LUMP SUM SALE

PROSPECTUS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT
KLAMATH FALLS RESOURCE AREA OFFICE

KLAMATH FALLS RESOURCE AREA
KLAMATH MASTER UNIT

Klamath Falls Sale No. ORL04-TS20-02
Sale Date: **July 29, 2020** (**10:00am**)

Bryant Mountain Timber Sale, Klamath County, PD Bid Deposit Required: **$7,900.00**

All timber designated for cutting in E ½ NE ¼, SW ¼ NE ¼, E ½ NW ¼, E ½ SW ¼, SE ¼ Sec. 12; NE ¼ NE ¼, E ½ NW ¼ Sec. 13; NE ¼, N ½ SE ¼ Sec. 24; E ½ NE ¼, NE ¼ SE ¼ Sec. 25 T.40S., R.12E., SW ¼ NW ¼, W ½ SW ¼, SE ¼ SW ¼, SW ¼ SE ¼, Sec. 7; SW ¼ NW ¼, NW ¼ SW ¼, Sec. 17; W ½ NE ¼, SE ¼ NE ¼, E ½ NW ¼ Sec. 18; W ½ NW ¼, SE ¼ NW ¼, N ½ SW ¼, SW ¼ SW ¼ Sec. 19; NW ¼ SW ¼ Sec. 30 T.40S., R.13E.,Willamette Meridian

Approximate Number of Trees	**Species**	**Est. Volume MBF 16' Log**	**Appraised Price Per MBF***	**Est. Volume Times Appraised Price**
18,226	Ponderosa Pine	1,757	$34.80	$61,143.60
3,265	White Fir	345	$48.10	$16,594.50
450	Incense-cedar	28	$26.30	$736.40
21,941		**2,130**		**$78,474.50**

*Stumpage values have been determined by analytical and market value appraisal methods. Additional information concerning the appraised price is available at the Klamath Falls Resource Area Office.

A revised Special Provisions has been added to the contract which enables the Contracting Officer to suspend the contract to facilitate protection of certain plant or animal species, and/or to modify or terminate the contract when necessary to: (1) Comply with the Endangered Species Act or to prevent incidental take of northern spotted owls in accordance with management direction in the Record of Decision (ROD) and Resource Management Plan (RMP), or (2) Comply with a court order, or: (3) Protect species which were identified for protection in accordance with management direction established in the ROD and RMP.

CRUISE INFORMATION - SAWLOG INFORMATION – This sale will be offered as a **lump sum sale**. Timber Volumes were based upon the PCMTRE method with a 20 BAF and 1 plot for every 2.27 acres. Plots were monumented with a pink pin flag at plot center and pink

flagging hung near each plot. Juniper was cruised for the purpose of appraising for its removal. With respect to merchantable trees of all conifer species: the average tree is 14.4 inches DBHOB; the average gross merchantable log contains 50 bd. ft.; the total gross volume is approximately 3,029 MBF.; and 82% recovery is expected. Combined sampling error for the cruise was estimated at 12.60%.

Note: This timber sale has been cruised, appraised, and advertised based upon Scribner Board Foot Volumes (16 Foot Log). The minimum bid figures shown by species are dollars per thousand board feet (MBF). The minimum bid increment will be $.50 per MBF.

LOG EXPORT AND SUBSTITUTION RESTRICTIONS - All timber offered for sale hereunder is restricted from export from the United States in the form of unprocessed timber and is prohibited from use as a substitute for exported private timber.

CUTTING AREA & HARVEST PRESCRIPTION -eleven (11) units containing approximately 490 acres of density management treatment.

CUTTING TIME - Contract duration will be thirty-six (36) months for cutting and removal of timber.

ACCESS - Access to the sale area is available via state highways, county roads, and existing BLM roads.

ROAD MAINTENANCE - The Purchaser will be required to maintain approximately seventeen (17) miles of existing BLM roads. In addition, the Purchaser will be required to pay a maintenance fee of $1.62 per MBF or a total of $3,444.04 for the use of these roads.

SOIL DAMAGE PREVENTION - Pursuant to Section 25 of Form 5450-3, Timber Sale Contract, the Purchaser shall not operate or cause to have operated on the contract area, any ground-based logging equipment when soil moisture content exceeds 20% by weight as determined by a moisture meter. This requirement does not apply if snow logging conditions exist as described in the contract.

EQUIPMENT REQUIREMENTS -

1. Mechanized harvesting equipment capable of cutting up to a twenty (20) inch Diameter Breast Height (DBH) tree and reaching a minimum of twenty (20) feet laterally.

2. At least one ground-based yarding tractor shall be equipped with an integral arch and winch system capable of lining logs at least one hundred feet (100').

SLASH DISPOSAL-

1. Whole tree yarding or yarding with the tops attached is required on all trees designated for cutting within all harvest units on as shown on the Exhibit A.

2. Unmerchantable timber (slash, limbs, tops, cull logs, pieces of logs, etc.) can be removed as biomass or other products. If unmerchantable timber is removed as biomass or other nontraditional products, a second contract will be used and the price of the material will be

negotiated.

OTHER-

1. Extension of time beyond the normal 30 days may be granted for completing bonding and contract signing requirements upon written request and justification from the Purchaser.

2. All operations are seasonally restricted from October 15th of one calendar year to June 1st of the following calendar year, unless waived by the Authorized Officer or winter logging conditions exist.

3. Cut stumps of all species fourteen (14) inches in diameter and larger will be treated with a fungicide. The fungicide will contain a cement dye to help monitor application compliance.

4. All logging equipment will be washed prior to operating on BLM lands to prevent the spread of noxious weeds.

5. All landing piles require a machine constructed fire line around the entire pile down to mineral soil.

6. This contract includes an additional special provision to ensure the Purchaser understands he/she is required to conduct all operations in compliance with Contract Section 12 (Purchaser's Contractual Responsibilities for Liability) and Contract Section 29 (Safety and Health) and the Special Provisions included in Section 42 of this Contract.

7. The purchaser shall select, mark, and create two hundred nineteen (219) snags in accordance with Exhibit E of the contract.

8. No harvest activity shall be conducted within 660' of any eagle nest as shown on the Exhibit A between January 1st and August 31st both days inclusive. Hauling is allowed through the Eagle Restriction area between January 1st and August 31st with the condition that no jake brakes are to be used in these areas, vehicles will remain moving, and occupants will not leave their vehicles while in these areas. If certain conditions are met such as successful fledging as determined by the Contracting Officer prior to August 31st harvest activity may be allowed.

CONTRACT TERMINATION - A Special Provision has been added to the contract which enables the Contracting Officer to suspend the contract to facilitate protection of certain plant or animal species, and/or to modify or terminate the contract when necessary to comply with the Endangered Species Act or comply with a court order. This contract provision limits the liability of the Government to the actual costs incurred by the Purchaser which have not been amortized by timber removed from the contract area.

NARRATIVE DESCRIPTION OF HOW TO GET TO THE TIMBER SALE AREA - The sale is located approximately twenty (20) miles east of Klamath Falls. From Klamath Falls, take Highway 140 east for approximately six (6) miles to N. Poe Valley Road. Turn right on N. Poe Valley Road and travel East for approximately nine (9) miles. Turn right toward Harpold Road then in 500ft turn left on Harpold Road. Travel on Harpold Road for

approximately three (3) miles. Turn right onto W Langell Valley Road. Stay on W Langell Valley Road for approximately two (2) miles then turn right onto Bryant Mountain Road (39-11-26.0). Follow Bryant Mountain Road for approximately six (6) miles to the project area.

ENVIRONMENTAL ASSESSMENT - An environmental assessment was prepared for this sale, and a Finding of No Significant Impact has been documented. This document is available for inspection as background information for this sale at the Klamath Falls Resource Area Office.

Notice of Decision for sale of timber dated July 1st, 2020.

Section 41

(A) Timber Reserved from Cutting

The following timber on the contract area is hereby reserved from cutting and removal under the terms of this contract and is retained as the property of the Government:

(1) **AR-1** All timber on the reserve areas as shown on Exhibit A and all blazed, orange painted, or orange painted and/or posted trees which are on or mark the boundaries of the reserve areas, and all orange painted trees within cutting units as shown on Exhibit A, and all trees within the scattered reserve area "skips" designated with green posters and orange paint on the exterior boundary.

(2) **IR-6** All western juniper as described in exhibit S in all units shown on Exhibit A.

(3) **IR-13** All snags, or downed trees of all decay classes in all cutting units shown on Exhibit A which do not present a safety hazard as determined by the Authorized Officer. All snags felled and all downed trees shall be retained on site unless approved by the Authorized Officer.

Section 42

(A) Log Exports

(1) **LE-1** All timber sold to the Purchaser under the terms of the contract, except exempted species, is restricted from export from the United States in the form of unprocessed timber, and is prohibited from being used as a substitute for exported private timber. For the purpose of this contract, unprocessed timber is defined as: (1) any logs, except those of utility grade or below, such as sawlogs, peeler logs; and pulp logs; (2) cants or squares to be subsequently remanufactured exceeding eight and three-quarters (8-3/4) inches in thickness; (3) split or round bolts or other roundwood not processed to standards or specifications suitable for end-product uses; or (4) western red cedar lumber which does not meet lumber of American Standards Grades of Number 3 dimension or better, or Pacific Lumber Inspection Bureau R-List Grades of Number 3 Common or better. Thus, timber manufactured into the following will be considered processed: (1) lumber and construction timbers, regardless of size, manufactured to standards and specifications suitable for end-product uses; (2) chips, pulp, and pulp products; (3) green or dry veneer and plywood; (4) poles and piling cut or treated for use as such; (5) cants, squares, and lumber cut for remanufacturing of eight and three-quarters (8-3/4) inches in thickness or less; or (6) shakes and shingles.

Substitution will be determined under the definition found in 43 CFR 5400.0-5.

The Purchaser is required to maintain and upon request to furnish the following information:

1. Date of last export sale.

2. Volume of timber contained in last export sale.

3. Volume of timber exported in the past twelve (12) months from the date of last export sale.

4. Volume of Federal timber purchased in the past twelve (12) months from the date of last export sale.

5. Volume of timber exported in succeeding twelve (12) months from date of last export sale.

6. Volume of Federal timber purchased in succeeding twelve (12) months from date of last export sale.

In the event the Purchaser elects to sell any or all of the timber sold under this contract in the form of unprocessed timber, the Purchaser shall require each party buying, exchanging, or receiving such timber to execute a Form 5460-16 (Certificate as to Non-substitution and the Domestic Processing of Timber). The original of such certification shall be filed with the Authorized Officer. Additionally, when the other party is an affiliate of the Purchaser, the Purchaser will be required to update information under item (2) of Form 5450-17 (Export Determination) and file the form with the Authorized Officer.

In the event an affiliate of the Purchaser has exported private timber within twelve (12) months prior to purchasing or otherwise acquiring Federal timber sold under this contract, the Purchaser shall, upon request, obtain from the affiliate information in the form specified by the Authorized Officer and furnish the information to the Authorized Officer.

Prior to the termination of this contract, the Purchaser shall submit tothe Authorized Officer Form 5460-15 (Log Scale and Disposition of Timber Removed Report), which shall be executed by the Purchaser. The purchaser shall also provide a current, interim Log Scale and Disposition of Timber Removed Report (Form 5460-15) upon request by the Authorized Officer at any time during the contract period for cutting and removal specified in Section 4 of this contract as amended. In addition, the Purchaser is required under the terms of this contract to retain for a three-year period from the date of termination of the contract the records of all sales or transfer of logs involving timber from the sale for inspection and use of the Bureau of Land Management.

Unless otherwise authorized in writing by the Contracting Officer, the Purchaser shall brand clearly and legibly one end of all logs with a scaling diameter (small end inside bark) of over ten (10) inches, prior to the removal of timber from the contract area. All loads of eleven (11) logs or more will have a minimum of ten (10) logs clearly and legibly branded on one end regardless of the diameter of the logs. All logs will be branded on loads of ten (10) logs or less. One end of all branded logs to be processed domestically will be marked with a three (3) square inch spot of highway yellow paint. The Purchaser will stop trucks for accountability monitoring at mutually agreed upon locations when notified by the Authorized Officer.

If multiple trailers (mule trains) are used, each bunked load shall be considered an individual load, and these guidelines will apply to each bunked load. If a flatbed stake trailer is used, each bundle will be treated as a separate load.

At the discretion of the Contracting Officer, the Purchaser may be required to brand and paint all logs. Any increased costs for log branding and painting shall be the responsibility of the Purchaser.

In the event of the Purchaser's noncompliance with this subsection of the contract, the Authorized Officer may take appropriate action as set forth in Section 10 of this contract. In addition, the Purchaser may be declared ineligible to receive future awards of Government timber for a period of one year.

(B) Logging

(1) **L-1** Before beginning operations on the contract area for the first time or after a shutdown of seven (7) or more days, the Purchaser shall notify the Authorized Officer in writing of the date they plan to begin operations. The Purchaser shall also notify the Authorized Officer in writing if they intend to cease operations for any period of seven (7) or more days.

(2) **L-2** Prior to the commencement of operations the Purchaser shall obtain from the Authorized Officer written approval of a written operations and logging plan commensurate with the terms and conditions of the contract, which shall include measures needed to ensure protection of the environment and watershed such as having spill kits on site during operations. A pre-work conference between the Purchaser's authorized representative and the Authorized Officer must be held at a location designated by the Authorized Officer before the logging plan will be approved. All logging shall be done in accordance with the plan.

(3) **L-4** All western juniper trees three (3) inches or larger D.B.H.O.B., which are not reserved as described in Exhibit S shall be felled and yarded in all units shown on Exhibit A.

(3) **L-5** All green trees (7.0) inches or larger D.B.H.O.B. which are not reserved shall be felled and yarded in all cutting units shown on Exhibit A.

(4) **L-8** In all harvest units as shown on Exhibit A, all trees designated for cutting shall be felled and whole tree yarded except when excessive stand damage occurs as determined by the Authorized Officer. If excessive stand damage occurs, all logs shall be completely limbed, except the top log, and bucked into lengths determined by the Authorized Officer prior to being yarded.

(5) **L-10** In all harvest units shown on Exhibit A, all trees designated for cutting which are within one hundred (100) feet of any fence, boundary, or powerline shall be directionally felled away from the fence or powerline in accordance with Section 14 of the Contract. Use of jacks, wedges, and/or tree pulling with cables or lines shall be employed when necessary to meet this requirement.

Prior to operating near powerlines, purchaser will coordinate with Authorized Officer to contact PP&L and Bonneville Power Administration.

Any fences that need to be dropped or modified to facilitate logging operations will be

approved by the Authorized Officer. All damaged or modified fences will be repaired or replaced immediately following operations.

(6) **L-12** In the entire contract area shown on Exhibit A, yarding and felling shall be done in accordance with the yarding requirements or limitations for the designated area as follows.

Designated Area	Yarding Requirements or Limitations
Entire Contract Area	Approval of landing locations and sizes shall be obtained from the Authorized Officer prior to landing construction or use.
Entire Contract Area	Landing size shall not exceed one-quarter (¼) acre unless otherwise approved by the Authorized Officer.
Entire Contract Area	No tractor or wheel-type equipment shall be operated in or through any stream shown on Exhibit A except under special condition approved in the logging plan.
Entire Contract Area	All log loading shall be done with boom type loaders.
Entire Contract Area	Winter yarding is allowed between October 15 and May 15, when one of the following conditions is present: (a) Snow depth in the cutting unit averages twenty (20) inches or more. (b) The ground is frozen to a depth of six (6) inches or more
Entire Contract Area	The location of the skid roads shall be clearly designated on the ground, spaced at approximately 150-foot intervals, and approved by the Authorized Officer, prior to felling of timber to be yarded over that skid road. Existing skid roads will be utilized where possible.
Entire Contract Area	Yarding and Mechanical Harvesting shall be confined to periods when soil moisture is less than twenty (20) percent at a six (6) inch depth as measured by the Authorized Officer, or when wintertime yarding conditions are met. Yarding and Mechanical Harvesting will be suspended if soil damage is occurring, as determined by the Authorized Officer in accordance with Section 26.
Entire Contract Area	Yarding equipment shall be operated only on skid roads approved by the Authorized Officer.
Entire Contract Area	At least one yarding tractor or wheel-type equipment shall be equipped with an integral arch and winch system capable of lining logs at least one hundred (100) feet.
Entire Contract Area	All trees designated for cutting that cannot be felled with a

	mechanical harvester shall be hand felled to the lead of the designated skid trails.
Entire Contract Area	All trees twenty (20) inches DBH and smaller designated for cutting shall be felled and pre-bunched within forty (40) feet of and to the lead of designated skid trails with a mechanical harvester. The mechanical harvester must be capable of cutting up to a twenty (20) inch DBH tree and have an arm capable of reaching at least twenty (20) feet laterally.

(8) **L-19** No harvest activity shall be conducted on all cutting units and all roads between October 15 of one calendar year and May 15 of the following calendar year both days inclusive. If conditions are met as described in Section 42 [B][6] as determined by the Contracting Officer harvest activity will be allowed.

No harvest activity shall be conducted within 660' of any eagle roost as shown on the Exhibit A between January 1st and August 31st both days inclusive. If certain conditions are met such as successful fledging as determined by the Contracting Officer prior to August 31st harvest activity may be allowed. For the eagle restriction area, there will be no noise above ambient level within 660 feet of the roost from December 1st – April 31st. Hauling may be allowed through the Eagle Restriction area with the condition that no jake brakes are to be used in these areas, vehicles will remain moving, and occupants will not leave their vehicles while in these areas.

(9) **L-24** Before cutting and removing any trees necessary to facilitate logging in all cutting units shown on Exhibit A, the Purchaser shall identify the location of the skid roads, landings, and danger trees on the ground in a manner approved by the Authorized Officer at the pre-work conference and documented in the Logging Plan. Said Purchaser identification of trees to be cut and removed does not constitute authority to proceed with cutting and removal. In addition, before proceeding with cutting the following conditions must be met:

(a) All skid roads upon which timber is identified by the Purchaser to be cut and removed in accordance with this special provision must be necessary for the safe and expeditious removal of timber sold under this contact and shall be limited to the minimum width necessary for yarding of logs with a minimum of damage to reserve trees, however, unless otherwise approved in writing by the Contracting Officer, the width of each skid road shall be limited to 14 feet.

(b) The Purchaser may immediately cut and remove additional timber to clear skid roads, landings, and danger trees when the trees have been marked with pink paint above and below stump height by the Authorized Officer and thereby approved for cutting and removal by the Authorized Officer. The volume of the timber to be sold will be determined by the Authorized Officer in accordance with Bureau of Land Management prescribed procedures. No timber may be cut or removed under terms of this provision unless sufficient installment payments have been made in accordance with Section 3. (a). of the contract or sufficient bonding has been provided in accordance with Section 3. (e). of the contract.

(c) The Purchaser agrees that sale of this additional timber shall be accomplished by a unilateral modification of the contract executed by the Contracting Officer and that such timber shall be sold at the unit prices shown in Exhibit B of this contract unless: the value of the timber must be reappraised subject to the terms for contract extension set forth in Section 9 of the contract; or, the Authorized Officer determines that the species of trees are not listed in Exhibit B of this contract or any tree that exceeds forty (40) inches diameter at breast height shall be appraised and sold by bilateral modification of the contract at current fair market value in accordance with Section 8 of the contract.

(d) This authorization for the Purchaser to cut and remove additional timber prior to the execution of a modification may be withdrawn by the Contracting Officer if the Authorized Officer determines that the Purchaser has cut and removed any tree not previously marked and approved for cutting by the Authorized Officer, which under Section 10 of the contract constitutes a violation of the contract and under Section 13 of the contract may constitute a trespass rendering the Purchaser liable for damages under applicable law.

(e) If authorization is withdrawn, the Contracting Officer shall issue a written notice to the Purchaser that the sale of additional timber under this special provision is no longer approved. In this case, the Purchaser shall inform the Authorized Officer at least one (1) working day prior to the need for cutting and removing any additional timber, and execute a bilateral modification prior to cutting for such additional approved timber at the unit prices shown in Exhibit B of the contract or in accordance with Section 8 or Section 9 of the contract as determined by the Authorized Officer in accordance with this provision. The Contracting Officer may issue a written order to the Purchaser to suspend, delay, or interrupt any or all contract work for the period of time deemed necessary and appropriate for the Government to safely measure and mark additional timber.

(10) **L-32** Distributed within cutting units as shown on Exhibit A, the Purchaser shall, select, mark, and create two hundred nineteen (219) snags in accordance with Exhibit E which is attached hereto and made part hereof.

(11) **L-33** Purchaser’s operations shall facilitate BLM’s safe and practical inspection of Purchaser’s operations and BLM’s conduct of other official duties on Contract Area. Purchaser has all responsibility for compliance with safety requirements for Purchaser's employees, contractors, and subcontractors. In the event that the Authorized Officer identifies a conflict between the requirements of this contract or agreed upon methods of proceeding hereunder and State or Federal safety requirements, the contract may be modified. If the cost of such contract modification is of a substantial nature ($2,000.00 or more), the Purchaser may request, in writing, an adjustment in the Total Purchase Price specified in Section 2 of the timber sale contract, as amended, to compensate for the changed conditions. Unless otherwise specified in writing, when operations are in progress adjacent to or on roads and/or trails in the harvest unit area, Purchaser shall furnish, install, and maintain all temporary traffic controls that provide the road or trail user with adequate warning of and protection from hazardous or potentially hazardous conditions associated with its operations. Purchaser shall prepare a Traffic Control Plan, which the Purchaser has determined is compliant with state and local OSHA and Transportation standards no

later than the pre-work meeting and prior to commencing operations. Traffic control devices shall be appropriate to current operating and/or weather conditions and shall be covered or removed when not needed., Flagmen and devices shall be as specified in state OSHA and Transportation standards for logging roads or the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD) published by the U.S. Department of Transportation - Federal Highway Administration. Included in the Traffic Control Plan, Purchaser shall note traffic control device locations on a Purchaser produced copy of the contract Exhibit A Map.

(C) Road Use and Maintenance

(1) **R-1** The Purchaser shall renovate all roads and other structures in strict accordance with the plans and specifications shown on Exhibit C, which is attached hereto and made a part hereof.

(2) **R-1a** Any required construction or renovation of structures and roads shall be complete and accepted, in accordance with Section 18, prior to removal of any timber, except right-of-way timber, over that road.

(3) **R-2** The Purchaser is authorized to use the roads listed below and shown on Exhibit D which are under the jurisdiction of the Bureau of Land Management for the removal of Government timber sold under the terms of this contract, provided that the Purchaser pay the required maintenance and rockwear obligation described in Section 42 (C) (5). Any road listed on Exhibit D and requiring renovation in Exhibit C of this contract shall be maintained by the Purchaser until receiving written acceptance from the Contracting Officer. The Purchaser shall pay current Bureau of Land Management maintenance and rockwear fees for the sale of additional timber under modification to the contract.

