

EXHIBIT "B"
FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
16 feet	12 feet	1A to 1B	0+00 to 23+40	DITCH
16 feet	12 feet	1C to 1D	0+00 to 13+40	DITCH
14 feet	N/A	2A to 2B	0+00 to 17+80	OUTSLOPED
16 feet	12 feet	3A to 3B	0+00 to 8+20	DITCH
16 feet	12 feet	I1 to I2	0+00 to 136+00	DITCH

CLEARING. This work shall consist of clearing, removing, and disposing of all trees, snags, down timber, brush, surface objects, and protruding obstructions within the clearing limits.

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 between Stations 17+40 and 19+60 on Segment 1A to 1B where clearing and grubbing debris shall be end-hauled to a designated waste area.

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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, according to the specifications in Exhibit B.

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

Excess excavation shall not be sidecast where material will enter a stream course or where material will accumulate in areas deemed a high landslide hazard location by STATE.

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

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

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

DRAINAGE

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

Outslope. Road subgrade shall be outsloped at 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 at least 25 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 the field.

SEASONAL WINTERIZATION. All unrocked roads (2A to 2B) shall be waterbarred in accordance with the specifications in Exhibit I and blocked to vehicular traffic prior to November 1, annually, and as directed by STATE.

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FOREST ROAD SPECIFICATIONS

GENERAL ROAD CONSTRUCTION INSTRUCTIONS

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.

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

<u>Segment</u>	<u>Station</u>	<u>Work Description</u>
1A to 1B	0+50	Begin construction of 55 foot radius curve.
	2+90	End construction of 55 foot radius curve.
	17+40	Begin full bench/end haul road construction.
	19+60	End full bench/end haul road construction.

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FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS

- (1) 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 two existing culverts (101+95 and 114+65) that are missing a marker and that could be reached by a grader blade.
- (2) Subgrade Preparation and Application of Surfacing Rock.
 - (a) Complete drainage ditches maintenance and other specified work prior to the application of leveling rock.
 - (b) Cut out all chuckholed and/or washboard sections from the existing surfacing.
 - (c) Apply required $\frac{3}{4}$ "-0", $1\frac{1}{2}$ "-0" leveling rock, as directed by STATE.
 - (d) Process (grade and mix) the existing surfacing and added base rock. Provide for a crown of 4 to 6 percent, $\frac{1}{2}$ inch per foot, and compact in accordance with Exhibit B.

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END-HAULING REQUIREMENTS

POINT TO POINT	STA. TO STA.	CONTAINMENT	WASTE AREA LOCATION	WASTE AREA TREATMENT
1A to 1B	4+00 to 11+50	2	1, 2, 3	1, 2
1A to 1B	17+40 to 19+60	1	1, 2, 3	1, 2
1A to 1B	19+60 to 21+60	2	1, 2, 3	1, 2

End-Haul Areas General Requirements

Material shall not be intentionally side cast.

Clearing and grubbing debris shall be end-hauled.

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

Containment

- (1) 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.
- (2) Average 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.

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

Waste Area Location

- (1) Between Station 11+50 to 16+65 on road segment 1A to 1B.
- (2) At designated waste area as shown on Exhibit A.
- (3) In a stable location as directed by STATE.

Waste Area Treatment

- (1) Use suitable excavated material for use in fill construction between Station 11+50 to 16+65 on Road 1A to 1B.
- (2) Deposit at waste area, spread evenly, compact, and provide adequate drainage. Pile woody debris separate from other waste material.

