

# PART III: EXHIBITS

State Timber Sale Contract  
No. 341-15-26  
Parallel Universe

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.: 341-15-26

(2) Sale Name: Parallel Universe

(3) Contract Expiration Date: October 31, 2017

Project Completion Dates: \_\_\_\_\_

(4) Purchaser: \_\_\_\_\_

(6) Purchaser Representatives:

|                 |              |                            |             |
|-----------------|--------------|----------------------------|-------------|
| Projects: _____ | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Projects: _____ | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Projects: _____ | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Projects: _____ | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Logging: _____  | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Logging: _____  | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Logging: _____  | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Logging: _____  | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |

(7) State Representatives:

|                 |              |                            |             |
|-----------------|--------------|----------------------------|-------------|
| Projects: _____ | Phone: _____ | Cell/Other<br>Phone: _____ | Home: _____ |
| Logging: _____  | Phone: _____ | Cell/Other<br>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.



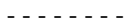
Cable Landing, with numbers for sequence.



Tractor Landing with alphabetical sequence.



Approximate setting boundary.



Spur truck roads.



Tractor yarding roads.



Temporary stream crossings.

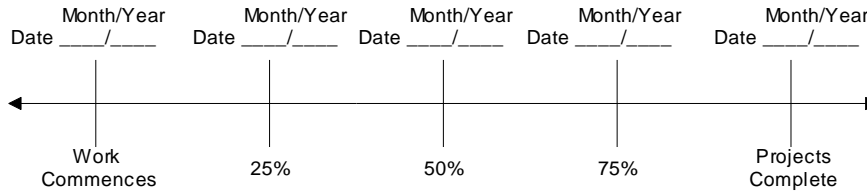
EXHIBIT B  
OPERATIONS PLAN

**Completion Timeline**

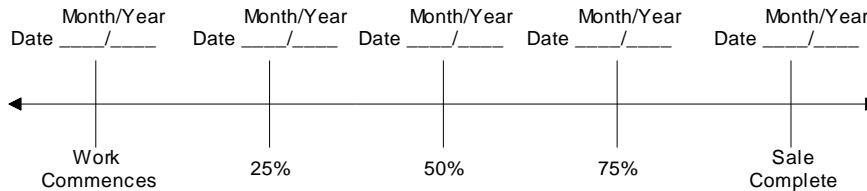
Indicate on the appropriate timeline below, the dates by which you plan to complete the work as required under this contract. The purpose of this section is to develop a plan that will ensure you complete the work as required, and meet the interim completion date(s) and contract expiration date. This 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**

**The  
Federal**



**Harvest & Other Requirements**



**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

**EXHIBIT C – SAWMILL GRADE (WESTSIDE SCALE)**

**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 Gale Creek Road  
Forest Grove, OR 97116

(4) PURCHASER: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

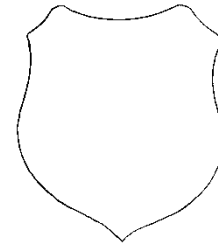
(9) SALE NAME: Parallel Universe

COUNTY: Tillamook

(10) STATE CONTRACT NUMBER: 341-15-26

(11) STATE BRAND REGISTRATION NUMBER: \_\_\_\_\_

(12) STATE BRAND INFORMATION (COMPLETE):



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

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

(13) PAINT REQUIRED: YES ☒  
COLOR: Orange

(6) WESTSIDE SCALE: YES ☒ NO ☐  
Use Region 6 actual taper rule. Logs over 40'.

(7) Weight Scale Sample ☐ ☒

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

| (8) APPROVED SCALING LOCATIONS<br>(as shown on the ODF Approved Locations web-site) | Species | Yard | Truck | Weight |
|---|---------|------|-------|--------|
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |
|   |         |      |       |        |

(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).

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](mailto:services@crls.com)

Pacific Rim Log Scaling Bureau, Inc.  
8288 28<sup>th</sup> Court North East, Lacey, WA 98516  
Phone: (360) 528-8710 Fax: (360) 528-8718  
Email: [office@prlsb.com](mailto:office@prlsb.com)

Mountain Western Log Scaling & Grading Bureau  
P.O. Box 580, Roseburg, OR 97470  
Phone: (541) 673-5571 Fax: (541) 672-6381  
Email: [info@solsgb.com](mailto:info@solsgb.com)

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](mailto:yamhill@attglobal.net)

Northwest Log Scalars, Inc.  
5526 NE 122<sup>nd</sup> Ave, Portland, OR 97230  
Phone: (503) 254-0600 Fax: (503) 408-0919  
Email: [info@nwlogscalars.com](mailto:info@nwlogscalars.com)

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](mailto:PacLogScale@aol.com)

- (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](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](mailto:scaling@odf.state.or.us). Scaling instructions for each brand should be scanned separately, for each approved TPSO.

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

EXHIBIT D

FOREST ROAD SPECIFICATIONS

| SUBGRADE WIDTH | SURFACED WIDTH       | POINT TO POINT | STATION TO STATION | DRAINAGE |
|----------------|----------------------|----------------|--------------------|----------|
| 16 feet        | 12 feet              | A to B         | 0+00 to 48+25      | Ditch    |
| 16 feet        | 12 feet              | C to D         | 0+00 to 6+50       | Ditch    |
| 16 feet        | 12 feet              | E to F         | 0+00 to 5+50       | Ditch    |
| 16 feet        | 12 feet              | G to H         | 0+00 to 5+30       | Ditch    |
| 16 feet        | 12 feet              | I to J         | 0+00 to 4+00       | Ditch    |
| 16 feet        | 12 feet              | K to L         | 0+00 to 8+70       | Ditch    |
| 12 feet        | -                    | M to N         | 0+00 to 6+75       | Outslope |
| 12 feet        | -                    | O to P         | 0+00 to 11+30      | Ditch    |
| 14 feet        | -                    | Q to R         | 0+00 to 3+00       | Outslope |
| 14 feet        | -                    | S to T         | 0+00 to 2+30       | Outslope |
| 14 feet        | -                    | U to V         | 0+00 to 7+45       | Ditch    |
| 14 feet        | -                    | W to X         | 0+00 to 2+25       | Ditch    |
| 16 feet        | 12 feet              | Y to Z         | 0+00 to 13+25      | Ditch    |
| 16 feet        | 12 feet              | AA to BB       | 0+00 to 6+75       | Ditch    |
| 16 feet        | 12 feet              | CC to DD       | 0+00 to 2+25       | Ditch    |
| 22 feet        | 20 feet              | EE to FF       | 0+00 to 39+60      | Ditch    |
| 18 feet        | 16 feet              | EE to FF       | 39+60 to 118+00    | Ditch    |
| -              | Match Existing Grade | EE to FF       | 118+00 to 237+60   | Ditch    |
| 14 feet        | 12 feet              | GG to HH       | 0+00 to 27+00      | Ditch    |
| -              | Match Existing Grade | GG to HH       | 27+00 to 105+20    | Ditch    |
| -              | Match Existing Grade | M to II        | 0+00 to 13+60      | Ditch    |
| -              | Match Existing Grade | JJ to KK       | 0+00 to 4+80       | Ditch    |
| 14 feet        | -                    | LL to S        | 0+00 to 6+00       | Outslope |
| 16 feet        | 12 feet              | MM to NN       | 0+00 to 30+00      | Ditch    |
| 16 feet        | 12 feet              | NN to OO       | 0+00 to 28+50      | Ditch    |
| -              | Match Existing Grade | NN to W        | 0+00 to 5+00       | Outslope |
| -              | Match Existing Grade | NN to W        | 5+00 to 19+40      | Ditch    |
| -              | Match Existing Grade | PP to CC       | 0+00 to 62+90      | Ditch    |
| -              | Match Existing Grade | QQ to RR       | 0+00 to 6+60       | Ditch    |
| -              | Match Existing Grade | RR to SS       | 0+00 to 4+00       | Ditch    |
| 16 feet        | 12 feet              | TT to UU       | 0+00 + 4+50        | Ditch    |

## EXHIBIT D

### FOREST ROAD SPECIFICATIONS

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. 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.

#### 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 debris shall not be left lodged against standing trees.

#### 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. Length shall be 50 feet for Large Turnouts plus 25-foot approaches at each end.

Location: Intervisible but not greater than 750 feet apart.

SLOPES. Unless otherwise specified in this exhibit.

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.



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. Subgrade Reinforcement. Where subgrade reinforcement is required, Jaw-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.
3. 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 or outsloped 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>  |
|----------------|----------------|--|
| A to B         | 0+00           | Point A. Begin road construction; crown road, begin ditch.   |
|                | 2+00           | Install gate according to the specifications in Exhibit J. Block access around gate to vehicles with stumps or boulders. |
|                | 6+00           | Junction with C to D on right.   |
|                | 8+75           | Junction with E to F on right.   |
|                | 14+00          | Begin subgrade reinforcement. Install Culvert No. 15 (18" x 30').  |
|                | 14+50          | Live Stream. Install Culvert No. 1 (18" x 30').  |
|                | 15+00          | End subgrade reinforcement.  |
|                | 15+50          | Install Culvert No. 16 (18" x 30').  |
|                | 17+50          | Install Culvert No. 17 (18" x 30').  |
|                | 18+85          | Live Stream. Install Culvert No. 2 (24" x 50').  |
|                | 19+70          | Junction with G to H on right. Install Culvert No. 7 (18" x 30').  |
|                | 22+15          | Junction with I to J on right.   |
|                | 22+50          | Junction with K to L on left.  |
|                | 28+80          | Install Culvert No. 3 (18" x 30').   |
|                | 34+50          | Install Culvert No. 4 (18" x 30').   |
|                | 35+40          | Construct 70' x 70' landing on left.   |
|                | 37+40          | Construct 100' spur with landing to left.  |
|                | 39+50          | Install Culvert No. 5 (18" x 30').   |
|                | 47+20          | Construct 100' spur with landing to left.  |
|                | 48+25          | Point B. End road construction, construct landing.   |
| C to D         | 0+00           | Point C. Begin road construction; crown road, begin ditch.   |
|                | 3+80           | Install Culvert No. 6 (18" x 50').   |
|                | 4+00           | Construct 70' x 70' landing on left.   |
|                | 6+50           | Point D. End road construction, construct landing.   |
| E to F         | 0+00           | Point E. Begin road construction; crown road, begin ditch.   |
|                | 2+75           | Construct 150' spur with landing to right.   |
|                | 5+50           | Point F. End road construction, construct landing.   |
| G to H         | 0+00           | Point G. Begin road construction; crown road, begin ditch.   |
|                | 5+30           | Point H. End road construction, construct landing.   |