Road No. and Segment	Length Miles Used	Road Control / Maintenance Responsibility	Road Surface Type
39-11E-26.0	9.09	BLM/Purchaser	NAT/PRR
40-12E-13.0	3.03	BLM/ Purchaser	NAT
40-12E-13.1	1.23	BLM/ Purchaser	NAT
40-13E-7.0	0.66	BLM/Purchaser	NAT
SPUR 13.2	0.85	BLM/ Purchaser	NAT
SPUR 19.1	0.26	BLM/ Purchaser	NAT
SPUR 19.2	0.82	BLM/ Purchaser	NAT
SPUR 19.3	0.82	BLM/Purchaser	NAT
SPUR 24.0	0.57	BLM/Purchaser	NAT

(4) **R-2a** With the prior written approval of the Authorized Officer, the Purchaser may arrange for cooperative maintenance with other users on roads included in Section 42 (C) (3) of this contract; provided, that such cooperative arrangement shall not relieve

the Purchaser of their liability for the maintenance and repair of such roads resulting from wear or damage, in accordance with this contract. The Purchaser shall furnish the Authorized Officer a copy of any cooperative maintenance agreements entered into with other users on these roads.

(5) **R-2b** The Purchaser shall pay the Government a road maintenance and or rock wear fee obligation in the amount of **three thousand four hundred forty-four and 04/100 ($3,444.04)** for the transportation of timber included in the contract area over said road or roads. The above road maintenance amount is for the use of seventeen (17) miles of road or less. If the total road maintenance and rockwear does not exceed five hundred dollars and no/100 ($500.00), the purchaser shall pay such amount in full prior to use of such roads. If the total road maintenance and rockwear fee exceeds five hundred dollars and no/100 ($500.00), the Authorized Officer shall establish an installment schedule of payments of the maintenance and rockwear obligations.

(6) **R-2f** The Purchaser shall perform any required road repair and maintenance work on roads used by him under the terms of Exhibit D, "Road Maintenance Specifications", of this contract, which is attached hereto and made a part hereof except for the BST roads which will be maintained by the BLM.

(7) **R-4** The Purchaser shall be required to secure written approval to use vehicles or haul forest products and equipment over Government owned or controlled roads when such vehicles or equipment exceeds the maximum allowable weights or dimensions established by the State for vehicles operating without a permit or if vehicles meet allowable non-permitted State vehicle weights, but the haul route crosses a structure or segment of road that is posted for reduced weights. The Purchaser agrees to abide by any special requirements included in said written approval.

Details of such equipment shall be furnished to the Authorized Officer for evaluation of load characteristics, at least fifteen (15) days prior to proposed move in.

Details shall include:

A. Axle weights when fully loaded
B. Axle spacing
C. Transverse wheel spacing
D. Tire size
E. Outside width of vehicle
F. Operating speed
G. Frequency of use
H. Special features (e.g. running tracks, overhang loads, etc.)

The Purchaser shall be responsible for repair of any damage to roads or structures caused by the use of overweight or over-dimension vehicles or equipment. (1) Without written approval, (2) in violation of the conditions of a written approval, or (3) in a

negligent manner. The amount of actual damage shall be determined by the Authorized Officer following a technical inspection and evaluation.

(8) **R-5** Tracked type equipment shall not be allowed to cross over concrete bridge decks, other concrete surfaced structures or asphalt surfaced roads without the proper protection of that surface. Prior approval shall be obtained from the Authorized Officer when crossing with protective devices. The Purchaser shall be responsible for repair of any damage to roads or structures caused by the use overweight or over-dimension vehicles or equipment: (1) without written approval; (2) in violation of the conditions of a written approval; or, (3) in a negligent manner. The amount of actual damage shall be determined by the Authorized Officer following a technical inspection and evaluation.

(D) Environmental Protection

(1) **E-1** In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall conduct all operations in a manner that minimizes damage to conifer reproduction and all other reserved trees regardless of size or merchantability.

(2) **E-1** In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall remove slash and debris from roadways and landings concurrently with yarding as directed by the Authorized Officer.

(3) **E-1** In addition to the requirements set forth in Section 26 of this contract, the Purchaser shall treat with a fungicide, as prescribed in this section, the stumps of all trees cut in the contract area having a diameter of fourteen (14) inches or larger in the following manner:

(a) Each stump shall be treated immediately after cutting.

(b) Treatment shall consist of application of fungicide to the sawn face of the stump.

(c) The fungicide used shall be provided by the Purchaser and approved by the Authorized Officer. The fungicide presently approved for use is Cellu-Treat made by the NISUS Corporation. The fungicide will contain a cement dye to help monitor application compliance.

(d) Dumping or cleaning of containers in streams or other bodies of water will not be permitted. Containers must be removed from the area and disposed of in conformance with Federal and Oregon State statutes.

(e) Fungicide treatment shall be performed at the direction of the Authorized Officer and to his satisfaction.

(4) **E-2** The water bars to be constructed as required by Sec. 26(c) shall be constructed in accordance with the specifications shown on Exhibit C which is attached hereto and made a part hereof.

(5) **E-3** The Purchaser shall immediately discontinue specified construction or timber

harvesting operations upon written notice from the Contracting Officer that:

(1) Threatened or endangered plants or animals protected under the Endangered Species Act of 1973, as amended, may be affected by the operation, and a determination is made that consultation or reinitiation of consultation is required concerning the species prior to continuing operation or;

(2) When, in order to comply with the Endangered Species Act, or to prevent incidental take of northern spotted owls in accordance with management direction in the Record of Decision (ROD) and Resource Management Plan (RMP), the Contracting Officer determines it may be necessary to modify or terminate the contract, or;

(3) Federal proposed, Federal candidate, Bureau sensitive or State listed species protected under BLM Manual 6840 – Special Status Species Management – have been identified, and a determination is made that continued operations would affect the species or its habitat, or;

(4) When, in order to comply with a court order, which enjoins operations on the sale or otherwise requires the Bureau of Land Management to suspend operations, or;

(5) When, in order to comply with a court order, the Contracting Officer determines it may be necessary to modify or terminate the contract, or;

(6) When, in order to comply with a stay or other remedy issued by the Interior Board of Land Appeals (IBLA) the Contracting Officer determines it may be necessary to modify or terminate the contract, or;

(7) Species have been discovered which were identified for protection in accordance with management direction established in the ROD and RMP, and the Contracting Officer determines that continued operations would affect the species or its habitat, or;

(8) When, in order to protect species which were identified for protection in accordance with management direction established in the ROD and RMP, the Contracting Officer determines it may be necessary to modify or terminate the contract.

Those operations necessary for a safe removal of personnel and equipment from the contract area and those directed by the Contracting Officer, which are required in order to leave the contract area in an acceptable condition will be permitted. Discontinued operations may be resumed upon receipt of written instructions and authorization by the Contracting Officer.

During any period of suspension, the Purchaser may withdraw performance and payment bond coverage aside from that deemed necessary by the Authorized Officer to secure cut and/or removed timber for which the Bureau of Land Management has not received payment, and/or unfulfilled contract requirements associated with harvest operations that have already occurred

and associated post-harvest requirements.

In the event of a suspension period or a combination of suspension periods that exceed a total of 30 days, the First Installment held on deposit may be temporarily reduced upon the written request of the Purchaser. For the period of suspension extending beyond 30 days, the First Installment on deposit may be reduced to five (5) percent of the First Installment amount listed in Section 3.c. of the contract. Any First Installment amount temporarily reduced may be refunded or transferred to another BLM contract at the request of the Purchaser. However, if the Purchaser has outstanding debt owing the United States, the Contracting Officer must first apply the amount of the First Installment that could be refunded to the debt owed in accordance with the Debt Collection Improvement Act, as amended (31 USC 3710, et seq.). Upon Purchaser's receipt of a bill for collection and written notice from the Contracting Officer lifting the suspension, the Purchaser shall restore the First Installment to the full amount shown in Section 3.b. of the contract within fifteen (15) days after the bill for collection is issued, subject to Section 3.j. of the contract. The Purchaser shall not resume operations until the First Installment amount is fully restored.

In the event of a suspension period or a combination of suspension periods that exceed a total of thirty (30) days, the unamortized Out-of-Pocket Expenses for road or other construction required pursuant to Exhibit C of the contract shall be refunded or transferred to another BLM contract at the request of the Purchaser. Upon written notice from the Contracting Officer lifting the suspension, the Purchaser shall reimburse the Government the amounts refunded or transferred. The Purchaser may choose to pay this reimbursement at once or in installments payable at the same time payments are due for the timber under the contract and in the amounts approximately equal to the expenses associated with the timber for which payment is due.

In the event that operating time is lost as a result of the incorporation of additional contract requirements, or delays due to Endangered Species Act consultation with the U.S. Fish and Wildlife Service or U.S. National Marine Fisheries Service, court-ordered injunctions, or an IBLA issued stay or remedy, the Purchaser agrees that an extension of time, without reappraisal, will constitute a full and complete remedy for any claim that delays due to the suspension hindered performance of the contract or resulted in damages of any kind to the Purchaser.

The Contracting Officer may determine that it is necessary to modify the contract or terminate the cutting and removal rights under the contract in order to comply with the Endangered Species Act, prevent incidental take of northern spotted owls in accordance with the ROD and RMP, protect species that have been discovered which were identified for protection in accordance with management direction established in the ROD and RMP, or comply with a court order or an IBLA issued stay or remedy. Following the issuance of a written notice that cutting and removal rights will be terminated, the Purchaser will be permitted to remove timber cut under the contract, if allowed by the Endangered Species Act, if able to proceed without causing incidental take of

northern spotted owls in accordance with the ROD and RMP, if consistent with species protection in accordance with management direction established in the ROD and RMP, or if consistent with a court order or an IBLA issued stay or remedy.

In the event the contract is modified or cutting and removal rights are terminated under this subsection, the Purchaser agrees that the liability of the United States shall be limited to the actual costs incurred by the Purchaser which have not been amortized by timber removed from the contract area. This calculation of liability shall utilize actual Purchaser costs and Government estimates of timber volumes. At the Authorized Officer's request, the Purchaser agrees to provide documentation of the actual costs incurred in the performance of the contract. In addition, the Purchaser shall be released from the obligation to pay the contract price for any timber which is not authorized to be removed from the contract area.

The Purchaser specifically and expressly waives any right to claim damages, other than those described in the preceding paragraphs, based on alleged breach of any duty to the Purchaser, whether express or implied, in regard to the manner in which the Government defended the litigation which resulted in the court order affecting the operation of the contract. This waiver also extends to any claims based on effects on the operation of the contract that arise from litigation against another agency. Furthermore, the Purchaser specifically acknowledges and agrees that a court ruling that the Government violated the Administrative Procedures Act cannot be interpreted, in itself, to mean that the Government had not acted reasonably in regard to its duties to the Purchaser under this contract.

(6) **E-7** In order to prevent the spread of noxious weeds, the Purchaser shall pressure wash all equipment prior to entry onto BLM lands as directed by the Authorized Officer. Cleaning shall be defined as removal of all dirt, grease, plant parts and material that may carry noxious weed seeds.

(E) Fire Prevention and Control

(1) **F-1a** Fire Prevention and Control Primarily for purposes of fire prevention and control, the Purchaser shall comply with the following provisions.

(a) At least three (3) days prior to the operation of power driven equipment in construction of logging operations under this contract during the closed fire season or periods of fire danger, prepare a fire prevention and control plan to the satisfaction of the State of Oregon, Department of Forestry.

(b) Provide and maintain on the contract area in good working order, and immediately available, the following equipment for use during closed fire season or periods of fire danger: see Exhibit F-1

(c) The Purchaser shall restrict operations, and provide the services of a fire watchman, during periods of fire danger as specified in Exhibit F-2 which is

attached hereto and made a part hereof.

(F) Slash Disposal and Site Preparation

(1) **SD-1** Fire Hazard Reduction. In addition to the requirements of Sec. 15 of this contract, and notwithstanding the Purchaser's satisfactory compliance with State laws and regulations regarding offsetting or abating the additional fire hazard created by this operation and the State's willingness to release the Purchaser from liability for such hazard, the Purchaser shall remain responsible to the Government for performance of the following hazard reduction measure(s) required by this contract:

(a) Definitions - Slash, as defined for this section, shall mean all woody material (brush, limbs, tops, logs, chunks, and severed trees) not removed from the contract area during the primary removal operation. This includes old slash existing prior to timber sale entry. Landing, as defined for this section, shall mean any location where woody material was loaded on trucks and also any other location that became a destination for yarded woody material.

(b) Landing Piling Pile all slash located within one hundred (100) feet of landings and designated locations for placement of gross yarded material. Slash shall be piled with a grapple/shovel loader. Finished piles shall be tight and free of earth. No portion of any pile will be located under the crown of any live or other reserve trees. A four (4) foot wide, fuel free area shall be cleared around each pile. Unmerchantable logs at landings sixteen (16) inches in diameter and larger at the small end shall be used to block skid trails.

(c) Upon completion of landing piling, the Purchaser shall prepare the landing piles for burning by securely covering each pile with polyethylene plastic film a minimum of 6 millimeters thick and covering a minimum of a 10 feet x 20 feet area. Pieces of burnable material shall be placed on top of the plastic or tie the corners with a piece of twine to secure it from moving and to prevent it from blowing off during strong wind episodes. The Purchaser is required to furnish the covering materials. The timing of this covering work shall be in accordance with instructions from the Authorized Officer. If the structure of the landing piles will not permit adequate consumption of piled debris by burning, the Purchaser shall re-pile them at the direction of the Authorized Officer.

Chipping Of Slash Piles

(a) The purchaser may remove and utilize non-sawlog forest products by submitting a written or verbal request to the Government.

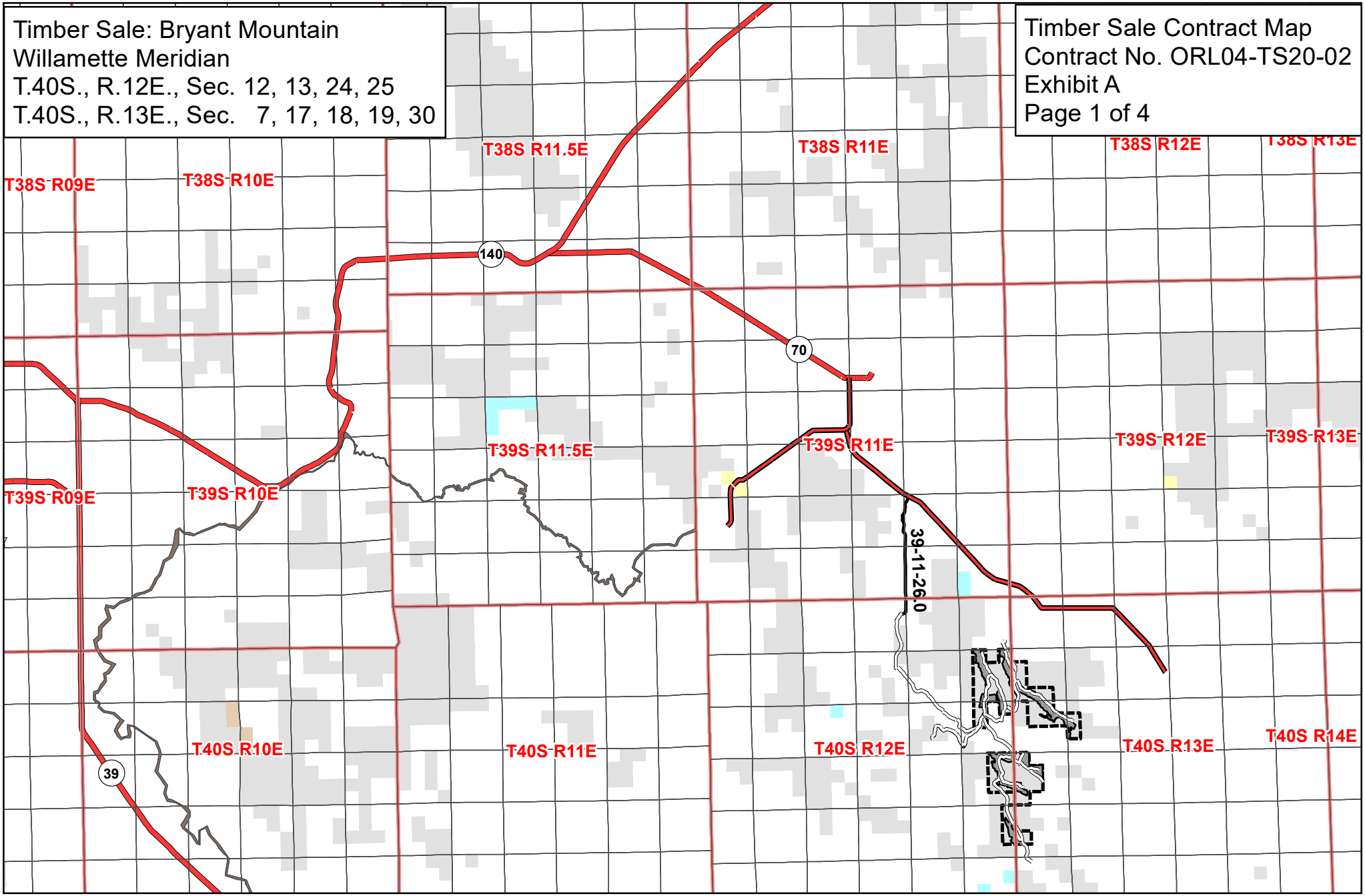
(b) The Government may execute a separate negotiated forest product/vegetative sale permit under 43 CFR 5400. Payment under the permit must be at a price equal to or greater than the appraised value of the forest product.

(1) The purchaser must make any appropriate payment specified in the vegetative sale contract before removal may be authorized.
(2) This contract will contain a separate expiration date and stipulations as determined by the Authorized Officer.

a. The contract must include stipulations that require the purchaser to report quantity of non-sawlog material removed (i.e. tons of biomass).

(G) Equal Opportunity in Employment

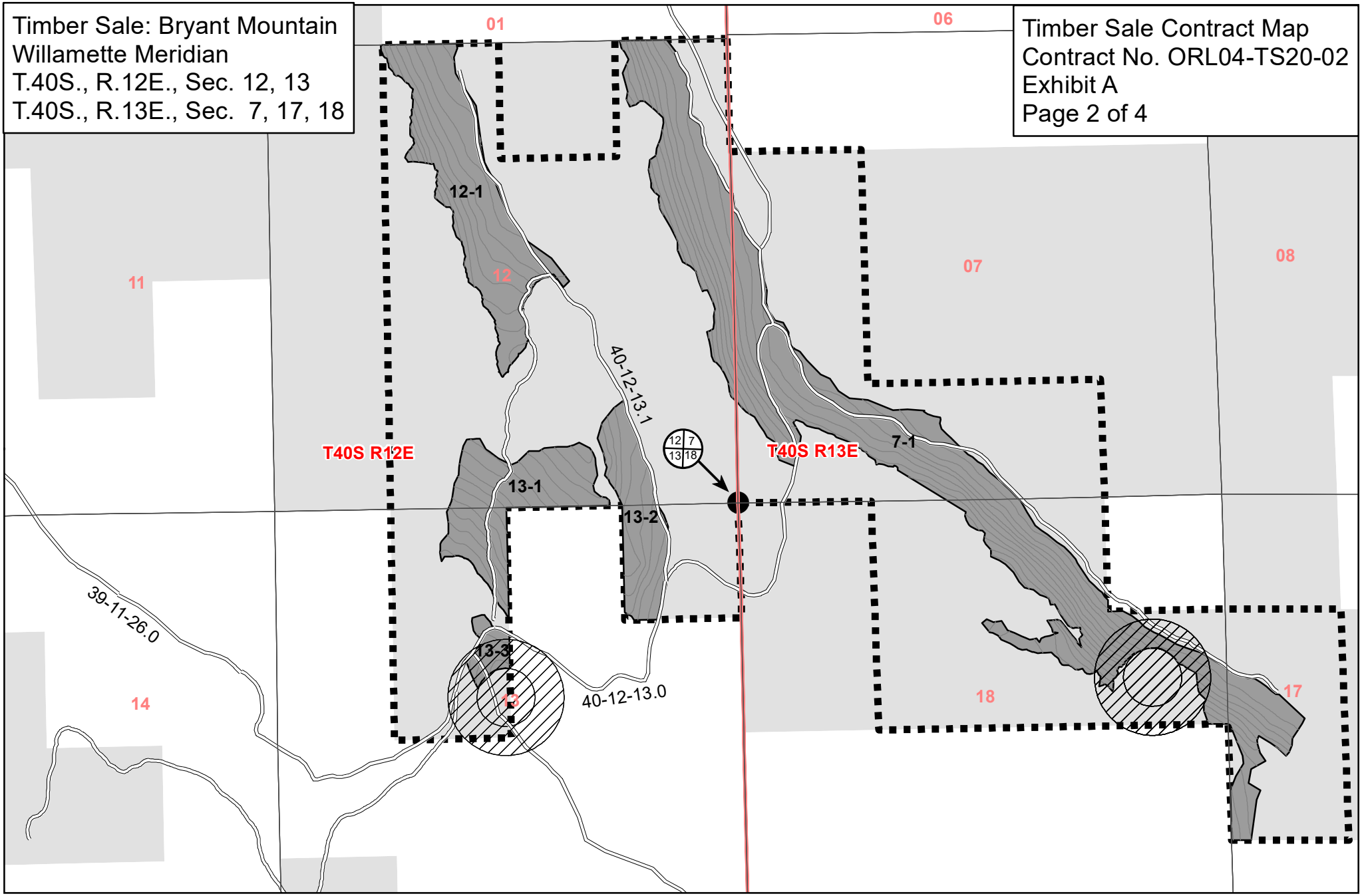
Certification of Nonsegregated Facilities attached hereto and made a part hereof.