EXHIBIT "B"
 ROAD SURFACING

ROAD SEGMENT: 1A to 1B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A to 1B		0+00 to 23+40		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Base Rock	6"-0" Pit-run		10	station	63	stations	23.4	1,474
Traction Rock	¾"-0"Crushed	0+00 to 2+50	3	station	19	stations	2.50	48
Traction Rock	¾"-0"Crushed	16+00 to 20+20	3	station	19	stations	4.20	80
Turnouts	6"-0" Pit-run		10	turnout	28	turnouts	2	56
Junctions	6"-0" Pit-run	1A	10	junction	30	junctions	1	30
Junctions	¾"-0"Crushed	1A	3	junction	24	junctions	1	24
Turn-Arounds	6"-0" Pit-run		10	TA	30	TA's	1	30
Curve Widening	6"-0" Pit-run		10	N/A		N/A		64
Curve Widening	¾"-0"Crushed		3	N/A		N/A		30
Landings	6"-0" Pit-run	1B	N/A	landing	80	landings	1	80
Total Rock for Road Segment:				1A to 1B				1,916
ROAD SEGMENT: 1C to 1D				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1C to 1D		0+00 to 13+40		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Base Rock	6"-0" Pit-run		10	station	63	stations	13.4	844
Turnouts	6"-0" Pit-run	11+00	10	turnout	28	turnouts	1	28
Junctions	6"-0" Pit-run	1C	10	junction	30	junctions	1	30
Turn-Arounds	6"-0" Pit-run		10	TA	30	TA's	1	30
Landings	6"-0" Pit-run	12+30 & 1D	N/A	landing	80	landings	2	160
Total Rock for Road Segment:				1C to 1D				1,092
ROAD SEGMENT: 3A to 3B				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)
Application	Rock Size and Type	Location	Depth of Rock (inches)	3A to 3B		0+00 to 8+20		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Base Rock	6"-0" Pit-run		10	station	63	stations	8.2	517
Turnouts	6"-0" Pit-run	2+20	10	turnout	28	turnouts	2	56
Junctions	6"-0" Pit-run	3A	10	junction	30	junctions	1	30
Turn-Arounds	6"-0" Pit-run	2+70	10	TA	30	TA's	1	30
Landings	6"-0" Pit-run	3B	N/A	landing	80	landings	1	80
Total Rock for Road Segment:				3A to 3B				713
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		0+00 to 136+00		
				Volume (CY) per	Number of	Volume (CY) per	Number of	
Subgrade Leveling	¾"-0" Crushed	N/A	N/A					150
Subgrade Leveling	1½"-0" Crushed	N/A	N/A					200
Total Rock for Road Segment:				I1 to I2				350

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ROAD SURFACING

ROCK TOTALS (CY)	24"-6"	6"-0"	4"-0"	1 1/2"-0"	3/4"-0"
	0	3,539	0	200	331

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 2A to 2B.	1

Fills. Embankments and fills shall be placed in (approximately) horizontal layers not more than 8 inches in depth. Each layer shall be separately, and thoroughly, compacted. Compaction equipment shall be operated over the entire width of each layer until visible deformation of the layers ceases or, in the case of a sheepsfoot roller, the roller "walks out." At least of 3 passes shall be made over the entire width and length of each layer. A pass is defined as traveling a fill layer in one direction and then back over that same layer again.

Placing individual rocks or boulders with more depth than the allowed layer thickness shall be permitted, provided the embankment will accommodate them. Such rocks and boulders shall be at least 6 inches below the subgrade. They shall be carefully distributed and the voids filled with finer material, forming a dense and compacted mass. Compaction shall be accomplished by using 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 and Pit-Run Rock. The rock shall be uniformly mixed and spread in layers on the approved roadbed. Each layer of crushed rock and/or pit-run 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 mile 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 materials around culverts (and/or bridge approach embankment materials around abutments). The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.

EXHIBIT "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, 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.

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.

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. 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.

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 rockered 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. 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	1A to 1B	2+10
2	18	50	1C to 1D	0+00
3	18	40	3A to 3B	0+00

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 2½ inches wide, with the spade driven 2 feet into the ground.

