0+00	Point V1. Construct roadblock.
	2+65	Culvert/fill removal. Align stream channel to the natural streambed at a channel width of 15 feet. Back slope excavation at 1½:1.
	5+90	Culvert/fill removal. Align stream channel to the natural streambed at a channel width of 6 feet. Back slope excavation at 1½:1.
	10+20	Culvert removal.
	16+60	Point V2. Culvert removal. Construct roadblock.
V3 to V4	0+00	Point V3. Construct roadblock.
	3+55	Culvert/fill removal. Align stream channel to the natural streambed at a channel width of 4 feet. Back slope excavation at 1½:1.
	10+50	Culvert/fill removal. Align stream channel to the natural streambed at a channel width of 5 feet. Back slope excavation at 1½:1.
	15+00	Culvert/fill removal. Align stream channel to the natural streambed at a channel width of 10 feet. Back slope excavation at 1½:1.
	15+40	Point V4. Construct roadblock.

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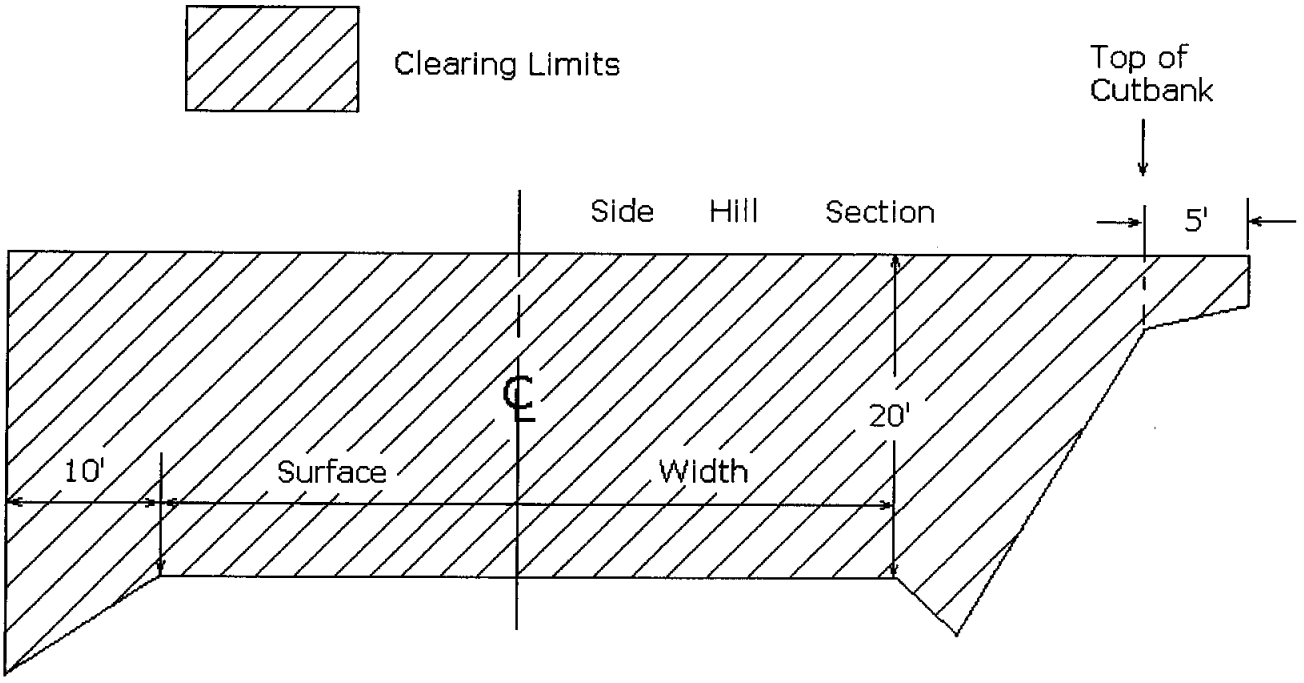
EXHIBIT "H"

LOGGING ROAD BRUSHING SPECIFICATIONS



REQUIREMENTS

The minimum height of clearing shall be 20 feet from the road surface, and the minimum width of clearing on the cutslope side(s) of the road shall be 15 feet horizontal distance from the shoulder of the road, 5 feet beyond the top of the cutbank, and 10 feet horizontal on the down slope side from the road shoulder.