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Timber Sale: Bryant Mountain
Willamette Meridian
T.40S., R.12E., Sec. 12, 13
T.40S., R.13E., Sec. 7, 17, 18

Timber Sale Contract Map
Contract No. ORL04-TS20-02
Exhibit A



BLM Ownership
Section Lines
Eagle Restriction
Contract Area
Reserve Areas
Cutting Units
Paved Road
Rock Road
Dirt Road
20' Contour
Corner

N

1 inch = 1,450 feet

0 0.2 0.4 Miles

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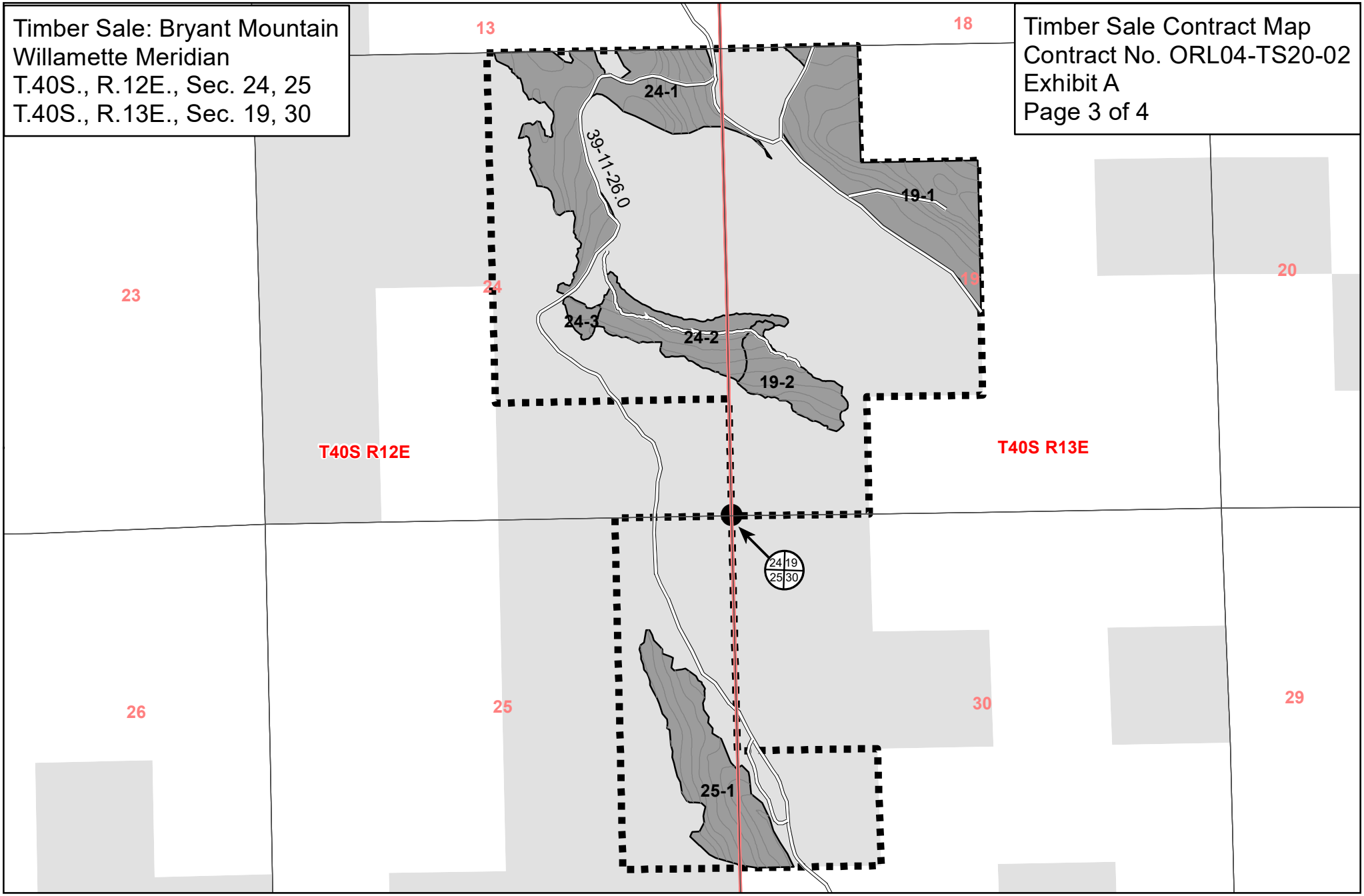
Timber Sale: Bryant Mountain
Willamette Meridian
T.40S., R.12E., Sec. 24, 25
T.40S., R.13E., Sec. 19, 30

Timber Sale Contract Map
Contract No. ORL04-TS20-02
Exhibit A



BLM Ownership
Section Lines
Corner
Contract Area
Reserve Areas
Cutting Units
Paved Road
Rock Road
Dirt Road
20' Contour

N

1 inch = 1,450 feet

0 0.2 0.4 Miles

Willamette Meridian:	T.40S., R.12E.,	Sec. 12, E ½ NE ¼, SW ¼ NE ¼, E ½ NW ¼, E ½ SW ¼, SE ¼
		Sec. 13, NE ¼ NE ¼, E ½ NW ¼
		Sec. 24, NE ¼, N ½ SE ¼
		Sec. 25, E ½ NE ¼, NE ¼ SE ¼
	T.40S. R.13E.,	Sec. 7, SW ¼ NW ¼, W ½ SW ¼, SE ¼ SW ¼, SW ¼ SE ¼
		Sec. 17, SW ¼ NW ¼, NW ¼ SW ¼,
		Sec. 18, W ½ NE ¼, SE ¼ NE ¼, E ½ NW ¼
		Sec. 19, W ½ NW ¼, SE ¼ NW ¼, N ½ SW ¼ SW ¼ SW ¼
		Sec. 30, NW ¼ SW ¼,

Cutting Areas	**Total Cutting Area Acres**	**Harvest Method**
7-1	174	Density Management (DM)
12-1	56	Density Management (DM)
13-1	37	Density Management (DM)
13-2	25	Density Management (DM)
13-3	5	Density Management (DM)
19-1	60	Density Management (DM)
19-2	15	Density Management (DM)
24-1	57	Density Management (DM)
24-2	21	Density Management (DM)
24-3	3	Density Management (DM)
25-1	37	Density Management (DM)
Total	**490**	

Total Cutting Area	490 acres
Total Reserve Area	1,732 acres
Total Contract Area	2,222 acres

United States
Department of the Interior
Bureau of Land Management

Timber Appraisal

Sale Name:	Bryant Mountain Timber Sale	**Sale Date:**	Wednesday, July 29, 2020
BLM District:	Lakeview DO	**Unit of Measure:**	16' MBF
Contract #:	ORL04-TS-2020.0002	**Contract Term:**	36 months
Sale Type:	Advertised	**Contract Mechanism:**	5450-3 Sale of Timber - Lump Sum

Content

Prepared By: Rentz, George C - 6/10/2020
Approved By: Rentz, George C - 6/22/2020

Legal Description of Contract Area

Land Status	County	Township	Range	Section	Subdivision	Meridian
PD	Klamath	40S	12E	12	Part	Willamette
PD	Klamath	40S	12E	13	Part	Willamette
PD	Klamath	40S	12E	24	Part	Willamette
PD	Klamath	40S	12E	25	Part	Willamette
PD	Klamath	40S	13E	07	Part	Willamette
PD	Klamath	40S	13E	18	Part	Willamette
PD	Klamath	40S	13E	17	Part	Willamette
PD	Klamath	40S	13E	19	Part	Willamette
PD	Klamath	40S	13E	30	Part	Willamette

Species Totals

Species	Net	Gross Merch	Gross	# of Merch Logs	# of Cull Logs	# of Trees
Ponderosa Pine	1,757.0	2,296.0	2,326.0	42,252	4,182	18,226
White Fir	345.0	466.0	487.0	7,085	1,139	3,265
Incense-cedar	28.0	34.0	34.0	804	0	450
Totals	**2,130.0**	**2,796.0**	**2,847.0**	**50,141**	**5,321**	**21,941**

Cutting Area Acres

Regeneration Harvest Acres	Partial Cut Acres	Right of Way Acres	Total Acres	Net Volume per Acre
0.0	491.0	0.0	491.0	4.3

Logging Costs

Stump to Truck	$271,551.96
Transportation	$136,142.40
Road Construction	$75,629.58
Maintenance/Rockwear	$11,907.11
Road Use	$3,444.04
Other Allowances	$57,396.69
Total:	**$556,071.78**
Total Logging Cost per MBF:	**$261.07**

Utilization Centers

Location	Distance	% of Net Volume
Klamath Falls, OR	31.0 miles	100 %

Profit & Risk

Profit	10 %
Risk	5 %
Total Profit & Risk	**15 %**

Tract Features

Quadratic Mean DBH	14.4 in
Average GM Log	50 bf
Average Volume per Acre	4.3 mbf
Recovery	82 %
Net MBF volume:	
Green	2,130.0 mbf
Salvage	0 mbf
Export	0 mbf
Ground Base Logging:	
Percent of Sale Volume	100 %
Average Yarding Slope	20 %
Average Yarding Distance	335 ft
Cable Logging:	
Percent of Sale Volume	0 %
Average Yarding Slope	0 %
Average Yarding Distance	0 ft
Aerial Logging:	
Percent of Sale Volume	0 %
Average Yarding Slope	0 %
Average Yarding Distance	0 ft

Cruise

Cruise Completed	April 2020
Cruised By	Rentz/Hultz

Cruise Method

The cruise method used was PCMTRE (Variable Plot). 220 plots were taken with 2.27 acres per plot. Plots were monumented with a pink pin flag at plot center and pink flagging hung near each plot. Juniper was cruised for the purpose of appraising for its removal.

Stumpage Computation

Species	# of Trees	Net Volume	Pond Value	(-) Profit & Risk	(-) Logging Costs	(+) Marginal Log Value	Appraised Price/MBF		Appraised Value
Ponderosa Pine	18,226	1,757.0	$348.09	$52.21	$261.07	$0.00	$34.80		$61,143.60
White Fir	3,265	345.0	$363.75	$54.56	$261.07	$0.00	$48.10		$16,594.50
Incense-cedar	450	28.0	$262.50	$39.38	$261.07	$0.00	$26.30	*	$736.40
Totals	**21,941**	**2,130.0**							**$78,474.50**

* Minimum Stumpage values were used to compute the Appraised Price/MBF (10% of Pond Value)

Percent of Volume By Log Grade

Species	No. 1 Sawmill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	No. 5 Sawmill	No. 6 Sawmill	Camp Run
Ponderosa Pine							100.0 %

Comments: Weighted sort value

Species	Peeler	No. 1 Sawmill	Special Mill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	Camp Run
White Fir							100.0 %

Species	No. 1 Sawmill	No. 2 Sawmill	No. 3 Sawmill	No. 4 Sawmill	No. 5 Sawmill	No. 6 Sawmill	Camp Run
Incense-cedar							100.0 %

Unit: 7-1

Net Volume/Acre: 4.2 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	622.0	805.0	816.0	6,392
White Fir	113.0	164.0	171.0	1,145
Incense-cedar	7.0	11.0	11.0	158
Totals:	**742.0**	**980.0**	**998.0**	**7,695**

Regeneration Harvest	0.0
Partial Cut	175.0
Right of Way	0.0
Total Acres:	**175.0**

Unit: 12-1

Net Volume/Acre: 4.1 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	185.0	258.0	261.0	2,045
White Fir	42.0	52.0	55.0	366
Incense-cedar	4.0	4.0	4.0	51
Totals:	**231.0**	**314.0**	**320.0**	**2,462**

Regeneration Harvest	0.0
Partial Cut	56.0
Right of Way	0.0
Total Acres:	**56.0**

Unit: 13-1

Net Volume/Acre: 4.4 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	132.0	170.0	172.0	1,351
White Fir	27.0	36.0	36.0	242
Incense-cedar	2.0	3.0	3.0	33
Totals:	**161.0**	**209.0**	**211.0**	**1,626**

Regeneration Harvest	0.0
Partial Cut	37.0
Right of Way	0.0
Total Acres:	**37.0**

Unit: 13-2

Net Volume/Acre: 4.7 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	96.0	115.0	117.0	913
White Fir	19.0	23.0	24.0	164
Incense-cedar	2.0	2.0	2.0	23
Totals:	**117.0**	**140.0**	**143.0**	**1,100**

Regeneration Harvest	0.0
Partial Cut	25.0
Right of Way	0.0
Total Acres:	**25.0**

Unit: 13-3

Net Volume/Acre: 4.6 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	19.0	23.0	23.0	183
White Fir	4.0	5.0	5.0	33
Totals:	**23.0**	**28.0**	**28.0**	**216**

Regeneration Harvest	0.0
Partial Cut	5.0
Right of Way	0.0
Total Acres:	**5.0**

Unit: 19-1

Net Volume/Acre: 4.3 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	211.0	276.0	280.0	2,192
White Fir	41.0	55.0	59.0	393
Incense-cedar	4.0	4.0	4.0	54
Totals:	**256.0**	**335.0**	**343.0**	**2,639**

Regeneration Harvest	0.0
Partial Cut	60.0
Right of Way	0.0
Total Acres:	**60.0**

Unit: 19-2

Net Volume/Acre: 4.7 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	58.0	69.0	70.0	548
White Fir	11.0	14.0	15.0	98
Incense-cedar	1.0	1.0	1.0	14
Totals:	**70.0**	**84.0**	**86.0**	**660**

Regeneration Harvest	0.0
Partial Cut	15.0
Right of Way	0.0
Total Acres:	**15.0**

Unit: 24-1

Net Volume/Acre: 4.7 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	220.0	299.0	303.0	2,374
White Fir	43.0	60.0	63.0	425
Incense-cedar	4.0	4.0	4.0	59
Totals:	**267.0**	**363.0**	**370.0**	**2,858**

Regeneration Harvest	0.0
Partial Cut	57.0
Right of Way	0.0
Total Acres:	**57.0**

Unit: 24-2

Net Volume/Acre: 4.7 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	81.0	97.0	98.0	767
White Fir	16.0	20.0	20.0	137
Incense-cedar	1.0	1.0	1.0	19
Totals:	**98.0**	**118.0**	**119.0**	**923**

Regeneration Harvest	0.0
Partial Cut	21.0
Right of Way	0.0
Total Acres:	**21.0**

Unit: 24-3

Net Volume/Acre: 5.0 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	12.0	14.0	14.0	110
White Fir	2.0	3.0	3.0	20
Incense-cedar	1.0	1.0	1.0	6
Totals:	**15.0**	**18.0**	**18.0**	**136**

Regeneration Harvest	0.0
Partial Cut	3.0
Right of Way	0.0
Total Acres:	**3.0**

Unit: 25-1

Net Volume/Acre: 4.1 MBF

Species	Net	Gross Merch	Gross	# of Trees
Ponderosa Pine	121.0	170.0	172.0	1,351
White Fir	27.0	34.0	36.0	242
Incense-cedar	2.0	3.0	3.0	33
Totals:	**150.0**	**207.0**	**211.0**	**1,626**

Regeneration Harvest	0.0
Partial Cut	37.0
Right of Way	0.0
Total Acres:	**37.0**

Comments:
One strata was used in this cruise so volume should be considered as the total sale volume, and not by the unit PP 32' includes >5" logs

Total Stump To Truck	Net Volume	$/MBF
$271,551.96	2,130.0	$127.49

Stump to Truck: Falling, Bucking, Yarding, & Loading

Yarding System	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Feller Buncher	GM MBF	2,796.0	$90.33	$252,562.68	Commercial species
Subtotal				**$252,562.68**	

Additional Costs

Item	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
Yarding Juniper	Total GM	2,796.0	$5.92	$16,552.32	
Subtotal				**$16,552.32**	

Additional Moves

Equipment	Unit of Measure	# of Units of Measure	$/Unit of Measure	Total Cost	Remarks
All equipment	Hour	6.0	$406.16	$2,436.96	Walk equipment between units
Subtotal				**$2,436.96**	

Comments:
Approx. 183 MBF Juniper to be harvested.

Total	Net Volume	$/MBF
$136,142.40	2,130.0	$63.92

Utilization Center	One Way Mileage	Description	Unit of Measure	# of Units	$/Unit of Measure	Total Cost	% of Sale Volume
Klamath Falls, OR	31.0	all sawlogs	32' GM	2,008.0	$67.80	$136,142.40	100 %

Engineering Allowances

Total	Net Volume	$/MBF
$90,980.73	2,130.0	$42.71

Cost Item	Total Cost
Road Construction:	$75,629.58
Road Maintenance/Rockwear:	$11,907.11
Road Use Fees:	$3,444.04

Comments:
Rockwear included in road use fees. $0.73/net MBF/mi., 2.21mi
See Engineering Appraisal.

Total	Net Volume	$/MBF
$57,396.69	2,130.0	$26.95

Environmental Protection

Cost item	Total Cost
Fungicide treatment	$9,635.69
Equipment wash	$230.00
Waterbar <30% slope	$8,662.50
Subtotal	**$18,528.19**

Logging

Cost item	Total Cost
Snag Creation	$18,067.50
Subtotal	**$18,067.50**

Slash Disposal & Site Prep

Cost item	Total Cost
Cover Piles	$1,568.00
Slashing Juniper >3"	$18,463.00
Pile fireline	$770.00
Subtotal	**$20,801.00**

Comments:
Cover pile = $20 tarp + 1/2 labor @ $23.00/hr.
Pile fire line 2640' an hour. 49 landings with 500' line per landing.
Fungicide treatment= $1.05 Cell treatment/dye and $18.26 labor per acre.
Water-bar = 2 acres an hour @ $77/hr. with appr. 225 acres over 30% slope.
Snag creation= Adin costs included in $/unit (contracted service).
Slashing Juniper= Maybe occasional tree that will require severing with chainsaw.

Information for Timber Sale Notice, Prospectus, Sec. 41 & 42
Bryant Mountain Timber Sale Timber Sale
ORL04-TS-2020.0002

Approx # of trees	Est Volume MBF 32'	Species	Est Volume MBF 16'	Appraised $/MBF		Appraised Price
18,226	1,406.0	Ponderosa Pine	1,757.0	$34.80		$61,143.60
3,265	262.0	White Fir	345.0	$48.10		$16,594.50
450	14.0	Incense-cedar	28.0	$26.30	*	$736.40
21,941	**1,682.0**		**2,130.0**			**$78,474.50**

* Minimum Stumpage values were used to compute the Appraised Price/MBF (10% of Pond Value)

CRUISED BY:	Rentz/Hultz
CRUISE COMPLETED:	April 2020
COMBINED SAMPLING ERROR:	12.60 %

CRUISE DESIGN/METHOD Description:

The cruise method used was PCMTRE (Variable Plot). 220 plots were taken with 2.27 acres per plot. Plots were monumented with a pink pin flag at plot center and pink flagging hung near each plot. Juniper was cruised for the purpose of appraising for its removal.

TRACT FEATURES

ALL SPECIES

QM DBH	14.4	INCHES
GM LOG	50	BD FT
Total Gross Volume	3,029	MBF
Recovery	82	%
Salvage	0	MBF
Export	0	MBF

Dominant Species: **Ponderosa Pine**

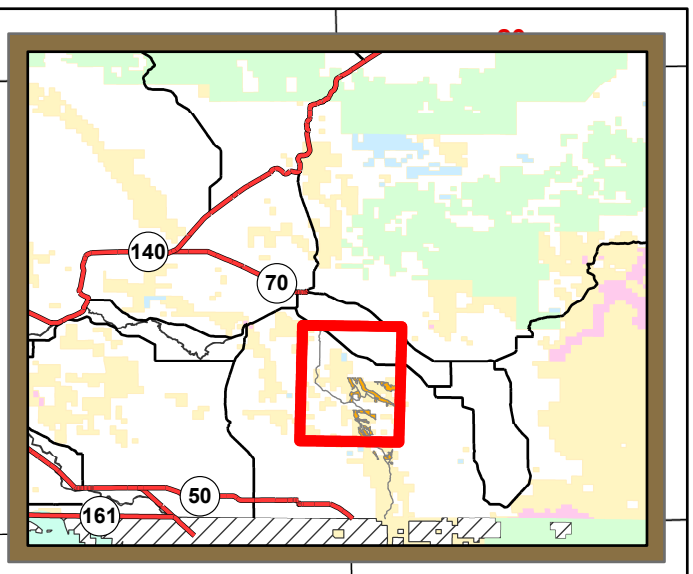
QM DBH	14.8	INCHES
GM Log	51	BD FT
Recovery	82	%
Salvage	0	MBF

Admin Scale Allowance		$0.50	$/MBF
	TOTAL ADMIN. SCALE Allowance	$1,065.00	

EXPORT VOLUME (LE-1)	Port Orford Cedar	0	MBF

Reserve Tree Paint Color	**Reserve Tree Count**
	0

Harvest Tree Paint Color	**Harvest Tree Count**
	0



Bryant Mountain TS
ORL04-TS20-02
EXHIBIT C
Sheet 1 of 38

× Engineering Stationing

Roads

- Bituminous/Paved
- Aggregate / Hard Surface / Pit Run
- Natural Improved Roads
- Natural Unimproved
- Haul Route
- Sale Boundary
- BLM, Public Domain
- State
- Private

WEST LANGELL VALLEY RD 520

39-11E-26.0

40-13E-1.0

40-12E-13.1

40-12E-13.0

12-1, 56 acres

13-1, 37 acres

13-2, 25 acres

13-3, 6 acres

19-1, 59 acres

24-1, 65 acres

24-2, 21 acres

19-2, 15 acres

7-1, 175 acres

25-1, 37 acres

SPUR 19.3

SPUR 19.2

1161

T39S R11E

T40S R12E

T40S R13E

John McFall Reservoir

Smith Reservoir

Harpold Reservoir

Captain Jack Lake

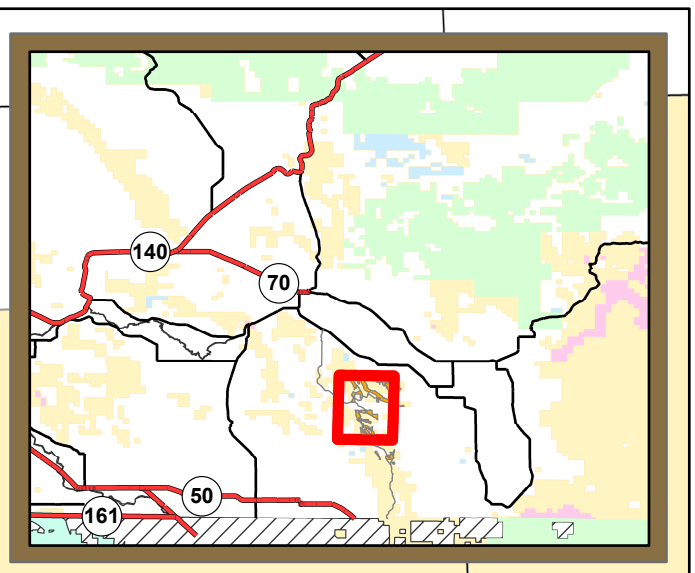
Lone Pine Reservoir

Long Lake

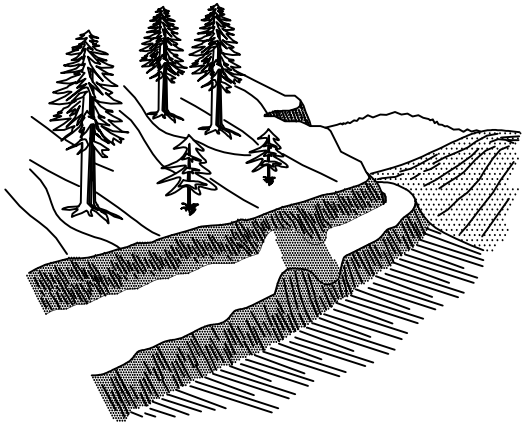
Worlow Meadow

McCoy Reservoir

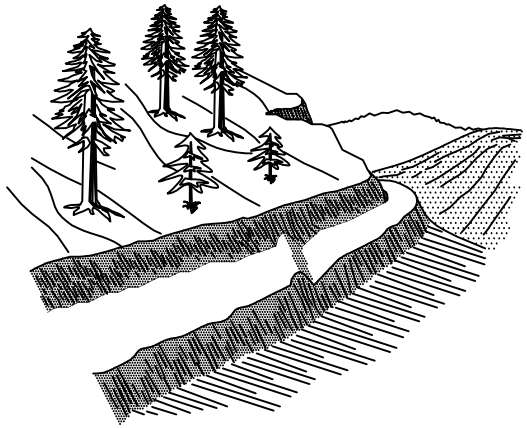
0 0.25 0.5 1 Miles



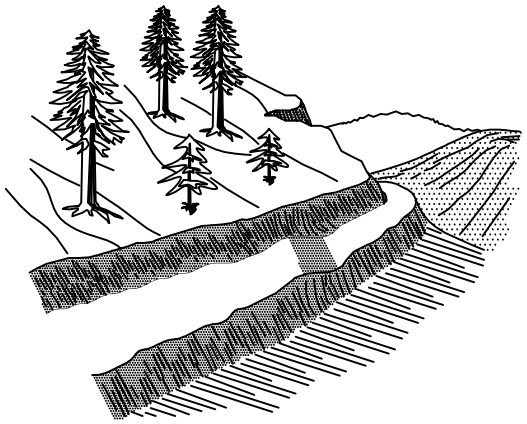
02
01
06
11
12
07
14
13
18
17
T40S R12E
T40S R13E
23
24
19
20
30
29
Smith Reservoir
Harpold Reservoir
Captain Jack Lake
Lone Pine Reservoir
Long Lake
Worlow Meadow
McCoy Reservoir
12-1, 56 acres
40-12E-13.1
40-13E-1.0
SPUR 13.2
13-1, 37 acres
13-2, 25 acres
13-3, 6 acres
7-1, 175 acres
40-12E-13.0
39-11E-26.0
24-1, 65 acres
SPUR 19.1
SPUR 19.2
19-1, 59 acres
SPUR 19.3
24-3, 3 acres
SPUR 24.0
24-2, 21 acres
19-2, 15 acres
25-1, 37 acres
3470
2415
1400
3850
3550
2015
8190
6855
5705
3765
4135
3585
4950
510
260
110
25670
25830
25421
26110
26600
26740
27058
27625
30100
29700
31800
2010
2120
2400
16020
35740
35695
1370
37100
36240
37700
38050
38865
1510
2180
39645
675
795
4230
40585
2555
2650
3000
41640
42300
42155
42720
43100
43485
43821
44580
46058
46018
47120
48010
0
0.125
0.25
0.5
Miles
N



