

PART III: EXHIBITS

State Timber Sale Contract
No. 341-16-45
Catch and Release

EXHIBIT B

Page 1 of 3
629-Form 341-203
Revised 06/97

OREGON DEPARTMENT OF FORESTRY

TIMBER SALE OPERATIONS PLAN

(See Page 2 for instructions)

Date Received by STATE: _____

(5) State Brand Information (complete):



(1) Contract No.: 341-16-45

(2) Sale Name: Catch and Release

(3) Contract Expiration Date: October 31, 2019

Project Completion Dates: _____

(4) Purchaser: _____

(6) Purchaser Representatives:

| | | | |
|-----------------|--------------|----------------------------|-------------|
| Projects: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Projects: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Projects: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Projects: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Logging: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Logging: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Logging: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Logging: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |

(7) State Representatives:

| | | | |
|-----------------|--------------|----------------------------|-------------|
| Projects: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |
| Logging: _____ | Phone: _____ | Cell/Other Phone: _____ | Home: _____ |

(8) Name of Subcontractors & Starting Dates:

| | | |
|-------------------------------|-------------|--------------|
| Projects: No(s) _____ - _____ | Date: _____ | Phone: _____ |
| No(s) _____ - _____ | Date: _____ | Phone: _____ |
| No(s) _____ - _____ | Date: _____ | Phone: _____ |
| No(s) _____ - _____ | Date: _____ | Phone: _____ |
| Logging: Felling _____ | Date: _____ | Phone: _____ |
| Yarding: _____ | Date: _____ | Phone: _____ |

(9) Comments: _____

(10) Operations Map: Attach a copy of timber sale Exhibit A or other suitable map which plainly shows the items listed on the instruction sheet.

EXHIBIT B

INSTRUCTION SHEET FOR OPERATIONS PLAN

SUBMIT ONE COPY OF PLAN TO STATE

Operations shall be limited to the work shown in the plan until a revised plan or supplemental plan is submitted covering additional work. Compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act. If STATE has prepared a required Forest Practices Act (FPA) "Written Plan" for operations, PURCHASER shall comply with all provisions of the Written Plan.

Explanation of Item No. (from Page 1)

- (5) All sales require you to use a brand furnished by STATE. If the State brand has not been assigned when the plan is submitted, it will be furnished and assigned later. Complete drawing. If more than one brand is assigned to the sale, complete both drawings.
- (6) The contract requires you to have a designated representative available on the sale area or work location who is authorized to receive in your behalf any notice or instruction given by STATE and to take action in regard to performance under the contract. If logging and project work is widely separated, a representative is required for each.
- (7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.
- (8) Show names of subcontractors to be used for any or all phases of the operations. If subcontractors are not known, or are changed later, give notification to the STATE representative prior to commencement of work by subcontractor.

Show projected dates for commencement of both projects and logging. If projected dates need to be changed at a later date, notification must be given to the STATE representative by supplemental plan or otherwise, prior to commencement of such operations.

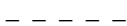
- (10) The STATE representative will furnish extra copies of Exhibit A of the contract for your use in preparing the operations map. The map shall use the following legend and show:
 1. Landing locations, approximate setting boundaries, and probable sequence of logging the settings. Number the settings in sequence.
 2. Locations of spur roads planned for construction, other than those required by the timber sale contract. Provide spur road specifications.
 3. Location of proposed tractor yarding roads. Show if and how marked on the ground.
 4. Location of temporary stream crossings.
 5. List the sequence of performing project work.
 6. Location of rock sources - attach pit development plans.



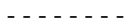
Cable Landing, with numbers for sequence.



Tractor Landing with alphabetical sequence.



Approximate setting boundary.



Spur truck roads.



Tractor yarding roads.



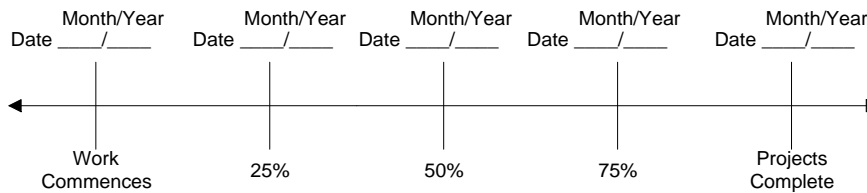
Temporary stream crossings.

EXHIBIT B
OPERATIONS PLAN

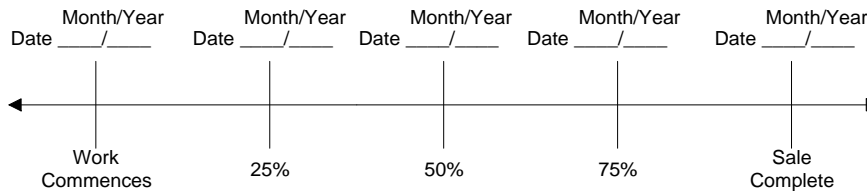
Completion Timeline

Indicate on the appropriate timeline below, the dates by which you plan to complete the work as required under this contract. The purpose of this section is to develop a plan that will ensure you complete the work as required, and meet the interim completion date(s) and contract expiration date. This plan is incorporated and made a part of the contract. When, in the opinion of STATE, operations are not commencing in a manner that meets the intent of this plan, you may be placed in violation of contract and your operations suspended until an amended plan is submitted and approved by STATE.

Projects



Harvest & Other Requirements



The Federal Endangered Species Act (ESA) prohibits a person from taking any federally listed threatened or endangered species. Taking under the federal ESA may include alteration of habitat. STATE's approval of this plan does not certify that PURCHASER's operation under the plan is lawful under the federal ESA. As provided in the timber sale contract, PURCHASERS must comply with all applicable state, federal, and local laws.

PURCHASER's compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act.

APPROVED: Date: _____

SUBMITTED BY:
PURCHASER

STATE OF OREGON - DEPARTMENT OF FORESTRY

Title _____

Title _____

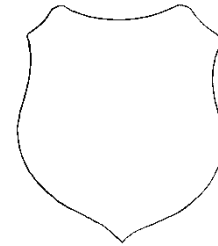
Original: Salem
cc: District File
Purchaser

SCALING INSTRUCTIONS -- LOCATION APPROVAL -- BRAND INFORMATION

- (1) ORIGINAL REGISTRATION ☐ Date _____
 REVISION NUMBER _____ ☐ Date _____
 CANCELLATION ☐ Date _____
- (2) TO: _____
 (Third Party Scaling Organization)
- (3) FROM: Forest Grove (05) Phone (503) 357-2191
 (State Forestry District)
 Address 801 Gales Creek Road
Forest Grove, OR, 97116
- (4) PURCHASER: _____
 Mailing Address: _____
 Phone Number: _____

- (9) SALE NAME: Catch and Release
COUNTY: Washington / Tillamook
- (10) STATE CONTRACT NUMBER: 341-16-45
- (11) STATE BRAND REGISTRATION NUMBER:

- (12) STATE BRAND INFORMATION (COMPLETE):



- (13) PAINT REQUIRED: YES ☒
COLOR: Orange

| | |
|--|-------------------------------------|
| (14) SPECIAL REQUESTS (Check applicable) | |
| PEELABLE CULL (all species) | <input checked="" type="checkbox"/> |
| NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE | <input checked="" type="checkbox"/> |
| ADD-BACK VOLUME - Deductions due to delay | <input checked="" type="checkbox"/> |
| OTHER: | |

- | (5) MINIMUM SCALING SPECIFICATIONS | |
|------------------------------------|--------------------|
| SPECIES | MINIMUM NET VOLUME |
| Conifers | 10 |
| Hardwoods | 10 |
| | |

* Apply minimum volume test to whole logs over 40' Westside

(6) WESTSIDE SCALE: YES ☒ NO ☐

Use Region 6 actual taper rule. Logs over 40'.

(7) Weight Scale Sample ☐ ☒

[illegible]

- (15) **REMARKS** _____

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

- (16) SIGNATURES:

Purchaser or Authorized Representative
Date

State Forester Representative _____ Date _____

State Forester Representative PRINT NAME

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

Distribution (See specific instructions on pg. 2): ORIGINAL: Salem / COPIES: TPSO, Approved Scaling Location, Purchaser, District, Mgmt. Unit

EXHIBIT C – SAWMILL GRADE
INSTRUCTIONS FOR FORM 343-307a (rev. 11/11)

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers, date and sign where indicated, write diagonally across page "CANCEL", and send to TPSO.
- (2) Designate Third Party Scaling Organization (TPSO).

| | |
|---|---|
| <p>Columbia River Log Scaling & Grading Bureau P.O. Box 7002, Eugene, OR 97401 Phone: (541) 342-6007 Fax: (541) 342-2631 Email: services@crls.com</p> <p>Mountain Western Log Scaling & Grading Bureau P.O. Box 580, Roseburg, OR 97470 Phone: (541) 673-5571 Fax: (541) 672-6381 Email: info@mwlsqb.com</p> <p>Northwest Log Scalars, Inc. 5526 NE 122nd Ave, Portland, OR 97230 Phone: (503) 254-0600 Fax: (503) 408-0919 Email: info@nwlogscalars.com</p> | <p>Pacific Rim Log Scaling Bureau, Inc. 8288 28th Court North East, Lacey, WA 98516 Phone: (360) 528-8710 Fax: (360) 528-8718 Email: office@prlsb.com</p> <p>Yamhill Log Scaling & Grading Bureau P.O. Box 709, Forest Grove, OR 97116 Phone: (503) 359-4474 Fax: (503) 359-4476 Email: yamhill@attglobal.net</p> <p>Pacific Log Scaling & Grading Bureau, Inc. P.O. Box 23939, Portland, OR 97281 Phone: (503) 684-5599 Fax: (503) 639-4880 Email: PacLogScale@aol.com</p> |
|---|---|
- (3) State District office, address and phone.
- (4) Enter Purchaser's business name, address, and phone number as it appears on the Contract.
- (5) Minimum Scaling Specifications.
- (6) Westside – Region 6 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) Weight Scale Sample – Check box if sale is to be a Weight Scale Sample. All specifics for handling, scaling and processing will be attached or explained in the Remarks section Item (15).
- (8) Show scaling locations only applicable to TPSO. Location name should appear as it does on the ODF Approved Scaling Location web site: http://www.odf.state.or.us/DIVISIONS/management/asset_management/ScalingLocation.asp
Locations with scaling and processing directions specific to their location should be on a separate form. Species should be identified if not capable of receiving "all" species. Check appropriate box for either: yard, truck scale, or weight. Refer to the web site listed above for the locations approval status.
- (9) Enter sale name and county.
- (10) Enter sale Contract number.
- (11) Enter Oregon's State Brand Registry Number **(REQUIRED)**.
- (12) Show brand assigned to timber sale. One brand only. If more than one brand is assigned to the sale: (1) make a separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section Item (15).
- (13) Check yes for Paint Required and designate "Orange" for color. Non required removal volumes may sometimes require blue paint.
- (14) Special Requests. These are requests that will be applied to ODF timber sales. All boxes applicable to the timber sales designated in the Exhibit C form must be "marked". If "Other" is indicated, it must contain a description and any necessary comments.
- (15) Use this space to designate any weight conversion factors, per load volumes, weight scale sample instructions or any other explanations to clarify scaling, processing and/or mailing requirements. If additional scaling locations are approved, revise original or current form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.
- (16) Require purchaser to sign and date completed form in addition to State Forester Representative, sign and print name on the form.

Salem Distribution Instructions: Original will be mailed to Salem after it is electronically scanned and placed in the Salem transfer drive \\WPODFFILL01\Transfer\ScalingInstructions or e-mailed directly to scaling@odf.state.or.us. Scaling instructions for each brand should be scanned separately, for each approved TPSO.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

| SUBGRADE WIDTH | SURFACED WIDTH | POINT TO POINT | STATION TO STATION | DRAINAGE |
|-------------------------------|----------------|----------------|--|----------|
| 18 feet | 16 feet | A to B | 0+00 to 33+75 | Ditch |
| 16 feet | 12 feet | B to C | 0+00 to 134+05 | Ditch |
| 16 feet | 12 feet | C to D | 0+00 to 56+00 | Ditch |
| 16 feet | - | E to F | 0+00 to 26+55 | Ditch |
| 16 feet | 12 feet | H to I | 0+00 to 24+60 | Ditch |
| 16 feet | - | J to K | 0+00 to 4+50 | Ditch |
| 16 feet | 12 feet | M to N | 0+00 to 35+00 | Ditch |
| 16 feet | 12 feet | O to P | 0+00 to 38+15 | Ditch |
| 16 feet 18 feet 16 feet | 12 feet | P to Q | 0+00 to 1+40 1+40 to 2+40 2+40 to 9+50 | Ditch |
| 16 feet | 12 feet | Q to R | 0+00 to 82+15 | Ditch |
| 14 feet | - | S to T | 0+00 to 20+30 | Outslope |
| 14 feet | - | U to V | 0+00 to 14+80 | 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. Clearing debris shall not be placed or permitted to remain in or under any road embankment sections.

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

CLEARING CLASSIFICATION. New Construction - Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 5 feet out from the toe of the fill slope, or as directed by STATE.

Improvement - Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 10 feet out from the toe of the fill slope, or as directed by STATE.