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 and may be scattered downslope from the road or placed in other stable locations. Large debris, 6 inches or larger in diameter, shall be cut into lengths of 6 feet or less to facilitate rapid decay, unless otherwise approved by STATE.

Conifer trees larger than 6 inches in diameter at stump height, located within clearing limits but outside of the ditchline or shoulder, shall not be cut down, but shall be limbed for road visibility.

EXHIBIT "I"

STREAM ENHANCEMENT INSTRUCTIONS

GENERAL INSTRUCTIONS

(a) Work shall be conducted only during periods of low water flows and between July 1 and August 31, annually, unless otherwise approved in writing by STATE. STATE shall be notified a minimum of 48 hours prior to beginning work. STATE has prepared the required FPA "Written Plan" for this work.

(b) Stream crossings will be limited to those necessary to access the sites and whenever possible equipment will operate from the banks to minimize stream disturbance. Turbidity shall not exceed 10% above natural stream turbidities as a result of work. The turbidity may be exceeded for a limited duration (per OAR 340-41), provided all practicable erosion control measures have been implemented. Oil spill response materials will be on site before work begins.

(c) Trees required for stream enhancement work shall be obtained from locations on the Deep Creek Road and along Road Segment V3 to V4, as marked in the field, or at other locations acceptable to STATE. Trees are marked with an orange painted "S".

(d) Trees shall be uprooted, cut to length, and delivered to the project site with the root wad attached, as directed by STATE. Trees will be transported by log truck, or other means so that roads are not damaged (i.e. trees cannot be dragged on road surface).

(e) Access routes will be selected to minimize disturbance to the riparian area, and equipment transporting trees to the sites will take care to avoid damage to existing in-stream logs, riparian or other trees. Trees that are cleared to gain access will be placed in the creek or used to block access trails.

(f) A minimum 1½ cubic-yard, track-mounted excavator shall be used for all placement.

(g) All areas of bare or disturbed soils shall be seeded with an approved grass seed mix as described in Exhibit L. Fertilizer shall not be used. All access trails will be blocked, waterbarred, de-compacted, and mulched upon completion, as directed by STATE.

SPECIFIC INSTRUCTIONS

Location	Work Description
Site No. 1	Utilize six trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. Place the top of the first tree on north bank against upstream side of alder clump "A" with root wad against opposite bank upstream of existing log. Place the root wad of the second tree against north bank with top angled downstream towards south bank. Place root wad end of third tree on upstream side of existing log with top place over the second log and angled onto south bank on upstream side of alder clump "B". Place root wad end of fourth tree against south bank with top placed over the second log and wedged into alder clump "C" on the north bank. Place the root wad ends of two logs against south bank upstream of existing log with tops angled onto the north bank.

EXHIBIT "I"