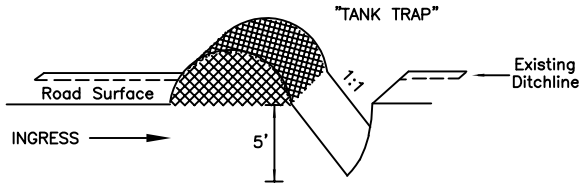
BARRIERS



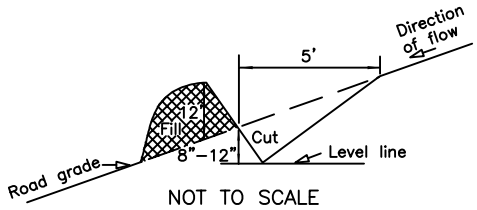
WATER BAR



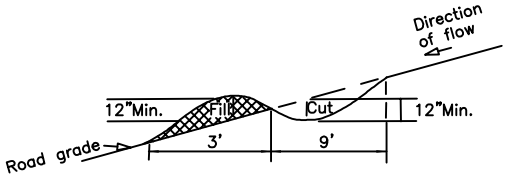
WATER DIP



NOT TO SCALE



NOT TO SCALE

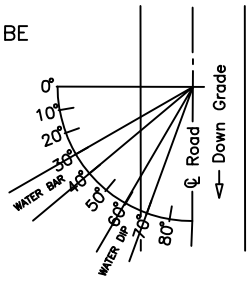


NOT TO SCALE

NOTES

1. ALL BARRIERS, WATER BARS, AND WATER DIPS AS REQUIRED SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATIONS WILL BE DIRECTED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER BARS SHALL BE SKEWED 30°–40°.
4. ALL WATER DIPS SHALL BE SKEWED 60°–70°.
5. ALL WATER BARS AND WATER DIPS SHALL BE CUT INTO THE ROADBED FROM THE DITCHLINE.
6. DITCHLINES SHALL BE BLOCKED WITH EXCAVATED MATERIAL (DITCHDAM) DOWNGRADE FROM ALL WATER BARS AND WATER DIPS.
7. EXCAVATED MATERIAL FROM BARRIER TRENCH (TANK TRAP) SHALL BE PLACED ON THE SIDE NEAREST THE BEGINNING OF THE ROAD.
8. OUTLETS OF WATER DIPS MUST BE ROCKED ON FILL SLOPE.
9. RIPRAP BARRIERS SHALL BE AT LEAST 4' HIGH, 4' DEEP, AND OF SUFFICIENT WIDTH TO COMPLETELY BLOCK THE ROADWAY AND ANY ADJACENT SHOULDERS THAT CAN BE TRAVELED WITH A VEHICLE.
10. ALL BERMS INCLUDING WATER BARS, WATER DIPS, AND EARTHEN BARRIERS SHALL BE COMPACTED TO 85% OF MAXIMUM DENSITY.

SKEW DIAGRAM



WATER DIP/BAR SPACING

ROAD GRADE	MAXIMUM SPACING
%	FEET
0–4	500
5–6	400
7–9	300
10–14	100
15–20	50

ON GRADES IN EXCESS OF 14% CONSTRUCT WATER BARS.

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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT OREGON

BARRIER AND EROSION CONTROL DETAIL

DESIGNED CAH

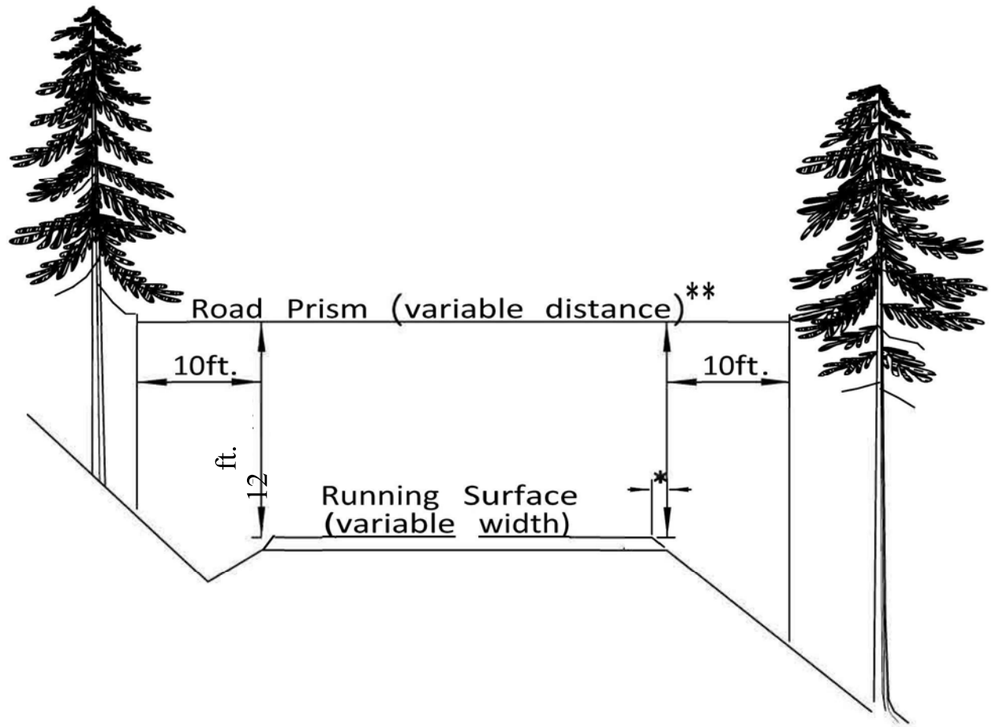
REVIEWED

APPROVED

DRAWN CAH | SCALE: None

DATE AUG. 2019 | STANDARD DRAWING

SHEET 3/38



* Variable distance between running surface and start of fill slope.

** All areas within the variable distance shall be free of all vegetation capable of growing one (1) foot in height or higher, and free of all over-hanging limbs and branches 12 feet in elevation above the running surface.

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT OREGON

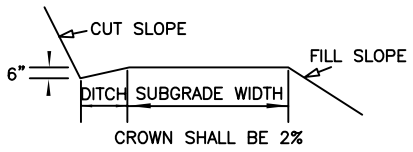
ROADSIDE BRUSHING DETAIL

DESIGNED Browning
REVIEWED
APPROVED
DRAWN LRB | SCALE NONE
DATE 5/19 | SHEET 4 / 38
DRAWING NO.

EXHIBIT C
ORL04-TS20-02
BRYANT MOUNTAIN T.S.
SHEET 5 OF 38 SHEETS

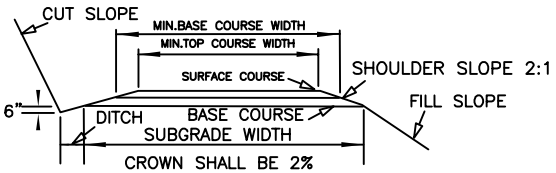
TYPICAL CROSS SECTION DETAIL

ROAD NUMBER	FROM STATION or MILE POST	TO STATION or MILE POST	LENGTH MILES	TYPICAL SECTION TYPE	ROAD WIDTH[1]		CLEARING WIDTH				SURFACING										REMARKS
							BEYOND		EXISTING ROADS[5]		BASE COURSE					SURFACE COURSE					
					Subgrade	Ditch	TOP CUT	TOE FILL	L	R	Minimum Width	Comp. Depth	Type[2]	Compaction	Cubic Yards	Minimum Width	Depth	Type[2]	Roller Compaction	Cubic Yards	
39–11E–26.0	266+00	297+00	0.59	2	15.0 Ft.	2 Ft.			10	10						15.0 Ft.	2 in.	A	YES	382	1" pit run surface rock, compacted
	348+50	362+40	0.26	2	15.0 Ft.	2 Ft.			10	10						15.0 Ft.	2 in.	A	YES	171	1" pit run surface rock, compacted
	0+00	480+10	9.09	2	15.0 Ft.	2 Ft.			10	10						15.0 Ft.	Varies	D	NO	50	1.5"– spot rock, apply where needed
40–12E–13.0	20+10	21+20	0.02	1	15.0 Ft.	2 Ft.			10	10						15.0 Ft.	12 in.	C	NO	73	4" washed rock
	37+65	81+90	0.84	1	15.0 Ft.	2 Ft.			10	10						15.0 Ft.	Varies	D	NO	50	3/4"– spot rock, apply where needed
	0+00	160+20	3.03	1	15.0 Ft.	2 Ft.			10	10						15.0 Ft.	Varies	D	NO	7	1.5"– spot rock, apply where needed
40–12E–13.1	0+00	64+75	1.23	1	12.0 Ft.				10	10						12.0 Ft.	Varies	D	NO	85	1.5"– spot rock, apply where needed
40–13E–7.0	14+00	14+20	0.01	1	12.0 Ft.				10	10						12.0 Ft.	6 in.	D	NO	8	1.5"– rock
	0+00	34+70	0.66	1	12.0 Ft.				10	10						12.0 Ft.	Varies	D	NO	36	1.5"– spot rock, apply where needed
SPUR 13.2	0+00	1+10	0.02	4	12.0 Ft.				10	10						12.0 Ft.	2 in.	D	NO	33	1.5"– rock
	1+10	5+10	0.07	4	12.0 Ft.				10	10						12.0 Ft.	8 in.	C	NO	54	4" washed rock
	0+00	44+75	0.85	4	12.0 Ft.				10	10						12.0 Ft.	Varies	D	NO	53	1.5"– spot rock, apply where needed
SPUR 19.1	0+00	13+70	0.26	4	12.0 Ft.				10	10						12.0 Ft.	Varies	D	NO	25	1.5"– spot rock, apply where needed
SPUR 19.2	0+00	43+20	0.82	4	12.0 Ft.				10	10						12.0 Ft.	Varies	D	NO	42	1.5"– spot rock, apply where needed
SPUR 19.3	0+00	15+10	0.82	4	12.0 Ft.																Natural
SPUR 24.0	0+00	30+00	0.57	4	12.0 Ft.																Natural, replace water bars in Ex. D



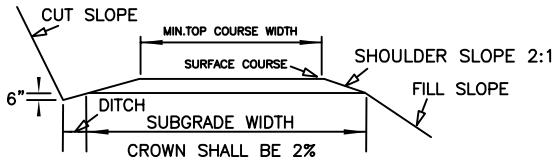
TYPICAL GRADING SECTION

TYPE 1



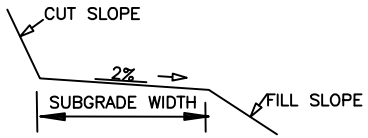
TYPICAL SURFACING SECTION

TYPE 2



TYPICAL SURFACING SECTION

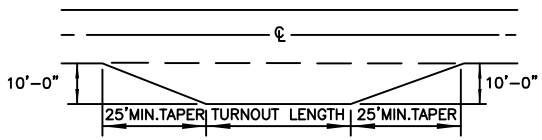
TYPE 3



TYPICAL GRADING SECTION

TYPE 4

ALL DITCHES:
4:1 SLOPE FROM SUBGRADE
DEPTH MAY BE EXCEEDED TO OBTAIN
REQUIRED DRAINAGE.



PLAN
TYPICAL TURNOUT

NOTES:

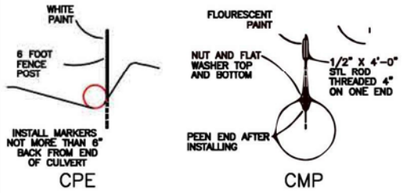
1. EXTRA SUBGRADE WIDTHS
   ADD TO EACH FILL SHOULDER 1 FT. FOR FILLS OF 1–6 FT. AND 2 FT. FOR FILLS OVER 6 FT. WIDEN THE INSIDE SHOULDER OF ALL CURVES AS FOLLOWS:
   WHEN THE DEGREE OF CURVE EQUALS
   7–21 ADD 1FT.
   22–35 ADD 2FT.
   36–48 ADD 3FT.
   49–64 ADD 4FT.
   65–96 ADD 5FT.
   OR AS SHOWN ON PLANS.

MATERIALS	CUT SLOPES	FILL SLOPES
COMMON	1/2:1	1 1/2:1
SOFT ROCK & SHALE	1/2:1	1 1/2:1
SOLID ROCK	1/4:1	REPOSE

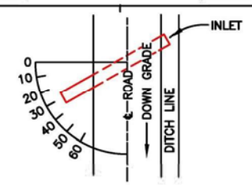
FULL BENCH CONSTRUCTION IS REQUIRED ON SIDE SLOPES EXCEEDING 60%.

2. SURFACING TYPE
   A. PIT RUN ROCK MATERIAL.
   B. GRID ROLLED ROCK MATERIAL
   C. SCREENED ROCK MATERIAL.
   D. CRUSHED ROCK MATERIAL.
3. TURNOUTS
   A. WIDTH 10 FT. IN ADDITION TO SUBGRADE WIDTH, OR AS SHOWN ON THE PLANS.
   B. LOCATED APPROXIMATELY AS SHOWN ON THE ROAD PLANS OR NARRATIVE.
4. SURFACING
   A. TURNOUTS, CURVE WIDENING AND ROAD APPROACH APRONS SHALL BE SURFACED.
5. CLEARING WIDTH
   SEE SUBSECTION 200 OR 2100.
6. GRADING

ITEM	SIZE	GRADE
900	4 INCH	A
	3 INCH	B
1000	3 INCH	A
1200	11/2 INCH	C&C–1
	1 INCH	D&D–1
	3/4 INCH	E&E–1



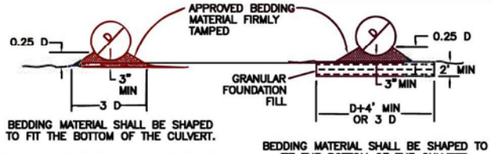
CULVERT MARKERS



SKEW DIAGRAM

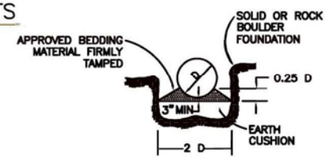
THE GRADE OF CROSSDRAINS SHALL BE AT LEAST 2% GREATER THAN THE GRADE OF THE DITCH.

BEDDING OF CULVERTS



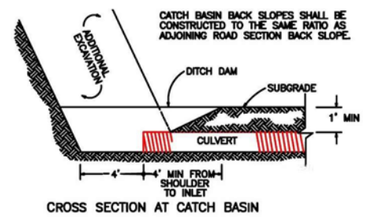
BEDDING OF CULVERTS ON STABLE NATURAL GROUND FOUNDATION OR COMPACTED EMBANKMENT

BEDDING OF CULVERTS ON SOFT SPONGY OR UNSTABLE SOIL FOUNDATION

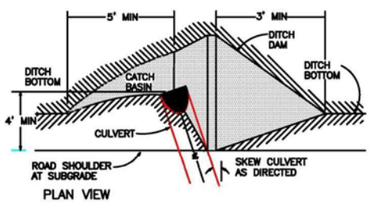


BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT. EARTH CUSHIONING OF SILTY CLAY LOAM OR SAND MAY BE USED IF MATERIAL CAN BE PLACED IN THE DRY CONDITION. IF THE EXCAVATION IS WET, USE GRANULAR FOUNDATION FILL MATERIAL. MAINTAIN 8" MIN. DEPTH BETWEEN HIGH POINTS OF ROCKS AND/OR BOULDERS AND THE BOTTOM OF THE CULVERT.

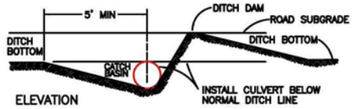
BEDDING OF CULVERT IN SOLID ROCK OR BOULDER FOUNDATION



CROSS SECTION AT CATCH BASIN

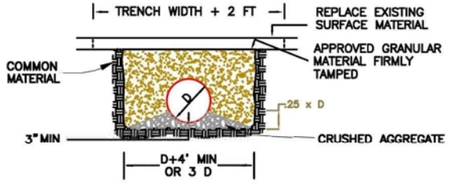


PLAN VIEW



ELEVATION

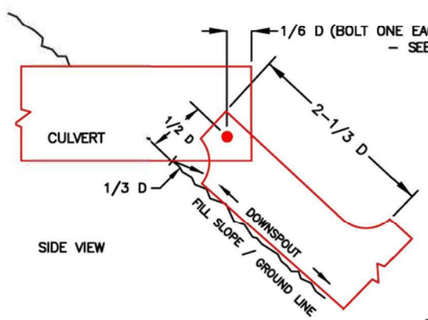
CATCH BASIN



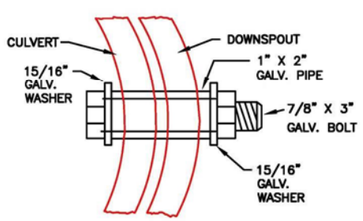
BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT. BACKFILL MATERIAL SHALL BE APPROVED GRANULAR MATERIAL.

BEDDING OF CULVERTS ON EXISTING SURFACED ROADS

USE "FLEXIBLE ELBOW" FOR CPE AND CMP DOWNSPOUTS



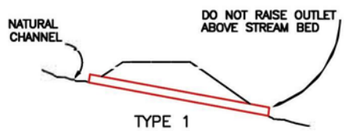
BOLT ASSEMBLY DETAIL**

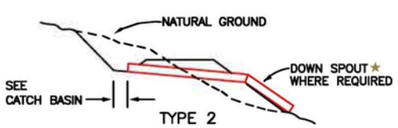


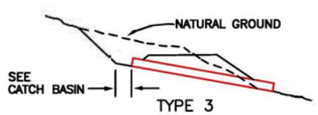
★ NOTE: ANCHOR DOWNSPOUTS ACCORDING TO SECTION 407b OF THE ROAD CONSTRUCTION SPECIFICATIONS

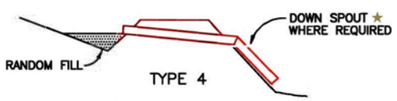
BANDS SHALL MEET MANUFACTURER'S SPECIFICATIONS

CULVERT INSTALLATION TYPES









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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT OREGON

CULVERT INSTALLATION DETAILS

DESIGNED	BROWNING
REVIEWED	
APPROVED	
DRAWN	LRB
SCALE	NONE
DATE	10/18
SHEET	6 OF 38
DRAWING NO.	

ROAD NUMBER	NEW CONSTRUCTION	RENOVATION	IMPROVEMENT	SLASH TREATMENT	GRUBBING	ROADSIDE BRUSHING	SLOPE STAKING	SURFACE COARSE AGGREGATE ROCK						CULVERT [1]				
														CPE #1		CMP #2		
								TOP WIDTH	DEPTH	GRADE	SIZE	LENGTH	QUANTITY	18" CPE	24" CPE	18" CMP	48" CMP	CULVERT ROCK
SPEC. NO.		500	500	200	200	2100	2300	1200	1200	1200	1200	1200	1200	400	400	400	400	400
UNITS	Ft.	Ft.	Ft.	ACRES	ACRES	Acres	Ft.	Ft.	INCHES			L.F.	C.Y.	L.F.	L.F.	L.F.	L.F.	C.Y.
39–11E–26.0		48010				11.0		15	2		1"–0"	4490	553	130'		4'		
									Varies		1.5–0"	Spot Rock	50					
40–12E–13.0		16020				3.7			Varies		3/4"–0"	Spot Rock	50					
									12		4" washed	110	73					
									Varies		1.5–0"	Spot Rock	7					
40–12E–13.1		6540				1.5			Varies		1.5–0"	Spot Rock	85					
40–13E–7.0		3585				0.8			Varies		1.5–0"	Spot Rock	44					
SPUR 13.2		2940				0.7			8		4" washed	150	54					
									Varies		1.5–0"	Spot Rock	86					
SPUR 19.1		1370				0.3			Varies		1.5–0"	Spot Rock	25					
SPUR 19.2		4320				1.0			Varies		1.5–0"	Spot Rock	42					
SPUR 19.3		1510				0.3												
SPUR 24.0		3000				0.7												
TOTALS		87,295				20.0							1,069	130'		4'		

ESTIMATE OF QUANTITIES *

* FOR INFORMATIONAL USE ONLY. QUANTITIES SHOWN ARE NOT PAY ITEMS. ALL ROCK QUANTITIES ARE LOOSE (TRUCK) MEASURE.

#1 CPE – CORRUGATED POLYETHYLENE PIPE
#2 CMP – CORRUGATED METAL PIPE
#3 SEE DOWNSPOUT INSTALLATION SHEET

ALWAYS THINK SAFETY

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
KLAMATH FALLS R.A. LAKEVIEW DIST.

ESTIMATE OF QUANTITIES

DESIGNED HULTZ
REVIEWED
APPROVED

DRAWN CAH | SCALE NONE
DATE 08/2019 | SHEET 7 OF 38
DRAWING NO.

Road Work Narratives

Note: For all roads listed - The contract administrator can authorize spot ditching, grading and watering. If not authorized to do so, the road narratives are to be followed.

39-11E-26.0 (Bryant Mountain Road)

0+00	50 CY of 1.5" spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser's discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed. Rocked surface. Begin grading, light brushing, and ditching on right. Add water while grading to achieve proper compaction. After watering and grading, apply dust palliative to rocked surface.
0+25	Clean sediment from below cattle guard. Grade road surface to top of cattle guard surface. (Sale administrator may exempt if cleaning is not necessary)
13+60	Clean 18" corrugated metal pipe (CMP) and CMP inlet and outlet.
20+90	Clean 18" CMP and CMP inlet and outlet.
25+40	Remove existing 18" CMP. Install 18" x 40' long corrugated polyethylene pipe (CPE).
31+30	Clean 18" CMP and CMP inlet and outlet.
34+00	End ditching right. Begin ditching on left. Clean 18" CMP and CMP inlet and outlet.
41+20	Clean 18" CMP and CMP inlet and outlet.
47+95	Clean ditch outlet – left. Continue ditching left.
52+40	Clean sediment from below cattle guard. Grade road surface to top of cattle guard surface.
59+80	Clean 18" CMP and CMP inlet and outlet.
75+20	Clean ditch outlet – left.
79+40	Clean 18" CMP and CMP inlet and outlet.
88+35	Clean 18" CMP and CMP inlet and outlet.
94+60	Remove existing 18" CMP. Install 18" x 24' CPE.
102+70	Clean 18" CMP and CMP inlet and outlet.
116+95	Road surface transitions from rock to natural improved surface. End watering. End dust palliative application.