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 CLASSIFICATION. New construction - from the top of the cutslope to the toe of the fill.

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

CLEARING AND GRUBBING DISPOSAL. Scatter in stable locations through openings in the timber outside of the cleared right-of-way, except areas where end-haul is required. In areas where end-haul is required, clearing and grubbing debris shall be fully contained and hauled to a designated waste area. Clearing and grubbing debris shall be left in a stable location, and not left lodged against standing trees.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

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

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

Unless road 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.

Suitable excavated material shall be used 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.

Sidecast includes any road generated excess excavation material which is not essential as part of the road prism, is not compacted, and is below the roadway. Sidecast shall not be placed where it will enter a stream course. Leaving sidecast below the road is only permissible if specifically allowed in "Full Bench and End Haul Requirements" in this Exhibit.

All fills shall be machine compacted according to the "Compaction and Processing Requirements" in this Exhibit.

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 specified in the plans or as follows: 400 divided by the radius of the curve equals the amount of extra width.

DRAINAGE

Subgrade. Subgrade shall be crowned or outsloped at 4 to 6 percent as shown on the "Forest Road Specifications" table in this Exhibit.

Ditch. Construct "V" shaped ditch 3 feet wide and to a depth of 1 foot below subgrade.

Ditchouts. Construct ditchouts to drain away from subgrade at locations 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: Intervisible but not greater than 750 feet apart.

SLOPES

Solid Rock

Fractured Rock

Soil - side slopes 50% and over

Soil - side slopes less than 50%

Back Slopes

Vertical to $\frac{1}{4}$:1

$\frac{1}{4}$:1

$\frac{1}{2}$:1

$\frac{3}{4}$:1

Fill Slopes

1½:1

1½:1

Top of cutslope shall be rounded.

LANDINGS. Landings shall be constructed as posted in the field, no less than 50 feet wide and no more than 70 feet wide unless otherwise approved by STATE. Surface is to be outsloped or crowned for drainage with general grade no more than 3 percent. Surface as shown in the "Road Surfacing" table in this Exhibit.

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

SEASONAL WINTERIZATION. All unsurfaced roads or unfinished subgrades shall be waterbarred in accordance with the specifications in Exhibit G, and blocked from vehicular traffic prior to October 31, annually and as directed by STATE.

EROSION CONTROL. Install bio bags for erosion control in project areas and ditch lines where sedimentation or erosion is possible, as directed by STATE. Each Bio-bag shall be installed with a minimum of two wooden stakes.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD CONSTRUCTION INSTRUCTIONS:

1. Excavated Materials. Excavated materials shall be utilized for road 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. Surplus excavated materials and waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with this Exhibit.
2. Fill Armor. Where rock is specified for fill armor, rock shall be machine placed and tamped at a 1½:1 slope, beginning at the toe of the fill.
3. Fill Material. For segment P to Q, utilize suitable fill material excavated from V5 to V6 to construct fill and road grades, as directed by STATE.
4. Subgrade Reinforcement. Where subgrade reinforcement is required, clean 6"-0" pit-run rock shall be hauled in and used for subgrade preparation. Truck measure volumes are given, but shall not limit the amount of rock spread to meet subgrade compaction requirements required in this Exhibit.
5. Subgrade Preparation and Application of Surfacing Rock.
 - (a) Complete culvert installations, drainage ditches, ditchouts, fill construction, subgrade reinforcement and other specified work prior to the application of surfacing rock.
 - (b) Subgrade shall be crowned at 4 to 6 percent.
 - (c) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with specifications in the "Compaction and Processing Requirements" in this Exhibit. Final road surface shall be crowned or outsloped at 4 to 6 percent.

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|--|
| E to F | 0+00 | Point E. Begin road construction; crown road, begin ditch. Install Culvert No. 17 (18" x 30') as cross drain. |
| | 5+50 | Install Culvert No. 18 (18" x 30') as cross drain. |
| | 16+30 | Install Culvert No. 19 (18" x 30') as cross drain. |
| | 23+45 | Live Stream. Install Culvert No. 20 (24" x 40'). |
| | 26+55 | Point F. End road construction, construct landing. |
| P to Q | 0+00 | Point P. Begin road construction; crown road, begin ditch. |
| | 0+50 | Begin subgrade reinforcement. |
| | 1+40 | Begin fill widening. |
| | 1+90 | Live stream. Install Culvert No. 34 (42" x 40'). Place 24 cy of fill armor around inlet and 24cy of fill armor around outlet of culvert. |
| | 2+00 | End subgrade reinforcement. |
| | 2+40 | End fill widening. |
| | 2+85 | Road follows existing grade. |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD CONSTRUCTION INSTRUCTIONS (Cont.)

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| | 4+00 | Point V6. Road leaves existing grade. |
| | 8+75 | Install Culvert No. 35 (18" x 30') as cross drain. |
| | 9+50 | Point Q. End road construction. |
| S to T | 0+00 | Point S. Begin road construction; outslope road, existing culvert. |
| | 20+30 | Point T. End road construction, construct landing. |
| U to V | 0+00 | Point U. Begin road construction; crown road, begin ditch. |
| | 9+80 | Live Stream. Install Culvert No. 41 (30" x 30'), construct ditch out at outlet. |
| | 14+80 | Point V. End road construction, construct landing. |

EXHIBIT D
FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

1. Bank Slough Removal. Dig out all bank slough. Bank slough material 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. Waste materials shall be seeded and mulched in accordance with specifications in Exhibit I.
2. Culvert Replacement, Culvert Installation, Fill Reconstruction, and Fill Removal. Existing culvert geometry shall be modified to provide for optimum drainage and culvert performance. Modifications may include, skewing the culvert and/or installing the culvert at gradients equal to or exceeding the drainage (or ditch) gradient. Where fill reconstruction or culvert replacement is specified, fills shall be excavated to natural stream course levels. 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. Waste materials shall be seeded and mulched in accordance with specifications in Exhibit I. Fill reconstruction backfill shall consist of select materials and may be obtained from borrow pits, as directed by STATE. Backfill materials shall be hauled in where necessary and thoroughly compacted in accordance with this Exhibit. Crushed rock shall be used for backfilling excavation trenches less than 3 feet deep. STATE may require the use of crushed rock for culvert bedding. Removed culverts shall be hauled off of STATE land.
3. Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Clean out all culvert inlets and outlets for a 10-foot radius. Ditch debris including woody debris shall be loaded and hauled to designated waste areas, and shall be accomplished with the use of an excavator and dump truck. 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.
4. Settling Ponds. Construct settling ponds for erosion control in project areas and ditchlines where specified in this exhibit, or where erosion is possible, and as directed by STATE. Excavated material shall be hauled to the designated waste areas designated on Exhibit A. Waste materials shall be sloped and compacted for drainage. Settling pond dimensions shall be a finished length of 4 feet, width of 3 feet, and 3 feet in depth, spaced 3 feet apart, or as directed by STATE. Backslopes shall be 3/4:1.
5. Fill Armor and Energy Dissipator Construction. Where rock is specified for fill armor, rock shall be machine placed and tamped at a 1½:1 slope, beginning at the toe of the fill. 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 E.
6. Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

7. Subgrade Preparation and Application of Surfacing Rock.
- (a) Complete culvert installations, drainage ditches, fill reconstruction, ditchouts, settling ponds, subgrade reinforcement, and other specified work prior to the application of new surfacing rock.
 - (b) Cut out all potholes and/or washboard sections from the existing surfacing.
 - (c) Process (grade and mix) the existing surface. Provide for a crown of 4 to 6 percent, and compact in accordance to the "Compaction and Processing Requirements" in this Exhibit.
 - (d) Upon completion of above required work, apply, process, and compact surfacing rock in accordance to this Exhibit.

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| A to B | 0+00 | Point A. (Lousignont Road) Begin road improvement; crown road, clean or construct ditches on both sides of the road. |
| | 0+25 | Existing culvert, install marker. |
| | 0+95 | Spur road on right. |
| | 1+00 | Existing culvert, install marker. |
| | 1+10 | Construct two settling ponds in ditch line. |
| | 3+70 | Existing culvert. |
| | 4+00 | Construct two settling ponds in ditch line. |
| | 6+20 | Construct two settling ponds at outlet of culvert. |
| | 6+50 | Existing culvert. |
| | 8+05 | Construct ditch out to left. |
| | 12+30 | Install Culvert No. 1 (18" x 40") as cross drain. Construct two settling ponds at outlet and construct ditchout to drain. |
| | 14+35 | Existing culvert. Construct two settling ponds at outlet and extend ditchout to drain. |
| | 18+80 | Construct two settling ponds in ditch. |
| | 18+90 | Existing culvert. |
| | 19+25 | Construct two settling ponds in ditch. |
| | 21+50 | Install Culvert No. 2 (18" x 30') as cross drain. |
| | 26+80 | Existing culvert. |
| | 28+40 | Block open area on left with boulders hauled from the Wildcat Mtn. Pit. Waste Area. |
| | 31+30 | Block open area on right with local material. Waste Area. |
| | 33+75 | Point B. End road improvement. |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS (Cont.)

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| B to C | 0+00 | Point B. (South Lousignont Road) Begin road improvement; crown road, clean or construct ditches. |
| | 1+00 | South Lousignont Bridge. Project No. 4. Replace bridge deck, nails, felloes, felloe supports, bolts, nuts and washers according to the specifications in Exhibit J. |
| | 3+30 | Existing culvert, install marker. |
| | 3+50 | Point V1 on left. |
| | 4+50 | Install Culvert No. 3 (18" x 30') as cross drain. |
| | 10+45 | Existing culvert, install marker. Construct ditch through spur on right. |
| | 14+20 | Junction with Morgan Creek Road on Right. |
| | 14+60 | Existing culvert, install marker. |
| | 19+85 | Existing culvert, install marker. |
| | 23+65 | Existing culvert. |
| | 27+55 | Install Culvert No. 4 (18" x 30') as cross drain. |
| | 27+90 | Spur on right. |
| | 29+25 | Install Culvert No. 5 (18" x 30') as cross drain. |
| | 33+20 | Remove existing culvert and install Culvert No. 6 (18" x 40') as cross drain. |
| | 38+35 | Existing culvert. Brush fill slope 15' around inlet and outlet. |
| | 44+50 | Improve turnout on left. |
| | 46+00 | Begin removing stumps on left side of road to maintain subgrade width. |
| | 48+00 | End stump removal. |
| | 48+50 | Existing culvert, install marker. |
| | 48+55 | Spur on right. |
| | 53+80 | Existing culvert, install marker. |
| | 57+45 | Install Culvert No. 7 (18" x 30') as disconnect. Construct ditchout at outlet. |
| | 58+10 | Live stream. Remove existing culvert and install Culvert No. 8 (24" x 40'). |
| | 61+80 | Existing culvert. |
| | 66+70 | Existing culvert. |
| | 71+00 | Spur on left. |
| | 71+20 | Existing culvert, repair inlet. |
| | 77+15 | Existing culvert, install marker. |
| | 85+20 | Install Culvert No. 9 (18" x 30') as disconnect. Construct ditchout at outlet. |
| | 86+40 | Live stream. Existing culvert, install marker. |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS (Cont.)

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|--|
| | 87+80 | Existing culvert, install marker. |
| | 88+75 | Spur on left. |
| | 89+85 | Existing culvert, install marker. |
| | 92+00 | Begin curve widening. |
| | 92+70 | Begin excavation to layback cut slope to specifications. |
| | 93+75 | End cut slope layback. |
| | 94+00 | End curve widening. |
| | 96+35 | Install Culvert No. 10 (18" x 30') as disconnect. |
| | 96+90 | Live stream. Remove existing culvert and install Culvert No. 11 (30" x 40'), construct ditchout at outlet. |
| | 96+95 | Fill in ditch from Culvert No 11 to Culvert No. 12 with local suitable material. |
| | 97+20 | Install Culvert No. 12 (18" x 40') across spur road as cross drain. |
| | 94+35 | Spur on right. |
| | 98+00 | Install Culvert No. 13 (18" x 30') as disconnect, construct ditchout at outlet away from live Stream channel. |
| | 98+45 | Live stream. Existing culvert. |
| | 99+35 | Live stream. Existing culvert. |
| | 100+55 | Install Culvert No. 14 (18" x 30') as disconnect. |
| | 102+95 | Existing culvert. |
| | 112+50 | Existing culvert. |
| | 116+20 | Existing culvert. |
| | 117+20 | Junction with Carlson Creek Road to left (to Point G). |
| | 117+90 | Existing culvert. |
| | 122+40 | Live Stream. Project No. 5. Install Culvert No. 15 (73" x 55" x 75'), according to the specifications in Exhibits D and E. |
| | 123+65 | Install Culvert No. 16 (18" x 30') as disconnect. Construct ditchout at outlet. |
| | 126+80 | Existing culvert. |
| | 134+00 | Existing culvert, install marker. |
| | 134+05 | Point C. End road improvement. |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS (Cont.)