EXHIBIT "D"



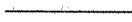


QUARRY DEVELOPMENT AND USE

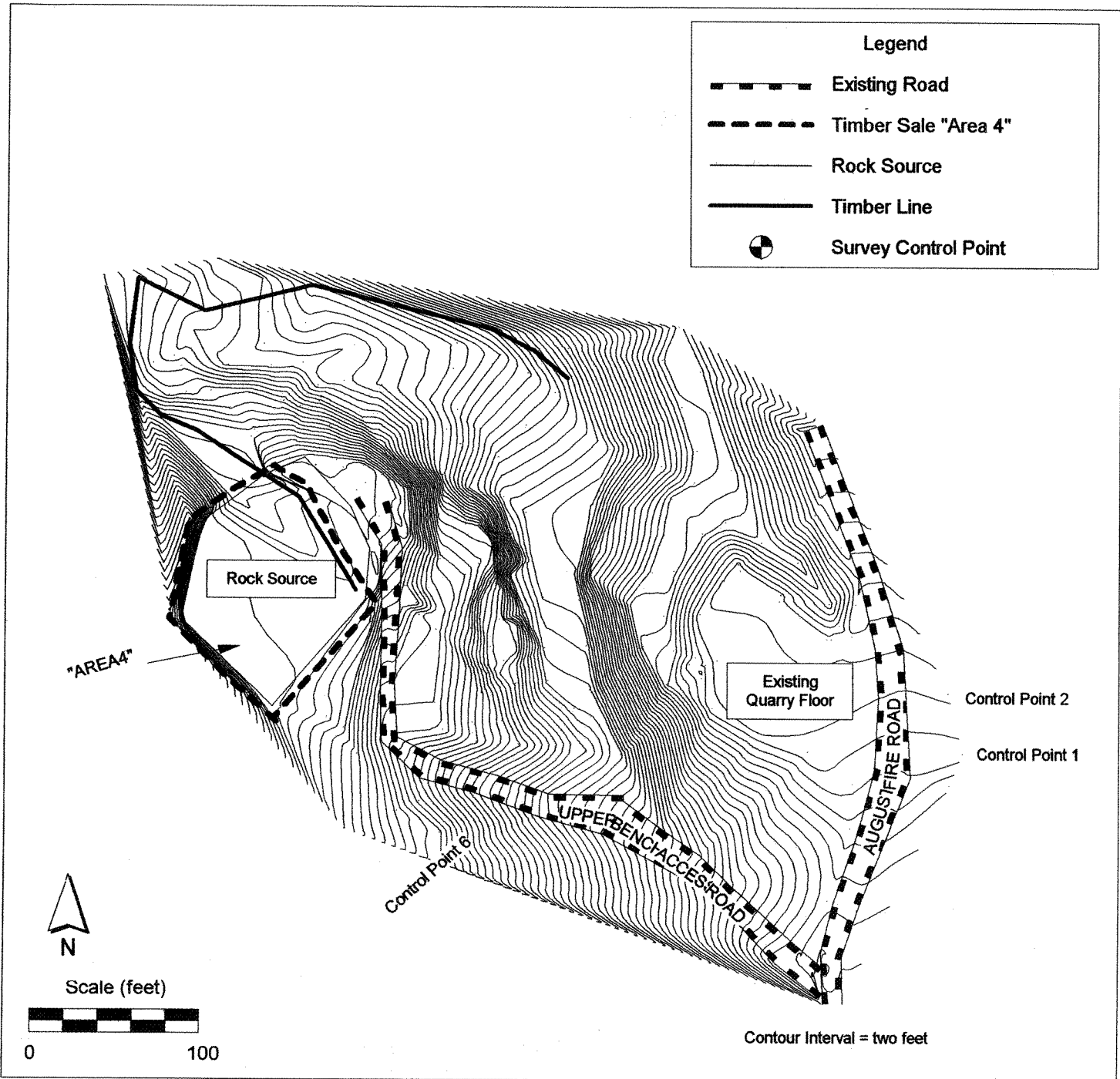
- (1) PURCHASER shall prepare a written development plan for the Spruce Run Quarry. The plan shall be submitted to STATE for approval prior to conducting any operation in the quarry area. The plan shall include, but not be limited to:
 - (a) Location of benches and roads to benches.
 - (b) Disposal site for clearing 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) PURCHASER to clear and grub Rock Source "Area 4" indicated on Exhibit D, page 2 of 2. Fall all timber within the posted "Timber Sale Boundary," deck in approved locations, and remove all merchantable timber. Clear and grub the rock source area. All woody debris, including stumps and slash shall be hauled to the designated waste area and piled as directed by STATE. All overburden material shall be hauled to the designated waste area, 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. Benches utilized will have equipment access roads to them. Benches shall be easily accessible with tractors.
- (5) Quarry face shall be developed in a uniform manner.
- (6) Oversized material that is produced shall be piled in a designated area adjacent to the quarry. It shall not be wasted.
- (7) The quarry site shall be left in a condition free from overburden and debris. Equipment Access roads to the quarry, and the quarry floor, shall be cleared at the termination of use. Overburden shall be removed for a distance of 20 feet beyond the developed rock source.
- (8) The quarry floor shall be developed to provide for drainage away from the quarry. Quarry access roads shall be water barred and blocked upon completion of use, as directed by STATE.
- (9) 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.
- (10) PURCHASER shall coordinate quarry use with the Purchaser of other STATE timber sale(s) with required quarry use. The STATE contract requiring quarry use is, as follows:

Rotorwash Timber Sale No. 341-04-07. Requires the removal of approximately 3,100 cubic yards of 6"-0" pit-run rock . Expected quarry use during the summer of 2004.
- (11) Location of Survey Control Points are indicated on Exhibit D, page 2 of 2. These control points are not to be disturbed by PURCHASER'S operation.

EXHIBIT "D"
SPRUCE RUN QUARRY PLAN

Legend

-  Existing Road
-  Timber Sale "Area 4"
-  Rock Source
-  Timber Line
-  Survey Control Point



Oregon Department of Forestry
Astoria District
Engineering Unit

Osweg Combination
NW1/4, Section 16, T4N, R7W, W. M.
Clatsop County, Oregon

State Timber Sale Contract
No. 341-04-36
Osweg Combination

EXHIBIT "E"

PIT-RUN ROCK SPECIFICATIONS

Grading Requirements

For 6"-0" Pit-Run	Passing	10" sieve	100%
	Passing	6" sieve	65%

Control of gradation shall be by visual inspection by STATE.

EXHIBIT "F"

FISHHAWK CREEK BRIDGE REMOVAL

GENERAL INSTRUCTIONS FOR FISHHAWK CREEK BRIDGE REMOVAL

- (a) Remove the existing bridge, including the bridge deck, stringers, and upper mud sill logs.
- (b) 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.
- (c) All planned equipment activity necessary for the bridge removal will be accomplished without equipment entering or crossing Fishhawk Creek. Turbidity shall not exceed 10% above natural stream turbidities as a result of equipment activity. The turbidity may be exceeded for a limited duration (per OAR 340-41), provided all practical erosion control measures have been implemented. Oil spill response materials will be on site before work begins.
- (d) All access trails and roads shall be water barred, de-compacted, and blocked upon completion of use. Apply grass seed and straw mulch to all bare and/or disturbed soils in accordance with specifications in Exhibit J.
- (e) A minimum 1½ cubic yard, track mounted excavator shall be used for the removal of stringers and sills from the Fishhawk Creek bridge.
- (f) Existing dirt berms used to block access to both sides of Fishhawk Creek Bridge shall be re-utilized in the same approximate location for blocking access to the vacated bridge upon project completion.
- (g) Those portions of the removed Fishhawk Bridge not used in the Warner Creek Stream Enhancement portion of this contract shall be neatly piled in the designated waste area on site as indicated on Exhibit A or as directed by STATE.
- (h) Wire cable pieces cut, and re-bar drift pin material dislodged shall be disposed of off State Lands.
- (i) Any treated bridge materials are to be kept from entering Fishhawk creek during the bridge removal process. PURCHASER shall present STATE with a plan for STATE approval prior to beginning the bridge removal process of PURCHASER's plan for the prevention of treated materials entering Fishhawk Creek.
- (j) Alders and other vegetative debris damaged during the bridge removal process will be neatly piled in the designated waste area on site as indicated on Exhibit A or as directed by STATE.