STREAM ENHANCEMENT INSTRUCTIONS

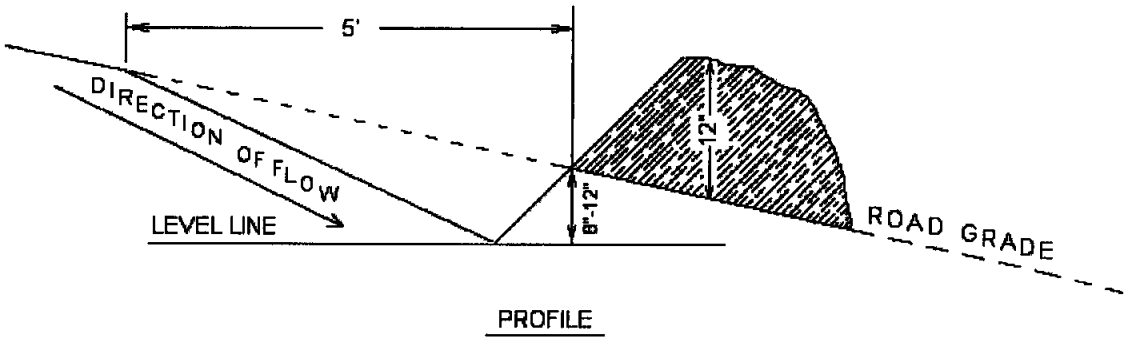
SPECIFIC INSTRUCTIONS

Location	Work Description
Site No. 2	Utilize six trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. Place the root wad end of the first tree against the south bank with top angled onto north bank on upstream side of alder "D". Place root wad end of second tree on upstream side of first tree with top wedged into alder clump "E" on south bank. Place the root wad ends of two trees in against the south and north banks with tops pushed into the south bank and under the second tree. Place root wad end of fifth tree against tops of trees three and four with top angled onto the north bank. Place root wad end of sixth tree against the north bank with top upstream of trees three and four.
Site No. 3	Utilize eight trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. Place the root wad of the first tree against the north bank at sharp bend with the top lying parallel to and against the south bank. Place the root wad end of the second tree downstream of the root wad of the first tree with the top angled downstream and into the existing debris jam. Place the root wad end of the third tree in mid-channel with the top angled upstream and over the first tree. Place the root wad end of the fourth tree against south bank at next bend upstream with top under the first tree and pushed into bank. Place root wad end of fifth tree against south bank and top angled upstream and over the fourth tree. Place root wad end of sixth tree against north bank upstream of second bend with top onto the south bank. Place root wad end of seventh tree against south bank upstream of second bend and the top angle downstream and over the sixth tree. Place root wad end of eighth tree against the north bank with the trunk lying parallel to south bank.
Site No. 4	Utilize two trees with a DBH of at least 16 inches and at least 40 foot long with attached root wads, and five tree tops. Place trees and tops into excavated area where culvert is removed wedging them into any available alders.
Site No. 5	Utilize four trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. Wedge the tops of three trees into alders on east bank with opposite end angled downstream, immediately upstream of the old bridge. Wedge the top of one tree into alders on east bank immediately upstream of the old bridge.
Site No. 6	Utilize three trees with a DBH of at least 20 inches and at least 50 foot long with attached root wads. Wedge the top of two trees into alders on west bank with root wad end angled downstream. Wedge the top of one tree into alders on east bank, with root wad end angled downstream.

State Timber Sale Contract
No. 341-04-06
Deep Creek Thinning

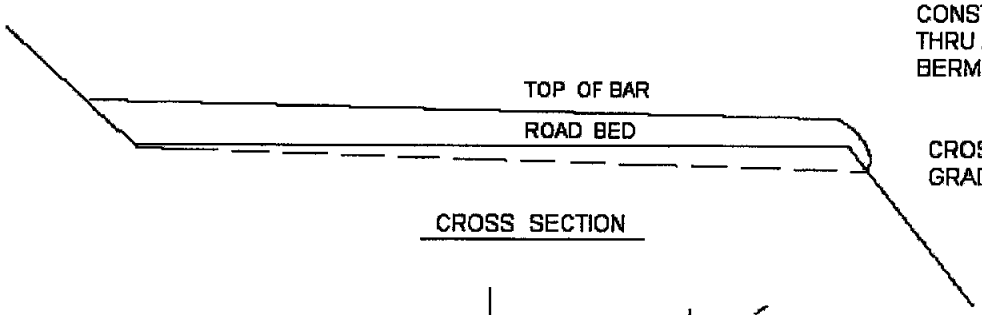
EXHIBIT "J"

WATERBAR SPECIFICATIONS



PROFILE

CONSTRUCT DITCH THRU ANY EXISTING BERM.