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| C to D | 0+00 | Point C. (X Over Road.) Begin road improvement; crown road, clean or construct ditches. |
| | 0+15 | Point V3 on left. |
| | 4+90 | Point E on left. |
| | 7+00 | Existing culvert. |
| | 11+25 | Existing culvert. |
| | 18+70 | Existing culvert. |
| | 25+50 | Existing culvert. |
| | 28+75 | Existing culvert. |
| | 35+85 | Existing culvert, install marker. |
| | 55+95 | Junction with Morgan Creek Road. |
| | 56+00 | Point D. End road improvement. |
| Point G | - | Chicken Camp Bridge. Project No. 4. Replace bridge deck, nails, felloes, felloe supports, bolts, nuts and washers according to the specifications in Exhibit J. |
| H to I | 0+00 | Point H. (South Lousignont Road) Begin road improvement; crown road, clean or construct ditches. |
| | 0+25 | Install Culvert No. 21 (18" x 40') as cross drain. |
| | 1+95 | Existing culvert. |
| | 7+80 | Live stream. Remove existing culvert and install Culvert No. 22 (24" x 30'). |
| | 8+20 | Point M on left. |
| | 12+65 | Existing culvert. |
| | 14+80 | Point J on right. |
| | 18+15 | Existing culvert. Remove tree to improve culvert catch basin to specifications. |
| | 20+15 | Spur to left (to Point L). |
| | 22+75 | Install Culvert No. 23 (18" x 30') as disconnect. |
| | 23+55 | Live stream. Remove existing culvert and install Culvert No. 24 (24" x 40'). |
| | 24+60 | Point I. End road improvement, improve turnaround. |
| J to K | 0+00 | Point J. Begin road improvement; crown road, clean or construct ditches. |
| | 4+50 | Point K. End road improvement, improve landing. |
| Point L | - | Live Stream. Existing culvert. Place riprap on inlet side as ditch armor, as directed by STATE. |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS (Cont.)

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| M to N | 0+00 | Point M. (Hawkins Pit Road) Begin road improvement; crown road, clean or construct ditches. |
| | 0+55 | Remove existing culvert and install Culvert No. 25 (18" x 30') as disconnect. |
| | 3+60 | Live stream. Remove existing culvert and install Culvert No. 26 (30" x 30'). |
| | 9+75 | Install Culvert No. 27 (18" x 30') as disconnect. |
| | 20+95 | Existing culvert. |
| | 21+90 | Live stream. Existing culvert. |
| | 22+50 | Install Culvert No. 28 (18" x 30') as disconnect. |
| | 30+35 | Live stream. Existing culvert. |
| | 35+00 | Point N. End road improvement. |
| O to P | 0+00 | Point O. (Ingersoll Road) Begin road improvement; crown road, clean or construct ditches on both sides of the road. |
| | 4+10 | Remove existing culvert and install Culvert No. 29 (18" x 30') as cross drain. |
| | 4+40 | Gate. |
| | 6+00 | Live stream. Install Culvert No. 30 (18" x 30'). |
| | 7+60 | Live stream. Remove existing culvert and install Culvert No. 31 (36" x 30'). |
| | 8+00 | Construct two settling ponds in ditch lines on both sides of the road. |
| | 22+75 | Replace existing culvert and install Culvert No. 32 (18" x 30') as cross drain. Construct ditchout at outlet. |
| | 25+85 | Property line. |
| | 32+00 | Construct two settling ponds in ditch lines on both sides of the road. |
| | 32+90 | Live stream. Remove existing culvert and install Culvert No. 33 (30" x 50'). Place 24cy of fill armor around inlet and 24cy of fill armor around outlet of culvert. |
| | 33+45 | Construct two settling ponds in ditch line on each side of the road. |
| | 34+40 | Remove all timber within the Right-of-Way boundary and begin corner improvement to straighten road, as directed by STATE. |
| | 35+00 | Remove existing culvert, backfill with existing surfacing from V5 to V6. |
| | 35+10 | Point V5 on right. |
| | 35+85 | End corner improvement. |
| | 38+15 | Point P. End road improvement. |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS (Cont.)

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| Q to R | 0+00 | Point Q. Begin road improvement; crown road, clean or construct ditches. |
| | 1+05 | Point S on left. |
| | 4+35 | Construct two settling ponds in ditch line. |
| | 5+20 | Existing culvert, construct ditchout at outlet. |
| | 5+70 | Construct two settling ponds in ditch lines on each side of the road. |
| | 9+75 | Existing culvert, install marker. |
| | 12+70 | Begin ditch construction to drain into Culvert No. 36. |
| | 13+40 | Live stream. Remove existing culvert and install Culvert No. 36 (24" x 30') in lowest spot. |
| | 14+00 | End ditch construction to drain into culvert. |
| | 14+20 | Construct two settling ponds in ditch lines on each side of the road. |
| | 16+40 | Existing culvert, install marker. Construct ditchout to drain at outlet. |
| | 22+30 | Install Culvert No. 37 (18" x 30') as cross drain. |
| | 23+50 | Spur to right. |
| | 27+40 | Install Culvert No. 38 (18" x 30') as cross drain. |
| | 36+55 | Install Culvert No. 39 (18" x 30') as cross drain. |
| | 42+45 | Spur to right. |
| | 48+80 | Install Culvert No. 40 (18" x 30') as cross drain. |
| | 53+60 | Construct ditchouts on both sides of the road. |
| | 60+45 | Construct ditchouts on both sides of the road. |
| | 71+90 | Spur to right. |
| | 72+50 | Existing culvert, install marker. |
| | 81+70 | Construct ditch to drain past landing. |
| | 82+15 | Point R. End road improvement, improve landing. |

EXHIBIT D
END-HAUL REQUIREMENTS

| POINT TO POINT | STA. TO STA. | CONTAINMENT - SIDECAST | WASTE AREA LOCATION | WASTE AREA TREATMENT |
|----------------|----------------|---------------------------|------------------------|-------------------------|
| A to B | 0+00 to 33+75 | 1 | 1 | 1, 2 & 3 |
| B to C | 0+00 to 134+05 | 1 | 1 | 1, 2 & 3 |
| H to I | 0+00 to 24+60 | 1 | 1 | 1, 2 & 3 |
| M to N | 0+00 to 35+00 | 1 | 1 | 1, 2 & 3 |

End-Haul Areas General Requirements

Sidecast includes any road generated excess excavation material which is not essential as part of the road prism, is not compacted, and is below the roadway. Material shall not be sidecast unless specified above.

Containment

Full: No excavated material remains below the road.

Any amount of material exceeding the containment requirements shall be removed by whatever means necessary and end-hauled to a designated waste area.

Waste Area Location

As shown on Exhibit A.

Waste Area Treatment

- (1) Deposit at waste area, spread evenly, compact, and provide adequate drainage.
- (2) Pile woody debris separate from other waste material.
- (3) Mulch and seed all waste areas in accordance with Exhibit I.

EXHIBIT D

ROAD SURFACING

| ROAD SEGMENT: A to B | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
|-------------------------------|-----------------------|---------------------------|------------------------------|--------------------|----|----------------|--------|-------------------------|
| Application | Rock Size and Type | Location | Depth of Rock (inches) | A to B | | 0+00 to 33+75 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Surfacing Rock | 1½"-0" | A to B | 8 | Station | 42 | Stations | 33.75 | 1,418 |
| Turnouts | 1½"-0" | 5+30 & 13+75 | 8 | Turnout | 24 | Turnouts | 2 | 48 |
| Junctions | 1½"-0" | Point A | 8 | Junction | 48 | Junctions | 1 | 48 |
| Culvert Bedding & Backfill | 1½"-0" | Culvert Nos. 1 & 2 | Varies | Culvert | 20 | Culverts | 2 | 40 |
| Blockage Material | 36" - 24" | 28+40 | - | Load | 5 | Loads | 4 | 20 |
| Total Rock for Road Segment: | | | A to B | | | | | 1,574 |
| ROAD SEGMENT: B to C | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
| Application | Rock Size and Type | Location | Depth of Rock (inches) | B to C | | 0+00 to 134+05 | | |
| | | | | Volume (CY) Per | | Number Of | | |
| Surfacing Rock | 1½"-0" | B to C | 6 | Station | 31 | Stations | 134.05 | 4,156 |
| Surfacing Rock | 1½"-0" | Culvert No. 15 | 6 | Culvert | 36 | Culverts | 1 | 36 |
| Base Rock | Jaw-Run | Culvert No. 15 | 6 | Culvert | 36 | Culverts | 1 | 36 |
| Turnouts | 1½"-0" | B to C | 6 | Turnout | 14 | Turnouts | 10 | 140 |
| Junctions | 1½"-0" | 117+20 | 6 | Junction | 36 | Junctions | 1 | 36 |
| Junctions | 1½"-0" | Point B & 14+20 | 6 | Junction | 12 | Junctions | 2 | 24 |
| Culvert Bedding & Backfill | 1½"-0" | Culvert Nos. 3-14 & 16 | Varies | Culvert | 20 | Culverts | 12 | 240 |
| Culvert Bedding | 1½"-0" | Culvert No. 15 | Varies | Culvert | 50 | Culverts | 1 | 50 |
| Culvert Seeding | 18" Select | Culvert No. 15 | - | Culvert | 24 | Culverts | 1 | 24 |
| Fill Armor | 36" - 24" | Culvert No. 15 | Varies | Fill Slope | 36 | Fill Slopes | 2 | 72 |
| Curve Widening | 1½"-0" | 92+00 – 94+00 | 6 | Station | 15 | Stations | 2 | 30 |
| Total Rock for Road Segment: | | | B to C | | | | | 4,844 |
| ROAD SEGMENT: C to D | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
| Application | Rock Size and Type | Location | Depth of Rock (inches) | C to D | | 0+00 to 56+00 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Surfacing Rock | 1½"-0" | C to D | 6 | Station | 31 | Stations | 56 | 1,736 |
| Turnouts | 1½"-0" | C to D | 6 | Turnout | 7 | Turnouts | 14 | 98 |
| Junctions | 1½"-0" | Point A | 6 | Junction | 12 | Junctions | 1 | 12 |
| Junctions | 1½"-0" | Points C & D | 6 | Junction | 24 | Junctions | 2 | 48 |
| Total Rock for Road Segment: | | | C to D | | | | | 1,894 |
| ROAD SEGMENT: H to I | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
| Application | Rock Size and Type | Location | Depth of Rock (inches) | H to I | | 0+00 to 24+60 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Spot Rock | 1½"-0" | H to I | Varies | | | | | 250 |
| Junctions | 1½"-0" | Point J | Varies | Junction | 24 | Junctions | 1 | 24 |
| Turnarounds | 1½"-0" | Point K | 8 | TA | 24 | TAs | 1 | 24 |
| Culvert Bedding & Backfill | 1½"-0" | Culvert Nos. 22- 24 | Varies | Culvert | 20 | Culverts | 3 | 60 |
| Total Rock for Road Segment: | | | H to I | | | | | 358 |

EXHIBIT D
ROAD SURFACING

| ROAD SEGMENT: L | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
|---------------------------------|-----------------------|-------------------------|------------------------------|--------------------|----|---------------|-------|-------------------------|
| Application | Rock Size and Type | Location | Depth of Rock (inches) | Point L | | | | |
| | | | | Volume (CY) Per | | Number of | | |
| Energy Dissipator | 36"-24" | Point L | Varies | Dissipator | 48 | Dissipators | 1 | 48 |
| Total Rock for Road Segment: | | | Point L | | | | | 48 |
| ROAD SEGMENT: M to N | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
| Application | Rock Size and Type | Location | Depth of Rock (inches) | M to N | | 0+00 to 35+00 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Surfacing Rock | 1½"-0" | 20+75 to 22+00 | 6 | Station | 31 | Stations | 1.25 | 39 |
| Culvert Bedding & Backfill | 1½"-0" | Culvert Nos. 25 - 28 | Varies | Culvert | 20 | Culverts | 4 | 80 |
| Total Rock for Road Segment: | | | M to N | | | | | 119 |
| ROAD SEGMENT: O to P | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
| Application | Rock Size and Type | Location | Depth of Rock (inches) | O to P | | 0+00 to 38+15 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Surfacing Rock | 1½"-0" | O to P | 8 | Station | 42 | Stations | 38.15 | 1,602 |
| Base Rock | Jaw-Run | 34+40 to 35+85 | 8 | Station | 42 | Stations | 1.45 | 61 |
| Turnouts | 1½"-0" | O to P | 8 | Turnout | 14 | Turnouts | 5 | 70 |
| Junctions | 1½"-0" | Point O | Varies | Junction | 24 | Junctions | 1 | 24 |
| Culvert Bedding & Backfill | 1½"-0" | Culvert Nos. 29- 33 | Varies | Culvert | 20 | Culverts | 6 | 120 |
| Fill Armor | 36"-24" | Culvert No. 33 | Varies | Fill Slope | 24 | Fill Slopes | 2 | 48 |
| Total Rock for Road Segment: | | | O to P | | | | | 1,925 |
| ROAD SEGMENT: P to Q | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
| Application | Rock Size and Type | Location | Depth of Rock (inches) | P to Q | | 0+00 to 9+50 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Surfacing Rock | 1½"-0" | P to Q | 6 | Station | 31 | Stations | 9.5 | 295 |
| Base Rock | Jaw-Run | P to Q | 6 | Station | 31 | Stations | 9.5 | 295 |
| Culvert Bedding and Backfill | 1½"-0" | Culvert No. 34 | Varies | Culvert | 30 | Culverts | 1 | 30 |
| Culvert Bedding and Backfill | 1½"-0" | Culvert No. 35 | Varies | Culvert | 20 | Culverts | 1 | 20 |
| Subgrade Reinforcement | Jaw-Run | 0+50 to 2+00 | 10 | Station | 53 | Stations | 1.5 | 80 |
| Fill Armor | 36"-24" | Culvert No. 34 | Varies | Fill Slope | 24 | Fill Slopes | 2 | 48 |
| Total Rock for Road Segment: | | | P to Q | | | | | 768 |

EXHIBIT D
ROAD SURFACING

| ROAD SEGMENT: Q to R | | | | POINT TO POINT | | Sta. to Sta. | | TOTAL VOLUME (CY) |
|-------------------------------|-----------------------|-------------------------|------------------------------|--------------------|----|---------------|---|-------------------------|
| Application | Rock Size and Type | Location | Depth of Rock (inches) | Q to R | | 0+00 to 82+15 | | |
| | | | | Volume (CY) Per | | Number of | | |
| Spot Rock | 1½"-0" | Q to R | Varies | | | | | 500 |
| Culvert Bedding & Backfill | 1½"-0" | Culvert Nos. 36 - 40 | Varies | Culvert | 20 | Culverts | 5 | 100 |
| Total Rock for Road Segment: | | | Q to R | | | | | 600 |

| ROCK TOTALS (CY) | 36"-24" | 18" Select | Jaw-Run | 1½"-0" |
|------------------|---------|------------|---------|--------|
| | 236 | 24 | 472 | 11,398 |

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

EXHIBIT D

ROCK ACCOUNTABILITY

PURCHASER shall obtain subgrade approval from STATE prior to rocking. Rocking shall be limited to periods when weather conditions are acceptable to STATE and when sediment will not enter streams. Additional surfacing needed because of construction season or construction practice is not included in the preceding ROAD SURFACING table, and shall be furnished at PURCHASER expense.