EXHIBIT D

FOREST ROAD SPECIFICATIONS

|          |  |  |
|----------|--|--|
| I to J   | 0+00<br>4+00                                 | Point I. Begin road construction; crown road, begin ditch.<br>Point J. End road construction, construct landing.   |
| K to L   | 0+00<br>2+00<br>7+50<br>8+00<br>8+50<br>8+70 | Point K. Begin road construction; crown road, begin ditch.<br>Install Culvert No. 8 (18" x 30').<br>Begin subgrade reinforcement.<br>Install Culvert No. 9 (18" x 30').<br>End subgrade reinforcement.<br>Point L. End road construction, construct landing.   |
| M to N   | 0+00<br>6+75                                 | Point M. Begin road construction; crown road, begin ditch. Install Culvert No. 10 (18" x 50').<br>Point N. End road construction, construct landing.   |
| O to P   | 0+00<br>0+75<br>11+30                        | Point O. Begin road construction; crown road, begin ditch.<br>Install Culvert No. 11 (18" x 30').<br>Point P. End road construction, construct landing.  |
| Q to R   | 0+00<br>3+00                                 | Point Q. Begin road construction, outslope road, construct ditch on outside edge in all thru cuts.<br>Point R. End road construction, construct landing.   |
| S to T   | 0+00<br>2+30                                 | Point S. Begin road construction, outslope road, construct ditchouts as needed.<br>Point T. End road construction, construct landing.  |
| U to V   | 0+00<br>1+40<br>2+00<br>2+40<br>7+45         | Point U. Begin road construction; crown road, begin ditch.<br>Begin subgrade reinforcement.<br>Install Culvert No. 12 (18" x 30').<br>End subgrade reinforcement.<br>Point V. End road construction, construct landing.  |
| W to X   | 0+00<br>2+25                                 | Point W. Begin road construction; crown road, begin ditch.<br>Point X. End road construction, construct landing.   |
| Y to Z   | 0+00<br>5+00<br>6+00<br>8+50<br>13+25        | Point Y. Begin road construction; crown road, begin ditch. Construct junction with local material.<br>Install Culvert No. 13 (18" x 30').<br>Live Stream. Install Culvert No. 14 (24" x 40').<br>Junction with AA to BB on left.<br>Point Z. End road construction, construct landing.   |
| AA to BB | 0+00<br>6+75                                 | Point AA. Begin road construction; crown road, begin ditch.<br>Point BB. End road construction, construct landing.   |
| CC to DD | 0+00<br>2+25                                 | Point CC. Begin road construction; crown road, begin ditch. Construct heliport, remove timber within posted Right-of-Way signs around Point CC. Clear a 150' diameter area free from slash, stumps and debris higher than 2 vertical feet from the elevation of the heliport. Construct a heliport to a minimum of 50' x 50' with a grade less than 4%, as directed by STATE.<br>Point DD. End road construction, construct landing. |
| TT to UU | 0+00<br>4+50                                 | Point TT. Begin road construction; crown road, begin ditch.<br>Point UU. End road construction, construct landing.   |

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

1. Excavated Materials. Excavated materials shall be utilized for road and fill construction and hauled in where necessary. Surplus excavation materials shall be hauled to the waste areas as marked in the field and/or designated on Exhibit A. Waste materials shall be sloped and compacted for drainage. Fills shall be thoroughly compacted in accordance with Exhibit D.
2. 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 H.
3. 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 H. 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.
4. Drainage Ditches. Restore or construct ditchlines, including ditchouts, as directed by STATE. Sections of road in thru cuts shall have ditches constructed to specification on both sides of the road. Clean out all culvert inlets and outlets for a 10-foot radius. Re-establish or construct culvert sediment basins. Waste materials from drainage ditches and sediment basins shall not be pulled across existing surfacing rock, but shall be placed in nearby waste areas and uniformly sloped and compacted for drainage, as directed by STATE. Damaged culvert inlets and/or outlets shall be repaired by opening them with a hydraulic jack, or cutting off the culvert end to allow for free passage of water at peak flow levels. Install a culvert marker at each newly installed culvert and at each existing culvert that is missing a marker that could be reached by a grader blade.
5. Fill Armor and Energy Dissipator Construction. Where rock is specified for fill armor, rock shall be machine placed and tamped at a 1:1 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 G.
6. Equipment. All excavation and riprap placement shall be performed using a minimum 1½ cubic yard, track-mounted excavator.
7. Subgrade Reinforcement. Where subgrade reinforcement is required, Jaw-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.
8. Settling Ponds. Construct settling ponds for erosion control in project areas and ditch lines where sedimentation or erosion is possible 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 according to the dimensions specified in the General Road Improvement Instructions in this Exhibit, or as directed by STATE.

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

9. EROSION CONTROL. Install up to 40 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.
10. Subgrade Preparation and Application of Surfacing Rock.
- 1) Complete culvert installations, Energy Dissipator installations, settling pond installations, drainage ditches, fill reconstruction, ditchouts, subgrade reinforcement, and other specified work prior to the application of new surfacing rock.
  - 2) Cut out all potholes and/or washboard sections from the existing surfacing.
  - 3) Apply required patching and leveling rock, as directed by STATE.
  - 4) Existing surface:
    - a. Road Segments EE to FF, GG to HH, M to II, and JJ to KK: Process (grade, mix, and roll) the added base rock with a minimum 6 inches of 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.
    - b. Road Segments MM to NN, NN to OO, NN to W, PP to CC, QQ to RR, and RR to SS: Process (grade, mix, and roll) existing surfacing. Provide for a crown of 4 to 6 percent, and compact in accordance to the "Compaction and Processing Requirements" in this Exhibit.
  - 5) 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>   |
|----------------|----------------|--|
| EE to FF       | 0+00           | Point EE, (Beaverdam Road). Begin road improvement; crown road, clean or construct ditch. Install 20 Bio-Bags as directed by STATE.  |
|                | 1+60           | Begin widening subgrade to a width of 22' and surface to a width of 20'. Widen the road into the cutbank as needed and endhaul material to waste area.   |
|                | 3+10           | Remove existing culvert and reinstall to allow for road widening into the cutbank.   |
|                | 5+80           | Widen road 4' into cutbank and construct ditch.  |
|                | 7+05           | End road widening.   |
|                | 17+45          | Widen road 3' into cutbank on both sides of road and construct ditches.  |
|                | 19+20          | End road widening.   |
|                | 36+05          | Widen road 4' into cutbank and construct ditch.  |
|                | 38+35          | Begin sidecast pullback. Remove the outside edge of fill and reduce fill slope to 1:1. Widen road 9' into cutbank and construct ditch.   |
|                | 39+60          | Junction with GG to FF on right. End road widening and sidecast pullback. End 22' subgrade and 20' surfacing width; begin widening subgrade to a width of 18' and surface to a width of 16'. Widen the road into the cutbank as needed and endhaul material to waste area. |
|                | 108+00         | Remove 12" of existing material at the bridge approach. Taper depth out to 25' from the bridge and haul material to Waste Area.  |
|                | 108+20         | Remove 12" of existing material at the bridge approach. Taper depth out to 25' from the bridge and haul material to Waste Area.  |
|                | 118+00         | End 18' subgrade and 16' surfacing width; begin matching surface width to existing road width.   |
|                | 124+75         | Stockpile Access Road on right.  |
|                | 137+35         | Browns Camp Pit on left.   |
|                | 229+50         | Improve parking area on right. Remove marked trees and stumps, compact grade and shape area to drain, surface according the specifications in this Exhibit.  |
|                | 237+60         | Point FF. End road improvement.  |

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

|          |       |   |
|----------|-------|---|
| GG to HH | 0+00  | Point GG, (University Falls Road). Begin road improvement; crown road, clean or construct ditch. Begin widening subgrade to a width of 14' and surface to a width of 12'. Widen the road into the cutbank as needed and endhaul material to Waste Area. Install 20 Bio-Bags as directed by STATE.   |
|          | 3+00  | Widen road 3' into cutbank and construct ditch, reduce cutbank to a 1:1 slope.  |
|          | 3+25  | Begin sidecast pullback. Remove outside edge of fill and reduce fill slope to 1:1.  |
|          | 4+00  | Remove existing half round and install 24cy of Riprap as Energy Dissipator at the outlet.   |
|          | 4+35  | End sidecast pullback.  |
|          | 4+75  | End road widening.  |
|          | 7+00  | Begin sidecast pullback. Remove the outside edge of fill and reduce fill slope to 1:1.  |
|          | 7+50  | End sidecast pullback.  |
|          | 7+90  | Remove woody debris and unsuitable material from existing fill. Remove existing culvert and half round. Endhaul unsuitable material to Waste Area and rebuild fill with suitable material. If additional material is required then Jaw-Run rock shall be used. Reinstall existing culvert with 36cy of Riprap as Energy Dissipator at the outlet. Place 24cy of Riprap as fill armor on fill slope. |
|          | 10+80 | Clean inlet of culvert and excavate cutbank to the specifications in this Exhibit.  |
|          | 11+15 | Begin sidecast pullback. Remove outside edge of fill and reduce fill slope to 1:1.  |
|          | 11+25 | Widen road 2' into cutbank and construct ditch, reduce cutbank to a 1:1 slope.  |
|          | 12+25 | End road widening.  |
|          | 12+50 | End sidecast pullback.  |
|          | 14+00 | Remove 12" of existing material at the bridge approach. Taper depth out to 25' from the bridge and haul material to Waste Area.   |
|          | 14+20 | Remove 12" of existing material at the bridge approach. Taper depth out to 25' from the bridge and haul material to Waste Area.   |
|          | 15+10 | Begin excavating cutbank to a slope of 1½:1, as directed by STATE.  |
|          | 16+30 | End cutbank excavation.   |
|          | 20+30 | Begin sidecast pullback. Remove outside edge of fill and reduce fill slope to 1:1.  |
|          | 21+00 | Clean inlet of culvert and excavate cutbank to the specifications in this Exhibit. Remove existing half round and install 24cy of Riprap as Energy Dissipator at outlet.  |
|          | 21+30 | End sidecast pullback. Widen road 2' into cutbank and construct ditch, reduce cutbank to a 1:1 slope.   |
|          | 21+95 | End road widening.  |
|          | 22+45 | Widen road 2' into cutbank and construct ditch, reduce cutbank to a 1:1 slope.  |
|          | 24+15 | End cutbank removal.  |
|          | 24+65 | Junction with QQ to RR on left.   |
|          | 26+60 | Remove existing culvert and install Culvert No. 18 (18" x 40').   |
|          | 27+00 | Junction with RR to SS on left. End 14' subgrade and 12' surfacing width; begin matching surfacing width to existing road width.  |
|          | 28+50 | Remove 12" of existing material at the bridge approach. Taper depth out to 25' from the bridge and haul material to Waste Area  |
|          | 28+80 | Remove 12" of existing material at the bridge approach. Taper depth out to 25' from the bridge and haul material to Waste Area.   |
|          | 29+00 | Construct 3'x3'x1½' settling pond in ditchline on right side of the road. Block settling pond to OHV access with local material or boulders, as directed by STATE.  |
|          | 30+50 | Remove existing culvert and install Culvert No. 19 (18" x 30').   |

# EXHIBIT D FOREST ROAD SPECIFICATIONS

|          |        |  |
|----------|--------|--|
|          | 33+20  | Remove existing culvert and install Culvert No. 20 (18" x 30').  |
|          | 36+75  | Remove existing culvert and install Culvert No. 21 (18" x 30').  |
|          | 43+50  | Install Culvert No. 22 (18" x 30') with 24cy of Riprap as Energy Dissipator at outlet.   |
|          | 44+90  | Remove existing culvert and backfill with crushed rock.  |
|          | 46+90  | Live Stream. Install Culvert No. 23 (18" x 30').   |
|          | 56+95  | Construct 3'x3'x1½' settling pond in ditchline on both sides of the road. Block settling pond to OHV access with local material or boulders, as directed by STATE. |
|          | 59+75  | Live Stream. Remove existing culvert and install Culvert No. 24 (24" x 40').   |
|          | 62+70  | Junction with PP to CC on right.   |
|          | 62+80  | Install Culvert No. 25 (18" x 30').  |
|          | 67+90  | Install Culvert No. 26 (18" x 30').  |
|          | 76+80  | Live Stream. Remove existing culvert and install Culvert No. 27 (24" x 30').   |
|          | 82+15  | Install Culvert No. 28 (18" x 30').  |
|          | 103+30 | Install Culvert No. 29 (18" x 30').  |
|          | 105+00 | Junction with M to N on left.  |
|          | 105+20 | Point HH. End road improvement.  |
| M to II  | 0+00   | Point M, (Crossover Road). Begin road improvement; crown road, clean or construct ditch. Junction with M to N on left.   |
|          | 4+50   | Junction with JJ to KK on right.   |
|          | 7+14   | Junction with O to P on left.  |
|          | 7+95   | Install Culvert No. 30 (18" x 30').  |
|          | 11+50  | Recreation trail crossing. Maintain access to trail.   |
|          | 13+60  | Point II. End road improvement.  |
| JJ to KK | 0+00   | Point JJ. Begin road improvement; crown road, clean or construct ditch. Begin road widening and straighten road alignment.   |
|          | 3+10   | Install Culvert No. 31 (18" x 30').  |
|          | 4+80   | Point KK. End road improvement, widening and alignment.  |
| LL to S  | 0+00   | Point LL. Begin road improvement; outslope road to ditch.  |
|          | 3+15   | Construct 3'x3'x1.5' settling pond in ditchline.   |
|          | 3+65   | Live Stream. Install Culvert No. 32 (24" x 30').   |
|          | 4+15   | Construct 3'x3'x1.5' settling pond in ditchline.   |
|          | 6+00   | Point S. End road improvement.   |
| MM to NN | 0+00   | Point MM. Begin road improvement; crown road, clean or construct ditch. Begin road widening.   |
|          | 2+00   | Install Culvert No. 33 (18" x 30').  |
|          | 3+00   | Remove existing culvert and install Culvert No. 34 (24" x 30').  |
|          | 8+00   | End road widening.   |
|          | 9+15   | Install Culvert No. 35 (18" x 45') with Energy Dissipator at outlet. Fill slopes may be constructed at 1:1.  |
|          | 10+45  | Install Culvert No. 36 (18" x 30').  |
|          | 11+50  | Begin road widening.   |
|          | 12+20  | End road widening. Install Culvert No. 37 (24" x 30').   |
|          | 17+00  | Begin road widening.   |
|          | 18+80  | End road widening.   |