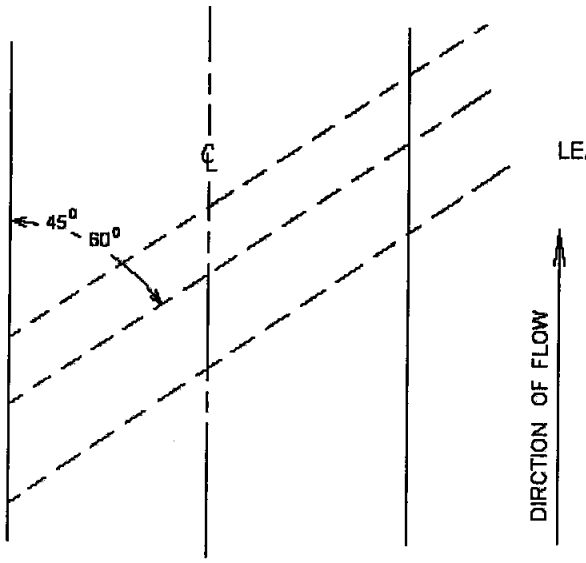


CROSS DRAINAGE GRADIENT MINIMUM 3%

CROSS SECTION

SPACING OF WATERBARS:

AS DIRECTED BY STATE.



LEAD OFF DITCH

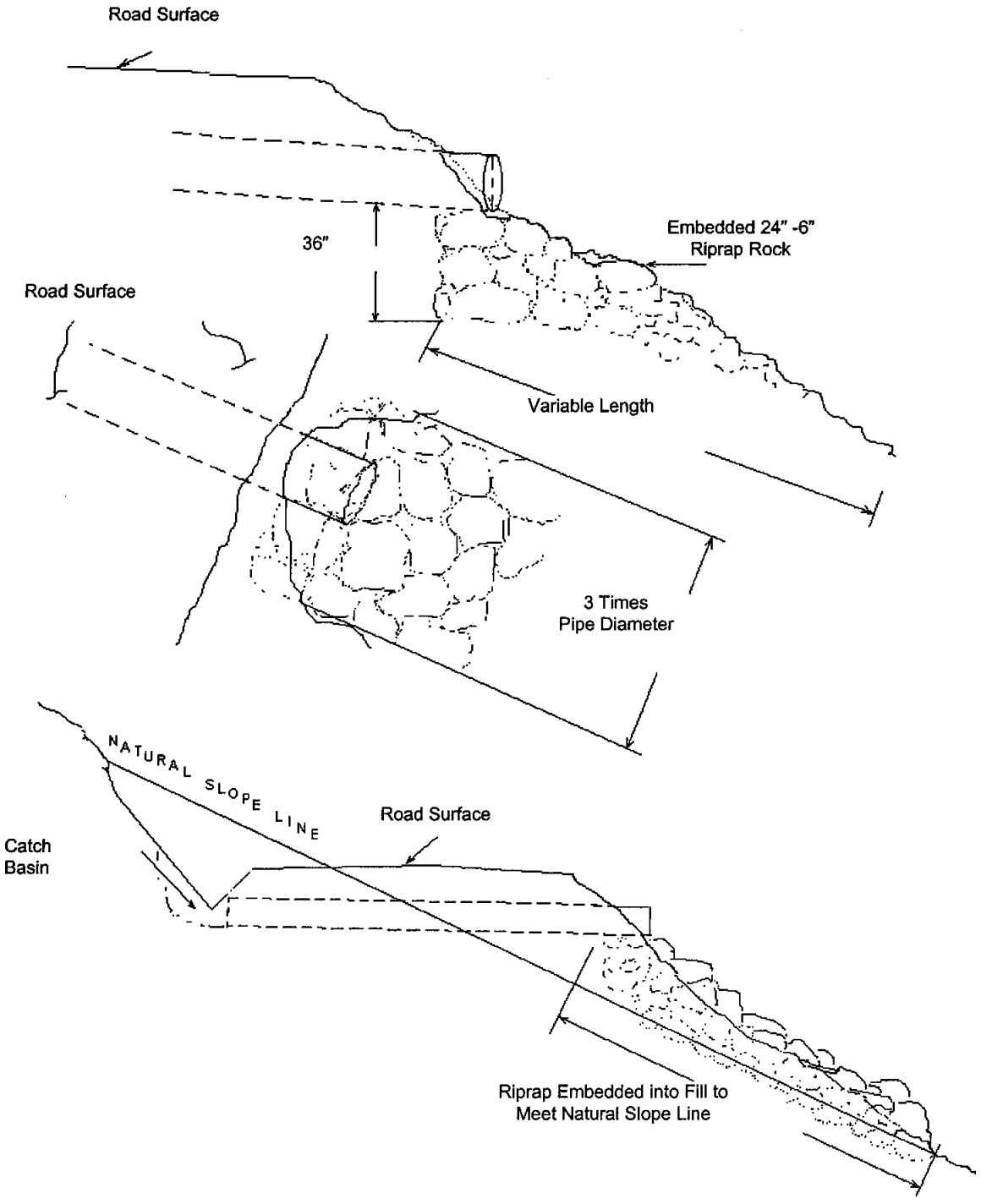
PLAN VIEW

WATERBAR SPECIFICATIONS
FOR CROSS DITCHING #298

State Timber Sale Contract
No. 341-04-06
Deep Creek Thinning

EXHIBIT "K"

TYPICAL EMBEDDED ENERGY DISSIPATER



Timber Sale Contract
No. 341-04-06
Deep Creek Thinning

EXHIBIT "L"

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	26%	95%	0	>90%
Orchard Grass	25%	95%	0	>90%
New Zealand White Clover	17%	95%	0	>90%
Perennial Rye	15%	95%	0	>90%
Birdsfoot Trifoil	07%	95%	0	>90%
Red Clover	06%	95%	0	>90%
Alsike Clover	04%	95%	0	>90%

Seeding. Apply grass seed to all waste areas and bare soils resulting from fill reconstruction/removals in Project Nos. 1 and 4 and all bare soils and access trails resulting from Project No. 6.

FORM 629.343-307
Rev. 3/01

EXHIBIT "M"
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 Phone (503) 325-5451
(State Forestry District)
Address 92219 Hwy. 202, Astoria, OR 97103

(4) PURCHASER: _____
Address _____

(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).