EXHIBIT "G"

WARNER CREEK STREAM ENHANCEMENT

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.
- (b) All work performed is subject to the DSL "General Authorization for Fish Habitat" on file at the Astoria District office.
- (c) All planned equipment activity necessary for stream enhancement will be accomplished without equipment entering or crossing Warner Creek. Turbidity shall not exceed 10% above natural stream turbidities as a result of equipment activity. The turbidity may be exceeded for a limited duration (per OAR 340-41), provided all practical erosion control measures have been implemented. Oil spill response materials will be on site before work begins.
- (d) All access trails and roads shall be water barred, de-compacted and blocked upon completion of use. Apply grass seed and straw mulch to all bare and/or disturbed soils in accordance with specifications in Exhibit J.
- (e) Woody material required for stream enhancement shall be obtained from the (5) stringers and (2) top sill logs developed during the Fishhawk Creek Bridge removal.
- (f) The stringers and sill logs shall be transported by log truck from the Fishhawk Creek bridge site to the Warner Creek stream enhancement project sites, or by other means approved by STATE that do not damage roads. (i.e. stringers and sills will not be dragged on road surfaces).
- (g) Access routes used during stream enhancement will be selected to minimize disturbance to the riparian area, and equipment transporting stringers, sills, or 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 as directed by STATE.
- (h) A minimum 1½ cubic-yard, track-mounted excavator shall be used for all placement of material in Warner Creek.
- (i) PURCHASER shall call the "OREGON UTILITY NOTIFICATION CENTER" at 1-800-332-2344 prior to building any trails to any of the three sites.

SPECIFIC INSTRUCTIONS FOR WARNER CREEK STREAM ENHANCEMENT

<u>Location</u>	<u>Work Description</u>
Site No. 1	Place one end of the first 50 foot log (stringer) into back water area with main part lying parallel to south bank. Place one end of second 50 foot log (stringer) against mid section of the first log and opposite end onto north bank.

EXHIBIT "G"