EXHIBIT D  
FOREST ROAD SPECIFICATIONS

|          |       |   |
|----------|-------|---|
|          | 21+25 | Install Culvert No. 38 (18" x 30').   |
|          | 23+50 | Install Culvert No. 39 (24" x 55'). Install Energy Dissipator and fill armor rock at outlet. Fill slopes may be constructed at 1:1.   |
|          | 26+00 | Install Culvert No. 40 (18" x 30').   |
|          | 28+00 | Install Culvert No. 41 (18" x 30').   |
|          | 29+40 | Install Culvert No. 42 (18" x 64') with Energy Dissipator at outlet. Fill slopes may be constructed at 1:1.   |
|          | 30+00 | Point NN. End road improvement.   |
| NN to OO | 0+00  | Point NN. Begin road improvement; crown road, clean or construct ditch.   |
|          | 1+75  | Install gate according to the specifications in Exhibit I. Block access around gate to vehicles with stumps or boulders.  |
|          | 7+25  | Junction with TT to UU on left.   |
|          | 7+50  | Begin road widening, construct a ditch on both sides of road.   |
|          | 9+00  | End road widening.  |
|          | 9+50  | Junction with Y to Z on left.   |
|          | 10+75 | Begin subgrade reinforcement.   |
|          | 11+00 | Live Stream. Install Culvert No. 43 (24" x 30').  |
|          | 12+00 | Live Stream. Install Culvert No. 44 (24" x 30').  |
|          | 12+75 | Install Culvert No. 45 (18" x 30').   |
|          | 13+00 | End subgrade improvement.   |
|          | 28+50 | Point OO. End road improvement, construct turnaround.   |
| NN to W  | 0+00  | Point NN. Begin road improvement; outslope road. Begin road widening and straighten road alignment.   |
|          | 5+00  | End road widening and alignment. End outslope, begin crown and ditch.   |
|          | 7+20  | Live Stream. Install Culvert No. 46 (18" x 30').  |
|          | 9+00  | Live Stream. Install Culvert No. 47 (18" x 30').  |
|          | 19+20 | Construct turnout.  |
|          | 19+40 | Point W. End road improvement.  |
| PP to CC | 0+00  | Point PP. Begin road improvement; crown road, clean or construct ditch. Remove existing culvert and backfill with crushed rock. Construct Y junction on old grade to left. Install Culvert No. 48 (18" x 50'), across Y junction in ditchline of University Falls Road. |
|          | 1+60  | Live Stream.  |
|          | 3+00  | Live Stream.  |
|          | 3+75  | Live Stream. Construct ditch on both sides of road.   |
|          | 4+75  | End ditch construction on right side of road.   |
|          | 5+40  | Live Stream.  |
|          | 6+00  | Install Culvert No. 49 (18" x 30').   |
|          | 9+60  | Live Stream.  |
|          | 10+10 | Install Culvert No. 50 (18" x 30').   |
|          | 13+25 | Junction with A to B on right.  |
|          | 18+70 | Install culvert marker.   |
|          | 62+90 | Point CC. End road improvement.   |
| QQ to RR | 0+00  | Point QQ. Begin road improvement; crown road, clean or construct ditch.   |
|          | 6+60  | Point RR. End road improvement.   |
| RR to SS | 0+00  | Point RR. Begin road improvement; crown road, construct ditch. Begin road widening and straighten road alignment.   |
|          | 4+00  | Point SS. End road improvement, widening and alignment.   |

EXHIBIT D  
FULL BENCH AND END-HAUL REQUIREMENTS

| POINT TO POINT | STA. TO STA.   | CONTAINMENT -<br>SIDECAST | WASTE AREA<br>LOCATION | WASTE AREA<br>TREATMENT |
|----------------|----------------|---------------------------|------------------------|-------------------------|
| EE to FF       | 0+00 to 237+60 | 1                         | 1                      | 1, 2 & 3                |
| GG to HH       | 0+00 to 105+20 | 1                         | 1                      | 1, 2 & 3                |
| M to II        | 0+00 to 13+60  | 1                         | 1                      | 1, 2 & 3                |
| NN to OO       | 10+70 to 13+00 | 2                         | 1                      | 1, 2 & 3                |
| PP to CC       | 0+00 to 62+90  | 1                         | 1                      | 1, 2 & 3                |
| QQ to RR       | 0+00 to 6+60   | 1                         | 1                      | 1, 2 & 3                |
| RR to SS       | 0+00 to 4+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.

Clearing and grubbing debris shall be end-hauled.  
Material removed from cleaning ditchlines shall be end-hauled.

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

Containment/Sidecast

- (1) Full: No excavated material remains below the road.
- (2) Normal/Incidental: The amount of excavated material lost over the outside edge of the road shall not exceed 1 foot in depth.

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

Waste Area Location

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

Waste Area Treatment

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



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 48+25 |       |                   |
|                              |                    |  |                        | Volume (CY) Per |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | A to B                                       | 12                     | Station         | 65  | Stations      | 48.25 | 3,136             |
| Turnouts                     | 3"-0" Crushed      |  | 12                     | Turnout         | 22  | Turnouts      | 2     | 44                |
| Turnaround                   | 3"-0" Crushed      |  | 12                     | Turnaround      | 20  | Turnarounds   | 1     | 20                |
| Junctions                    | 3"-0" Crushed      | Point C, E, G, I & K, 37+40 & 47+20          | 12                     | Junction        | 20  | Junctions     | 7     | 140               |
| Landings                     | 3"-0" Crushed      | 35+40 spur, 37+40 spur, 47+20 spur & Point B | 12                     | Landing         | 180 | Landings      | 4     | 720               |
| Subgrade Reinforcement       | 6"-0" Jaw-Run      | 14+00 to 15+00                               | Varies                 | Station         | 65  | Stations      | 1     | 65                |
| Approach to Landings         | 3"-0" Crushed      | 35+40 & 47+20                                | 12                     | Approach        | 65  | Approaches    | 2     | 130               |
| Total Rock for Road Segment: |                    |  | A to B                 |                 |     |               |       | 4,255             |
| 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 6+50  |       |                   |
|                              |                    |  |                        | Volume (CY) Per |     | Number Of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | C to D                                       | 12                     | Station         | 65  | Stations      | 6.5   | 423               |
| Turnaround                   | 3"-0" Crushed      |  | 12                     | Turnaround      | 20  | Turnarounds   | 1     | 20                |
| Landing                      | 3"-0" Crushed      | Point D                                      | 12                     | Landing         | 180 | Landings      | 2     | 360               |
| Total Rock for Road Segment: |                    |  | C to D                 |                 |     |               |       | 803               |
| ROAD SEGMENT: E to F         |                    |  |                        | POINT TO POINT  |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location                                     | Depth of Rock (inches) | E to F          |     | 0+00 to 5+50  |       |                   |
|                              |                    |  |                        | Volume (CY) Per |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | E to F                                       | 12                     | Station         | 65  | Stations      | 5.5   | 358               |
| Turnaround                   | 3"-0" Crushed      |  | 12                     | Turnaround      | 20  | Turnarounds   | 1     | 20                |
| Junction                     | 3"-0" Crushed      | 2+75   | 12                     | Junction        | 20  | Junctions     | 1     | 20                |
| Landings                     | 3"-0" Crushed      | 2+75 spur & Point F                          | 12                     | Landing         | 180 | Landings      | 2     | 360               |
| Approach to Landings         | 3"-0" Crushed      | 2+75   | 12                     | Approach        | 65  | Approaches    | 1.5   | 98                |
| Total Rock for Road Segment: |                    |  | E to F                 |                 |     |               |       | 856               |
| ROAD SEGMENT: G to H         |                    |  |                        | POINT TO POINT  |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size And Type | Location                                     | Depth of Rock (inches) | G to H          |     | 0+00 to 5+30  |       |                   |
|                              |                    |  |                        | Volume (CY) Per |     | Number Of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | G to H                                       | 12                     | Station         | 65  | Stations      | 5.3   | 345               |
| Turnaround                   | 3"-0" Crushed      |  | 12                     | Turnaround      | 20  | Turnarounds   | 1     | 20                |
| Landing                      | 3"-0" Crushed      | Point H                                      | 12                     | Landing         | 180 | Landings      | 1     | 180               |
| Total Rock for Road Segment: |                    |  | G to H                 |                 |     |               |       | 545               |

EXHIBIT D  
ROAD SURFACING

| ROAD SEGMENT: I to J         |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |     | TOTAL VOLUME (CY) |
|------------------------------|--------------------|--------------|------------------------|-----------------|-----|---------------|-----|-------------------|
| Application                  | Rock Size And Type | Location     | Depth of Rock (inches) | I to J          |     | 0+00 to 4+00  |     |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number Of     |     |                   |
| Surfacing                    | 3"-0" Crushed      | I to J       | 12                     | Station         | 65  | Stations      | 4   | 260               |
| Turnaround                   | 3"-0" Crushed      |              | 12                     | Turnaround      | 20  | Turnarounds   | 1   | 20                |
| Landing                      | 3"-0" Crushed      | Point J      | 12                     | Landing         | 180 | Landings      | 1   | 180               |
| Total Rock for Road Segment: |                    |              | I to J                 |                 |     |               |     | 460               |
| ROAD SEGMENT: K to L         |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |     | TOTAL VOLUME (CY) |
| Application                  | Rock Size And Type | Location     | Depth of Rock (inches) | K to L          |     | 0+00 to 8+70  |     |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number Of     |     |                   |
| Surfacing                    | 3"-0" Crushed      | K to L       | 12                     | Station         | 65  | Stations      | 8.7 | 566               |
| Turnouts                     | 3"-0" Crushed      |              | 12                     | Turnout         | 22  | Turnouts      | 1   | 22                |
| Turnaround                   | 3"-0" Crushed      |              | 12                     | Turnaround      | 20  | Turnarounds   | 1   | 20                |
| Landing                      | 3"-0" Crushed      | Point L      | 12                     | Landing         | 180 | Landings      | 1   | 180               |
| Subgrade Reinforcement       | 6"-0" Jaw-Run      | 7+50 to 8+50 | Varies                 | Station         | 65  | Stations      | 1   | 65                |
| Total Rock for Road Segment: |                    |              | K to L                 |                 |     |               |     | 853               |
|                              |                    |              |                        |                 |     |               |     |                   |
| 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 6+75  |     |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number Of     |     |                   |
| Surfacing                    | 3"-0" Crushed      | 0+00 to 1+00 | 10                     | Station         | 53  | Stations      | 1   | 53                |
| Total Rock for Road Segment: |                    |              | M to N                 |                 |     |               |     | 53                |
| 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 11+30 |     |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number Of     |     |                   |
| Surfacing                    | 3"-0" Crushed      | 0+00 to 1+00 | 10                     | Station         | 53  | Stations      | 1   | 53                |
| Total Rock for Road Segment: |                    |              | O to P                 |                 |     |               |     | 53                |
| ROAD SEGMENT: U to V         |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |     | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location     | Depth of Rock (inches) | U to V          |     | 0+00 to 7+45  |     |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number of     |     |                   |
| Surfacing                    | 3"-0" Crushed      | 0+00 to 1+00 | 10                     | Station         | 53  | Stations      | 1   | 53                |
| Subgrade Reinforcement       | 6"-0" Jaw-Run      | 1+40 to 2+40 | Varies                 | Station         | 65  | Stations      | 1   | 65                |
| Total Rock for Road Segment: |                    |              | U to V                 |                 |     |               |     | 118               |