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

Depth Measurement. Rock shall be spread and compacted according to the depths specified in Exhibit D. 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. The depth of compacted aggregates shall not vary more than 1 inch from the depth specified in the "Road Surfacing" table in Exhibit D. The average depth for each road segment shall be the specified depth or greater. If additional rock is required because of insufficient depth, the locations and volumes to be added shall be determined by STATE.

EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

Moisture Content: Compaction must take place when moisture content of the materials being compacted is favorable for effective compaction as determined by STATE.

Compaction Pass: A pass is defined as traveling a road section forward and then backward over that same section.

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 the surface is smooth and hard and visible deformation ceases. At least 3 passes shall be made over the entire width and length of the road. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

Subgrade shall be crowned or outsloped at 4 to 6 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

| ROAD SEGMENT | COMPACTION EQUIPMENT OPTIONS |
|--|------------------------------|
| All road segments. | 1 |
| All road segments that require subgrade reinforcement rock | 3 or a combination of 1 & 4 |

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. At least 3 passes shall be made over the entire width and length of each layer.

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 & 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 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 until the surface is smooth and hard and visible deformation ceases. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

Rock shall be compacted and processed during the same project period it is spread, unless otherwise approved in writing by STATE.

Rock shall be crowned at 4 to 6 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

| ROAD SEGMENT | COMPACTION EQUIPMENT OPTIONS |
|---|------------------------------|
| All road segments requiring crushed rock. | 1 |

EXHIBIT D

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. Vibratory Hand-Operated or Backhoe-Mounted Tamper. Vibratory hand-held or hydraulic tampers shall be used for compaction of backfill materials around culverts. The tamper shoe dimensions shall be a minimum of 10" X 13" and capable of a centrifugal force of 2,250 pounds.
3. Vibratory Grid Compactors. The roller shall have a grid surface and have an operating weight of 32,000 pounds or more. The rock shall be worked with a grader weighing at least 20,000 pounds during the grid rolling process. All rock shall come in contact with the vibratory grid compactor.
4. Dozer. A dozer/track-type tractor weighing a minimum of 82,000 pounds shall be operated so that the entire surface comes in contact with the tracks.

EXHIBIT E

CULVERT SPECIFICATIONS

All culvert materials shall be furnished and installed by PURCHASER, unless otherwise specified in the Contract.

Culverts Nos. 17 – 20 and Culvert No. 40, may be metal or polyethylene, new or used condition acceptable to STATE.

Culverts shall be constructed of corrugated double-walled polyethylene or corrugated aluminized (Type 2) steel.

Polyethylene culverts shall be double-walled and meet the requirements of AASHTO M-294-06, Type S Culvert.

Aluminized (Type 2) steel culverts shall meet the requirements of AASHTO M-36-03¹.

Polyethylene culverts shall not be used where required culvert diameter is over 36 inches.

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

Culverts shall be located according to the alignment and grade as shown on the Plan and Profile, and/or as staked in the field, or as specified in special instructions.

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

Cross Drain Culverts

Cross drain culverts on road grades in excess of 3 percent shall be skewed at least 30 degrees from perpendicular to the road centerline, except that cross drain culverts at the low point of dips in roads shall not be skewed. Cross drains shall be skewed to fit the required culvert length to the road prism.

Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3 percent or greater than 10 percent.

Disconnect Culverts

The culvert inlet shall be located as close to the channel that it is disconnecting, while the culvert outlet shall be located as far from the channel as possible; discharge culvert outflow on the forest floor, allowing for filtration before the water enters the disconnected channel.

The foundation and trench walls for all culverts shall be free from logs, stumps, limbs, stones, and other objects which would dent or damage the culvert. The culvert trench shall be excavated 3 culvert diameters wide to permit compaction and working on each side of the culvert. Tamping shall be done in 6-inch lifts, 1 culvert diameter each side of the culvert. Bedrock shall be excavated as required to provide a uniform foundation for the full length of the culvert.

A bedding of crushed rock as specified shall be placed to provide a wide band of support and to transmit the load from above evenly over the entire length of the culvert for all live stream culverts and all culverts on road improvement segments.

Backfill shall consist of crushed rock or rock crusher reject, on improvement segments and crushed rock, rock crusher reject, or job-excavated soil free of stumps, limbs, rocks, or other objects which would damage the culvert on new construction segments.

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

EXHIBIT E

CULVERT SPECIFICATIONS

Minimum height of cover over top of culvert to subgrade when road is to be rocked shall be as follows: 12" for culverts 18" to 36" and 18" for culverts 42" to 96". Minimum height of cover on dirt spurs shall be 18". Minimum vertical cover for other designs shall be as specified by STATE.

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

The ends of each culvert shall be free of logs and debris which would restrict the free flow of water.

The intake end of relief culverts shall be provided with a sediment catching basin 3 feet in diameter at the bottom. The outlet end of any culvert which would allow water to erode embankment soil shall be provided with an energy dissipator, half round, or other approved slope protection device. Construct lead-off ditches away from culvert outlets where the slope gradients restrict the free flow of water.

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

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for all live water culverts and culverts on improvement sections.

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

For culverts on rocked roads the intake ends in fills less than 3 feet to the top of the culvert shall be marked by driving steel posts within 6 inches of the downgrade side. Posts shall be painted with a rust-resistant paint and be a minimum of 5 feet long, with the spade driven 2 feet into the ground.

Energy Dissipators, Settling Ponds and Bio Bags shall be installed within 72 hours of culvert installation, unless otherwise approved in writing by STATE. Steel posts used with half round installation shall be painted with rust preventative paint.

A manufacturer's certification that the product was manufactured, tested, and supplied in accordance with this specification shall be furnished to STATE upon request.

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

| <u>Dia.</u> | <u>Steel Culvert</u> | <u>Thickness</u> | | <u>Band Gauges</u> | <u>Band Widths (")</u> | |
|-------------|----------------------|------------------|---------------|--------------------|------------------------|----------------|
| | <u>Gauge</u> | <u>Uncoated</u> | <u>Coated</u> | | <u>Annular</u> | <u>Helical</u> |
| 42 | 14 | (0.0747") | (0.079") | 16 | 12 | 12 |
| 73 x 55 | 12 | (0.1046") | (0.109") | 16 | 24 | 24 |

EXHIBIT E
CULVERT LIST

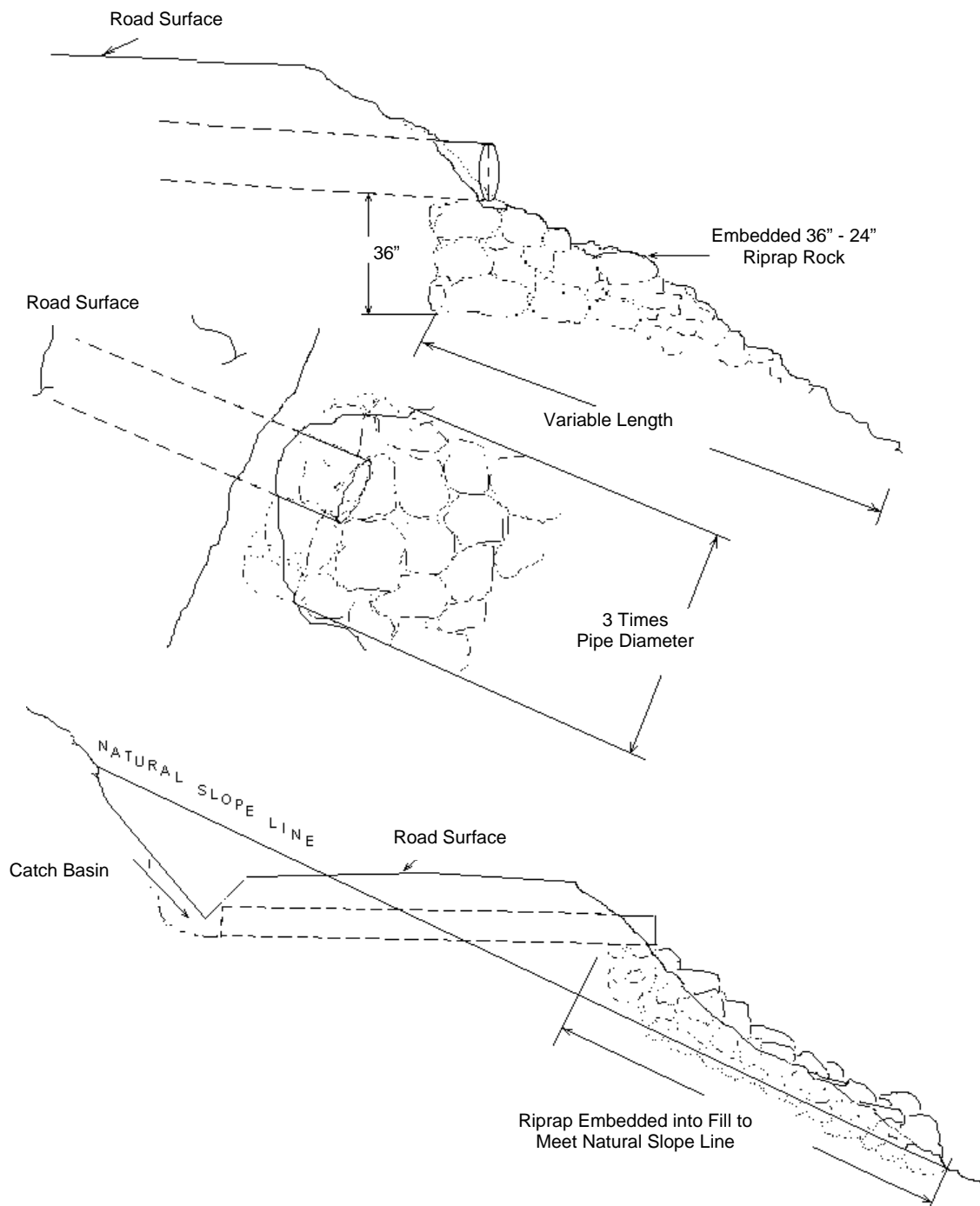
| CULVERT NO. | DIAMETER (Inches) | LENGTH (Feet) | MATERIAL TYPE | ROAD SEGMENT POINT TO POINT | STATION |
|-------------|-------------------|---------------|---|-----------------------------|---------|
| 1 | 18 | 40 | CPP | A to B | 12+30 |
| 2 | 18 | 30 | CPP | A to B | 21+50 |
| 3 | 18 | 30 | CPP | B to C | 4+50 |
| 4 | 18 | 30 | CPP | B to C | 27+55 |
| 5 | 18 | 30 | CPP | B to C | 29+25 |
| 6 | 18 | 40 | CPP | B to C | 33+20 |
| 7 | 18 | 30 | CPP | B to C | 57+45 |
| 8 | 24 | 40 | CPP | B to C | 58+10 |
| 9 | 18 | 30 | CPP | B to C | 85+20 |
| 10 | 18 | 30 | CPP | B to C | 96+35 |
| 11 | 30 | 40 | CPP | B to C | 96+90 |
| 12 | 18 | 40 | CPP | B to C | 97+20 |
| 13 | 18 | 30 | CPP | B to C | 98+00 |
| 14 | 18 | 30 | CPP | B to C | 100+55 |
| 15 | 73 x 55 | 75 | ACSP | B to C | 122+40 |
| 16 | 18 | 30 | CPP | B to C | 123+65 |
| 17 | 18 | 30 | New or Acceptable Used Condition, ACSP or CPP | E to F | 0+00 |
| 18 | 18 | 30 | New or Acceptable Used Condition, ACSP or CPP | E to F | 5+50 |
| 19 | 18 | 30 | New or Acceptable Used Condition, ACSP or CPP | E to F | 16+30 |
| 20 | 24 | 40 | New or Acceptable Used Condition, ACSP or CPP | E to F | 23+45 |
| 21 | 18 | 40 | CPP | H to I | 0+25 |
| 22 | 24 | 30 | CPP | H to I | 7+80 |
| 23 | 18 | 30 | CPP | H to I | 22+75 |
| 24 | 24 | 40 | CPP | H to I | 23+55 |
| 25 | 18 | 30 | CPP | M to N | 0+55 |
| 26 | 30 | 30 | CPP | M to N | 3+60 |