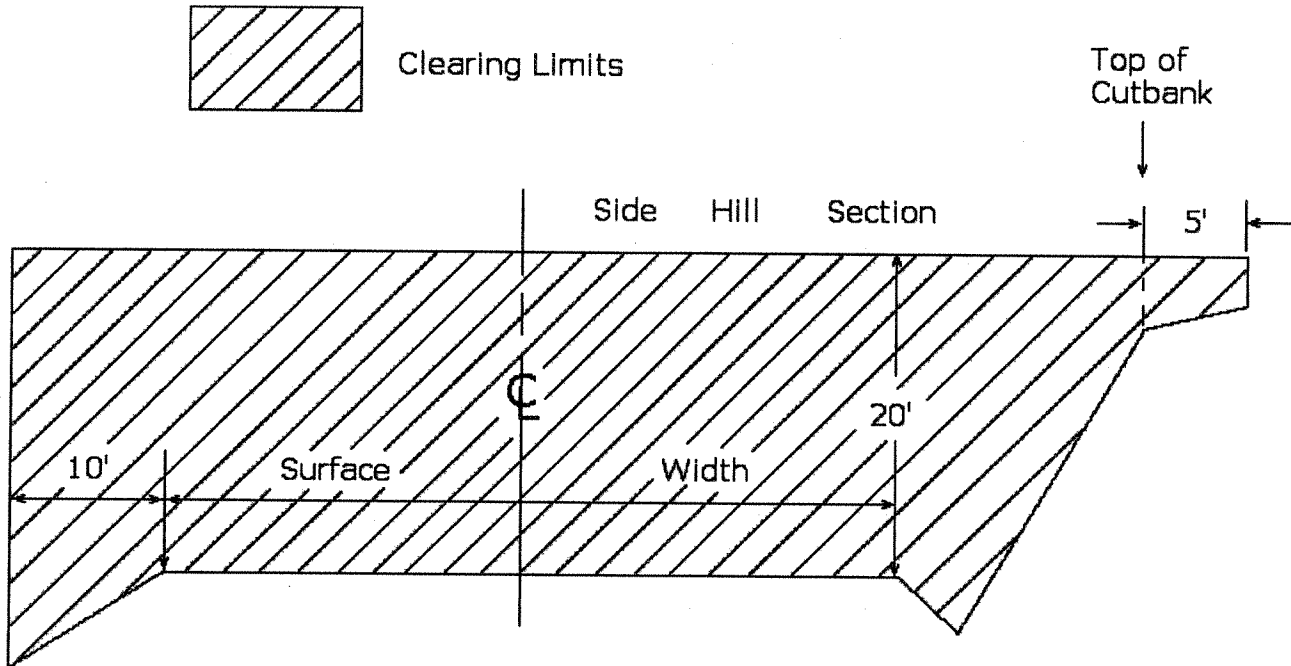
WARNER CREEK STREAM ENHANCEMENT

SPECIFIC INSTRUCTIONS FOR WARNER CREEK STREAM ENHANCEMENT

- Site No. 2 Place the first 50 foot log (stringer) across channel on upstream side of existing root wad. Place one end of second 50 foot log (stringer) against the mid section of the first log with opposite end extending upstream in mid channel. Place the third 50 foot log (stringer) immediately upstream of second log with opposite end angled upstream towards the north bank.
- Site No. 3 Place one end of a 35 foot log (sill) on south bank on upstream side of alder with opposite end across channel and against north bank. Wedge one end of a 35 foot log (sill) between alders on north with opposite end across channel and against south bank downstream of first log. Access off of the Greasy Spoon road at this site is steep and the purchaser will need to restore the fill slope to its original slope and condition. Purchaser will not cut into any of the road surface when building the trail.

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.

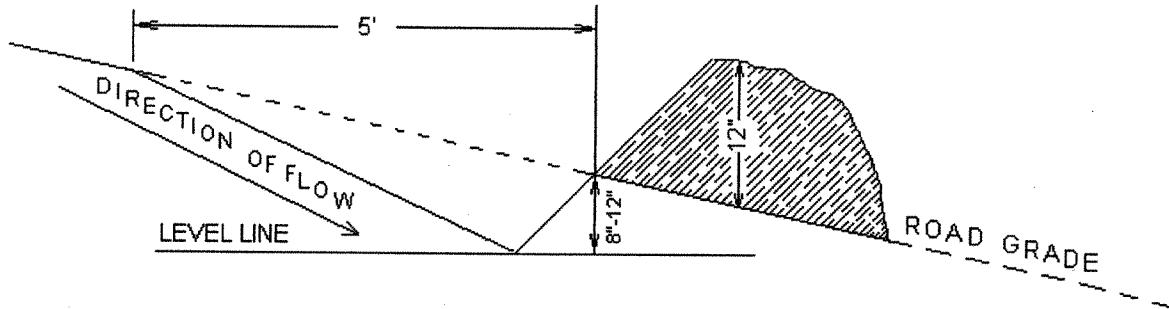
Brush and trees shall be cut to a maximum height of 6 inches above the ground surface or obstructions such as rocks or existing stumps.

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.