EXHIBIT D

ROAD SURFACING

| ROAD SEGMENT: W to X         |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
|------------------------------|--------------------|--------------|------------------------|-----------------|-----|---------------|-------|-------------------|
| Application                  | Rock Size and Type | Location     | Depth of Rock (inches) | W to X          |     | 0+00 to 2+25  |       |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | 0+00 to 1+00 | 10                     | Station         | 53  | Stations      | 1     | 53                |
| Total Rock for Road Segment: |                    |              | W to X                 |                 |     |               |       | 53                |
| ROAD SEGMENT: Y to Z         |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location     | Depth of Rock (inches) | Y to Z          |     | 0+00 to 13+25 |       |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | Y to Z       | 12                     | Station         | 65  | Stations      | 13.25 | 861               |
| Turnaround                   | 3"-0" Crushed      |              | 12                     | Turnaround      | 20  | Turnarounds   | 1     | 20                |
| Junctions                    | 3"-0" Crushed      | Point AA     | 12                     | Junction        | 20  | Junctions     | 1     | 20                |
| Landings                     | 3"-0" Crushed      | Point Z      | 12                     | Landing         | 180 | Landings      | 1     | 180               |
|                              |                    |              |                        |                 |     |               |       |                   |
| Total Rock for Road Segment: |                    |              | Y to Z                 |                 |     |               |       | 1,081             |
| ROAD SEGMENT: AA to BB       |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location     | Depth of Rock (inches) | AA to BB        |     | 0+00 to 6+75  |       |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | AA to BB     | 12                     | Station         | 65  | Stations      | 6.75  | 439               |
| Turnaround                   | 3"-0" Crushed      |              | 12                     | Turnaround      | 20  | Turnarounds   | 1     | 20                |
| Landings                     | 3"-0" Crushed      | Point BB     | 12                     | Landing         | 180 | Landings      | 1     | 180               |
| Total Rock for Road Segment: |                    |              | AA to BB               |                 |     |               |       | 639               |
| ROAD SEGMENT: CC to DD       |                    |              |                        | POINT TO POINT  |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location     | Depth of Rock (inches) | CC to DD        |     | 0+00 to 2+25  |       |                   |
|                              |                    |              |                        | Volume (CY) Per |     | Number of     |       |                   |
| Heliport                     | 3"-0" Crushed      | Point CC     | 6                      | Heliport        | 50  | Heliports     | 1     | 50                |
| Surfacing                    | 3"-0" Crushed      | CC to DD     | 12                     | Station         | 65  | Stations      | 2.25  | 146               |
| Landings                     | 3"-0" Crushed      | Point DD     | 12                     | Landing         | 180 | Landings      | 1     | 180               |
| Total Rock for Road Segment: |                    |              | CC to DD               |                 |     |               |       | 376               |

EXHIBIT D  
ROAD SURFACING

| ROAD SEGMENT: EE to FF       |                    |  |                        | POINT TO POINT             |     | Sta. to Sta.       |       | TOTAL VOLUME (CY) |
|------------------------------|--------------------|--|------------------------|----------------------------|-----|--------------------|-------|-------------------|
| Application                  | Rock Size and Type | Location   | Depth of Rock (inches) | EE to FF                   |     | 0+00 to 237+60     |       |                   |
|                              |                    |  |                        | Volume (CY) Per            |     | Number of          |       |                   |
| Base Rock                    | 3"-0" Crushed      | 0+00 to 39+60  | 6                      | Station                    | 52  | Stations           | 39.6  | 2,060             |
| Surfacing                    | 1½"-0" Crushed     | 0+00 to 39+60  | 6                      | Station                    | 52  | Stations           | 39.6  | 2,060             |
| Base Rock                    | 3"-0" Crushed      | 39+60 to 118+00                                      | 5                      | Station                    | 33  | Stations           | 78.4  | 2,588             |
| Surfacing                    | 1½"-0" Crushed     | 39+60 to 118+00                                      | 4                      | Station                    | 26  | Stations           | 78.4  | 2,039             |
| Base Rock                    | 3"-0" Crushed      | 118+00 to 237+60                                     | 5                      | Station                    | 29  | Stations           | 119.6 | 3,469             |
| Surfacing                    | 1½"-0" Crushed     | 118+00 to 237+60                                     | 4                      | Station                    | 23  | Stations           | 119.6 | 2,751             |
| Turnouts                     | 1½"-0" Crushed     |  | 8                      | Turnout                    | 14  | Turnouts           | 25    | 350               |
| Large Turnouts               | 1½"-0" Crushed     |  | 8                      | Turnout                    | 28  | Turnouts           | 5     | 140               |
| Junction                     | 1½"-0" Crushed     | Point GG   | 6                      | Junction                   | 20  | Junctions          | 1     | 20                |
| Junction                     | 1½"-0" Crushed     | Point II   | 6                      | Junction                   | 90  | Junctions          | 1     | 90                |
| Parking Area                 | 3"-0" Crushed      | 229+50   | 12                     | Parking Area               | 50  | Parking Areas      | 1     | 50                |
| Culvert Bedding              | 1½"-0" Crushed     | 3+10   | Varies                 | Culvert                    | 12  | Culverts           | 1     | 12                |
| Total Rock for Road Segment: |                    |  | EE to FF               |                            |     |                    |       | 15,629            |
| ROAD SEGMENT: GG to HH       |                    |  |                        | POINT TO POINT             |     | Sta. to Sta.       |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location   | Depth of Rock (inches) | GG to HH                   |     | 0+00 to 105+20     |       |                   |
|                              |                    |  |                        | Volume (CY) Per            |     | Number of          |       |                   |
| Base Rock                    | 3"-0" Crushed      | GG to HH   | 5                      | Station                    | 25  | Stations           | 105.2 | 2,630             |
| Surfacing                    | 1½"-0" Crushed     | GG to HH   | 4                      | Station                    | 20  | Stations           | 105.2 | 2,104             |
| Junctions                    | 1½"-0" Crushed     | Point M, PP, QQ & SS                                 | Varies                 | Junction                   | 20  | Junctions          | 4     | 80                |
| Culvert Bedding              | 1½"-0" Crushed     | Culverts Nos. 18, 19, 20, 21, 22, 23, 25, 26, 28, 29 | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet        | 310   | 104               |
| Culvert Bedding              | 1½"-0" Crushed     | Culverts Nos. 24 & 27                                | Varies                 | Per Linear foot of Culvert | 1/2 | Linear Feet        | 70    | 35                |
| Culvert Backfill             | 1½"-0" Crushed     | 44+90  | Varies                 | Culvert                    | 12  | Culverts           | 1     | 12                |
| Energy Dissipator            | 36" - 24" Riprap   | 4+00, 21+00 & 43+50                                  | Varies                 | Energy Dissipator          | 24  | Energy Dissipators | 3     | 72                |
| Energy Dissipator            | 36" - 24" Riprap   | 8+00   | Varies                 | Energy Dissipator          | 36  | Energy Dissipators | 1     | 36                |
| Fill Construction            | 6"-0" Jaw-Run      | 8+00   | Varies                 | Fill                       | 19  | Fill               | 1     | 19                |
| Fill Armor                   | 36" - 24" Riprap   | 8+00 to 8+30   | Varies                 | Fill Armor                 | 24  | Fill Armors        | 1     | 24                |
| Total Rock for Road Segment: |                    |  | GG to HH               |                            |     |                    |       | 5,116             |

EXHIBIT D

ROAD SURFACING

| ROAD SEGMENT: M to II        |                    |  |                        | POINT TO POINT             |     | Sta. to Sta.       |      | TOTAL VOLUME (CY) |
|------------------------------|--------------------|--|------------------------|----------------------------|-----|--------------------|------|-------------------|
| Application                  | Rock Size and Type | Location                                 | Depth of Rock (inches) | M to II                    |     | 0+00 to 13+60      |      |                   |
|                              |                    |  |                        | Volume (CY) Per            |     | Number of          |      |                   |
| Base Rock                    | 3"-0" Crushed      | M to II                                  | 5                      | Station                    | 25  | Stations           | 13.6 | 340               |
| Surfacing                    | 1½"-0" Crushed     | M to II                                  | 4                      | Station                    | 20  | Stations           | 13.6 | 272               |
| Junctions                    | 1½"-0" Crushed     | Point JJ & O                             | 8                      | Junction                   | 20  | Junctions          | 2    | 40                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 30                           | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet        | 30   | 10                |
| Total Rock for Road Segment: |                    |  | M to II                |                            |     |                    |      | 662               |
| ROAD SEGMENT: JJ to KK       |                    |  |                        | POINT TO POINT             |     | Sta. to Sta.       |      | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location                                 | Depth of Rock (inches) | JJ to KK                   |     | 0+00 to 4+80       |      |                   |
|                              |                    |  |                        | Volume (CY) Per            |     | Number of          |      |                   |
| Base Rock                    | 3"-0" Crushed      | JJ to KK                                 | 6                      | Station                    | 31  | Stations           | 4.8  | 149               |
| Surfacing                    | 1½"-0" Crushed     | JJ to KK                                 | 6                      | Station                    | 31  | Stations           | 4.8  | 149               |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 31                           | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet        | 30   | 10                |
| Total Rock for Road Segment: |                    |  | JJ to KK               |                            |     |                    |      | 308               |
| ROAD SEGMENT: LL to S        |                    |  |                        | POINT TO POINT             |     | Sta. to Sta.       |      | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location                                 | Depth of Rock (inches) | LL to S                    |     | 0+00 to 6+00       |      |                   |
|                              |                    |  |                        | Volume (CY) Per            |     | Number of          |      |                   |
| Surfacing                    | 3"-0" Crushed      | 0+00 to 1+00                             | 10                     | Station                    | 53  | Stations           | 1    | 53                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 32                           | Varies                 | Per Linear foot of Culvert | 1/2 | Linear Feet        | 30   | 15                |
| Total Rock for Road Segment: |                    |  | LL to S                |                            |     |                    |      | 68                |
| ROAD SEGMENT: MM to NN       |                    |  |                        | POINT TO POINT             |     | Sta. to Sta.       |      | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location                                 | Depth of Rock (inches) | MM to NN                   |     | 0+00 to 30+00      |      |                   |
|                              |                    |  |                        | Volume (CY) Per            |     | Number of          |      |                   |
| Surfacing                    | 3"-0" Crushed      | MM to NN                                 | 12                     | Station                    | 65  | Stations           | 30   | 1,950             |
| Turnouts                     | 3"-0" Crushed      |  | 12                     | Turnout                    | 22  | Turnouts           | 4    | 80                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 33, 35, 36, 38, 40, 41, & 42 | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet        | 259  | 87                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 34, 37, & 39                 | Varies                 | Per Linear foot of Culvert | 1/2 | Linear Feet        | 115  | 58                |
| Junctions                    | 3"-0" Crushed      | Point MM & NN                            | 12                     | Junction                   | 20  | Junctions          | 2    | 40                |
| Fill Armor                   | 36" - 24" Riprap   | Culvert No. 39                           |                        | Fill                       | 12  | Fills              | 1    | 12                |
| Energy Dissipator            | 36" - 24" Riprap   | Culvert Nos. 35, 39, & 42                | Varies                 | Energy Dissipator          | 12  | Energy Dissipators | 3    | 36                |
| Total Rock for Road Segment: |                    |  | MM to NN               |                            |     |                    |      | 2,263             |