EXHIBIT E
CULVERT LIST

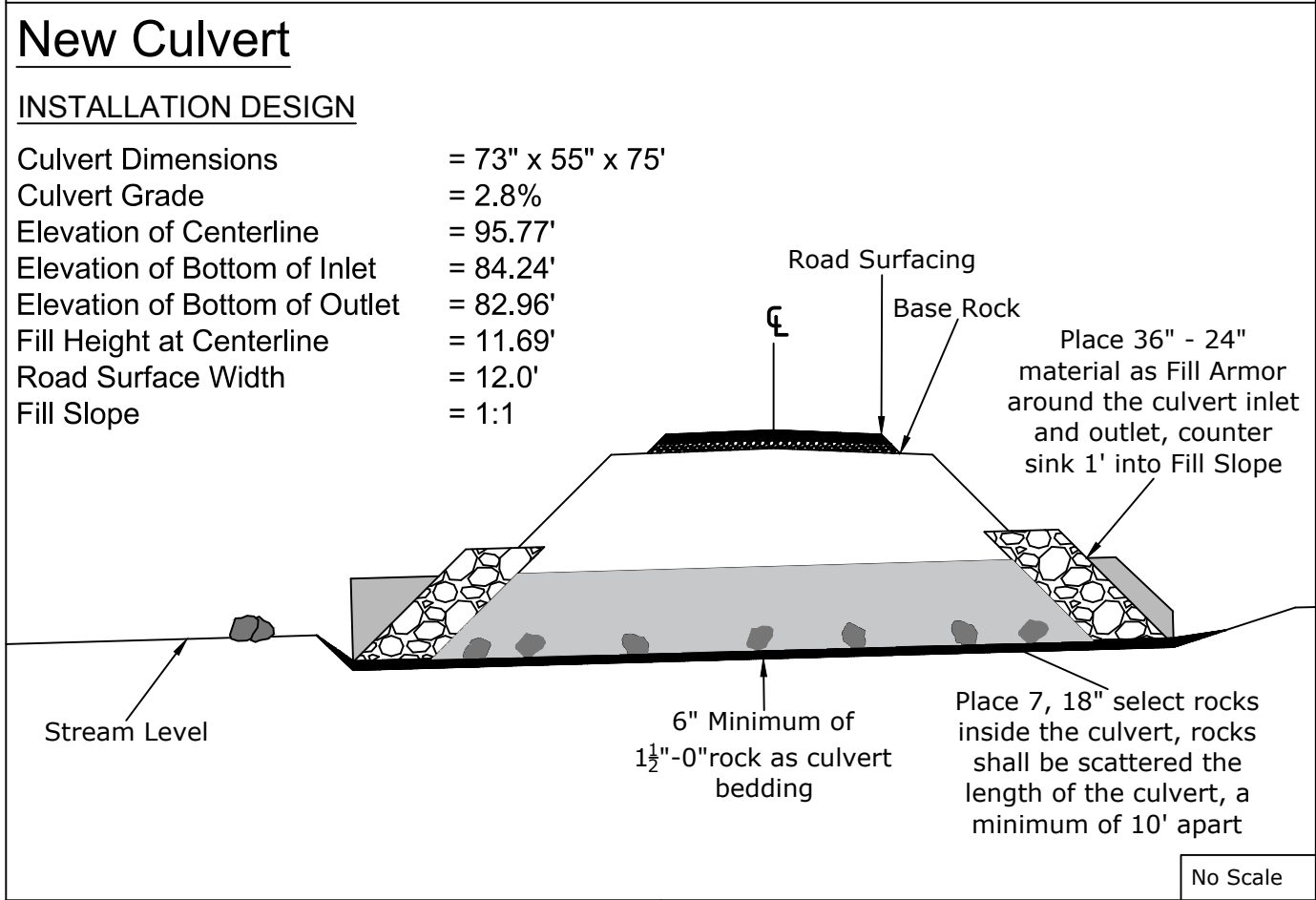
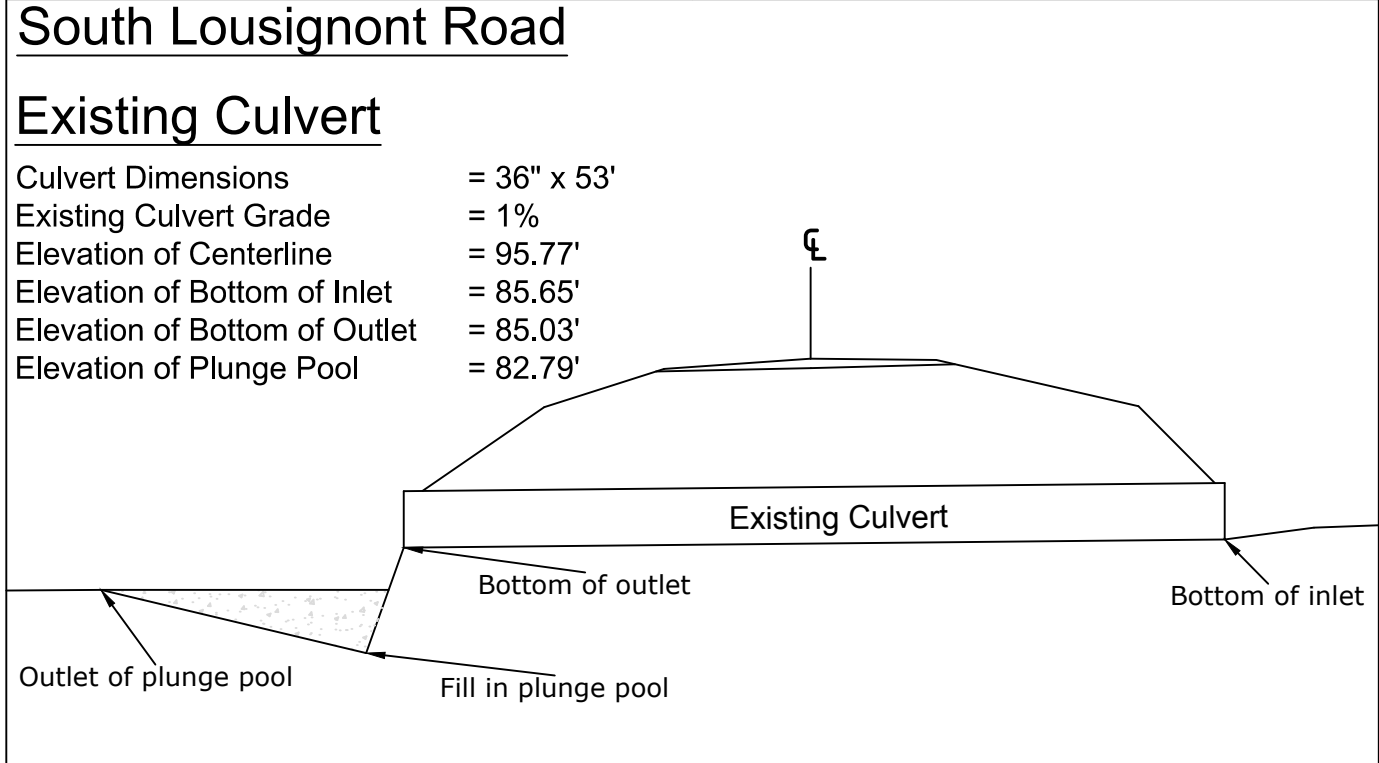
| CULVERT NO. | DIAMETER (Inches) | LENGTH (Feet) | MATERIAL TYPE | ROAD SEGMENT POINT TO POINT | STATION |
|-------------|-------------------|---------------|---|-----------------------------|---------|
| 27 | 18 | 30 | CPP | M to N | 9+75 |
| 28 | 18 | 30 | CPP | M to N | 22+50 |
| 29 | 18 | 30 | CPP | O to P | 4+10 |
| 30 | 18 | 30 | CPP | O to P | 6+00 |
| 31 | 36 | 30 | CPP | O to P | 7+60 |
| 32 | 18 | 30 | CPP | O to P | 22+75 |
| 33 | 30 | 50 | CPP | O to P | 32+90 |
| 34 | 42 | 40 | ACSP | P to Q | 1+90 |
| 35 | 18 | 30 | CPP | P to Q | 8+75 |
| 36 | 24 | 30 | CPP | Q to R | 13+40 |
| 37 | 18 | 30 | CPP | Q to R | 22+30 |
| 38 | 18 | 30 | CPP | Q to R | 27+40 |
| 39 | 18 | 30 | CPP | Q to R | 36+55 |
| 40 | 18 | 30 | CPP | Q to R | 48+80 |
| 41 | 30 | 30 | New or Acceptable Used Condition, ACSP or CPP | U to V | 9+80 |

ACSP = Aluminized, CPP = Polyethylene

EXHIBIT E
TYPICAL EMBEDDED ENERGY DISSIPATOR

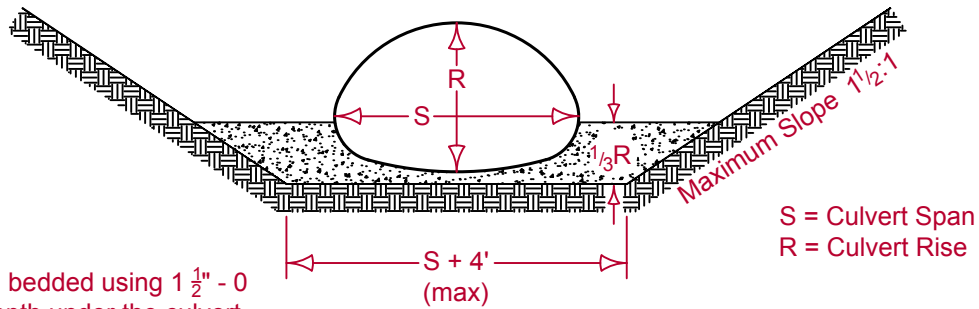


| | | | | | | |
|--|--------------------------------------|-----------|-------------------------------|----------|-----------------------|--------------------------------------|
| Catch and Release, No. 341-16-45 | | Exhibit E | | | | |
| | | Plan View | | | | |
| <div><div><div>South Lousignont Road Culvert No. 15</div><div><div>RP1</div><div>○</div><div>RP #1 Elevation = 100'</div><div>HD from Center of New Inlet to RP1 = 48.14'</div><div>AZI from Center of New Inlet to RP1 = 25°</div><div>HD from Center of New Outlet to RP1 = 63.22'</div><div>AZI from Center of New Outlet to RP1 = 77°</div></div></div><div><div><div>RP #2 Elevation = 87.08'</div><div>HD from Center of New Inlet to RP2 = 57.08'</div><div>AZI from Center of New Inlet to RP2 = 54°</div><div>HD from Center of New Outlet to RP2 = 24.38'</div><div>AZI from Center of New Outlet to RP2 = 13°</div></div><div><div>○ RP2</div><div>Place 7, 18" select rocks in front of the outlet, as directed by STATE</div></div></div></div> <tr><td>Oregon Department of Forestry</td><td>No Scale</td></tr> <tr><td>Forest Grove District</td><td>T3N, R5W, Sec. 20, Washington County</td></tr> | | | Oregon Department of Forestry | No Scale | Forest Grove District | T3N, R5W, Sec. 20, Washington County |
| Oregon Department of Forestry | No Scale | | | | | |
| Forest Grove District | T3N, R5W, Sec. 20, Washington County | | | | | |



BEDDING DETAILS

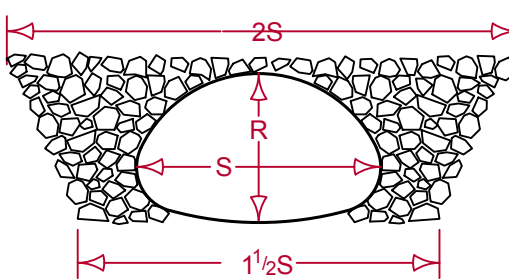
Culverts shall be bedded using $1\frac{1}{2}$ " - 0 crushed rock. Depth under the culvert may vary, but shall be a minimum of 6". Rock shall be machine compacted.