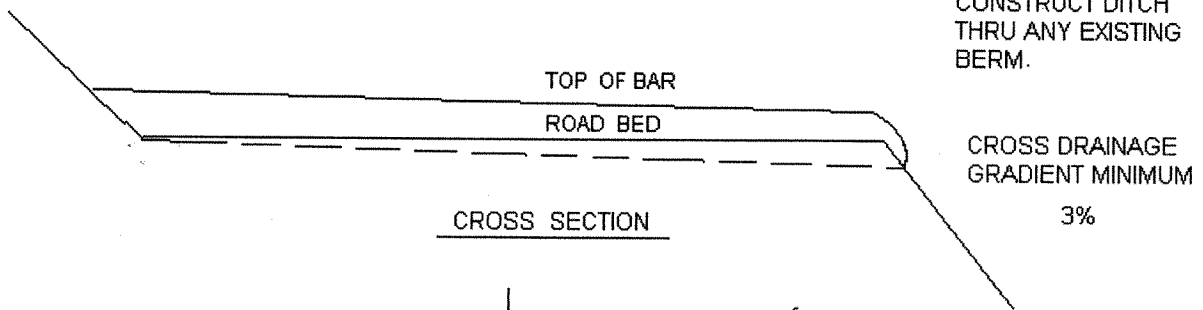
Conifer trees larger than 6 inches in diameter at stump height, located within clearing limits but outside of the ditchline or shoulder, shall not be cut down, but shall be limbed for road visibility.

EXHIBIT "I"

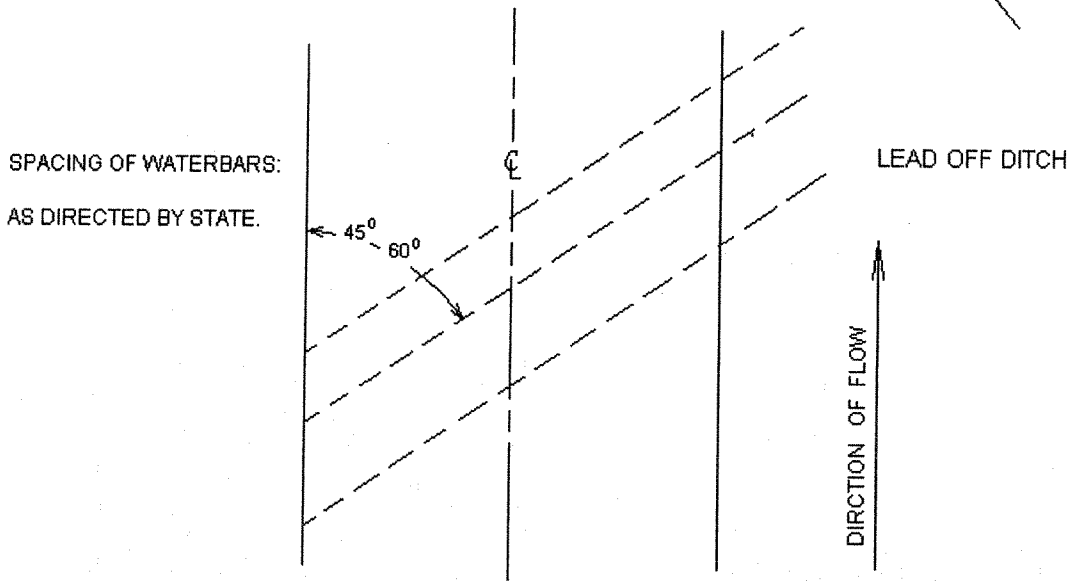
WATERBAR SPECIFICATIONS



PROFILE



CROSS SECTION



PLAN VIEW

State Timber Sale Contract
No. 341-04-36
Osweg Combination

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 REPELLANT	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 Trifol	07%	95%	0	>90%
Red Clover	06%	95%	0	>90%
Alsike Clover	04%	95%	0	>90%

Seeding. Apply grass seed to all waste areas resulting from Project No. 1 and all bare soils resulting from road construction activities on Road Segment 1A to 1B, 1C to 1D, and 2A to 2B.

Seeding and Mulching. Apply grass seed and straw mulch to all bare and/or disturbed soils resulting from Project No. 2. Straw mulch shall be a minimum of 2 inches deep and provide uniform cover.

State Timber Sale Contract
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Osweg Combination

EXHIBIT "K"

WATERSHED REGULATIONS

PURCHASER shall take precautions necessary to protect the watershed from damage and to prevent pollution to the water supply. Precautions shall include, but not be limited to, the following regulations.

Laws, Rules, and Regulations. Comply with Oregon laws and with the rules and regulations of the Oregon State Board of Health relative to protection of watersheds and sanitation of public water supply.