	Clean sediment below cattle guard. Grade road surface to top of cattle guard surface.
118+80	Remove existing 18” CMP. Install 18” x 30’ CPE.
121+50	Clean 18” CMP and CMP inlet and outlet.
	Begin ditching left and right.
122+50	End ditching left. Continue ditching right.
125+00	Clean 18” CMP and CMP inlet and outlet.
132+00	Remove existing 18” CMP. Install 18” x 30’ CPE
137+45	Replace or repair damaged 18” x 2’ CMP end.
	Clean 18” CMP and CMP inlet and outlet.
142+45	Clean ditch outlet – right. End ditching right.
	Begin ditching left.
144+60	Clean 18” CMP and CMP inlet and outlet.
150+90	Clean 18” CMP and CMP inlet and outlet.
154+85	Clean 18” CMP and CMP inlet and outlet.
156+90	Clean 18” CMP and CMP inlet and outlet.
159+15	Clean 18” CMP and CMP inlet and outlet.
161+10	Clean sediment below cattle guard. Grade road surface to top of cattle guard surface.
163+40	Clean 18” CMP and CMP inlet and outlet.
167+60	Clean 18” CMP and CMP inlet and outlet.
175+50	Clean 44” CMP and CMP inlet and outlet.
178+20	Clean 18” CMP and CMP inlet and outlet.
	Repair east end of crushed CMP.
	End ditching left.
	Begin ditching right.
200+20	Clean 18” CMP and CMP inlet and outlet.
202+70	Clean 22” CMP and CMP inlet and outlet.
208+00	Clean 18” CMP and CMP inlet and outlet.
211+15	Clean 18” CMP and CMP inlet and outlet.
218+20	Clean 18” CMP and CMP inlet and outlet.
222+00	Clean 18” CMP and CMP inlet and outlet.
224+25	Clean 18” CMP and CMP inlet and outlet.
227+95	Clean 18” CMP and CMP inlet and outlet.
235+40	Clean 18” CMP and CMP inlet and outlet.
239+20	Clean 18” CMP and CMP inlet and outlet.
254+50	Clean 18” CMP and CMP inlet and outlet.
256+70	Clean 18” CMP and CMP inlet and outlet.
258+30	Clean 18” CMP and CMP inlet and outlet.

261+10	Clean 18” CMP and CMP inlet and outlet.
266+00	Begin ditching left. Continue ditching right.
	Begin add rock: 2” of 1” pit-run rock. Compact the rock with a rolling compactor and water to achieve proper compaction.
	After Ex. C watering and grading, apply dust palliative to rocked surface.
267+40	Clean 18” CMP and CMP inlet and outlet.
	End ditching left.
270+50	Clean 18” CMP and CMP inlet and outlet.
276+25	Clean 36” CMP and CMP inlet and outlet.
297+00	End add rock. End watering and compacting.
	End dust palliative application.
301+00	Junction with 40-12E-13.0 on left (0+00)
	End ditching right.
	Begin ditching left.
310+80	Road surface transitions to rock.
318+00	Clean ditch outlet – left and right.
330+90	End ditching left.
348+50	Road surface transitions to natural improved.
	Begin add rock: 2” of 1” pit-run rock. Compact the rock with a rolling compactor and water to achieve proper compaction.
	After Ex. C watering and grading, apply dust palliative to rocked surface.
356+95	Construct rolling dip.
362+40	Junction with Spur 19.2 on left (0+00).
	Road surface transitions to rock.
	End add rock. End watering and compacting.
	End dust palliative application.
	Begin ditching left.
371+00	Road surface transitions to natural improved.
377+00	End ditching left.
380+50	Begin ditching right.
388+65	Road surface transitions to rock.
	Construct rolling dip.
	Clean ditch outlet – left.
	Continue ditching right.
396+00	Clean 18” CMP and CMP inlet and outlet.
396+45	Junction with Spur 24.0 on left (0+00).
405+85	Road surface transitions to natural.
412+55	Construct rolling dip.
416+40	End ditching left. Begin ditching right.

423+00	Clean ditch outlet – right.
	End ditching right.
	Begin ditching left.
427+20	Construct rolling dip.
	Clean ditch outlet – right.
431+00	Construct rolling dip.
	Clean ditch outlet – left.
	End ditching left.
	Begin ditching right.
434+85	Construct rolling dip.
	Clean ditch outlet – left.
438+21	Construct rolling dip.
	Clean ditch outlet – left.
445+80	Construct rolling dip.
	Clean ditch outlet – left.
460+15	Install 18” CPE culvert.
471+20	Construct rolling dip.
	Clean ditch outlet – left.
480+10	End grading. End ditching. End light brushing.

40-12E-13.0

0+00	7 CY of 1.5” spot rock and 50 CY of ¾” spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser’s discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed.
	Junction with 39-11E-26.0 (301+00).
	Road surface is natural. Begin light brushing. Begin grading.
3+90	Junction with Spur 13.2 (0+00) on left.
20+10	Begin add rock: 12” of 4” washed rock.
21+20	End add rock.
24+00	Clean sediment below cattle guard. Grade road surface to top of cattle guard surface.
	(Sale administrator may exempt if cleaning is not necessary)
35+85	Junction with 40-12E-13.1 (0+00) on left.
37+65	Clean 18” CMP and CMP inlet and outlet.
41+35	Construct rolling dip.
49+50	Construct rolling dip.
	Begin ditching left.

57+05	End ditching left.
68+55	Clean sediment below cattle guard. Grade road surface to top of cattle guard surface. (Sale administrator may exempt if cleaning is not necessary)
81+90	Junction with 40-13E-7.0 (0+00) on left.
160+20	End light brushing. End grading.

40-12E-13.1

0+00	85 CY of 1.5" spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser's discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed. Junction with 40-12E-13.0 (35+85). Road surface is natural. Begin light brushing. Begin grading. Out-slope grading for water run-off where possible. A dozer was used for grading in the appraisal.
38+50	Junction with Spur 13.2 (44+75) on left.
54+55	Re-align road (12' wide) between centerline stakes on right. Remove logs in roadway.
55+20	End re-align and merge with existing road (40-12E-13.1).
62+00	Junction with unnamed spur road on left.
64+75	Construct truck turn around. End light brushing. End grading.

40-13E-7.0

0+00	36 CY of 1.5" spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser's discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed. Junction with 40-12E-13.0 (81+90). Road surface is natural. Begin light brushing and grading. Out-slope grading for water run-off where possible. A dozer was used for grading in the appraisal.
14+00	Begin add rock: 6" of 1 ½" rock.
14+20	End add rock.
23+00	Re-align road (12' wide) between centerline stakes on right.

24+15	End re-align and merge with existing road (40-13E-7.0).
34+70	Construct truck turn around on left. End light brushing. End grading.

SPUR 13.2

0+00	53 CY of 1.5" spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser's discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed. Road surface is natural improved. Begin light brushing, grading. Out-slope grading for water run-off where possible. A dozer was used for grading in the appraisal. Add rock: 2" of 1.5" minus base rock.
1+10	End add 1.5" rock. Add rock: 8" depth of 4" washed rock.
2+60	End add 4" rock. Add rock: 2" of 1.5" minus base rock.
5+10	End add 1.5" rock.
20+15	Create truck turn around. End light brushing. End grading.
35+50	Begin light brushing, begin grading. A dozer was used for grading in the appraisal. Construct truck turnaround on left. Remove stump on left. (This portion of road can be accessed through 40-12E-13.1 if desired).
44+75	Junction with 40-12E-13.1 (38+50). End light brushing. End grading.

Spur 19.1

0+00	25 CY of 1.5" spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser's discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed. Junction with Spur 19.2 (12+50). Road surface is natural. Begin light brushing. Begin grading. Out-slope grading for water run-off where possible. A dozer was used for grading in the appraisal.
12+90	Remove stump on left.
13+70	End light brushing. End grading.

Spur 19.2

0+00	42 CY of 1.5" spot rock have been appraised to add to rough areas on this road. This rock is not optional but may be distributed at the purchaser's discretion. If not applied to this road, the Contract Administrator may distribute along other roads as needed.
	Junction with 39-11E-26.0 (362+40). Road surface is natural. Begin light brushing. Begin grading. Out-slope grading for water run-off where possible.
12+50	Junction with Spur 19.1 (0+00) on left.
21+80	Junction with Spur 19.3 (0+00) on left.
43+20	End light brushing. End grading.

Spur 19.3

0+00	Junction with 19.2 (21+80). Road surface is natural. Begin light brushing. Begin grading. Out-slope grading for water run-off where possible. A dozer was used for grading in the appraisal.
15+10	Construct truck turn around on left. End light brushing. End grading.

Spur 24.0

0+00	Junction with 39-11E-26.0 (396+45).
	Road surface is natural. Begin light brushing. Begin grading. Out-slope grading for water run-off where possible. A dozer was used for grading in the appraisal.
	Remove boulders at entrance (Replace in Ex. D)
0+75	Remove earthen barrier. (Replace in Ex. D)
5+55	Remove water bar. (Replace in Ex. D)
6+75	Remove water bar. (Replace in Ex. D)
7+95	Remove water bar. (Replace in Ex. D)
11+85	Remove water bar. (Replace in Ex. D)
25+55	Remove water bar. (Replace in Ex. D)
26+50	Remove water bar. (Replace in Ex. D)
30+00	Move slash pile – pile 25' north of roadway.
	Construct truck turn around.
	End light brushing. End grading.

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GENERAL – 100

101 - Prework Conference(s):

A prework conference will be held prior to the start of operations. The Purchaser shall request the conference at least 48 hours prior to the time it is to be held. The conference will be attended by the Purchaser and/or his representative(s), subcontractor(s) and/or his or their representative(s) and the Authorized Officer and/or his representative(s).

The purpose of the prework conference will be to review the required work, exhibits and specifications, and to establish a work schedule and a list of the Purchaser's representatives (and subcontractor(s)).

102 - Definitions:

AASHTO - American Association of State Highway and Transportation Officials. Current editions of tests and specifications.

Abrasion Resistance - The ability of a fabric surface to resist wear by friction.

ACI - American Concrete Institute

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Apparent Opening Size (AOS) - Number of the U.S. Bureau of Standard sieve (or its opening size in millimeters or inches) having openings closest in size to the diameter of uniform particles which will allow 5 percent by weight to pass through the geotextile material when shaken in a prescribed manner. This is also referred to as Equivalent Opening Size (EOS).

ASTM - American Society for Testing and Materials.

Base Course - Surfacing structure consisting of crushed gravel or stone, crushed sandstone, pitrun rock, bank or river-run gravels, etc., to provide support and, in the event no surface course is placed, the running surface for traffic load.

BLM - Bureau of Land Management

Borrow - Excavated material required for embankments and other portions of the work.

Burst Strength - The resistance of a geotextile material to rupture from pressure applied at right angles to the plane of the geotextile material under specified conditions, usually expressed as the amount of pressure causing failure. Rupture or burst results from tensile failure of the geotextile material.

Culvert - A pipe, pipe-arch, arch, or box structure constructed of metal, concrete, plastic or wood which provides an opening under the roadway primarily for the conveyance of liquids, pedestrians or livestock.

Curve Widening - Widening required on inside of curves to accommodate long log and equipment hauling trucks.

Embankment - A structure of soil, aggregate, or rock material placed on a prepared ground surface and constructed to subgrade.

End Haul - Excavated material moved, other than by dozer, to an embankment or waste area to prevent sidecasting material outside of the road prism.

Excess Excavation - Material from the roadway in excess of that needed for construction of the designed roadway (waste).

Grab Tensile Strength - A modified tensile strength of a geotextile material. The strength of a specific width of geotextile material together with the additional strength contributed

TIMBER SALE ROAD SPECIFICATIONS

by adjacent areas. Typically, grab strength is determined on a 12-inch-wide strip of geotextile material, with the tensile load applied at the midpoint of the geotextile material width through 1-inch-wide jaw faces.

Grading - Leveling to grade, shaping and smoothing of a road subgrade; the shaping of roadside ditches as to grade and contour. In some instances includes smoothing of the cut bank.

Nonwoven Geotextile Material - A textile structure produced by bonding or interlocking of fibers, or both, accomplished by mechanical or chemical means.

Overhaul - Distance excavated material is transported in excess of the distance included in the cost for excavation.

Penetration Resistance - The geotextile material property determined by the force required to penetrate a geotextile material with a sharp pointed object. Initial penetration is by separating the fibers. Further penetration is essentially a tearing process.

Percent Open Area - The net area of a geotextile material that is not occupied by geotextile material filaments, normally determinable only for woven and nonwoven geotextile material having distinct, visible, and measurable openings that continue directly through the geotextile material.

Permeability - The geotextile material property which permits water to be transmitted in the longitudinal or transverse planes of the geotextile material.

Pioneer Road - Temporary construction access built along the route of the project.

Piping - The process by which soil particles are washed in or through pore spaces in drains and filters or poorly compacted fill/backfill material.

Plans - The approved drawings, or exact reproductions thereof which show the locations, character, dimensions, and details of the work to be done.

Pore Size - The size of an opening between geotextile material filaments; apparent opening size (AOS) is used to quantify this geotextile material property.

Puncture Resistance - The geotextile material property determined by the force required to penetrate a geotextile material with a blunt object. Failure results in a tearing of the

TIMBER SALE ROAD SPECIFICATIONS

geotextile material.

Purchaser - The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through their, or its agents, employees, or contractors.

Reasonably Close Conformity - Compliance with reasonable and customary manufacturing and construction tolerances where working tolerances are not specified.

Reinforcement - Strengthening of concrete with iron bars or mesh: geotextile with geotextile material inclusion: subgrade with aggregate: etc.

Roadbed - The graded portion of the road within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

Road Centerline - The longitudinal center of a roadbed.

Road Improvement - Work done to an existing road which improves it over its original design standard.

Road Renovation - Work done to an existing road which restores it to its original design.

Roadway - The portion of a road within limits of construction. Usually from the toe of the fill slope to a point where the cut slope intersects natural ground line. Synonym - road prism.

Scale - In quarrying, consists of the removal of loose or overhanging rock adhering to the solid face after a shot or a round of shots has been fired.

Scarification - The process of loosening or breaking up of the surface layer of soil or road, usually to a specified depth.

Separation - Function of geotextile material as a partition between adjacent materials to prevent mixing of those materials.

Shoulder - The portion of the roadbed contiguous with the traveled way designed for accommodation of stopped vehicles, safety, and lateral support of base and surface courses.

TIMBER SALE ROAD SPECIFICATIONS

Slope ratio notation (horizontal:vertical) – Slope ratios for constructed cut and fill slopes are expressed as a ratio of horizontal units to vertical units.

Spalls - Flakes or chips of stone.

Specifications - A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

Specific Gravity - The ratio of the density of a material to the density of water obtained by weighing known volumes of both items in air. A specific gravity less than one implies that the material will float.

Structures - Bridges, culverts, catch basins, retaining walls, underdrains, flumes, splash pads, downspouts, and other project features which may be involved in the work and not otherwise classified in these specifications.

Subbase - Reinforcement of the subgrade with large particles of pitrun rock or crushed stone. Usually confined to roads having wet subgrades or subgrades with weak support characteristics.

Surface Course - Top layer of a road structure consisting of finely crushed gravels or asphalt designed to provide a smooth running surface for traffic load.

Subgrade - The top surface of a roadbed upon which the traveled way and shoulders are constructed.

Tensile Strength - The strength shown by a geotextile material subjected to tension as distinct from torsion, compression, or shear.

Tensile Stress - Strain Modulus - A measure of the resistance to elongation under stress. The ratio of the change in tensile stress to the corresponding change in strain.

Tensile Test - A test which subjects geotextile material to tensile forces and measures resultant stresses and strains.

Timber - Standing trees, downed trees, or logs which can be measured in board feet.

Traveled Way - The portion of the roadbed used for the movement of vehicles, exclusive of shoulders.

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Typical Cross Sections - Cross-sectional plane of a typical roadway; showing natural ground line and designed roadway in relation to cut and fill, through cut, and through fill.

Turnout - Extra widening of the roadbed at appropriate intervals on single-lane roads for passing purposes.

Ultraviolet (UV) Radiation Stability - The ability of geotextile material to resist deterioration from exposure to sunlight.

Unaged Cloth - Cloth in condition received from the manufacturer or distributor.

Woven Geotextile Material - A textile structure comprising two or more sets of filaments of yarns interlaced in such a way that the elements pass each other at essentially right angles with one set of elements parallel to the geotextile material axis.

103 - Compaction equipment shall meet the following requirements:

103i - Other. Compaction equipment approved by the Authorized Officer.

CLEARING AND GRUBBING - 200

201 - This work shall consist of clearing, grubbing, removing and disposing of vegetation, debris, surface objects, and protruding obstructions within the clearing limits in accordance with these specifications and conforming to the lines, grades, dimensions and typical cross sections shown on the plans and as staked on the ground.

202 - Where clearing limits have not been staked, established by these specifications or shown on the plans, the limits shall extend (10) feet back of the top of the cut slope and (5) feet out from the toe of the fill slope.

203 - Clearing shall consist of the removal and disposal of trees, logs, rotten material, brush, and other vegetative materials and surface objects in accordance with these specifications and within the limits established for clearing as specified under Subsection 202 and as shown on the plans and as staked on the ground.

203a - Brush under (2) feet in height need not be cut within the limits established for clearing.

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203b - Standing trees and snags to be cleared shall be felled within the limits established for clearing unless otherwise authorize.

203c - Disposal of logs from private timber cleared within the limits established as staked on the ground shall consist of decking at a location designated by the Authorized Officer.

204 - Grubbing shall consist of the removal and disposal of stumps, roots, and other wood material embedded in the ground and protruding obstacles remaining as a result of the clearing operation between the top of the cut slope and the toe of the fill slope.

205 - Clearing and grubbing debris shall not be placed or permitted to remain in or under road embankment sections. Such debris will, however, be permitted to remain under waste material from full-bench construction on steep side slopes.

206 - Clearing and grubbing debris shall be disposed of by piling in accordance with Subsection 211 and as shown on the plans or as designated by the Authorized Officer.

206a - Notwithstanding Subsections 204 and 205, clearing and grubbing debris resulting from landing construction shall be placed at disposal sites and shall not be covered with excavated material. Location of disposal sites will be determined by the Authorized Officer.

211 - Disposal of clearing and grubbing debris, stumps and cull logs shall be by piling on government lands outside of established clearing limits in an area and in a manner acceptable to the Authorized Officer.

213 - No clearing or grubbing debris shall be left lodged against standing trees.

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EXCAVATION AND EMBANKMENT - 300

301 - This work shall consist of excavating, overhaul, placement of embankments, backfilling, borrowing, leveling, ditching, grading, in sloping, out sloping, crowning and scarification of the subgrade, compaction, disposal of excess and unsuitable materials, and other earth-moving work in accordance with these specifications and conforming to the lines, grades, dimensions, Standard Drawing and typical cross sections shown on the plans.

303 - Suitable material removed from the excavation shall be used in the formation of embankment subgrade, shoulders, slopes, bedding, backfill for structures, and for other purposes as shown on the plans.

304 - Borrow shall consist of suitable material required for the construction of embankments or for other portions of the work; such material shall be obtained from sources shown on the plans or selected by the Purchaser at his option and approved by the Authorized Officer.

305 - Embankment construction shall consist of the placement of excavated and borrowed materials, backfilling, leveling, grading, compaction, and other earth-moving work necessary for the construction of the roadway and landings in accordance with these specifications and conforming to the lines, grades, dimensions, Standard Plans and typical cross sections shown on the plans and as marked on the ground with stakes or metal tags.

305a - Material used in the construction of embankment sections shall be free of stumps, cull logs, brush, muck, sod, roots, frozen material, and other deleterious materials and shall be placed and compacted as specified.

306e - The final subgrade shall be compacted to full width with compacting equipment conforming to the requirements of Subsections 103f, 103g , 103h, and 103i.

308 - In the case of rock fills, placement of material in layers is not required and such material may be placed by end-dumping or other methods approved by the Authorized Officer provided that the rock be reasonably prevented from escaping beyond the embankment toe.

309 - The top of cut slopes shall be rounded by blending into the adjacent terrain for a distance not less than (1) foot and not more than (3) feet beyond the top of the cut.

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Rounding shall be performed in soils that can be shaped without ripping or blasting.

313 - In cut areas where solid rock is encountered at, or near subgrade, the rock shall be excavated to a minimum depth of (6) inches below subgrade elevation and the excavated area backfilled with suitable material. The backfill material shall be processed to the optimum moisture content suitable for maximum density and compacted to full width in accordance with the requirements of Subsection 306e.

314 - When heavy clays, muck, clay shale, or other deleterious material for forming the roadbed is encountered in cuts at subgrade, it shall be excavated to a minimum depth of (2) feet below the subgrade elevation and the excavated area backfilled with a selected borrow material approved by the Authorized Officer. The backfill material shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density in accordance with the requirements of Subsection 306e. Unsuitable material shall be disposed of as directed by the Authorized Officer.

316 - Borrow material from sources selected at the Purchaser's option shall be inspected and approved in writing by the Authorized Officer prior to placement.

318 - Selected borrow or selected roadway excavation material shall be uniformly spread on the roadbed in lifts not to exceed (6) inches in depth until the required thickness shown on the plans is attained.

Each layer shall be uniformly moistened or dried to the optimum moisture content suitable for maximum density and compacted to full width in accordance with the requirements of Subsection 306e.

320 - Ditches shall conform to the slope, grade, dimensions, Standard Plans 1 thru 3 and shape of the required cross section shown on the plans. Roots, stumps, rocks, and other projections shall be removed to form smooth, even slopes.

321 - Excess excavated, unsuitable, or slide materials shall not be disposed of on areas where the material will encroach on a stream course or other body of water. Such materials shall be disposed of in accordance with Subsection 321c. Materials not disposed of in this manner shall be retrieved and disposed of at the Purchaser’s expense and at the direction of the Authorized Officer.

TIMBER SALE ROAD SPECIFICATIONS

321c - End-dumping will be permitted for the placement of excess materials under Subsection 321 in designated disposal areas or within areas approved by the Authorized Officer. Watering, rolling, and placement in layers are not required. Materials placed shall be sloped, shaped, and otherwise brought to a visible condition acceptable to the Authorized Officer.

324 - Excavated material shall not be allowed to cover boles of standing trees to a depth in excess of (2) feet on the uphill side.

327 - The finished grading shall be approved in writing by the Authorized Officer. The Purchaser shall give the Authorized Officer (3) days' notice prior to start of surfacing operations.

PIPE CULVERTS - 400

401 - This work shall consist of furnishing and installing pipe culverts in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans. Individual lengths and locations are approximate; final lengths and locations will be determined by the Authorized Officer from established construction stakes. Additional pipe and erosion control devices may be required at the option of the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost of furnishing and installing such items. Costs will be based upon the unit prices set forth in the current BLM Timber Appraisal Production Cost Schedule.