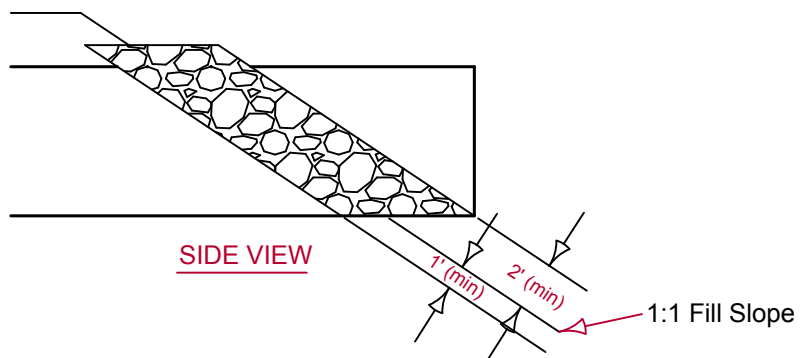
END VIEW

RIP RAP DETAILS

Culverts shall be armored at both the inlet and outlet by machine placing 36" - 24" rip rap as shown.



END VIEW



SIDE VIEW

No Scale

EXHIBIT F

ROCK QUARRY DEVELOPMENT AND USE

1. PURCHASER shall prepare a written development plan for the quarry area. The plan shall be submitted to STATE for approval prior to conducting any operation in quarry area. The plan shall include, but not be limited to:
 - (a) Location of benches and roads to benches.
 - (b) Disposal site for woody debris, overburden and reject material.
 - (c) Time lines for rock quarry use.
 - (d) Erosion Control measures.
2. PURCHASER shall schedule and coordinate quarry and stockpile usage with other existing or planned activity requiring quarry or stockpile usage. PURCHASER shall notify STATE 5 days prior to the start of quarry development activities.
3. The quarry site shall be left in a condition free from overburden and debris. 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.
4. All existing shot rock shall be utilized for crushing or screened and piled away from the quarry face as directed by STATE.
5. All excess shot rock remaining after crushing shall be screened and piled away from the quarry face as directed by STATE.
6. All overburden and reject material shall be hauled to the designated waste area as directed by STATE.
7. PURCHASER shall conduct the operations relative to the disposal of waste material in such manner that sediment, rock, or debris shall not be washed, conveyed, or otherwise deposited in any stream.
8. 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 maintain 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.
9. Benches shall be maintained/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 percent or less. There shall be a minimum of one bench with an access road to it. Said bench shall be easily accessible with tractors.
10. Quarry face shall be developed in a uniform manner. All quarry backslopes shall be left in a stable condition.
11. Oversized material that is produced shall be piled in a designated area adjacent to the pit. It shall not be wasted.
12. 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.
13. 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.
14. Apply seed and mulch to the waste area, as specified in Exhibit J.

EXHIBIT F

CRUSHED ROCK SPECIFICATIONS

Materials. The material shall be fragments of rock crushed to the required size. The material shall be free from vegetation and lumps of clay.

STATE requires screening and/or rejecting of materials utilized for production of crushed rock for the purpose of removing excess fine material. Excess fines are present, when greater than 5 percent of a total rock sample weight, passes a #200 sieve.

Rock crushing shall be limited to periods when weather conditions are acceptable to STATE.

Quality and Grading Requirements. The base material shall be rock. River gravel shall not be used. Crushed rock shall meet the grading requirements that follow:

Rock strength: for rock not produced from STATE quarries, the material from which base material is produced or manufactured shall meet the following test requirement for Aggregate Hardness - Test Method AASHTO T 96 30 percent Maximum.

For the purpose of crushing rock specified under the projects in Section 2610, "Project Work," PURCHASER shall utilize a three-stage rock crusher, or equivalent, unless otherwise approved by STATE.

The rock crusher shall be calibrated to produce rock as specified in this exhibit. Prior to the commencement of production crushing, PURCHASER shall sample, test, and provide rock test results meeting STATE specifications. STATE may then sample and test crushed rock for approval to proceed. PURCHASER shall take one sample of each 2,000 cubic yards of crushed rock material produced thereafter, using approved AASHTO sampling procedures. PURCHASER shall submit samples to a certified laboratory or shall perform testing for gradation requirements using AASHTO T 11 and AASHTO T 27 testing procedures. Prior to testing, each sample shall be split, making one-half of the sample, with proper identification, available for testing by STATE. Each sample and the results of PURCHASER testing shall be made available to STATE within 24 hours of sampling. Any rock crushed prior to STATE approval to proceed shall not be credited to the required rock quantity. Any subsequent rock tests not meeting STATE specifications shall be reason for rejection of that portion of crushed rock produced after that test and shall not be credited to the required rock quantity. STATE may sample the crushed rock at any time during the operation. Results of STATE's tests shall prevail over all other test results.

EXHIBIT F

DURABLE CRUSHED ROCK SPECIFICATIONS

Grading Requirements

| | | | |
|-------------------|---------|--------------|---------|
| <u>For 1½"-0"</u> | Passing | 2" sieve | 100% |
| | Passing | 1½" sieve | 90-100% |
| | Passing | ¾" sieve | 60-90% |
| | Passing | ¼" sieve | 30-50% |
| | Passing | No. 10 sieve | 15-30% |
| | Passing | No. 40 sieve | 7-15% |

JAW-RUN & RIPRAP ROCK SPECIFICATIONS

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

Material shall be well graded, free of organic material and shall not have excessive fine materials.

For 18" Select The material shall measure a minimum of 18 inches, measured in one dimension. Material shall be clean and approved by STATE.

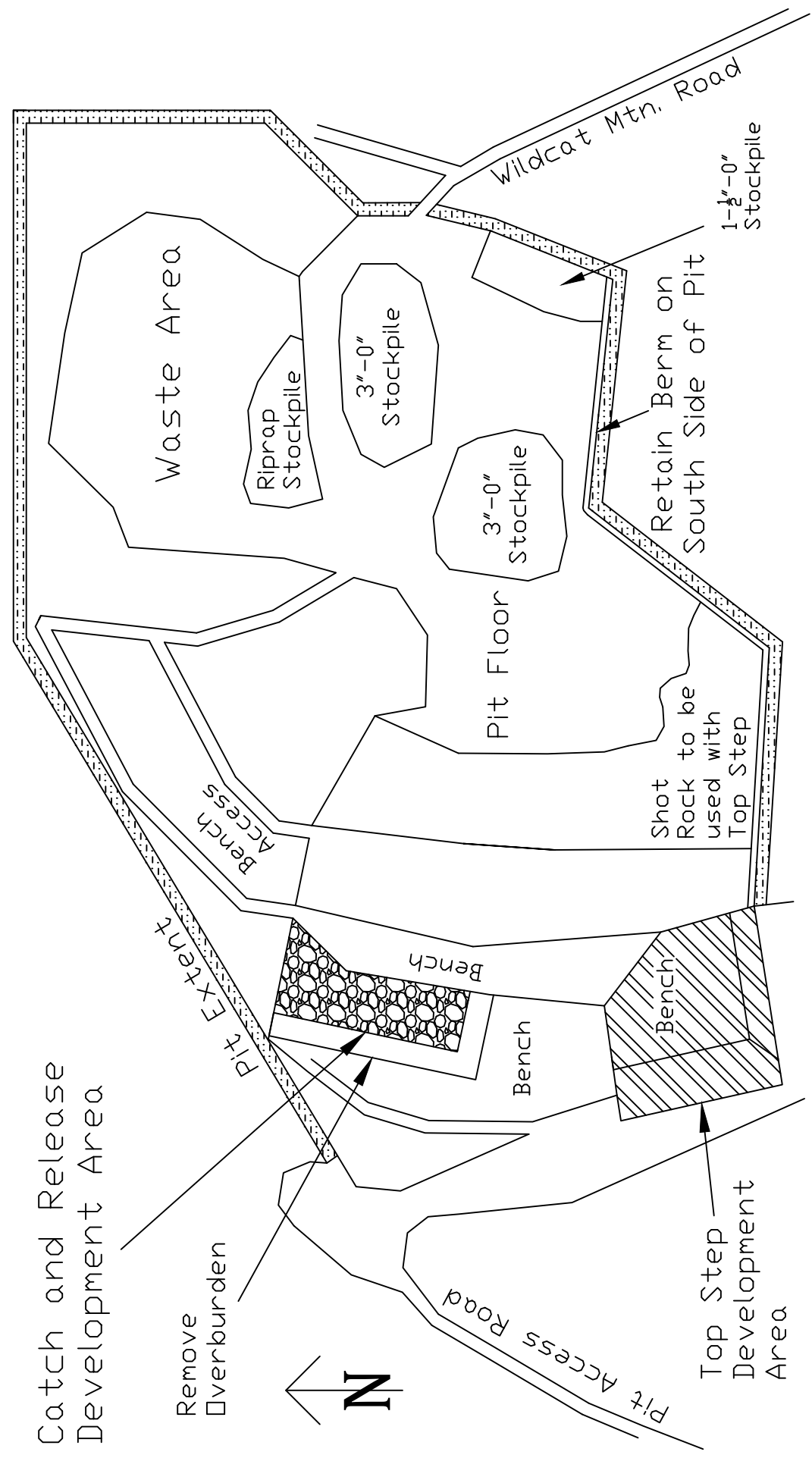
For 36"- 24" Riprap A minimum of 50 percent of the material shall measure a minimum of 36 inches, measured in one dimension. Material shall be clean, well graded, and free of 2"-0" fines.

Control of gradation shall be by visual inspection by STATE.

Catch and Release 341-16-45

Exhibit F
Pit Development Plan

Wildcat Mtn. Pit

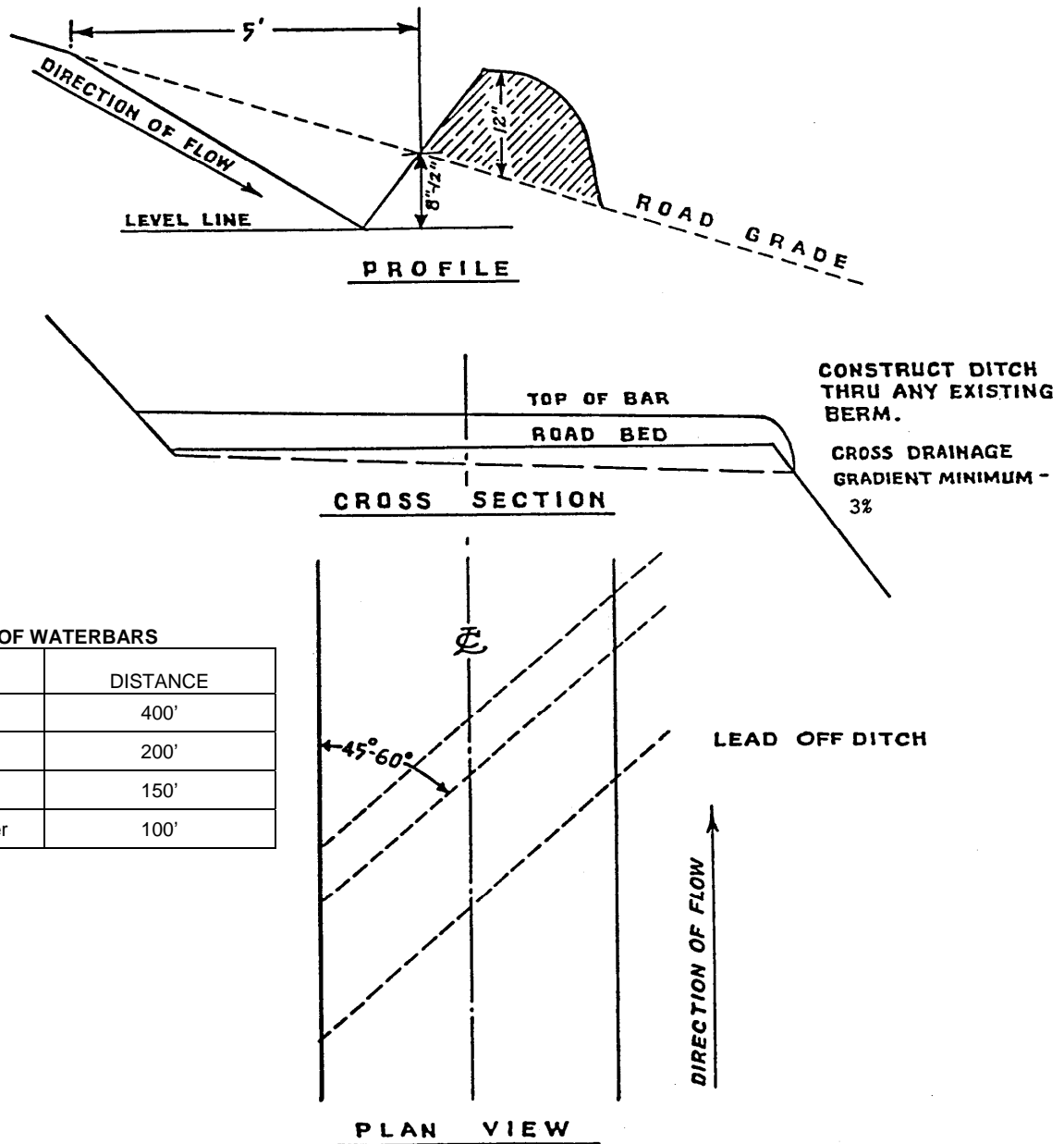


Oregon Department Forestry
Forest Grove District

No Scale

T2N R5W Sec.13 SE1/4 NE1/4, Washington County

EXHIBIT G
WATERBAR SPECIFICATIONS



SPACING OF WATERBARS

| ROAD GRADE | DISTANCE |
|-------------------|----------|
| $\leq 5\%$ | 400' |
| 6-10% | 200' |
| 11-15% | 150' |
| 16-20% or greater | 100' |