Debris in Streams. Prevent, insofar as possible, logs, chunks, and other debris, resulting from logging and road building operations, from being deposited in streams. If such material should become deposited in streams, immediately remove the material to restore normal stream flow, using necessary care to prevent unnecessary damage to the stream channel and banks.

General Sanitary Conditions. Do not create any conditions which may permit breeding of flies or mosquitoes. Machinery, equipment, soil, and fuel storage shall not be located near streams. Waste oil shall be removed from the watershed. Camping shall not be permitted.

Privies. Place a clean, sanitary, and usable privy at each landing and other main points of operation on Area I, and require all personnel to use the privies. Privies shall be placed at locations approved by STATE not closer than 100 feet to any stream. The privies shall be constructed as follows, unless other types are approved by STATE prior to being placed in use:

The housing shall be waterproof and flyproof, and the toilet shall be equipped with a seat and cover. A receptacle shall be provided for all refuse and the privy shall be equipped with a separate urinal draining into the receptacle. The receptacle shall be not less than 45-gallon capacity and the refuse shall be removed from the receptacle and disposed of off the watershed area. The receptacle shall be vented through the roof of the privy housing.

Pit type privies shall not be permitted on the watershed.

Personnel. Persons with a history of typhoid fever, amoebic dysentery, or infectious hepatitis shall not be employed on the watershed. All personnel shall be required to use the privies. PURCHASER shall verbally instruct all personnel employed on the watershed in the required sanitary precautions to be observed and shall give each such person a copy of these regulations.

Overnight Camping Prohibited. No person shall remain on the watershed overnight, unless authorized in writing by STATE.

EXHIBIT "L"

SPECIFICATIONS FOR BRUSH AND SLASH SHOVEL PILING

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

Clearing - Brush, logging slash, and other debris shall be cleared from planting sites and piled in windrows or piled 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.

Piles - shall be located at least 75 feet apart and shall be no more than 75 feet long. 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 - An average of 500 cubic feet of hard conifer logs per acre. Log shall contain a minimum of 10 cubic feet of volume and be no shorter than 6 feet in length. Two logs per acre shall be at least 24 inches in diameter, on 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 or logs shall be left well distributed across the unit.

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 "L"

SPECIFICATIONS FOR BRUSH AND SLASH SHOVEL PILING

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.

- Excavator-shovel: Bucket 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. "Clamshell-style bucket with rake arms" shall be hydraulically controlled to operate bucket in a horizontal position (**fixed position: positive control**) for piling slash.
- Log Loader – shovel: Bucket 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 other wise approved in writing by STATE. "Clamshell-style bucket with rake arms" shall be hydraulically controlled to operate bucket in a vertical position (**free swinging**) for piling slash.

Equipment	Rate	Hours	Appraised Value
Excavator	\$ 95.00 / hour	40	\$ 4,085
Log Loader	\$ 70.00 / hour	58	\$ 4,085

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

Support - including transport, other equipment, replacements, supplies, maintenance, and repairs 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 2. Operations shall provide for continual operation until contract work is completed, unless interrupted by poor weather, fire closures, or other uncontrollable 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 "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 Highway 202, Astoria, OR 97103

(4) PURCHASER: _____
 Address _____

(12) SALE NAME Osweg Combination

COUNTY Clatsop

(13) STATE CONTRACT NUMBER 341-04-36

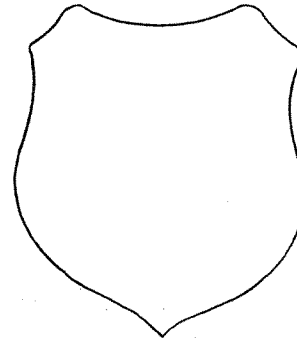
(14) SCALE: westside eastside cubic foot

(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): _____

(21) SIGNATURES:

 Purchaser or Authorized Representative Date

 State Forester Representative Date

 State Forester's Representative

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.