402 - The pipe culverts located at the following road locations:

39S-11E-26.0	25+40
39S-11E-26.0	94+60
39S-11E-26.0	118+80
39S-11E-26.0	132+00
39S-11E-26.0	460+15

as shown on the plans shall be replaced/installed. Installation shall conform to the

TIMBER SALE ROAD SPECIFICATIONS

lines, grades, dimensions, and typical cross sections shown on the plans. Details are also contained in the Road Narratives.

403 - Grade culverts shall have a gradient of 2 percent to 4 percent greater than the adjacent road grade. Grade culverts shall be skewed down grade 30 degrees as measured from the perpendicular to the centerline unless otherwise specified on the plans.

405e - Corrugated-polyethylene pipe for culverts 18-inch through 36-inch diameter shall meet the requirements of AASHTO M 294, Type S.

Installation will be subject to the same specification as other pipe materials.

406 - Coupling bands shall conform to the requirements of AASHTO M 36 and AASHTO M 218 or AASHTO M 274 with the exception of band widths and the "Hugger"-type band which shall conform to the details, dimensions, and typical diagram shown on the plans.

406a - "Hugger"-type coupling bands shall only be used with annular corrugated pipe and pipe-arch culverts, or helically corrugated pipe and pipe-arch culverts having annular reformed ends. Annular reformed ends shall consist of two annular corrugations.

410 - Pipe shall be unloaded and handled with reasonable care. If the Authorized Officer determines any structure is damaged to the extent that it is unsuitable for use in the road construction, it shall be replaced at the Purchaser's expense.

411 - Trenches necessary for the installation of pipe culverts shall conform to the lines, grades, dimensions, and typical diagram included in the plans and the Culvert Installation Detail Sheet.

412 - Where ledge rock, boulders, soft, or spongy soils are encountered, they shall be excavated a minimum of (24) inches below the invert grade for a width of at least one pipe diameter or span on each side of the pipe and shall be backfilled with crushed rock material in accordance with Section 1200.

413 - Pipe culverts shall be bedded on a crushed rock material in accordance with

TIMBER SALE ROAD SPECIFICATIONS

Section 1200 or fine readily compactable soil material having a depth of not less than 6 inches as shown on plans. Foundation material shall be of uniform density throughout the length of the structure and shall be shaped to fit the pipe.

414a - The invert grade of the bedding shall be cambered at the middle ordinate a minimum of 1 percent of the total length of the drainage structure. Camber shall be developed on a parabolic curve.

416 - Side-fill material for pipe culverts shall be placed within 1 pipe diameter, or a minimum of 2 feet, of the sides of the pipe barrel, and to 1 foot over the pipe with fine, readily compactable soil, crushed rock material in accordance with Section 1200, or granular fill material free of excess moisture, muck, frozen material, roots, sod, or other deleterious or caustic material and devoid of rocks or stones of sizes which may impinge upon and damage the pipe or otherwise interfere with proper compaction.

419 - The pipe culverts after being bedded and backfilled as required by these specifications shall be protected by a 2-foot cover of fill before heavy equipment is permitted to cross the drainage structures. Removal of the protection fill shall be as directed by the Authorized Officer.

427 - Record culvert sizes, lengths and location actually installed on a copy of the culvert list. This culvert list shall be furnished to the Authorized Officer.

428 - Remove and dispose of old culverts in a legal manner, and pay for any fees required. The Purchaser shall remove the old culverts from the work site within three 3 working days of completion of the culvert replacement work for each road prior to road acceptance.

RENOVATION OF EXISTING ROADS - 500

501 - This work shall consist of reconditioning and preparing the roadbed and shoulders, minor excavation and/or embankment, cleaning and shaping drainage ditches, trimming vegetation from cut and embankment slopes, and cleaning and repairing drainage structures of existing roads in accordance with these specifications as shown on the plans and as marked on the ground with stakes.

TIMBER SALE ROAD SPECIFICATIONS

502 - The existing road surface shall be bladed and shaped to the lines, grades, dimensions, and typical cross sections shown on the plans at the following location(s):

39-11E-26.0	0+00	480+10	2
40-12E-13.0	0+00	160+20	2
40-12E-13.1	0+00	64+75	2
40-13E-7.0	0+00	34+70	1
SPUR 13.2	0+00	44+75	4
SPUR 19.1	0+00	13+70	4
SPUR 19.2	0+00	43+20	4
SPUR 19.3	0+00	15+10	4
SPUR 24.0	0+00	30+00	4

502a - Rocks larger than 4 inches in maximum dimension shall be removed from the scarified layers of the roadbed. Material so removed will not be permitted to remain on road shoulders or in ditches.

502b - Drainage ditches shall be bladed and shaped in accordance with the lines, grades, dimensions, and typical cross sections shown on the plans.

504 - Existing road surfaces shall be uniformly watered to the optimum moisture content suitable for grading in accordance with the following table:

39-11E-26.0	0+00	116+95

TIMBER SALE ROAD SPECIFICATIONS

506 - The inlet end of designated existing drainage structures as shown on the plans shall be cleared of vegetative debris and boulders that are of sufficient size to obstruct normal stream flow. Pipes shall be cleared of sediment and other debris lodged in the barrel of the pipe. The outflow area of designated pipe structures shall be cleared of rock and vegetative obstructions which will impede the structure's designed outflow configuration. Catch basins shall conform to the lines, grade, dimensions, and typical diagram shown on the plans.

508 - Vegetation encroaching on the roadbed and the drainage ditches of existing roads at the following locations:

39-11E-26.0	0+00	480+10	2
40-12E-13.0	0+00	160+20	2
40-12E-13.1	0+00	64+75	2
40-13E-7.0	0+00	34+70	1
SPUR 13.2	0+00	44+75	4
SPUR 19.1	0+00	13+70	4
SPUR 19.2	0+00	43+20	4
SPUR 19.3	0+00	15+10	4
SPUR 24.0	0+00	30+00	4

Vegetation shall be removed by cutting and disposed of in accordance with Subsection 2100 of these specifications.

509 - The finished grading shall be approved by the Authorized Officer. The Purchaser shall give the Authorized Officer 3 days notice prior to final inspection of the grading operations.

TIMBER SALE ROAD SPECIFICATIONS

WATERING - 600

601 - This work shall consist of furnishing and applying water required for the finishing and reconditioning of existing roadbeds, laying dust, or for other uses in accordance with these specifications.

602 - Water, when needed for compaction or laying dust, shall be applied at the locations, in the amounts, and during the hours as directed by the Authorized Officer. Amounts of water to be provided will be the minimum needed to properly execute the compaction requirements in conformance with these specifications, and for laying dust during work periods.

603 - Water trucks used in this work shall be equipped with a distributing device of ample capacity and of such design as to ensure uniform application of water on the road bed.

AGGREGATE SURFACE COURSE - 1200
CRUSHED ROCK MATERIAL

1201 - This work shall consist of furnishing, hauling, and placing one or more layers of crushed rock material on roadbeds approved for placing crushed rock material in accordance with these specifications and conforming to the dimensions and typical cross sections shown on the plans. Material not conforming to these specifications will be rejected, and shall be removed from the road at the purchaser's expense.

1202a - Crushed rock materials used in this work may be obtained from commercial sources selected by the Purchaser at his option and expense, providing the rock materials furnished comply with the specifications.

1203 - When crushed rock material is produced from gravel, not less than 65 percent by weight of the particles retained on the No. 4 sieve will have 2 manufactured

fractured faces. If necessary to meet the above requirements or to eliminate an excess of filler, the gravel shall be screened before crushing.

1204 - Crushed rock material shall consist of hard durable rock fragments conforming to the following gradation requirements:

TABLE 1204

AGGREGATE SURFACE COURSE
CRUSHED ROCK MATERIAL
Percentage by weight passing square mesh sieves
AASHTO T 11 & T 27

GRADATION

1-1/2-inch	100
1-inch	-
3/4-inch	50-90
1/2-inch	-
No. 4	25-50
No. 8	-
No. 30	-
No. 40	5-25
No. 200	2-15

1205 - Crushed rock material shall not exceed 35 percent loss as determined by AASHTO T 96.

1206 - Crushed rock material shall show a durability value of not less than 35 as determined by AASHTO T210.

1206a - The crushed rock material shall show a loss of not more than 20 percent by weight, when submerged in DMSO, dimethyl sulfoxide, for five days, according to Federal Highway Administration Region 10 Accelerated Weathering Test

TIMBER SALE ROAD SPECIFICATIONS

Procedure.

1207 - That portion of crushed rock material passing the No. 40 sieve, including blending filler, shall have a liquid limit of not more than 35 and a plasticity index of not less than 4 and not more than 12 as determined by AASHTO T 89 and AASHTO T 90.

1207a - That portion of crushed rock material passing No. 4 sieve, including blending filler, shall have a sand equivalent of not less than 35, as determined by AASHTO T 176, except where that portion exhibits a sand equivalence of less than 35, the aggregate will be accepted if it complies with the additional requirement as follows:

TABLE 1207a

34	9
33	8
32	7
31	6
30	5
29 or less	4

1208 - If additional binder or filler material is necessary to meet the grading or plasticity requirements or for satisfactory bonding of the material, it shall be uniformly blended with the crushed rock material at the crushing and screening plant prior to placing on the road, unless otherwise agreed. The material for such purposes shall be obtained from sources approved by the Authorized Officer and shall be free from stones, vegetative matter, and other deleterious materials.

1208a - Each layer of crushed rock material shall be thoroughly mixed on the roadbed by alternately blading, to full depth, until a uniform mixture has been obtained. The mixture shall then be spread to full width. When completed, the spreading shall produce a surface which is smooth, presents uniform shoulder lines, and conforms to the specified cross section.

TIMBER SALE ROAD SPECIFICATIONS

1209 - Shaping and compacting of roadbed base course shall be completed and approved in writing, prior to placing crushed rock material, in accordance to the requirements of Subsection 500 for placing on the roadbed. Notification for final inspection prior to rocking shall be 72 hours prior to the inspection and shall be 10 days prior to start of surfacing operations.

1210 - Crushed rock material conforming to the requirements of these specifications shall be placed on the approved roadbed in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the plans. Compacted layers shall not exceed 4 inches in depth. When more than one layer is required, each shall be shaped, processed, compacted, and approved in writing by the Authorized Officer before the succeeding layer is placed. Irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and then adding or removing crushed rock material until the surface is smooth and uniform.

1210a - Crushed rock material used to repair or reinforce soft, muddy, frozen, yielding, or rutted roadbed shall not be construed as surfacing required by this specification.

1212 - Each layer of crushed rock material placed, processed, and shaped as specified shall be moistened or dried to a uniform moisture content suitable for maximum compaction and compacted to full width by compacting equipment conforming to the requirements of Subsection 103 - i. Minimum compaction shall be 1 hour of continuous compacting for each 150 cubic yards of crushed rock material placed per layer, or fraction thereof.

ROADSIDE BRUSHING - 2100

2101 - This work shall consist of the removal of vegetation from the road prism - variable distance, and inside curves in accordance with these specifications and conforming to the lines, grades, dimensions, and typical cross sections shown on the Roadside Brushing Detail Sheet of this exhibit, at designated locations as shown in the plans.

2102 - Roadside brushing may be performed mechanically with self powered, self-propelled equipment and/or manually with hand tools, including chain saws.

TIMBER SALE ROAD SPECIFICATIONS

2103 - Vegetation cut manually or mechanically less than 6 inches in diameter D.B.H. shall be cut to a maximum height of 2 inches above the ground surface or above obstructions such as rocks or stumps on cut and fill slopes and all limbs will be severed from the trunk.

2103a - Vegetation shall be cut and removed from the road bed between the outside shoulders and the ditch centerline and such vegetation shall be cut to a maximum height of 1 inch above the ground and running surface. All limbs will be severed from the trunk. Sharp pointed ends will not be permitted. Cuts shall be parallel to the ground line or running surface.

2104 - Trees in excess of 6 inches in diameter at D.B.H. shall be limbed, so that no limbs extend into the treated area or over the roadbed to a height of 12 feet above the subgrade of the roadway on cut and fill slopes, within the road prism-variable distance. Limbs shall be cut to within 1 inch of the trunk to produce a smooth vertical face. Removal of trees larger than 6 inches in diameter for sight distance or safety may be directed by the Authorized Officer.

2105 - Vegetation that is outside of the road prism-variable distance that protrudes into the road prism and within 12 feet in elevation above the subgrade) shall be cut, to within 1 inch of the trunk to produce a smooth vertical face.

2106 - Vegetative growth capable of growing 1 foot in height or higher shall be cut, within the road prism-variable distance or as directed by the Authorized Officer.

2108 - Self propelled equipment shall not be permitted on cut and fill slopes or in ditches.

2109 - Debris resulting from this operation shall be scattered downslope from the roadway. Debris shall not be allowed to accumulate in concentrations. Debris in excess of 1 foot in length and 2 inches in diameter shall not be allowed to remain on cut slopes, ditches, roadways or water courses, or as directed by the Authorized Officer.

2113 - Roadside brushing shall be accomplished as specified on SHEET 4

TIMBER SALE ROAD SPECIFICATIONS

2115 - Mechanical brush cutters shall not be operated when there are people and occupied vehicles within 400 feet of the immediate operating area.

2116 - Traffic warning signs shall be required at each end of the work area. Signs shall meet the requirements of the Manual on Uniform Traffic Devices.

DUST PALLIATIVES / OTHER MAINTENANCE - 3400

3405 The Purchaser shall be required to furnish and apply (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives in accordance with these specifications.

This work shall be performed upon acceptance of the required road construction, renovation, or improvement work and be **placed prior to any timber hauling** other than right-of-way timber (and rock hauling).

When timber hauling has commenced during the wet weather season, the Purchaser shall apply the required dust palliative during the subsequent summer hauling season as directed by the Authorized Officer.

Other means of dust abatement needed prior to the application of the required dust palliative shall be applied as approved by Authorized Officer.

The specified dust palliative shall be applied evenly over the specified road surface width of the following roads:

Road No.	From Sta./M.P.	to Sta./M.P.	Spread Width
39-11E-26.0	0+00	116+95	15 ft.
39-11E-26.0	266+00	297+00	15 ft.
39-11E-26.0	348+50	362+40	15 ft.

Turnouts and extra widening shall (not) be included in addition to the spread width.

3405a Additional (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliative may be required at the option of the Authorized Officer when the

TIMBER SALE ROAD SPECIFICATIONS

functional qualities of the dust palliative have been reduced or become ineffective due to third party damage, rain, or other events not under the control of the purchaser.

All materials and labor shall be furnished by the Purchaser and placed in amounts and locations designated by the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost. Costs will be based upon the unit prices set forth in the current BLM Road Cost Guide.

If additional dust palliative is required due to events controlled by the Purchaser, such as split hauling season, the Purchaser shall furnish and place such material at his own expense.

3405b The Purchaser shall notify affected residents along the roads to be treated of the planned application of (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives at least (3) days prior to the work. Warning signs shall be posted at key intersections to alert users that the road is being treated. All signs shall be removed by the Purchaser within (thirty) days of treatment.

3406 Prior to the application of (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives, the roadbed shall be bladed and shaped to remove surface irregularities and excess loose material. The prepared surface must (have (1/2) to (1) inch of relatively loose material and) be visibly moist and drying.

3407 The Purchaser shall furnish in duplicate, commercial certification signed by vendor of compliance with the (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives material requirements specified under Subsection (3412b) (3412c). Commercial certification includes the date, identification number of truck or trailer, net mass, and brand name with each shipment. Also provide the net volume and specific gravity at 60 degrees F, percent solids by mass, and PH.

3408 Dust palliatives shall be applied with standard commercial distribution equipment operated in a manner that the material is uniformly applied on variable widths of surface at controlled rates.

3409 The Purchaser shall notify the Authorized Officer a minimum of (3) days in advance of application of required dust palliative.

TIMBER SALE ROAD SPECIFICATIONS

3410 The Purchaser shall submit an application schedule for all dust palliative work to the Authorized Officer for approval. All work shall be in accordance with the approved plan.

3411 Required (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives shall only be applied when the atmospheric temperature is 45° F and steady or rising and when the weather is not foggy or rainy. Do not apply dust palliative if rain is anticipated within 24 hours of application or when the ground is frozen.

3412 The Purchaser shall apply to the prepared roadbed specified under Subsection 3405, a (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliative conforming to the material requirements of Subsection (3412b) (3412c). The rate of application shall be (0.5) gallons per yd^2 surface. (A second application at the rate of (0.3) gallons per yd^2 shall be applied at a time designated by the Authorized Officer.)

Applied materials not penetrating the road surface shall be blade mixed with additional water into the top 1 to 1½ inches of the surfacing at the Contractor's expense.

3412a If required, the (lignin sulfonate) (magnesium chloride) (calcium chloride) shall be field diluted within the application vehicle and be circulated at least 5 minutes to assure mixing. An air gap shall be provided between any water source and the materials being diluted. Accidental spills shall be contained to prevent entry in water courses or ponded water. The surface of adjacent structures and trees shall be protected from spattering or marring.

A wetting agent may be used in addition to the certified compound or mixed with the road surface preparation watering. A mix of less than 1:6000 is recommended.

Water used to dilute (lignin sulfonate) (magnesium chloride) (calcium chloride) concentrate shall be clean and free of oil, salt, acid, alkali, vegetable matter, or any other substance that contaminates the finished product.

3412b Specifications for Lignin Sulfonate:

Lignin sulfonate shall be the chemical residue produced as a byproduct of the acid

TIMBER SALE ROAD SPECIFICATIONS

sulfite pulping process and supplied as a water solution. The base cation shall be ammonia, calcium, or sodium. The product shall be water soluble to allow field dilution. Dilute with water until the mixture contains a minimum 48 percent concentration with the following properties:

Solids	50%
Specific gravity	1.25
PH, AASHTO T289	4.5 min.

Ensure that the material does not exceed the following chemical constituents:

phosphorous	25.00 ppm
cyanide	0.20 ppm
arsenic	5.00 ppm
copper	0.20 ppm
lead	1.00 ppm
mercury	0.05 ppm
chromium	0.50 ppm
cadium	0.20 ppm
barium	10.00 ppm
selenium	5.00 ppm
zinc	10.00 ppm

Apply when the ambient air temperature is 45° F or above.

3412c Specifications for (magnesium chloride) (calcium chloride):

The material shall consist of a brine containing 29 to 35 percent (magnesium chloride) (calcium chloride) by weight and 62 to 72 percent water by weight. Ensure that the material does not exceed the following chemical constituents:

phosphorous	25.00 ppm
cyanide	0.20 ppm
arsenic	5.00 ppm
copper	0.20 ppm

lead	1.00 ppm
mercury	0.05 ppm
chromium	0.50 ppm
cadmium	0.20 ppm
barium	10.00 ppm
selenium	5.00 ppm
zinc	10.00 ppm
sulfate	4.3 percent maximum
nitrate	5.0 percent maximum.

(Concentration specifications for Calcium Chloride)

Calcium chloride shall conform to AASHTO M 144, type L for the specified concentration.

(Concentration specifications for Magnesium chloride)

(1) Magnesium chloride by mass	28% minimum
(2) Water by mass	72% maximum
(3) Specific gravity, AASHTO T 227	1.290 to 1.330)

Apply when the ambient air temperature is 45° F or above.

3413 Sampling of (lignin sulfonate) (magnesium chloride) (calcium chloride) material may be required to validate certificates furnished by the Purchaser. When sampling is directed by the Government, the actual samples will be taken by the Purchaser or his representative in the presence of the Authorized Officer.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Version: 6.1.0.23

Summary of All Roads and Projects Updated: 11/20/2019

T.S. Contract Name: Bryant Mountain T.S. Tract No: ORL04-TS20-02 Sale Date: 07/29/2020
Prepared by: C. Hultz Ph: 5418854133 Print Date: 5/19/2020 6:16:25 AM
Construction: 0.00 sta
Improve: 0.00 sta Renov: 871.15 sta Decom: 0.00 sta Temp: 0.00 sta

200 Clearing and Grubbing: 0.0 acres	$0.00
300 Excavation:	$0.00
Haul < 500 ft: 0 sta-yds	
Haul > 500 ft: 0 yd-mi	
400 Drainage:	$5,700.70
Culvert: 4 lf DownSpout: 0 lf	
PolyPipe: 130 lf	
500 Renovation:	$12,271.01
Blading 12.95 mi	
700-1200 Surfacing:	$48,186.62
Commercial Quarry Name: Buesing Rd KR - 1.5" 338 LCY	
Commercial Quarry Name: Buesing Rd KR - 3/4- 50 LCY	
Commercial Quarry Name: Buesing Rd - 1"Dirty 553 LCY	
Commercial Quarry Name: Buesing Rd 4" washed 127 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$1,660.05
2100 RoadSide Brushing:	$4,885.00
Mechanical Brushing: 20.0 acres	
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $2,926.20	$2,926.20
Quarry Development:	$0.00
Total: 2,488 mbf @ $30.398/mbf =	$75,629.58

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities are loose cubic yards.

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: 39-11-26.0 Road Name: Bryant Mtn. Rd.
Road Renovation: 9.09 mi 15 ft Subgrade 2 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$5,700.70
Culvert: 4 lf	
DownSpout: 0 lf	
PolyPipe: 130 lf	
500 Renovation:	$9,111.32
Blading 9.10 mi	
700-1200 Surfacing:	$31,658.68
Quarry Name: Buesing Rd KR - 1.5" 49 LCY	
Quarry Name: Buesing Rd - 1"Dirty 553 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$1,245.05
2100 RoadSide Brushing (Mechanical):11.0 acres	$2,686.75
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $1,649.41	$1,649.41
Quarry Development:	$0.00
Total:	$52,051.90

Notes:
- Quantities shown are estimates only and not pay items.
- Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 39-11-26.0 Road Name: Bryant Mtn. Rd.