EXHIBIT D  
ROAD SURFACING

| ROAD SEGMENT: NN to OO       |                    |                          |                        | POINT TO POINT             |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
|------------------------------|--------------------|--------------------------|------------------------|----------------------------|-----|---------------|-------|-------------------|
| Application                  | Rock Size and Type | Location                 | Depth of Rock (inches) | NN to OO                   |     | 0+00 to 28+50 |       |                   |
|                              |                    |                          |                        | Volume (CY) Per            |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | NN to OO                 | 12                     | Station                    | 65  | Stations      | 28.5  | 1,853             |
| Turnouts                     | 3"-0" Crushed      |                          | 12                     | Turnout                    | 22  | Turnouts      | 2     | 44                |
| Turnaround                   | 3"-0" Crushed      |                          | 12                     | Turnaround                 | 20  | Turnarounds   | 1     | 20                |
| Junctions                    | 3"-0" Crushed      | Point Y & TT             | 12                     | Junction                   | 20  | Junctions     | 2     | 40                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert Nos. 43 & 44     | Varies                 | Per Linear foot of Culvert | 1/2 | Linear Feet   | 60    | 30                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 45           | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet   | 30    | 10                |
| Subgrade Reinforcement       | 6"-0" Jaw-Run      | 10+75 to 13+00           | Varies                 | Station                    | 100 | Stations      | 2.25  | 225               |
| Total Rock for Road Segment: |                    |                          | NN to OO               |                            |     |               |       | 2,222             |
| ROAD SEGMENT: NN to W        |                    |                          |                        | POINT TO POINT             |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location                 | Depth of Rock (inches) | NN to W                    |     | 0+00 to 19+40 |       |                   |
|                              |                    |                          |                        | Volume (CY) Per            |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | NN to W                  | 6                      | Station                    | 31  | Stations      | 19.4  | 601               |
| Turnouts                     | 3"-0" Crushed      | 19+20                    | 6                      | Turnout                    | 11  | Turnouts      | 1     | 11                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert Nos. 46 & 47     | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet   | 60    | 20                |
| Total Rock for Road Segment: |                    |                          | NN to W                |                            |     |               |       | 632               |
| ROAD SEGMENT: PP to CC       |                    |                          |                        | POINT TO POINT             |     | Sta. to Sta.  |       | TOTAL VOLUME (CY) |
| Application                  | Rock Size and Type | Location                 | Depth of Rock (inches) | PP to CC                   |     | 0+00 62+90    |       |                   |
|                              |                    |                          |                        | Volume (CY) Per            |     | Number of     |       |                   |
| Surfacing                    | 3"-0" Crushed      | 0+00 to 13+25 (Point A)  | 6                      | Station                    | 31  | Stations      | 13.25 | 411               |
| Surfacing                    | 3"-0" Crushed      | Y Junction               | 12                     | Junction                   | 65  | Junctions     | 1     | 65                |
| Spot Rock                    | 3"-0" Crushed      | PP to CC                 | Varies                 |                            |     |               |       | 50                |
| Junctions                    | 3"-0" Crushed      | Point A                  | 6                      | Junction                   | 40  | Junctions     | 1     | 40                |
| Culvert Backfill             | 1½"-0" Crushed     | 0+00                     | Varies                 | Culvert                    | 12  | Culverts      | 1     | 12                |
| Culvert Bedding              | 1½"-0" Crushed     | Culvert No. 48, 49, & 50 | Varies                 | Per Linear foot of Culvert | 1/3 | Linear Feet   | 110   | 37                |
| Total Rock for Road Segment: |                    |                          | PP to CC               |                            |     |               |       | 615               |

EXHIBIT D

ROAD SURFACING

| ROAD SEGMENT: QQ to RR            |                    |                             |                        | POINT TO POINT  |       | Sta. to Sta. |                   | TOTAL VOLUME (CY) |
|-----------------------------------|--------------------|-----------------------------|------------------------|-----------------|-------|--------------|-------------------|-------------------|
| Application                       | Rock Size and Type | Location                    | Depth of Rock (inches) | QQ to RR        |       | 0+00 to 6+60 |                   |                   |
|                                   |                    |                             |                        | Volume (CY) Per |       | Number of    |                   |                   |
| Surfacing                         | 1½"-0" Crushed     | QQ to RR                    | 8                      | Station         | 42    | Stations     | 6.6               | 277               |
| Total Rock for Road Segment:      |                    |                             | QQ to RR               |                 |       |              |                   | 277               |
| ROAD SEGMENT: RR to SS            |                    |                             |                        | POINT TO POINT  |       | Sta. to Sta. |                   | TOTAL VOLUME (CY) |
| Application                       | Rock Size and Type | Location                    | Depth of Rock (inches) | RR to SS        |       | 0+00 to 4+00 |                   |                   |
|                                   |                    |                             |                        | Volume (CY) Per |       | Number of    |                   |                   |
| Surfacing                         | 1½"-0" Crushed     | RR to SS                    | 12                     | Station         | 65    | Stations     | 4                 | 260               |
| Total Rock for Road Segment:      |                    |                             | RR to SS               |                 |       |              |                   | 260               |
| ROAD SEGMENT: TT to UU            |                    |                             |                        | POINT TO POINT  |       | Sta. to Sta. |                   | TOTAL VOLUME (CY) |
| Application                       | Rock Size and Type | Location                    | Depth of Rock (inches) | TT to UU        |       | 0+00 to 4+50 |                   |                   |
|                                   |                    |                             |                        | Volume (CY) Per |       | Number of    |                   |                   |
| Surfacing                         | 3"-0" Crushed      | TT to UU                    | 12                     | Station         | 65    | Stations     | 4.5               | 293               |
| Turnaround                        | 3"-0" Crushed      |                             | 12                     | Turnaround      | 20    | Turnarounds  | 1                 | 20                |
| Landing                           | 3"-0" Crushed      | Point UU                    | 12                     | Landing         | 180   | Landings     | 1                 | 180               |
| Total Rock for Road Segment:      |                    |                             | TT to UU               |                 |       |              |                   | 493               |
| PROJECT NO. 3 Stockpile Expansion |                    |                             |                        |                 |       |              | TOTAL VOLUME (CY) |                   |
| Application                       | Rock Size and Type | Location                    | Depth of Rock (inches) |                 |       |              |                   |                   |
| Surfacing                         | 6"-0" Jaw-Run      | Brown's Camp Stockpile Site | 10                     |                 | 1,607 |              |                   |                   |

| ROCK TOTALS (CY) | 36"- 24" Riprap | Jaw-Run | 3"-0" Crushed | 1½"-0" Crushed |
|------------------|-----------------|---------|---------------|----------------|
|                  | 180             | 2,046   | 26,987        | 11,084         |

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.

| LOCATION           | COMPACTION EQUIPMENT OPTIONS |
|--------------------|------------------------------|
| All road segments. | 1                            |
| Project No. 3      | 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. 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:

| LOCATION           | COMPACTION EQUIPMENT OPTIONS |
|--------------------|------------------------------|
| All road segments. | 1, 2 & 4                     |
| Project No. 3      | 1 & 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.

On road segments EE to FF, GG to HH, M to II, and JJ to KK, each layer requires approval by STATE 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 AND PROCESSING REQUIREMENTS

Jaw-Run Rock. The rock shall be uniformly mixed and spread in layers at the approved locations. Each layer of Jaw-Run rock shall be moistened or dried to uniform moisture content suitable for maximum compaction and compacted in layers not to exceed 8 inches in depth. When more than 1 layer is required, each shall be shaped and compacted before the succeeding layer is placed. Any irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. Each layer shall be compacted with a minimum of 3 passes over the entire width and length of the road. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

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

| LOCATION                   | COMPACTION EQUIPMENT OPTIONS |
|----------------------------|------------------------------|
| All Jaw-Run rock locations | 3 & 4                        |
| Project No. 3              | 3 or a combination of 1 & 4  |

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 and bridge approaches. 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. Crawler Tractors. D-7 Caterpillar or equivalent or larger.

EXHIBIT E  
CULVERT SPECIFICATIONS

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

Culverts Nos. 10, 11 & 12 may be constructed of metal or polyethylene, in new or used condition acceptable by STATE.

All other Culverts shall be constructed of corrugated double-walled polyethylene, and meet the requirements of AASHTO M-294-06, Type S Culvert.

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 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.

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 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 stream crossing and replacement culverts.

Backfill on road improvement segments shall consist of crushed rock.

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

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

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" add 6" for roads which will not be rocked. 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.

EXHIBIT E  
CULVERT SPECIFICATIONS

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.

Compaction by tamping utilizing a Vibratory Hand-Operated or Backhoe-Mounted Tamper is required for all stream crossing culverts and all culverts installed or replaced on road improvement segments.

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

The intake ends of culverts 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.

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

EXHIBIT E  
CULVERT LIST

| CULVERT NO. | DIAMETER (Inches) | LENGTH (Feet) | ROAD SEGMENT POINT TO POINT | STATION |
|-------------|-------------------|---------------|-----------------------------|---------|
| 1           | 18                | 30            | A to B                      | 14+50   |
| 2           | 24                | 50            | A to B                      | 18+85   |
| 3           | 18                | 30            | A to B                      | 28+80   |
| 4           | 18                | 30            | A to B                      | 34+50   |
| 5           | 18                | 30            | A to B                      | 39+50   |
| 6           | 18                | 50            | C to D                      | 3+80    |
| 7           | 18                | 30            | A to B                      | 19+70   |
| 8           | 18                | 30            | K to L                      | 2+00    |
| 9           | 18                | 30            | K to L                      | 8+00    |
| 10          | 18                | 50            | M to N                      | 0+00    |
| 11          | 18                | 30            | O to P                      | 0+75    |
| 12          | 18                | 30            | U to V                      | 2+00    |
| 13          | 18                | 30            | Y to Z                      | 5+00    |
| 14          | 24                | 40            | Y to Z                      | 6+00    |
| 15          | 18                | 30            | A to B                      | 14+00   |
| 16          | 18                | 30            | A to B                      | 15+50   |
| 17          | 18                | 30            | A to B                      | 17+50   |
| 18          | 18                | 40            | GG to HH                    | 26+60   |
| 19          | 18                | 30            | GG to HH                    | 30+50   |
| 20          | 18                | 30            | GG to HH                    | 33+20   |
| 21          | 18                | 30            | GG to HH                    | 36+75   |
| 22          | 18                | 30            | GG to HH                    | 43+50   |
| 23          | 18                | 30            | GG to HH                    | 46+90   |
| 24          | 24                | 40            | GG to HH                    | 59+75   |
| 25          | 18                | 30            | GG to HH                    | 62+80   |
| 26          | 18                | 30            | GG to HH                    | 67+90   |
| 27          | 24                | 30            | GG to HH                    | 76+80   |