	YES	NO
(6) WESTSIDE SCALE: Actual taper all logs over 40' scaling length	☒	☐
(7) EASTSIDE SCALE: *Actual taper butt logs over 40' scaling length	☐	☒
(8) PENCIL BUCK back to Minimum Scaling Diameter _____	☐	☒
(9) ADD-BACK VOLUME -- Deductions due to delay	☒	☐

(10) APPROVED SCALING LOCATIONS	Species	Yard	Truck

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

_____
State Forester's Representative

(12) SALE NAME Deep Creek Thinning
COUNTY Clatsop

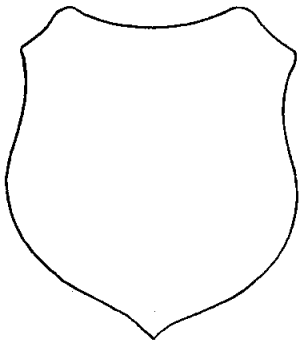
(13) STATE CONTRACT NUMBER 341-04-06

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

(15) STATE BRAND REGISTRATION NUMBER _____

(16) BUREAU BRAND CODE NUMBER _____

(17) STATE BRAND INFORMATION:
(COMPLETE)



(18) PAINT REQUIRED: YES ☒
COLOR Orange

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

(20) REMARKS: _____

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

(21) SIGNATURES:

_____
Purchaser or Authorized Representative Date

_____
State Forester Representative Date

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

EXHIBIT "M"

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.