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Galvanized	STA 137+45 Repair	18 inch 16 ga 2 lf x $48.15/lf = $96.30
Galvanized	STA 178+20 Repair	18 inch 16 ga 2 lf x $48.15/lf = $96.30
Poly Pipe	STA 25+40	18 inch 40 lf x $42.37/lf = $1,694.80
Poly Pipe	STA 118+80	18 inch 30 lf x $42.37/lf = $1,271.10
Poly Pipe	STA 132+00	18 inch 30 lf x $42.37/lf = $1,271.10
Poly Pipe	STA 460+15	18 inch 30 lf x $42.37/lf = $1,271.10

Subtotal: $5,700.70

Section 500 Renovation:

Comment: 4.97 mi at 8 culverts/mi. 1 additional culverts at $63.89/ea

Blading: $708.54/mi x 8.43 mi = $5,970.16

Blading w/o Ditches: $434.19/mi x 0.67 mi = $290.91

Compaction: $330.78/mi x 0.85 mi = $281.16

Clean Culverts: $383.34/mi x 4.97 mi = $1,905.20

Watering- 3000 gal water truck

Sta 0+00-116+95, 80 USD/hr 2 trip x $150.00/trip = $300.00

Sta 266+00 - 297+00, 80 USD/hr 1 trip x $150.00/trip = $150.00

Sta 348+50 - 362+40 1 trip x $150.00/trip = $150.00

1 additional culvert- clean 1 Culvert x $63.89/Culvert = $63.89

Subtotal: $9,111.32

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"

Comment: 2.60 stations spot rock, 2" depth

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.05mi	12ft	15ft	2in						

Rock Volume = 29 LCY

Purchase Price / Royalty: $11.78/LCY x 29 LCY = $341.62

Basic Rock Haul cost: $0.59/LCY x 29 LCY = $17.11

Rock Haul +15% grades: $1.78/LCY-mi x 29 LCY x 3.50 mi= $180.67

Rock Haul St& Co Roads: $0.39/LCY-mi x 29 LCY x 20.00 mi= $226.20

Commercial Quarry Name: Buesing Rd KR - 1.5"

Comment: 0+80 stations spot rock, 4" depth

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.02mi	15ft	15ft	4in						

Rock Volume = 20 LCY

Purchase Price / Royalty: $11.78/LCY x 20 LCY = $235.60

Basic Rock Haul cost: $0.59/LCY x 20 LCY = $11.80

Rock Haul +15% grades: $1.78/LCY-mi x 20 LCY x 3.50 mi= $124.60

Rock Haul St& Co Roads: $0.39/LCY-mi x 20 LCY x 20.00 mi= $156.00

Commercial Quarry Name: Buesing Rd - 1"Dirty

Comment: STA 266+00 - 297+00

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.59mi	15ft	15ft	2in						

Rock Volume = 382 LCY

Purchase Price / Royalty: $10.00/LCY x 382 LCY = $3,820.00

Basic Rock Haul cost: $0.59/LCY x 382 LCY = $225.38

Rock Haul +15% grades: $1.78/LCY-mi x 382 LCY x 0.50 mi= $339.98

Rock Haul -15% grades: $0.89/LCY-mi x 382 LCY x 5.00 mi= $1,699.90

Rock Haul St& Co Roads: $0.39/LCY-mi x 382 LCY x 28.50 mi= $4,245.93

Commercial Quarry Name: Buesing Rd - 1"Dirty
 Comment: STA 348+50 - 362+40

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.26mi	15ft	15ft	2in						

Rock Volume = 171 LCY
Purchase Price / Royalty: $10.00/LCY x 171 LCY = $1,710.00
Basic Rock Haul cost: $0.59/LCY x 171 LCY = $100.89
Rock Haul +15% grades: $1.78/LCY-mi x 171 LCY x 1.56 mi= $474.83
Rock Haul -15% grades: $0.89/LCY-mi x 171 LCY x 5.00 mi= $760.95
Rock Haul St& Co Roads: $0.39/LCY-mi x 171 LCY x 28.50 mi= $1,900.67
Dust Palliative
 16185 feet of dust palliative, 0+00 - 116+95
 11695 ft x $1.29/ft = $15,086.55
Subtotal: $31,658.68

Section 1300 Geotextiles:
Subtotal: $0.00

Section 1400 Slope Protection:
Subtotal: $0.00

Section 1800 Soil Stabilization:
Subtotal: $0.00

Section 1900 Cattleguards:
Clean Below Cattleguards
 Remove sediment below cattleguard. 415 USD per CG
 2 Cattlegrd x $415.00/Cattlegrd = $830.00
 Backhoe 3 hr x $87.60/hr = $262.80
 General Laborer 3 hr x $38.17/hr = $114.51
 Dump Truck 10 cy 0.5hr between CGs 0.5 hr x $75.47/hr = $37.74
Subtotal: $1,245.05

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: STA 0+00 - 480+10 Light brushing
 Brushing width Left: 5ft. Right: 5ft.
 RoadSide Brushing Light: $244.25/acre x 11.00 acres = $2,686.75
Subtotal: $2,686.75

Section 2300 Engineering:
Subtotal: $0.00

Section 2400 Minor Concrete:
Subtotal: $0.00

Section 2500 Gabions:
Subtotal: $0.00

Section 8000 Miscellaneous:
Subtotal: $0.00

Mobilization:
Construction - 69.33% of total Costs = $0.00
Surfacing - 56.37% by rock volume = $1,649.41
Subtotal: $1,649.41

Quarry Development:
Based on 56.37% of total rock volume
Subtotal: $0.00

Total: $52,051.90

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: 40-12-13.0 Road Name:
Road Renovation: 3.03 mi 15 ft Subgrade 3 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$1,417.89
Blading 3.03 mi	
700-1200 Surfacing:	$5,227.74
Quarry Name: Buesing Rd KR - 1.5" 7 LCY	
Quarry Name: Buesing Rd KR - 3/4- 50 LCY	
Quarry Name: Buesing Rd 4" washed 73 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$415.00
2100 RoadSide Brushing (Mechanical):3.7 acres	$903.73
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $356.19.....	$356.19
Quarry Development:	$0.00
Total:	$8,320.55

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 40-12-13.0 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
 Comment: 1 culvert cleaning - $63.89
  Blading: $708.54/mi x 0.14 mi = $99.20
  Blading w/o Ditches: $434.19/mi x 2.89 mi = $1,254.81
  Culvert cleaning
   Clean culvert 1 Culvert x $63.89/Culvert = $63.89

Subtotal: $1,417.89

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: 0.20 STA spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.01mi	12ft	15ft	4in						

  Rock Volume = 7 LCY
  Purchase Price / Royalty: $11.78/LCY x 7 LCY = $82.46
  Basic Rock Haul cost: $0.59/LCY x 7 LCY = $4.13
  Rock Haul +15% grades: $1.78/LCY-mi x 7 LCY x 5.70 mi= $71.02
  Rock Haul St& Co Roads: $0.39/LCY-mi x 7 LCY x 20.00 mi= $54.60

Commercial Quarry Name: Buesing Rd KR - 3/4-
 Comment: STA 37+65 - 81+90, spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.00mi									50 LCY

  Rock Volume = 50 LCY
  Purchase Price / Royalty: $17.50/LCY x 50 LCY = $875.00
  Basic Rock Haul cost: $0.59/LCY x 50 LCY = $29.50
  Rock Haul +15% grades: $1.78/LCY-mi x 50 LCY x 6.10 mi= $542.90
  Rock Haul St& Co Roads: $0.39/LCY-mi x 50 LCY x 20.00 mi= $390.00

Commercial Quarry Name: Buesing Rd 4" washed
 Comment: STA 20+10, 12" of 4" washed rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.02mi	12ft	15ft	12in						

  Rock Volume = 73 LCY
  Purchase Price / Royalty: $25.00/LCY x 73 LCY = $1,825.00
  Basic Rock Haul cost: $0.59/LCY x 73 LCY = $43.07
  Rock Haul +15% grades: $1.78/LCY-mi x 73 LCY x 5.70 mi= $740.66
  Rock Haul St& Co Roads: $0.39/LCY-mi x 73 LCY x 20.00 mi= $569.40

Subtotal: $5,227.74

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Clean Cattleguards
Clean sediment below cattleguard 1 CG x $415.00/CG = $415.00

Subtotal: $415.00

Section 2100 Roadside Brushing:
Mechanical Brushing
Comment: Light brushing 0+00 - 160+20
Brushing width Left: 5ft. Right: 5ft.
RoadSide Brushing Light: $244.25/acre x 3.70 acres = $903.73

Subtotal: $903.73

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 10.95% of total Costs = $0.00
Surfacing - 12.17% by rock volume = $356.19

Subtotal: $356.19

Quarry Development:
Based on 12.17% of total rock volume

Subtotal: $0.00

Total: $8,320.55

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: 40-12-13.1 Road Name:
Road Renovation: 1.23 mi 12 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$204.52
700-1200 Surfacing:	$2,622.25
Quarry Name: Buesing Rd KR - 1.5" 85 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):1.5 acres	$366.38
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $232.89	$232.89
Quarry Development:	$0.00
Total:	$3,426.04

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 40-12-13.1 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Grading with dozer
   1.5 mph dozer grading 1.64 hr x $95.57/hr = $156.73
  Truck turn around
   Tractor: D5 with winch .5 hr x $95.57/hr = $47.79

Subtotal: $204.52

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: 2" of 1.5" spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.16mi	12ft	12ft	2in						

  Rock Volume = 85 LCY
  Purchase Price / Royalty: $11.78/LCY x 85 LCY = $1,001.30
  Basic Rock Haul cost: $0.59/LCY x 85 LCY = $50.15
  Rock Haul +15% grades: $1.78/LCY-mi x 85 LCY x 6.00 mi= $907.80
  Rock Haul St& Co Roads: $0.39/LCY-mi x 85 LCY x 20.00 mi= $663.00

Subtotal: $2,622.25

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: Light brushing 0+00 - 64+75
  Brushing width Left: 5ft. Right: 5ft.
  RoadSide Brushing Light: $244.25/acre x 1.50 acres = $366.38

Subtotal: $366.38

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 4.39% of total Costs = $0.00
Surfacing - 7.96% by rock volume = $232.89

Subtotal: $232.89

Quarry Development:
Based on 7.96% of total rock volume

Subtotal: $0.00

Total: $3,426.04

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: 40-13-7.0 Road Name:
Road Renovation: 0.66 mi 12 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$227.46
700-1200 Surfacing:	$1,458.86
Quarry Name: Buesing Rd KR - 1.5" 44 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):0.8 acres	$195.40
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $120.56	$120.56
Quarry Development:	$0.00
Total:	$2,002.27

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: 40-13-7.0 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Grading with dozer
   1.5 mph grading with dozer .88 hr x $95.57/hr = $84.10
  Truck turn around
   Tractor: D5 with winch .5 hr x $95.57/hr = $47.79
  Road construct
   STA 23+00 - 24+15 1 hr CAT 1 hr x $95.57/hr = $95.57

Subtotal: $227.46

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: 2" of 1.5" spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.08mi	10ft	12ft	2in						

  Rock Volume = 36 LCY
  Purchase Price / Royalty: $11.78/LCY x 36 LCY = $424.08
  Basic Rock Haul cost: $0.59/LCY x 36 LCY = $21.24
  Rock Haul +15% grades: $1.78/LCY-mi x 36 LCY x 7.25 mi= $464.58
  Rock Haul St& Co Roads: $0.39/LCY-mi x 36 LCY x 20.00 mi= $280.80

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: STA 14+00, 6" depth

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.01mi	10ft	12ft	6in						

  Rock Volume = 8 LCY
  Purchase Price / Royalty: $11.78/LCY x 8 LCY = $94.24
  Basic Rock Haul cost: $0.59/LCY x 8 LCY = $4.72
  Rock Haul +15% grades: $1.78/LCY-mi x 8 LCY x 7.50 mi= $106.80
  Rock Haul St& Co Roads: $0.39/LCY-mi x 8 LCY x 20.00 mi= $62.40

Subtotal: $1,458.86

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: Light brushing 0+00 - 34+70
  Brushing width Left: 5ft. Right: 5ft.
  RoadSide Brushing Light: $244.25/acre x 0.80 acres = $195.40

Subtotal: $195.40

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 2.59% of total Costs = $0.00
Surfacing - 4.12% by rock volume = $120.56

Subtotal: $120.56

Quarry Development:
Based on 4.12% of total rock volume

Subtotal: $0.00

Total: $2,002.27

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: SPUR 13.2 Road Name: SPUR 13.2
Road Renovation: 0.56 mi 12 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$166.29
700-1200 Surfacing:	$5,032.88
Quarry Name: Buesing Rd KR - 1.5" 86 LCY	
Quarry Name: Buesing Rd 4" washed 54 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):0.7 acres	$170.98
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $383.58	$383.58
Quarry Development:	$0.00
Total:	$5,753.73

Notes:
- Quantities shown are estimates only and not pay items.
- Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: SPUR 13.2 Road Name: SPUR 13.2

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Grading with dozer
   1.5 mph grading with dozer 0.74 hr x $95.57/hr = $70.72
  Construct truck turn around x2
   Tractor: D5 with winch 1 hr x $95.57/hr = $95.57

Subtotal: $166.29

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: STA 0+00 2" depth

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.07mi	10ft	12ft	2in						

  Rock Volume = 33 LCY
  Purchase Price / Royalty: $11.78/LCY x 33 LCY = $388.74
  Basic Rock Haul cost: $0.59/LCY x 33 LCY = $19.47
  Rock Haul +15% grades: $1.78/LCY-mi x 33 LCY x 6.00 mi= $352.44
  Rock Haul St& Co Roads: $0.39/LCY-mi x 33 LCY x 20.00 mi= $257.40

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: 1.5" spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.11mi	10ft	12ft	2in						

  Rock Volume = 53 LCY
  Purchase Price / Royalty: $11.78/LCY x 53 LCY = $624.34
  Basic Rock Haul cost: $0.59/LCY x 53 LCY = $31.27
  Rock Haul +15% grades: $1.78/LCY-mi x 53 LCY x 6.00 mi= $566.04
  Rock Haul St& Co Roads: $0.39/LCY-mi x 53 LCY x 20.00 mi= $413.40

Commercial Quarry Name: Buesing Rd 4" washed
 Comment: STA 2+60 8" depth washed rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.03mi	10ft	12ft	8in						

  Rock Volume = 54 LCY
  Purchase Price / Royalty: $25.00/LCY x 54 LCY = $1,350.00
  Basic Rock Haul cost: $0.59/LCY x 54 LCY = $31.86
  Rock Haul +15% grades: $1.78/LCY-mi x 54 LCY x 6.00 mi= $576.72
  Rock Haul St& Co Roads: $0.39/LCY-mi x 54 LCY x 20.00 mi= $421.20

Subtotal: $5,032.88

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Road Number: SPUR 13.2 SPUR 13.2 Continued

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: Light brushing
  Brushing width Left: 5ft. Right: 5ft.
  RoadSide Brushing Light: $244.25/acre x 0.70 acres = $170.98

Subtotal: $170.98

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 7.39% of total Costs = $0.00
  Surfacing - 13.11% by rock volume = $383.58

Subtotal: $383.58

Quarry Development:
  Based on 13.11% of total rock volume

Subtotal: $0.00

Total: $5,753.73

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: SPUR 19.1 Road Name:
Road Renovation: 0.26 mi 12 ft Subgrade ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$129.02
700-1200 Surfacing:	$815.75
Quarry Name: Buesing Rd KR - 1.5" 25 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):0.3 acres	$73.28
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $68.50.....	$68.50
Quarry Development:	$0.00
Total:	$1,086.54

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: SPUR 19.1 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Grading with dozer
   1.5 mph grading with dozer 0.35 hr x $95.57/hr = $33.45
  Remove stump
   Sta 12+90 CAT 1 hr x $95.57/hr = $95.57

Subtotal: $129.02

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"
 Comment: 2" depth of 1.5" spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.05mi	10ft	12ft	2in						

  Rock Volume = 25 LCY
  Purchase Price / Royalty: $11.78/LCY x 25 LCY = $294.50
  Basic Rock Haul cost: $0.59/LCY x 25 LCY = $14.75
  Rock Haul +15% grades: $1.78/LCY-mi x 25 LCY x 7.00 mi= $311.50
  Rock Haul St& Co Roads: $0.39/LCY-mi x 25 LCY x 20.00 mi= $195.00

Subtotal: $815.75

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: Light brushing 0+00 - 13+70
  Brushing width Left: 5ft. Right: 5ft.
  RoadSide Brushing Light: $244.25/acre x 0.30 acres = $73.28

Subtotal: $73.28

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
Construction - 1.40% of total Costs = $0.00
Surfacing - 2.34% by rock volume = $68.50

Subtotal: $68.50

Quarry Development:
Based on 2.34% of total rock volume

Subtotal: $0.00

Total: $1,086.54

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: SPUR 19.2 Road Name:
Road Renovation: 0.82 mi 12 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$356.04
Blading 0.82 mi	
700-1200 Surfacing:	$1,370.46
Quarry Name: Buesing Rd KR - 1.5" 42 LCY	
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):1.0 acres	$244.25
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $115.08.....	$115.08
Quarry Development:	$0.00
Total:	$2,085.82

Notes:
- Quantities shown are estimates only and not pay items.
- Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: SPUR 19.2 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
Comment: 0+00 - 43+20 Grading
Blading w/o Ditches: $434.19/mi x 0.82 mi = $356.04

Subtotal: $356.04

Section 700-1200 Surfacing:

Commercial Quarry Name: Buesing Rd KR - 1.5"
Comment: 2" depth of 1.5" spot rock

Length	TopW	BotW	Depth	CWid	#TOs	Width	F.W.L	Taper	Other
0.09mi	10ft	12ft	2in						

Rock Volume = 42 LCY
Purchase Price / Royalty: $11.78/LCY x 42 LCY = $494.76
Basic Rock Haul cost: $0.59/LCY x 42 LCY = $24.78
Rock Haul +15% grades: $1.78/LCY-mi x 42 LCY x 7.00 mi= $523.32
Rock Haul St& Co Roads: $0.39/LCY-mi x 42 LCY x 20.00 mi= $327.60

Subtotal: $1,370.46

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
Comment: 0+00 - 43+20 Light brushing
Brushing width Left: 5ft. Right: 5ft.
RoadSide Brushing Light: $244.25/acre x 1.00 acres = $244.25

Subtotal: $244.25

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Road Number: SPUR 19.2 Continued

Mobilization:
  Construction - 2.71% of total Costs = $0.00
  Surfacing - 3.93% by rock volume = $115.08

Subtotal: $115.08

Quarry Development:
  Based on 3.93% of total rock volume

Subtotal: $0.00

Total: $2,085.82

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: SPUR 19.3 Road Name:
Road Renovation: 0.29 mi 12 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$84.10
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):0.3 acres	$73.28
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $0.00.....	$0.00
Quarry Development:	$0.00
Total:	$157.38

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: SPUR 19.3 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Grading with dozer
   1.5 mph grading with dozer 0.38 hr x $95.57/hr = $36.32
  Construct truck turn around
   Tractor: D5 with winch .5 hr x $95.57/hr = $47.79

Subtotal: $84.10

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: 0+00 - 15+10 light brushing
  Brushing width Left: 5ft. Right: 5ft.
  RoadSide Brushing Light: $244.25/acre x 0.30 acres = $73.28

Subtotal: $73.28

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 0.22% of total Costs = $0.00
  Surfacing - 0.00% by rock volume = $0.00

Subtotal: $0.00

Quarry Development:

Based on 0.00% of total rock volume

Subtotal:	$0.00
Total:	$157.38

ROAD CONSTRUCTION SUMMARY

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020
Road Number: SPUR 24.0 Road Name:
Road Renovation: 0.57 mi 12 ft Subgrade 0 ft ditch

200 Clearing and Grubbing: acres	$0.00
300 Excavation:	$0.00
400 Drainage:	$0.00
Culvert: 0 lf	
DownSpout: 0 lf	
PolyPipe: 0 lf	
500 Renovation:	$574.38
700-1200 Surfacing:	$0.00
1300 Geotextiles:	$0.00
1400 Slope Protection:	$0.00
1800 Soil Stabilization: 0.0 acres	$0.00
1900 Cattleguards:	$0.00
2100 RoadSide Brushing (Mechanical):0.7 acres	$170.98
2300 Engineering: 0.00 sta.	$0.00
2400 Minor Concrete:	$0.00
2500 Gabions:	$0.00
8000 Miscellaneous:	$0.00
Mobilization: Const. $0.00 Surf. $0.00	$0.00
Quarry Development:	$0.00
Total:	$745.35

Notes:
Quantities shown are estimates only and not pay items.
Surfacing Quantities shown are loose cubic yards.

Road Construction Worksheet

Road Number: SPUR 24.0 Road Name:

Section 200 Clearing and Grubbing:

Subtotal: $0.00

Section 300 Excavation:

Subtotal: $0.00

Section 400 Drainage:

Subtotal: $0.00

Section 500 Renovation:
  Grading with dozer
   1.5 mph grading with dozer 0.76 hr x $95.57/hr = $72.63
  Remove barricade
   0+00, 0+75 CAT 0.75 hr x $95.57/hr = $71.68
  Move slash pile 30+00
   Tractor: D5 with winch 4 hr x $95.57/hr = $382.28
  Construct truck turn around
   Tractor: D5 with winch 0.5 hr x $95.57/hr = $47.79

Subtotal: $574.38

Section 700-1200 Surfacing:
Surfacing:

Subtotal: $0.00

Section 1300 Geotextiles:

Subtotal: $0.00

Section 1400 Slope Protection:

Subtotal: $0.00

Section 1800 Soil Stabilization:

Subtotal: $0.00

Section 1900 Cattleguards:

Subtotal: $0.00

Section 2100 Roadside Brushing:
Mechanical Brushing
 Comment: 0+00 - 30+00 light brushing
  Brushing width Left: 5ft. Right: 5ft.
  RoadSide Brushing Light: $244.25/acre x 0.70 acres = $170.98

Subtotal: $170.98

Section 2300 Engineering:

Subtotal: $0.00

Section 2400 Minor Concrete:

Subtotal: $0.00

Section 2500 Gabions:

Subtotal: $0.00

Section 8000 Miscellaneous:

Subtotal: $0.00

Mobilization:
  Construction - 1.03% of total Costs = $0.00

Road Number: SPUR 24.0 Continued

Surfacing - 0.00% by rock volume = $0.00

Subtotal: $0.00

Quarry Development:
Based on 0.00% of total rock volume

Subtotal: $0.00

Total: $745.35

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Mobilization Costs - Construction and Surfacing

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020

Average Mobilization distance = 40 miles   Factor = 0.85

Mobilization: Construction
Excavators: 0 ea x (0.85 x $896.00/ea = $0.00

Subtotal: $0.00

Mobilization: Surfacing
Comment: All equipment for construction/surfacing move-in
Fire Equipment: 1ea x (0.85 x $75.00/ea + 0 mi x $4.16/mi)= $63.75
Powder House: 1ea x (0.85 x $414.00/ea) = $351.90
Graders-all: 1ea x (0.85 x $414.00/ea + 0 mi x $14.27/mi)= $351.90
Rollers & Comp: 1ea x (0.85 x $414.00/ea + 0 mi x $22.05/mi)= $351.90
Tractors <= D7: 1ea x (0.85 x $655.00/ea + 0 mi x $31.35/mi)= $556.75
Equipment Washing: 5 ea x ($250.00) /ea = $1,250.00

Subtotal: $2,926.20

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Summary of Construction Quantities

T.S. Contract Name: Bryant Mountain T.S. Sale Date: 07/29/2020

Road Number	Const	Improv	Renov	Decomm	Temp
39-11-26.0			480.10		
40-12-13.0			160.20		
40-12-13.1			64.75		
40-13-7.0			34.70		
SPUR 13.2			29.40		
SPUR 19.1			13.70		
SPUR 19.2			43.20		
SPUR 19.3			15.10		
SPUR 24.0			30.00		
Total Sta:			871.15		

200 Clearing and Grubbing	Clearing acres
39-11-26.0	0.0
40-12-13.0	0.0
40-12-13.1	0.0
40-13-7.0	0.0
SPUR 13.2	0.0
SPUR 19.1	0.0
SPUR 19.2	0.0
SPUR 19.3	0.0
SPUR 24.0	0.0
Totals:	0.0

300 Excavation	Excav LCY.s	Haul sta-yds	Haul yd-mi
Totals:	0	0	0

400 Drainage

Road Number	CMP Culvert	Polypipes	Downspouts
39-11-26.0	4 lf	130 lf	0 lf
Total Drainage:	4 lf	130 lf	

Culvert Qty	Aluminized	Galvanized	Poly Pipe
12 inch	0 lf	0 lf	
18 inch	0 lf	4 lf	130 lf
24 inch	0 lf	0 lf	0 lf
30 inch	0 lf	0 lf	0 lf
36 inch	0 lf	0 lf	0 lf
42 inch	0 lf	0 lf	
48 inch	0 lf	0 lf	

Downspout Qty	Half Round	Full (poly)	Full (galv)
18 inch	0 lf	0 lf	0 lf
21 inch	0 lf		

Continuation of Construction Quantities

24 inch	0 lf	0 lf	0 lf
30 inch		0 lf	

500 Renovation	Blade Miles	Slide cy
39-11-26.0	9.10	0
40-12-13.0	3.03	0
SPUR 19.2	0.82	0
Totals:	12.95	0

Construct truck turn around SPUR 24.0
- Tractor: D5 with winch . . . . . 0.5 hr

Construct truck turn around SPUR 19.3
- Tractor: D5 with winch . . . . . .5 hr

Construct truck turn around x2 SPUR 13.2
- Tractor: D5 with winch . . . . . 1 hr

Culvert cleaning 40-12-13.0
- Clean culvert . . . . . 1 Culvert

Grading with dozer 40-12-13.1
- 1.5 mph dozer grading . . . . . 1.64 hr

Grading with dozer 40-13-7.0
- 1.5 mph grading with dozer . . . . . .88 hr

Grading with dozer SPUR 13.2
- 1.5 mph grading with dozer . . . . . 0.74 hr

Grading with dozer SPUR 19.1
- 1.5 mph grading with dozer . . . . . 0.35 hr

Grading with dozer SPUR 19.3
- 1.5 mph grading with dozer . . . . . 0.38 hr

Grading with dozer SPUR 24.0
- 1.5 mph grading with dozer . . . . . 0.76 hr

Move slash pile 30+00 SPUR 24.0
- Tractor: D5 with winch . . . . . 4 hr

Remove barricade SPUR 24.0
- 0+00, 0+75 CAT . . . . . 0.75 hr

Remove stump SPUR 19.1
- Sta 12+90 CAT . . . . . 1 hr

Road construct 40-13-7.0
- STA 23+00 - 24+15 1 hr CAT . . . . . 1 hr

Truck turn around 40-13-7.0
- Tractor: D5 with winch . . . . . .5 hr

Truck turn around 40-12-13.1
- Tractor: D5 with winch . . . . . .5 hr

Watering- 3000 gal water truck 39-11-26.0
- Sta 0+00-116+95, 80 USD/hr . . . . . 2 trip
- Sta 266+00 - 297+00, 80 USD/hr . . . . . 1 trip
- Sta 348+50 - 362+40 . . . . . 1 trip
- 1 additional culvert- clean . . . . . 1 Culvert

Surfacing (Loose Cubic Yards)
Note: Due to slight rounding differences between total LCY vs. subtotaled LCY,
Totals shown here may not be exactly as shown in the road summaries and worksheets.