WATERBAR SPECIFICATIONS
FOR CROSS DITCHING #298

EXHIBIT G

TANK TRAP SPECIFICATIONS

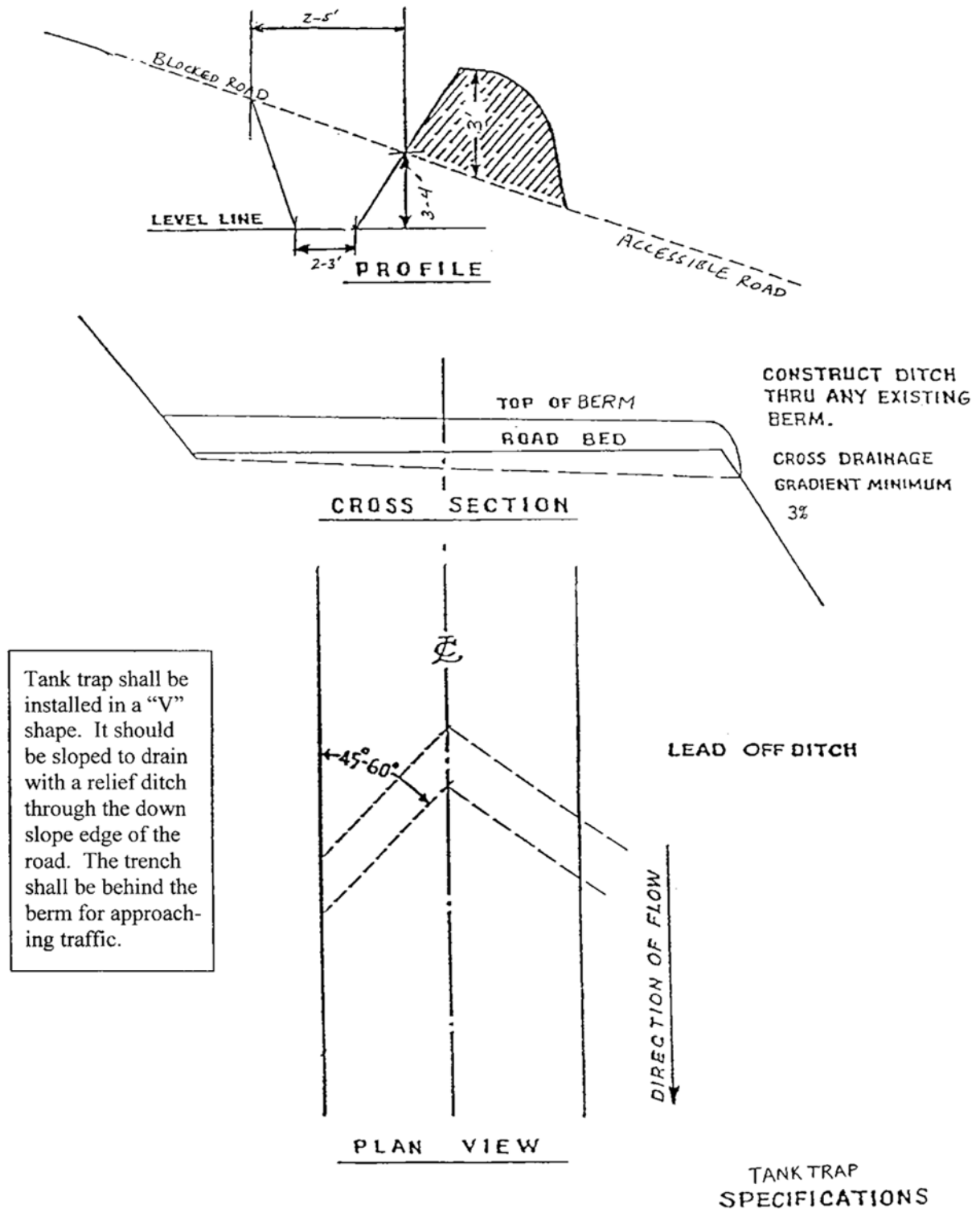


EXHIBIT H

ROAD BLOCKING SPECIFICATIONS

PURCHASER shall block the following road segment: E to F, S to T, and U to V.

Specific objectives for this project include:

- (a) Fill removal and stream channel development.
 - (b) Culvert removal.
 - (c) Construction of waterbars and tank traps.
 - (d) Blocking access.
 - (e) Minimize disturbance of existing vegetation.
-
- (1) Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off of STATE land.
 - (2) Fill Removal and Stream Channel Development. Remove fills to the natural stream course level. Stream channel shall be excavated/developed to specified widths. Developed stream banks shall be sloped at natural contours or no steeper than 1 ½:1, as directed by STATE.
 - (3) Road Blocking. Roads shall be blocked to all vehicles by constructing tank traps and using local materials such as stumps, logs, and boulders. Construct tank traps according to the specifications in Exhibit G.
 - (4) Construct Waterbars as directed by STATE. Construct waterbars according to the specifications in Exhibit G.

EXHIBIT H

ROAD BLOCKING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|---|
| <u>E to F</u> | <u>0+00</u> | <u>Point E.</u> Remove existing culvert and connect ditch line on X-Over Road. Construct a tank trap to block vehicle access. |
| | <u>5+25</u> | <u>Construct waterbar.</u> |
| | <u>5+50</u> | <u>Remove existing culvert.</u> |
| | <u>5+75</u> | <u>Construct waterbar.</u> |
| | <u>16+30</u> | <u>Remove existing culvert.</u> |
| | <u>16+55</u> | <u>Construct waterbar.</u> |
| | <u>23+45</u> | <u>Remove existing culvert.</u> |
| | <u>23+70</u> | <u>Construct waterbar.</u> |
| <u>S to T</u> | <u>0+00</u> | Point S. Remove existing culvert and connect ditch line on Ingersoll Road. Construct a tank trap to block vehicle access. Construct four waterbars on road segment according to the specifications in Exhibit G and as directed by STATE. |
| | | |
| <u>U to V</u> | <u>0+00</u> | Point U. Construct tank trap. Construct four waterbars on road segment before 9+80 according to the specifications in Exhibit G and as directed by STATE. |
| | <u>9+80</u> | Remove existing culvert and construct waterbar. |
| | <u>10+80</u> | Construct waterbar. Construct two waterbars on road segment before Point V according to the specifications in Exhibit G and as directed by STATE. |

EXHIBIT H

ROAD VACATING SPECIFICATIONS

PURCHASER shall vacate the following segments: V1 to V2, V3 to V4 and V5 to V6.

Specific objectives for this project include:

- (a) Fill removal and stream channel development.
 - (b) Culvert removal.
 - (c) Restoration of natural contours to the road prism.
 - (d) Ripping of the road surface.
 - (e) Blocking access.
 - (f) Minimize disturbance of existing vegetation.
- (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 scattered in stable locations along the vacated road segment. Timber shall not be decked.
 - (2) Fill Removal and Stream Channel Development. Remove fills to the natural stream course level. Stream channel shall be excavated/developed to specified widths. Developed stream banks shall be sloped at natural contours or no steeper than 1 ½:1, as directed by STATE.
 - (3) Culvert Removal. Remove drainage structures and culverts. Removed culverts shall be hauled to an approved refuse site off of STATE land.
 - (4) Rip Road Surface. Rip road surface to a minimum depth of 10 inches.
 - (5) Block Access. Block access to all vehicles at Point V1, V3 and V5. Access shall be blocked by constructing tank traps and using local boulders or stumps.
 - (6) Use of Excavated Materials.
 - i. Fill Excavation and Sidecast Pullback. 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 percent outsloped surface for drainage. Excavated fill material may be placed within the vacated road segment, as approved by STATE. Excavated fill material shall be compacted and shaped for drainage. Any excess material will be hauled to a designated waste area, as directed by STATE.
 - ii. Woody Debris. Shall be placed on the surface of pullback/fill material.
 - iii. Block Roads. Use excavated material from fill removals to block roads from vehicle access, as directed by STATE.
 - (7) Erosion Control. Erosion control shall be completed in a progressive manner. Grass seed and straw mulch shall be applied for every 500 feet of road vacated, prior to continuing work. All excavated material and bare soil shall utilize grass seed and straw mulch approved by STATE and in accordance with the specifications in Exhibit I. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover.

EXHIBIT H

ROAD VACATING SPECIFICATIONS

SPECIFIC INSTRUCTIONS/SPECIFICATIONS:

| <u>Segment</u> | <u>Station</u> | <u>Work Description</u> |
|----------------|----------------|--|
| V1 to V2 | 0+00 | Point V1. Begin road vacating. Remove existing culvert. Block and rip road surface. |
| | 1+00 | Point V2. End road vacating. |
| V3 to V4 | 0+00 | Point V3. Begin road vacating. Block road with debris at point 1+50. Construct ditch through spur road and rip road surface. |
| | 1+50 | Point V4. End road vacating. |
| V5 to V6 | 0+00 | Point V5. Begin road vacating. Block existing road, remove suitable surfacing and rip compacted road grade. Suitable surfacing, approved by STATE, maybe be used as subgrade reinforcement on road segment P to Q. |
| | 3+35 | Remove existing culvert and fill to the specifications in this Exhibit. Open stream channel to 5' wide minimum. Suitable fill shall be used to construct road on segment P to Q. |
| | 6+00 | Junction. Vacate road grade on right for 150' to Point Q. |
| | 6+00 | Remove existing culvert. |
| | 7+25 | Point V6. End road vacating, block road. |

EXHIBIT I

SEEDING AND MULCHING

This work shall consist of preparing seedbeds and furnishing and placing required seed, fertilizer, and straw mulch. Straw mulch shall consist of straw that is free of noxious weeds. Apply seed and fertilizer to all waste areas, and bare soils resulting from Project Nos. 1, 2, 4, 5, and 6. Apply straw mulch to all bare soils within 100' of streams resulting from Project Nos. 1, 2, 4, 5, and 6 and to all waste areas.

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. Areas of disturbed soil shall be seeded by the end of the project period in which work was started.

APPLICATION METHODS FOR SEED AND FERTILIZER

Dry Method. Mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment shall be used to apply the seed and fertilizer in the amounts and mixtures specified. Hand-operated seeding devices may be used when seed and fertilizer are applied in dry form.

APPLICATION RATES FOR SEED AND FERTILIZER

The seed mixture listed below shall be applied at 100 lbs. per acre. The seed mixture shall be comprised of the following:

| SPECIES | MIXTURE | PURE LIVE SEED | GERMINATION |
|---------------|---------|----------------|-------------|
| Annual Rye | 33% | 95% | >90% |
| Orchard Grass | 33% | 95% | >90% |
| Perennial Rye | 34% | 95% | >90% |

Fertilizer: Chemical analysis shall be 16-20-0 and shall be applied at the rate of 200 pounds per acre. Fertilizer shall not be applied within 100 feet of streams.

Mulching Period. Straw mulch shall be applied within 24 hours of spreading grass seed and fertilizer.

APPLICATION RATES FOR MULCH

Place straw mulch to a reasonably uniform thickness of 1½ to 2½ inches. This rate requires between 2 and 3 tons of dry mulch per acre.

Application Locations:

| Road Segment | Location | Road Segment | Location |
|--------------|---|--------------|---|
| A to B | Culvert Nos. 1 & 2, All ditch lines, settling ponds & Waste Areas | B to C | Culvert Nos. 8, 11 & 15, existing culverts at 86+40, 98+45, 99+35 and all Waste Areas |
| H to I | Ditch lines and Waste Areas | J to K | Existing culvert at 23+55 |
| M to N | Culvert No. 25, existing culverts at 3+60, 21+90, 30+35 and Waste Areas | O to P | Culvert Nos. 30 – 33, ditch lines, settling ponds and Waste Areas |
| P to Q | Culvert No. 34 | Q to R | Culvert No. 36 |
| V1 to V2 | Entire segment | V3 to V4 | Entire segment |
| V5 to V6 | Entire segment | - | - |

EXHIBIT J

BRIDGE DECK REPLACEMENT SPECIFICATIONS

All bridge deck materials shall be furnished and installed by the PURCHASER.

All hardware shall meet ASTM A307 and be hot-dipped galvanized.

Bolts shall be dimensions of $\frac{3}{4}$ " x 22" with hex heads. Bridge washers shall be used on all wood contacts. Bolts shall be securely fastened with nuts and lock washers.

Wood material shall be constructed of #1 or better Douglas-fir conforming to WWPA grading rules and be treated for ground contact. Treatment specifications shall be provided to STATE.

South Lousignont Bridge:

Felloe (curb) shall be 8" x 8" x 11'10", S4S and shall be placed heart-side down.

Felloe support shall be 4" x 12" x 55 $\frac{1}{2}$ " and 4" x 12" x 49 $\frac{3}{4}$ ", S4S and shall be placed heart-side down.

Impact plank shall be 4" x 12" x 13', S4S and shall be placed heart-side down.