EXHIBIT E  
CULVERT LIST

| CULVERT NO. | DIAMETER (Inches) | LENGTH (Feet) | ROAD SEGMENT POINT TO POINT | STATION |
|-------------|-------------------|---------------|-----------------------------|---------|
| 28          | 18                | 30            | GG to HH                    | 82+15   |
| 29          | 18                | 30            | GG to HH                    | 103+30  |
| 30          | 18                | 30            | M to II                     | 7+95    |
| 31          | 18                | 30            | JJ to KK                    | 3+10    |
| 32          | 24                | 30            | LL to S                     | 3+65    |
| 33          | 18                | 30            | MM to NN                    | 2+00    |
| 34          | 24                | 30            | MM to NN                    | 3+00    |
| 35          | 18                | 45            | MM to NN                    | 9+15    |
| 36          | 18                | 30            | MM to NN                    | 10+45   |
| 37          | 24                | 30            | MM to NN                    | 12+20   |
| 38          | 18                | 30            | MM to NN                    | 21+25   |
| 39          | 24                | 55            | MM to NN                    | 23+50   |
| 40          | 18                | 30            | MM to NN                    | 26+00   |
| 41          | 18                | 30            | MM to NN                    | 28+00   |
| 42          | 18                | 64            | MM to NN                    | 29+40   |
| 43          | 24                | 30            | NN to OO                    | 11+00   |
| 44          | 24                | 30            | NN to OO                    | 12+00   |
| 45          | 18                | 30            | NN to OO                    | 12+75   |
| 46          | 18                | 30            | NN to W                     | 7+20    |
| 47          | 18                | 30            | NN to W                     | 9+00    |
| 48          | 18                | 50            | PP to CC                    | 0+00    |
| 49          | 18                | 30            | PP to CC                    | 6+00    |
| 50          | 18                | 30            | PP to CC                    | 10+10   |

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.
  - (e) Signage closing the pit to public access during operations.
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 overburden and reject material shall be hauled to the designated waste areas as directed by STATE.
5. 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.
6. 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.
7. 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. Construct access roads to existing benches within the pit. All pit and bench access roads shall be blocked, to vehicle access, with boulders at the end of quarry operations.
8. Quarry face shall be developed in a uniform manner. All quarry backslopes shall be left in a stable condition.
9. Oversized material that is produced shall be piled in a designated area adjacent to the pit. It shall not be wasted.
10. 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.
11. 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.
12. Apply seed and mulch to the waste area, as specified in Exhibit H.

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 may require 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 in writing 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 or hauled from the quarry prior to STATE approval to proceed shall not be credited to the required rock quantity. STATE may require unapproved rock to be returned to the quarry for further processing. 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%   |

|                  |         |              |         |
|------------------|---------|--------------|---------|
| <u>For 3"-0"</u> | Passing | 4" sieve     | 100%    |
|                  | Passing | 3" sieve     | 90-100% |
|                  | Passing | 1½" sieve    | 60-90%  |
|                  | Passing | ¾" sieve     | 40-60%  |
|                  | Passing | ¼" sieve     | 20-40%  |
|                  | Passing | No. 10 sieve | 5-20%   |

JAW-RUN RIPRAP ROCK SPECIFICATIONS

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

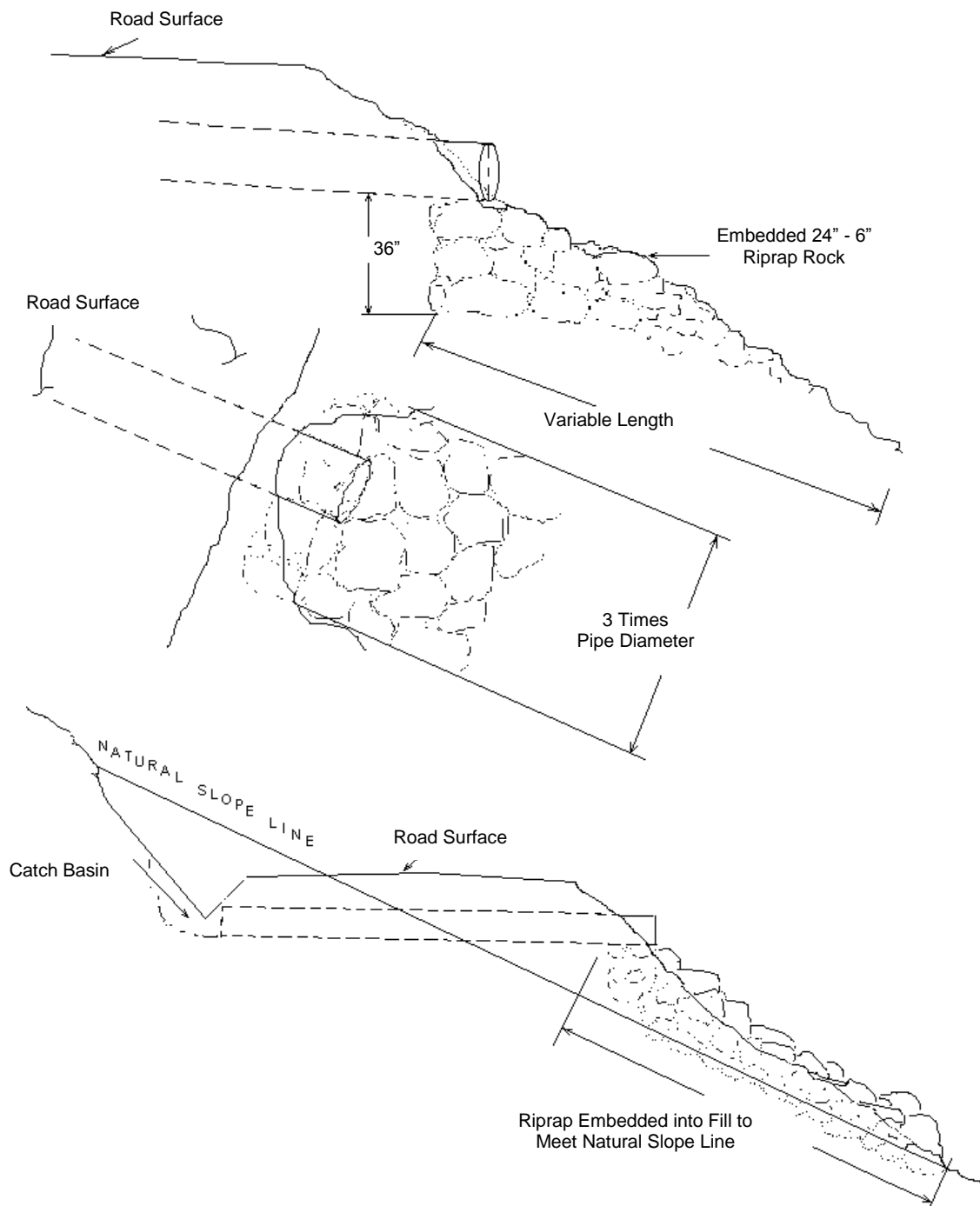
Material shall be well graded, free of organic material and shall not have excessive fine materials.

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

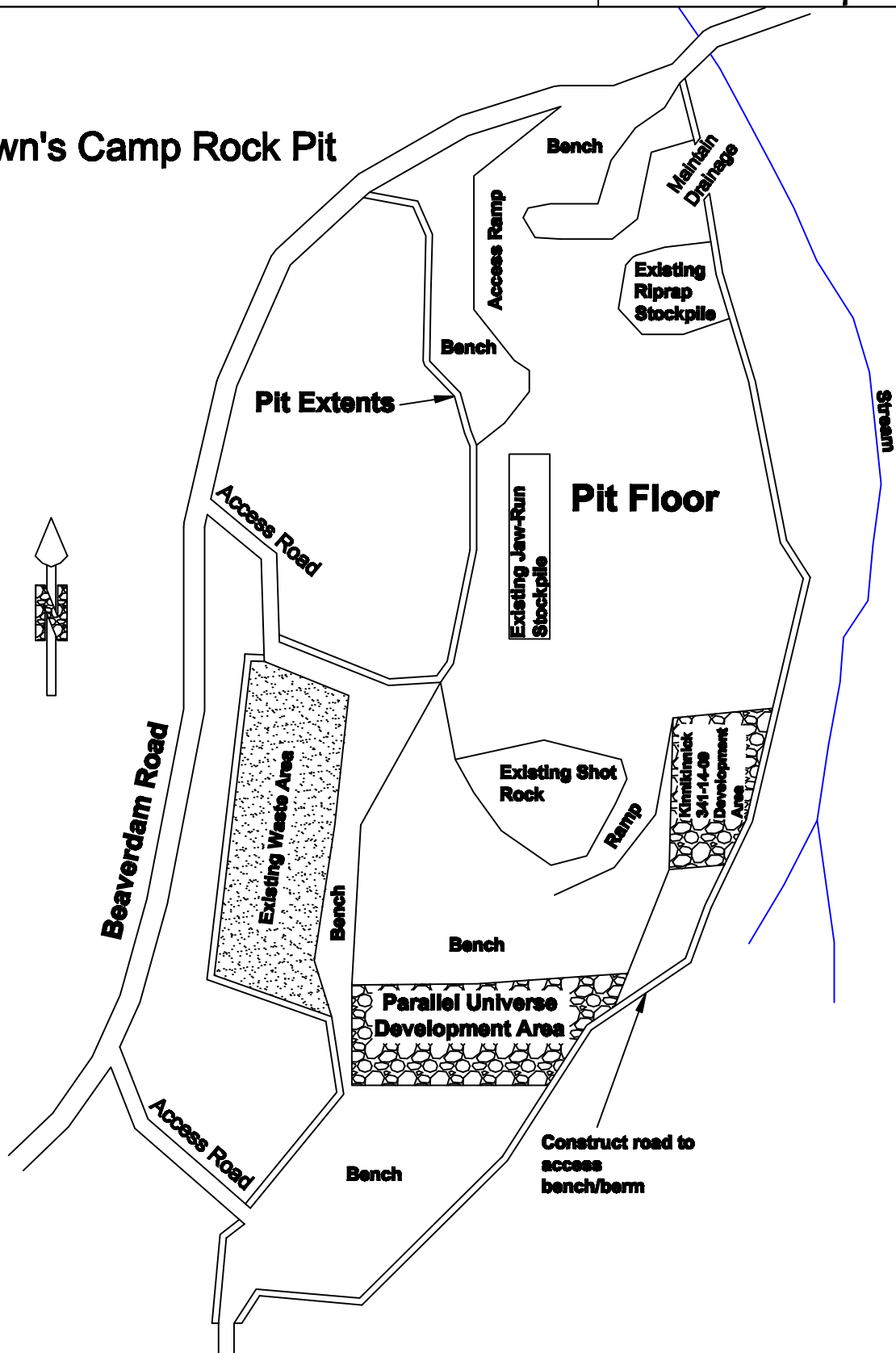
Control of gradation shall be by visual inspection by STATE.