Decking shall be 4" x 12" x 22' x 6", S4S and shall be placed heart-side down at a uniform spacing of $\frac{1}{2}$ " clear apart as shown in figure #1.

Chicken Camp Bridge:

Felloe (curb) shall be 8" x 8" x 12', 4" x 12" x 7'7", S4S and shall be placed heart-side down.

Felloe support shall be 4" x 12" x 55 $\frac{1}{2}$ " and 4" x 12" x 22 $\frac{3}{4}$ ", S4S and shall be placed heart-side down.

Impact plank shall be 4" x 12" x 13', S4S and shall be placed heart-side down.

Decking shall be 4" x 12" x 12', 4" x 12" x 8'7 $\frac{1}{2}$ ", 4" x 12" x 8' and 4" x 12" x 6'7 $\frac{1}{2}$ ", S4S and shall be placed heart-side down at a uniform spacing of $\frac{1}{2}$ " clear apart as shown in figure #1.

Decking and impact plank shall be attached at each end with two plank, galvanized 80d, spikes in pre drilled holes and one at each support or every 2' in a staggered pattern as shown in figure #1.

All cuts and drill holes shall be treated in accordance with AWPA standard M4. Applying three coats or until no more can be absorbed. Preservative shall be allowed to cure before erecting.

Preservative or treated wood shall not enter stream.

All sediment shall be cleaned off deck support beams and other components of the bridge as directed by STATE. Precaution shall be taken to minimize crushed rock and sediment from entering the stream.

Damage to existing bridge components during replacement shall be repaired or replaced at PURCHASERS expense as determined by STATE.

All removed decking and debris shall become property of the PURCHASER and be removed from STATE land in the same project period in which the replacement occurred.

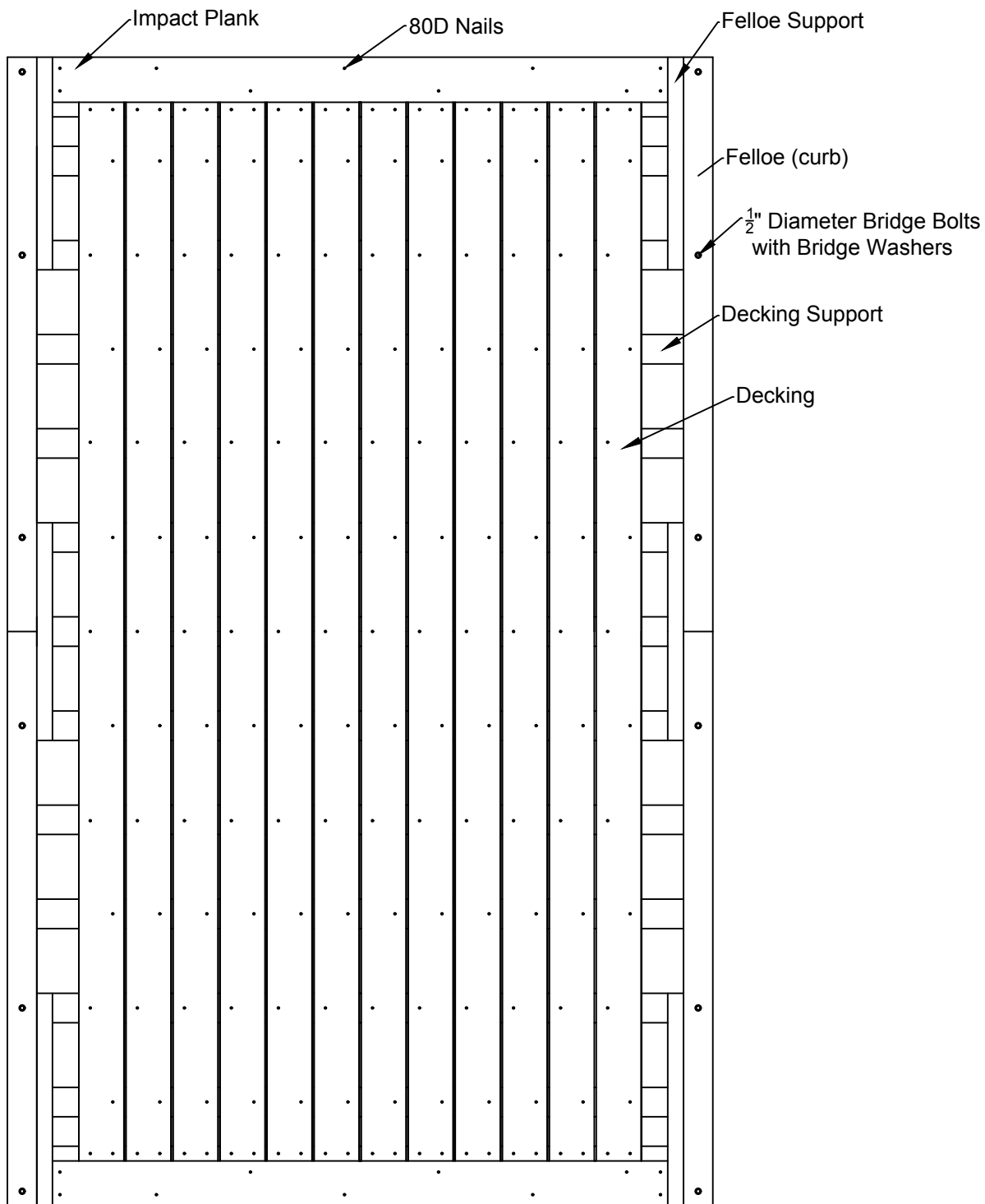
EXHIBIT J

BRIDGE DECK REPLACEMENT SPECIFICATIONS

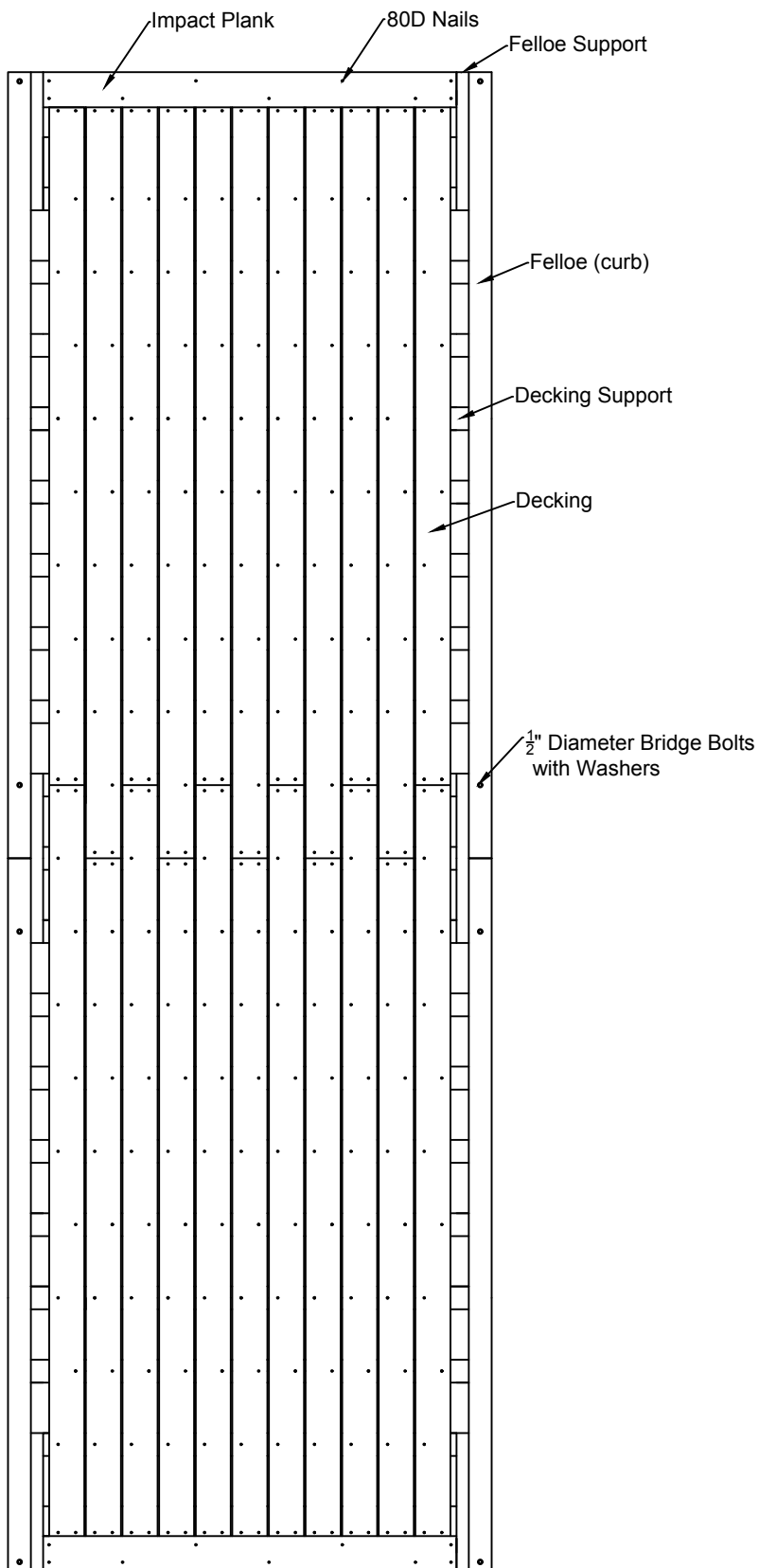
OPERATOR shall notify STATE 24 hours prior to beginning of work.

OPERATOR shall block and sign the work site, during times of operation, to insure safety to all vehicle traffic.

Operations shall provide for continual operation on the project, 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. Road shall not remain closed on weekend days or longer than 24 hours unless approved by STATE.



No Scale



No Scale

PART IV: OTHER INFORMATION

State Timber Sale Contract
No. 341-16-45
Catch and Release

WRITTEN PLAN FOR INSTREAM ACTIVITIES – CATCH and RELEASE TIMBER SALE

SALE NO. 341-16-45

PROJECT DESCRIPTION:

Installation a fish passable culvert at the following location:

Project No. 5, Section 20, T3N R5W, W.M.

The Oregon Forest Practices Act requires a written plan for operations within 100 feet of a Type F stream. This Written Plan addresses the installation of a culvert that meets current fish passage guidelines and the protection measure that will be applied to minimize impact to the streams and associated riparian areas.

PROTECTED RESOURCES:

The culvert to be installed under this Written Plan will replace a non-fish passable culvert. This will provide fish passage for an unnamed stream that is a small type F, which is a tributary to the Lousignont Creek, a large type F stream. This project site is within the Forest Practices Coast Range Region.

DESCRIPTION OF THE AREAS:

The stream's drainage area is 133 acres, or 0.21 square mile, with a mean elevation of 1040 feet. The predicted 100-year peak flow, based on Campbell's equations, is 56.3 cubic feet per second. A waterway area of 12.5 square feet is required to pass this flow. Average active channel width at normal high water is estimated to be approximately 3.9 feet.

CULVERT DESIGN STRATEGIES:

In order to provide upstream passage of juvenile fish, a countersunk pipe-arch culvert is designed. The culvert will have boulders scattered inside the pipe and placed just downstream of the outlet to slow the water and allow existing stream gravels to deposit in the culvert, creating over time a natural stream channel bottom through the culvert.

This design provides a 73" span X 55" rise X 75' length pipe-arch culvert to be installed at a 2.8% gradient. The resulting waterway area is 14.76 sq ft, sufficient to pass the 100-year peak flow. The resultant channel width through the culvert will be 6.04 feet.

PROTECTION MEASURES:

All in stream work associated with this plan will be accomplished from July 1 to August 30, annually. In water work will be limited to the minimum necessary to adequately prepare the site for installation of the structure. To minimize impact to the resource during all in water work, the stream will be pumped or diverted around the project site. Upon completion of the installation of the structure all areas of disturbed soil will be seeded and mulched within project site. The exposed fill slopes around the structure will be armored with rip rap to protect the fill from erosion and scour.

**WRITTEN PLAN
Catch and Release
Timber Sale #341-16-45**

LEGAL DESCRIPTION: Portions of Section Sections 17, 18, 19, 20, 28, 29, and 30, T3N, R5W, W.M, Washington County, Oregon, and Sections 13 and 24, T3N, R6W, W.M., Tillamook County, Oregon.

PROTECTED RESOURCE: Type F streams, including North Fork Lousignont Creek and the North Fork Lousignont Creek, flow along portions of the Timber Sale Areas, specifically the south side of Areas 2, 4, and 5. Portions of the timber sale boundary was posted 25 feet from these streams.

DESCRIPTION OF THE AREA: Slopes adjacent to these Creek range from 5% in the flood plane to approximately 80% immediately upslope. Streamside vegetation along these type F streams include second-growth Douglas-fir.

PROTECTION MEASURES: The partial cut prescription will not reduce the basal area to less than 130 square feet. Skidding operations will not be allowed from November 1 through March 31. Equipment shall not be allowed on slopes greater than 35% or operated within 50 feet of streams. Operations shall be suspended during periods of high soil moisture. Trees and snags adjacent to buffers shall be felled away from or parallel to buffer.

Prepared by: Eric Foucht 03/25/2016

Reviewed by: _____
Erik Marcy; Unit Forester Date