EXHIBIT F

TYPICAL EMBEDDED ENERGY DISSIPATOR

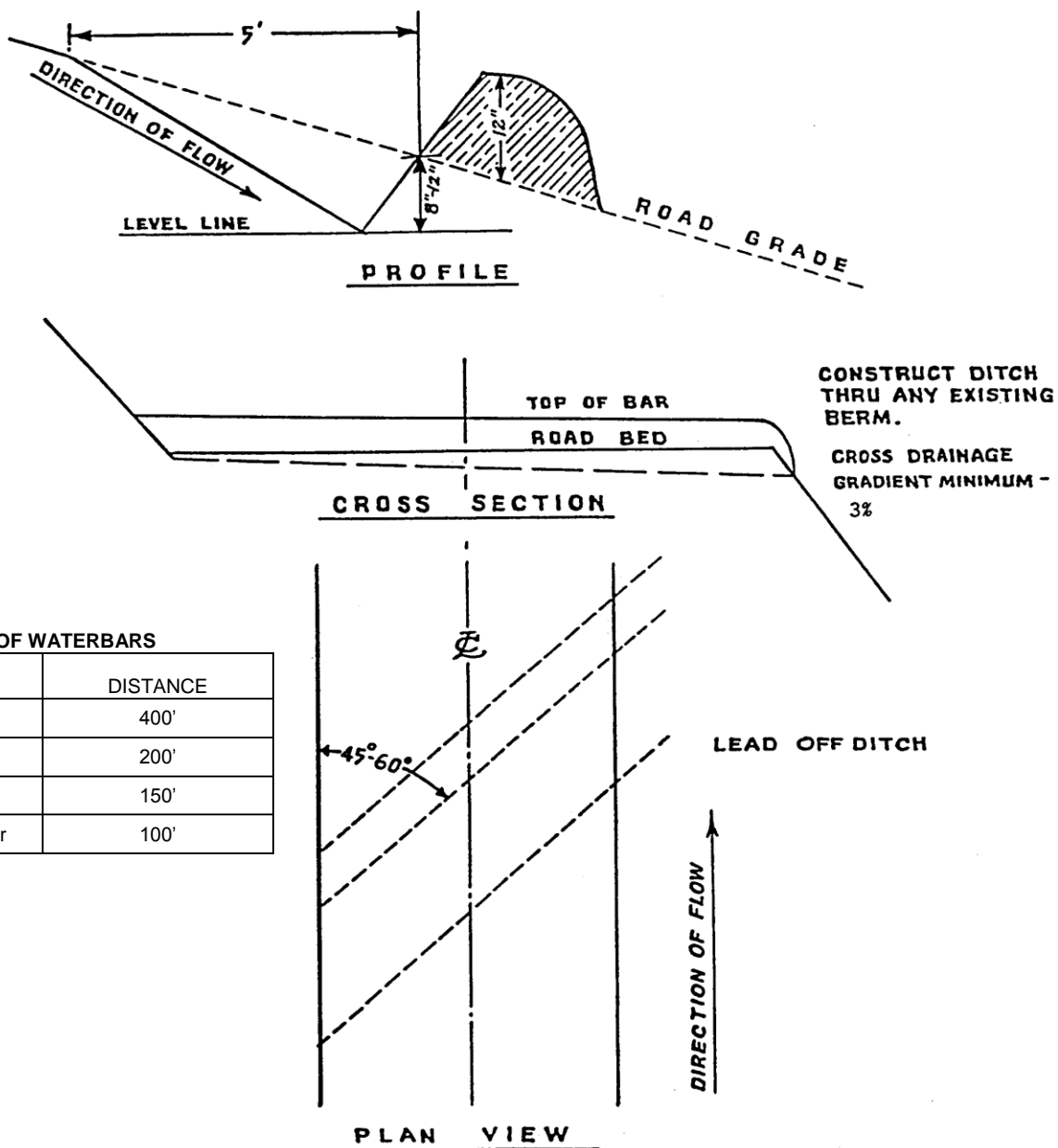


# Brown's Camp Rock Pit



No Scale

EXHIBIT G  
WATERBAR SPECIFICATIONS



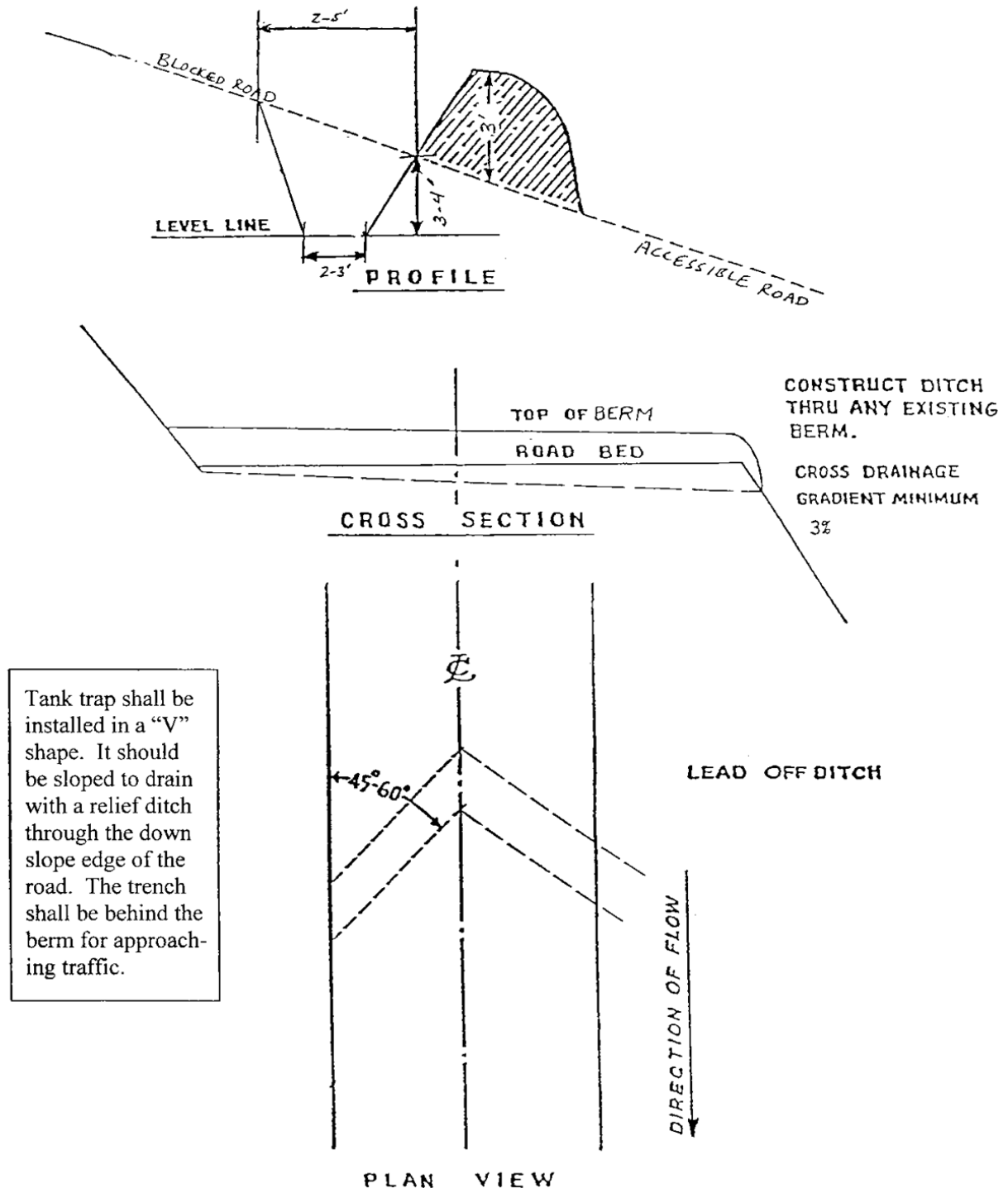
SPACING OF WATERBARS

| 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



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

TANK TRAP  
SPECIFICATIONS

## EXHIBIT H

### 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, 3, and 5. Apply straw mulch to all bare soils within 100' of streams resulting from Project Nos. 1, 3, 5, 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   | K to L        | Culvert Nos. 8 & 9                                |
| U to V        | Culvert No. 12       | Y to Z        | Culvert No. 13 - 17                               |
| EE to FF      | All bare soil        | GG to HH      | Culvert Nos. 18, 23, 24, 27,<br>and all bare soil |
| LL to S       | Culvert No. 32       | NN to OO      | Culvert Nos. 43 & 44                              |
| NN to W       | Culvert Nos. 46 & 47 | RR to SS      | All bare soil                                     |
| Project No. 3 | All bare soil        | Project No. 5 | All bare soil                                     |

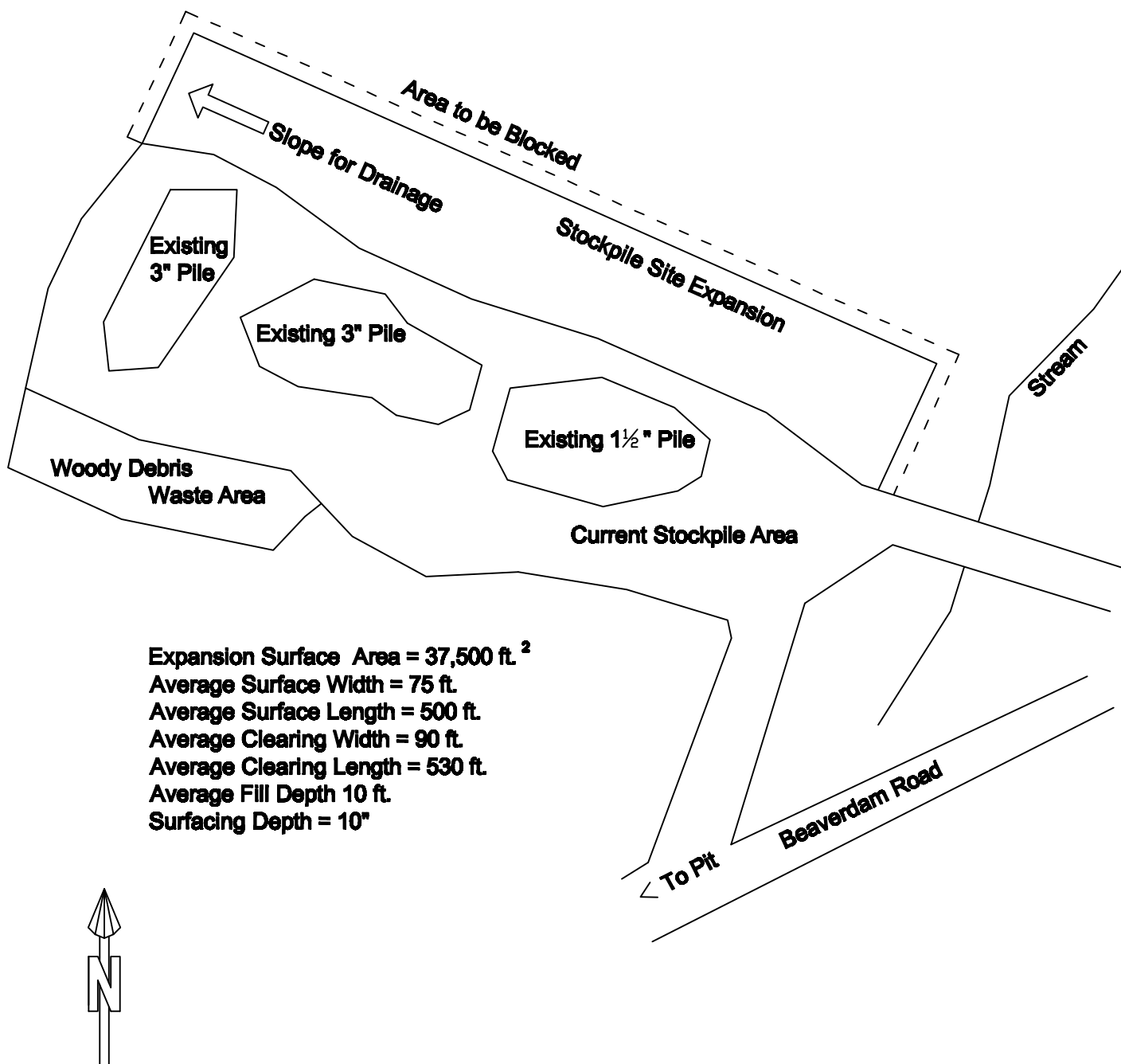
EXHIBIT I

STOCKPILE EXPANSION

PURCHASER shall expand the stockpile site 75 feet wide by 500 feet long, final surfaced width, within the "Timber Sale Boundary" signs adjacent to the "Brown's Camp Stockpile Site", shown as Area 7 on Exhibit A. Specific objectives for this project include:

- (a) Timber removal.
  - (b) Clearing and grubbing of the site.
  - (c) Excavate and haul material.
  - (d) Constructing the stockpile site.
  - (e) Surfacing the site.
  - (f) Blocking off OHV trails and openings within the tree line.
  - (g) Applying grass seed, fertilizer and mulch.
- (1) Timber Removal. Cut and haul all merchantable trees within posted Timber Sale Boundary. Timber Sale Boundary will be marked with "Timber Sale Boundary" signs, ribbons and/or marked with blue paint on boundary trees.
  - (2) Clearing and Grubbing. Clear and grub site according to the specifications in Exhibit D, and as directed by STATE.
  - (3) Excavate and Haul Fill Material. Fill material shall be excavated from the locations shown on Exhibit F as "Parallel Universe Development Area". If additional material to complete the "Stockpile Expansion" is required, the material shall come from the area marked "Existing Waste Area" on Exhibit F.
  - (4) Construct Stockpile Site. Construct and compact the stockpile site according to the specifications in Exhibit D. Stockpile site is to be outsloped to the Northwest for drainage with an average grade between 3-4 percent. Fill depths will vary with the terrain and will be determined by STATE. Toe of fill shall be between 1-2 feet from the base of the posted Timber Sale Boundary trees. Existing trees shall not be buried with fill material.
  - (5) Surfacing. Surface stockpile site with 10" of Jaw-Run rock. Compact surface as specified in Exhibit D. The final surfaced elevation of the stockpile expansion shall be uniform with the existing stockpile site elevation.
  - (6) Blocking. Use stumps, logs and/or boulders to block existing OHV trails or larger openings in the tree line. Openings shall not be greater than 36" wide. Fill slopes shall also be blocked. Block as directed by STATE. Boulders may need to be hauled in from the pit if local material is insufficient to meet the blocking needs. STATE shall determine the final placement of blocking material.
  - (7) Erosion Control. Apply grass seed, fertilizer and mulch according to the specifications is Exhibit H.

## Brown's Camp Stockpile Site



No Scale



EXHIBIT J

METAL GATE INSTALLATION AND SPECIFICATIONS

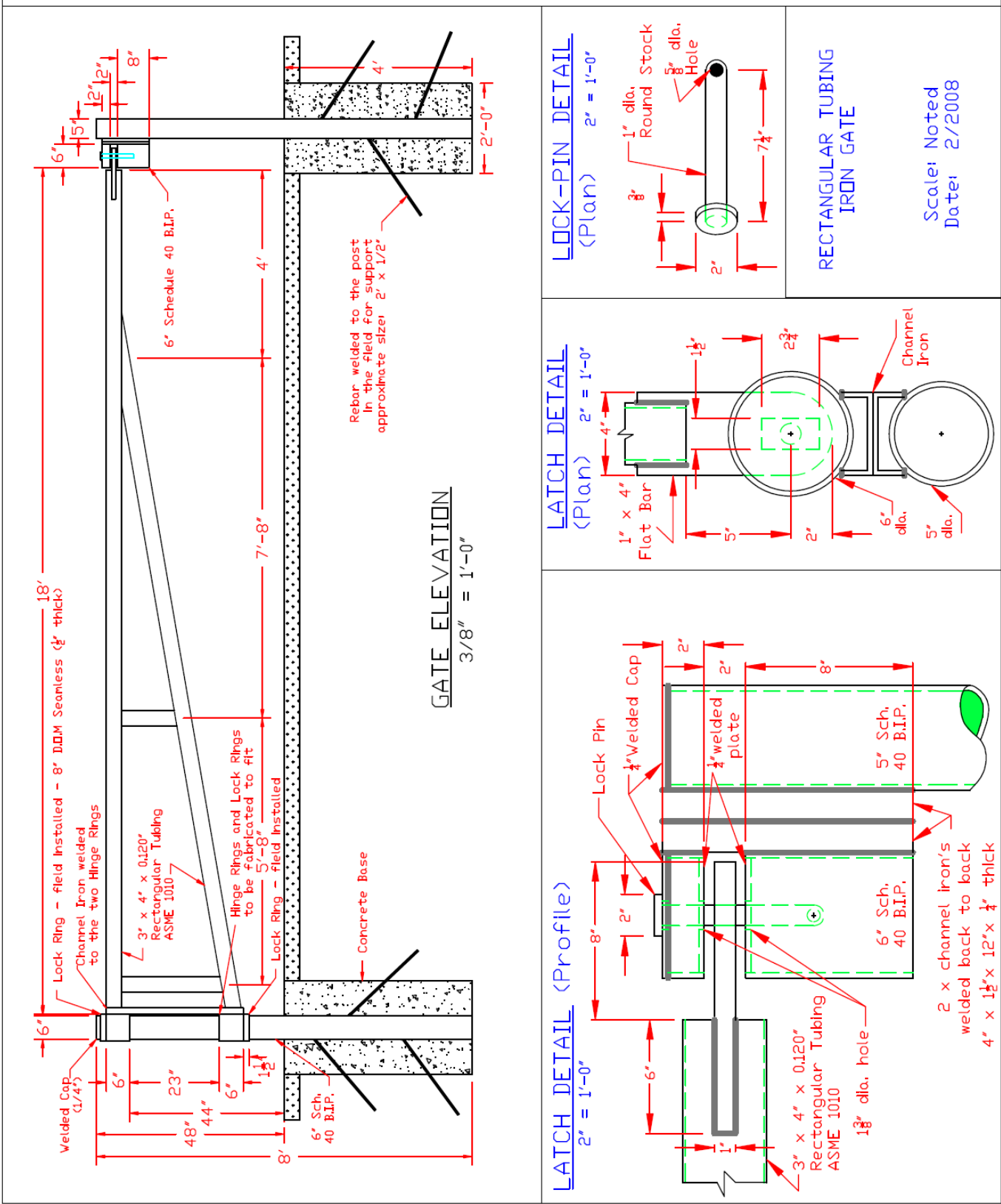


EXHIBIT K

ROAD VACATING SPECIFICATIONS

Road vacating work shall be completed after the completion of logging operations on that road segment. The road segment shall be blocked to vehicle access within 24 hours of the end of logging operations.

PURCHASER shall vacate the following segments: M to N, O to P, Q to R, S to T, U to V and W to X.

Specific objectives for this project include:

- (a) Blocking access to all vehicles.
  - (b) Erosion Control.
  - (c) Removal of specified culverts.
  - (d) Rip road bed and landing.
  - (e) Construct waterbars.
  - (f) Reestablish ditchlines.
- (1) 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.
  - (2) Erosion Control. Erosion control shall be completed in a progressive manner. Grass seed, fertilizer, and straw mulch shall be applied for every 500 feet of road vacated, prior to continuing work.
  - (3) All excavated material and bare soil shall utilize grass seed, fertilizer, and straw mulch approved by STATE and in accordance with the specifications in Exhibit H. Applied mulch shall be a minimum of 2 inches deep and provide a uniform cover. Grass seed, fertilizer and mulch shall be applied to dirt road surface and landings.
  - (4) Culvert Removal. Remove existing drainage structures and culverts. Removed culverts shall become property of the PURCHASER and be removed from STATE land in the same project period in which the removal occurred.
  - (5) Rip Road Bed and Landing. Rip road and landing surfaces beyond road blockage to a minimum depth of 12 inches.
  - (6) Construct Waterbars. Construct waterbars as specified in Exhibit G.
  - (7) Reestablish Ditchlines. Reestablish ditchlines at Points M, O and U.

EXHIBIT L

WATERBAR INSTALLATION

Specific objectives for this project include:

- (1) Construct Drivable Waterbars along LL to S according to the specifications in Exhibit G and as directed by STATE.
- (2) All work shall be performed during dry conditions acceptable to STATE.

## **PART IV: OTHER INFORMATION**

State Timber Sale Contract  
No. 341-15-26  
Parallel Universe

## Written Plan for Parallel Universe Timber Sale: 341-15-26

## Timber Harvest

**LEGAL DESCRIPTION:** The Parallel Universe Timber Sale is located in Portions of Sections 35 and 36, T2N, R6W, Section 31, T2N, R5W, and Sections 1 and 2, T1N, R6W, W.M., Tillamook County, Oregon.

**PROTECTED RESOURCE:** Deyoe Creek is a medium Type F Stream, Elliot Creek is a large Type F stream, two unnamed small Type F streams that are tributaries to Elliot Creek, and Devil's Lake Fork Wilson River.

**DESCRIPTION OF THE AREA:** Deyoe Creek is located to the west of Areas 3, 4, and 6 with adjacent slopes of 5% to 20%. Elliot Creek is located to the northwest of Area 1, north and west of Area 2, and south and west of Area 6 with adjacent slopes of 5% to 60%. One unnamed tributary to Elliot Creek is located to the west of Area 1 with adjacent slopes of 30% to 60%. Another unnamed tributary to Elliot Creek is located within Area 6 with adjacent slopes of 15%. Devil's Lake Fork Wilson River is located north of Area 1 with adjacent slopes of 20% to 60%. All Type F streams have mature Douglas-fir and red alder next to them.

**PROTECTION MEASURES:** All Type F stream buffers are excluded from harvesting. The large and medium Type F streams have an average of 187 foot horizontal distance stream buffer. The small Type F in Area 6 thinning has a 25 foot no harvest buffer.

No ground based equipment shall be allowed within 50 feet of streams.

All cables passing over or through buffers shall take necessary precautions to protect all buffer components.

Reviewed by: \_\_\_\_\_  
Erik Marcy; Unit Forester Date \_\_\_\_\_

Prepared by: Peter Stone  
4/23/14

## NOTICE OF TRANSFER OF STATE TIMBER

### Instructions

629:-Form-301-010

Complete Section 1. Mark the box which applies to you/your company in Section 2. Complete Section 3 and obtain signatures.

### SECTION 1

On \_\_\_\_\_, state timber sale purchaser (Transferor)  
\_\_\_\_\_, sold, exchanged or otherwise transferred to  
\_\_\_\_\_, (Transferee) state timber originating from State  
Timber Sale Contract No. \_\_\_\_\_.

Transferee hereby certifies that they:

- (a) Will not export the unprocessed state timber which is the subject of this transaction;
- (b) Will not sell, transfer, exchange or otherwise convey the unprocessed timber which is the subject of this transaction to any other person without first obtaining a like certification from that person; and
- (c) Are not prohibited by OAR's 629-31-005 through 045 from purchasing state timber or logs directly from the State Forester, or this is a sale of Western Red Cedar for domestic processing.

### SECTION 2

- ☐ Have not exported unprocessed timber originating from private lands in Oregon in the last 24 months.
- ☐ This is a sale of hardwood logs for domestic processing.
- ☐ This is a sale of Western Red Cedar for domestic processing.
- ☐ This is a sale of pulp logs or cull logs processed at domestic pulp mills, domestic chip plants or other domestic operations for the purpose of conversion of the logs into chips.

### SECTION 3

The parties understand that falsely entering into this certification, or failure to comply with the terms of this certification is a violation of the Forest Conservation and Shortage Relief Act of 1990 and OAR Chapter 629, Division 31, and is subject to any and all penalties contained therein.

Transferor:

Transferee:

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Dated

\_\_\_\_\_  
Dated

[Note: For the purpose of this form, the definition of unprocessed timber is the same as in OAR 629-31-005]

Mail To: State Forester  
2600 State Street  
Salem, OR 97310