Quarry Name: Buesing Rd KR - 1.5"

Commercial	Roadway	Turnouts	Other	
39-11-26.0	29	0	0	29
39-11-26.0	20	0	0	20
40-12-13.0	7	0	0	7
40-12-13.1	85	0	0	85
40-13-7.0	36	0	0	36
40-13-7.0	8	0	0	8

SPUR 13.2	33	0	0	33
SPUR 13.2	53	0	0	53
SPUR 19.1	25	0	0	25
SPUR 19.2	42	0	0	42
Totals:	338	0	0	338

Quarry Name: Buesing Rd KR - 3/4-

Commercial	Roadway	Turnouts	Other	
40-12-13.0	0	0	50	50
Totals:	0	0	50	50

Quarry Name: Buesing Rd - 1"Dirty

Commercial	Roadway	Turnouts	Other	
39-11-26.0	382	0	0	382
39-11-26.0	171	0	0	171
Totals:	553	0	0	553

Quarry Name: Buesing Rd 4" washed

Commercial	Roadway	Turnouts	Other	
40-12-13.0	73	0	0	73
SPUR 13.2	54	0	0	54
Totals:	127	0	0	127

Dust Palliative 39-11-26.0

16185 feet of dust palliative, 0+00 - 116+95 . . . . . 11695 ft

1300 Geotextiles

Totals: No Quantities

1400 Slope Protection

Totals:	0 cy

Totals:	0

1800 Soil stabilization - acres

	Dry W/O Mulch	Dry/with Mulch	Hydro Mulch
Totals:	0.0	0.0	0.0

1900 Cattleguards

Clean Below Cattleguards 39-11-26.0

Remove sediment below cattleguard. 415 USD per CG . . . . . 2 Cattlegrd
Backhoe . . . . . 3 hr
General Laborer . . . . . 3 hr
Dump Truck 10 cy 0.5hr between CGs . . . . . 0.5 hr

Clean Cattleguards 40-12-13.0

Clean sediment below cattleguard . . . . . 1 CG

2100 RoadSide Brushing

	acres
39-11-26.0 - Mechanical Brushing	11.0
40-12-13.0 - Mechanical Brushing	3.7
40-12-13.1 - Mechanical Brushing	1.5

Continuation of Construction Quantities

40-13-7.0 - Mechanical Brushing		0.8
SPUR 13.2 - Mechanical Brushing		0.7
SPUR 19.1 - Mechanical Brushing		0.3
SPUR 19.2 - Mechanical Brushing		1.0
SPUR 19.3 - Mechanical Brushing		0.3
SPUR 24.0 - Mechanical Brushing		0.7
	Totals:	20.0

2300 Engineering

		stations
	Totals:	0.00

2400 Minor Concrete

Totals: No Quantities

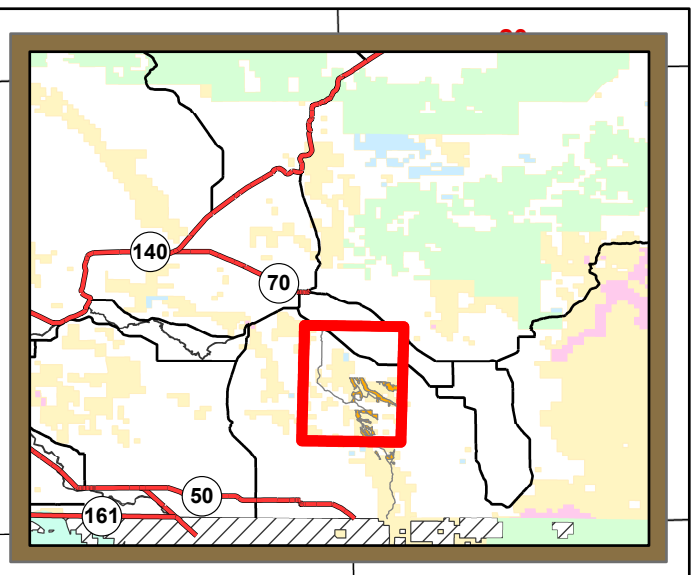
2500 Gabions

Totals: No Quantities

8000 Miscellaneous

Totals: No Quantities

Bryant Mountain TS
ORL04-TS20-02
EXHIBIT D
Sheet 1 of 12



Roads

- Bituminous/Paved
- Aggregate / Hard Surface / Pit Run
- Natural Improved Roads
- Natural Unimproved
- Haul Route
- Purchaser Maintenance
- Barricade
- Sale Boundary
- BLM, Public Domain
- State
- Private

WEST LANGELL VALLEY RD
520
39-11E-26.0
40-13E-1.0
1161
40-12E-13.1
12-1, 56 acres
13-2, 25 acres
13-1, 37 acres
13-3, 6 acres
7-1, 175 acres
40-12E-13.0
40-12E-13.0
39-11E-26.0
19-1, 59 acres
24-1, 65 acres
SPUR 19.3
SPUR 19.2
SPUR 24.0
24-2, 21 acres
19-2, 15 acres
25-1, 37 acres
John McFall Reservoir
Smith Reservoir
Harpold Reservoir
Captain Jack Lake
Lone Pine Reservoir
Long Lake
Worlow Meadow
McCoy Reservoir
T39S R11E
T40S R12E
T40S R13E
22
23
24
25
26
27
34
35
36
31
32
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02
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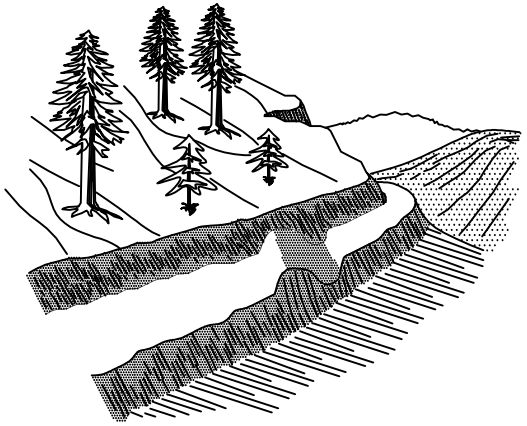
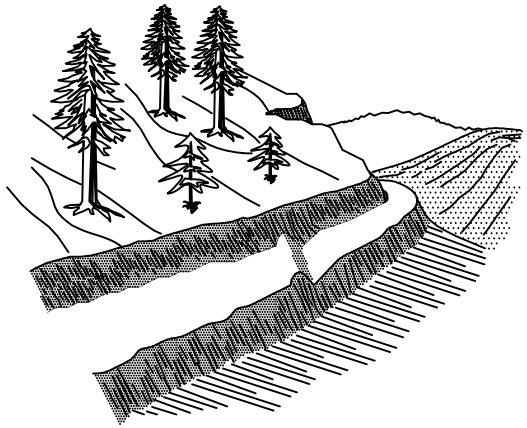
24
25
30
29

0 0.25 0.5 1 Miles

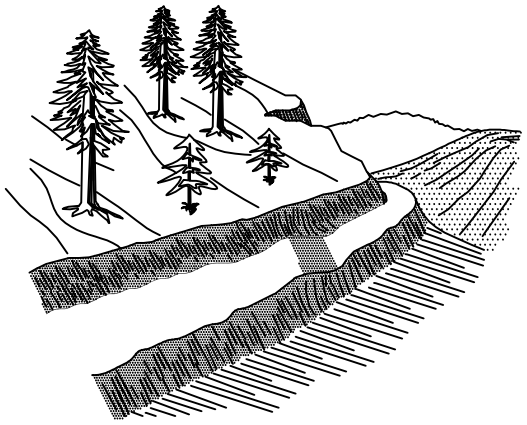
N



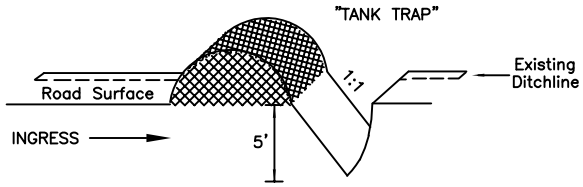
BARRIERS



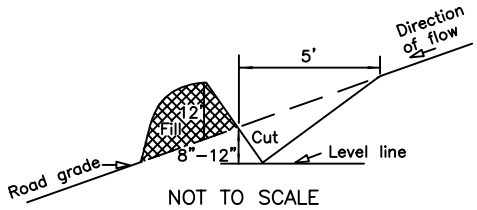
WATER BAR



WATER DIP



NOT TO SCALE



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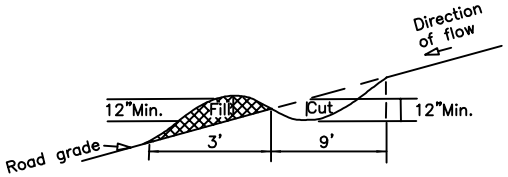
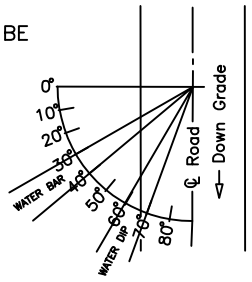


NOT TO SCALE

NOTES

1. ALL BARRIERS, WATER BARS, AND WATER DIPS AS REQUIRED SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATIONS WILL BE DIRECTED BY THE AUTHORIZED OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER BARS SHALL BE SKEWED 30°–40°.
4. ALL WATER DIPS SHALL BE SKEWED 60°–70°.
5. ALL WATER BARS AND WATER DIPS SHALL BE CUT INTO THE ROADBED FROM THE DITCHLINE.
6. DITCHLINES SHALL BE BLOCKED WITH EXCAVATED MATERIAL (DITCHDAM) DOWNGRADE FROM ALL WATER BARS AND WATER DIPS.
7. EXCAVATED MATERIAL FROM BARRIER TRENCH (TANK TRAP) SHALL BE PLACED ON THE SIDE NEAREST THE BEGINNING OF THE ROAD.
8. OUTLETS OF WATER DIPS MUST BE ROCKED ON FILL SLOPE.
9. RIPRAP BARRIERS SHALL BE AT LEAST 4' HIGH, 4' DEEP, AND OF SUFFICIENT WIDTH TO COMPLETELY BLOCK THE ROADWAY AND ANY ADJACENT SHOULDERS THAT CAN BE TRAVELED WITH A VEHICLE.
10. ALL BERMS INCLUDING WATER BARS, WATER DIPS, AND EARTHEN BARRIERS SHALL BE COMPACTED TO 85% OF MAXIMUM DENSITY.

SKEW DIAGRAM



WATER DIP/BAR SPACING

ROAD GRADE	MAXIMUM SPACING
%	FEET
0–4	500
5–6	400
7–9	300
10–14	100
15–20	50

ON GRADES IN EXCESS OF 14% CONSTRUCT WATER BARS.

ALWAYS THINK SAFETY

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT OREGON

BARRIER AND EROSION CONTROL DETAIL

DESIGNED CAH

REVIEWED

APPROVED

DRAWN CAH | SCALE: None

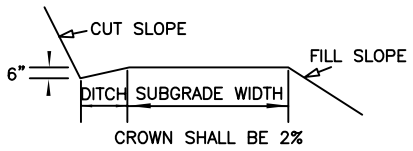
DATE AUG. 2019 | STANDARD DRAWING

SHEET 2/12

EXHIBIT D
ORL04-TS20-02
BRYANT MOUNTAIN T.S.
SHEET 3 OF 12 SHEETS

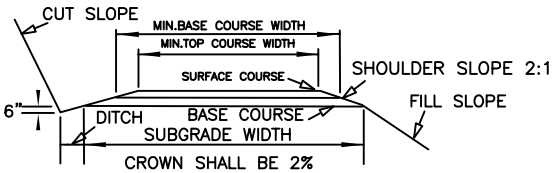
TYPICAL CROSS SECTION DETAIL

ROAD NUMBER	FROM STATION or MILE POST	TO STATION or MILE POST	LENGTH MILES	TYPICAL SECTION TYPE	ROAD WIDTH[1]		CLEARING WIDTH				SURFACING										REMARKS
							BEYOND		EXISTING ROADS[5]		BASE COURSE					SURFACE COURSE					
					Subgrade	Ditch	TOP CUT	TOE FILL	L	R	Minimum Width	Comp. Depth	Type[2]	Compaction	Cubic Yards	Minimum Width	Comp. Depth	Type[2]	Compaction	Cubic Yards	
39–11E–26.0	266+00	297+00	0.59	2	15.0 Ft.	2 Ft.			10	10											
	348+50	362+40	0.26	2	15.0 Ft.	2 Ft.			10	10											
	0+00	480+10	9.09	2	15.0 Ft.	2 Ft.			10	10											
40–12E–13.0	20+10	21+20	0.02	1	15.0 Ft.	2 Ft.			10	10											
	37+65	81+90	0.84	1	15.0 Ft.	2 Ft.			10	10											
	0+00	160+20	3.03	1	15.0 Ft.	2 Ft.			10	10											
40–12E–13.1	0+00	64+75	1.23	1	12.0 Ft.				10	10											
40–13E–7.0	14+00	14+20	0.01	1	12.0 Ft.				10	10											
	0+00	34+70	0.66	1	12.0 Ft.				10	10											
SPUR 13.2	0+00	1+10	0.02	4	12.0 Ft.				10	10											
	1+10	5+10	0.07	4	12.0 Ft.				10	10											
	0+00	44+75	0.85	4	12.0 Ft.				10	10											
SPUR 19.1	0+00	13+70	0.26	4	12.0 Ft.				10	10											
SPUR 19.2	0+00	43+20	0.82	4	12.0 Ft.				10	10											
SPUR 19.3	0+00	15+10	0.82	4	12.0 Ft.																
SPUR 24.0	0+00	30+00	0.57	4	12.0 Ft.																Replace barrier at 0+75, water bars



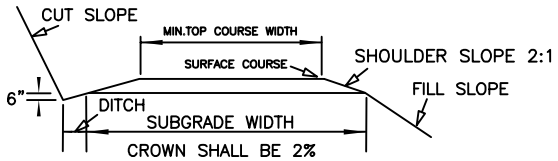
TYPICAL GRADING SECTION

TYPE 1



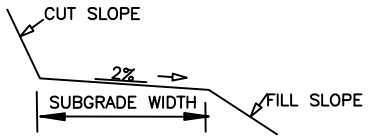
TYPICAL SURFACING SECTION

TYPE 2



TYPICAL SURFACING SECTION

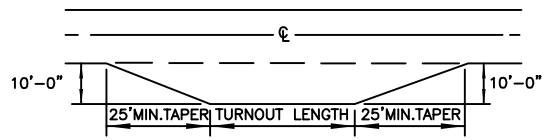
TYPE 3



TYPICAL GRADING SECTION

TYPE 4

ALL DITCHES:
4:1 SLOPE FROM SUBGRADE
DEPTH MAY BE EXCEEDED TO OBTAIN
REQUIRED DRAINAGE.



PLAN
TYPICAL TURNOUT

NOTES:

1. EXTRA SUBGRADE WIDTHS
   ADD TO EACH FILL SHOULDER 1 FT. FOR FILLS OF 1–6 FT. AND 2 FT. FOR FILLS OVER 6 FT. WIDEN THE INSIDE SHOULDER OF ALL CURVES AS FOLLOWS:
   WHEN THE DEGREE OF CURVE EQUALS
   7–21 ADD 1FT.
   22–35 ADD 2FT.
   36–48 ADD 3FT.
   49–64 ADD 4FT.
   65–96 ADD 5FT.
   OR AS SHOWN ON PLANS.

MATERIALS	CUT SLOPES	FILL SLOPES
COMMON	1/2:1	1 1/2:1
SOFT ROCK & SHALE	1/2:1	1 1/2:1
SOLID ROCK	1/4:1	REPOSE

FULL BENCH CONSTRUCTION IS REQUIRED ON SIDE SLOPES EXCEEDING 60%.

2. SURFACING TYPE
   A. PIT RUN ROCK MATERIAL.
   B. GRID ROLLED ROCK MATERIAL
   C. SCREENED ROCK MATERIAL.
   D. CRUSHED ROCK MATERIAL.
3. TURNOUTS
   A. WIDTH 10 FT. IN ADDITION TO SUBGRADE WIDTH, OR AS SHOWN ON THE PLANS.
   B. LOCATED APPROXIMATELY AS SHOWN ON THE ROAD PLANS OR NARRATIVE.
4. SURFACING
   A. TURNOUTS, CURVE WIDENING AND ROAD APPROACH APRONS SHALL BE SURFACED.
5. CLEARING WIDTH
   SEE SUBSECTION 200 OR 2100.
6. GRADING

ITEM	SIZE	GRADE
900	4 INCH	A
	3 INCH	B
1000	3 INCH	A
1200	11/2 INCH	C&C–1
	1 INCH	D&D–1
	3/4 INCH	E&E–1

Exhibit D Barriers and Water Bar List

Spur 24.0

0+00	Replace boulders at entrance.
0+75	Construct earthen barrier (See Sheet 2).
5+55	Construct water bar (See Sheet 2).
6+75	Construct water bar (See Sheet 2).
7+95	Construct water bar (See Sheet 2).
11+85	Construct water bar (See Sheet 2).
25+55	Construct water bar (See Sheet 2).
26+50	Construct water bar (See Sheet 2).

ROAD MAINTENANCE SPECIFICATIONS

General road maintenance specifications are designated by numeric symbols according to the type of work performed as follows:

SECTION	DESCRIPTION
3000	General
3100	Operational Maintenance
3200	Seasonal Maintenance
3300	Final Maintenance
3400	Other Maintenance
3500	Decommissioning

ROAD MAINTENANCE SPECIFICATIONS

GENERAL - 3000

3001 The Purchaser shall be required to maintain roads referenced in section 42.(C)(3) and as shown on the Exhibit D map of this contract in accordance with Sections 3000, 3100, 3200, 3300, 3400, and 3500 of this exhibit.

3001a The Purchaser shall be required to provide maintenance on roads in accordance with Subsections 3403 and 3404.

3002 The Purchaser shall maintain the cross section of existing dirt or graveled roads to the existing geometric standards. Any roads required to be renovated under terms of this contract shall be maintained to the geometric standards required in Exhibit C of this contract.

3003 The minimum required maintenance on any roads shall include the provisions specified in Subsections 3101, 3104, and 3105.

3004 The Purchaser shall be responsible for providing timely maintenance and cleanup on any roads with logging units substantially completed prior to moving operations to other roads. The maximum length of non-maintained or non-cleanup of the road prism shall not exceed the sum of one 1 mile at any time. Release of maintenance requirements may be granted, upon written request, when the conditions specified in Sections 3300 and 3400 are met satisfactorily.

OPERATIONAL MAINTENANCE - 3100

3101 The Purchaser shall blade and shape the road surface and shoulders with a motor grader. Banks shall not be undercut. Back blading with tractors or similar equipment will be allowed only around landings and other areas when approved by the Authorized Officer.

3103 The purchaser shall maintain established berms and place additional berms using adjacent material where needed to protect fills as directed by the Authorized Officer.

3104 The purchaser shall perform other road cleanup including removal of debris, fallen timber, bank slough, and slides which can practicably be accomplished by a motor grader, rubber tired front end bucket loader, rubber tired backhoe or comparable equipment, and by the use of hand tools.

3105 The Purchaser shall be responsible for maintaining normal flow in drainage structures. This includes cleaning out drainage ditches, catch basins, clearing pipe inverts of sediment and other debris lodged in the barrel of the pipe, and maintaining water dips and water-bars using equipment specified in Subsection 3104 and other culvert cleaning and flushing equipment.

3107 The Purchaser shall cut or trim trees and brush which obstructs vision or prevents the safe

ROAD MAINTENANCE SPECIFICATIONS

passage of traffic along the traveled way when directed by the Authorized Officer.

The Purchaser shall also cut trees or brush encroaching on the road prism that are a result of his activities or winter damage during the contract period. Disposal of such vegetative material shall be in accordance with Section 2100 of Exhibit C.

3108 The Purchaser shall avoid fouling gravel or bituminous surfaces through covering with earth and debris from side ditches, slides or other sources. The Purchaser shall also avoid blading surfacing material off the running surface of the roadway. Skidding of logs on the roadway in or outside designated logging units is not authorized without prior written approval by the Authorized Officer. Repair required caused by such skidding activity is not considered maintenance and shall be repaired at the Purchaser's expense.

SEASONAL MAINTENANCE - 3200

3201 The Purchaser shall perform preventative maintenance at the end of Purchaser's hauling each season and during non-hauling periods which occur between other operations on the contract area. This includes requirements specified in Section 3100.

3202 The purchaser shall perform and complete maintenance specified in Sections 3000, 3100, and 3200 on all roads maintained by him, prior to October 15 each year, except as specified in Subsection 3203, after initial commencement of construction or logging operations. Thereafter, all roads shall have continuous preventive maintenance and road cleanup until suspension of seasonal operations. This includes all roads used and not used during the proceeding operating seasons.

3203 The Purchaser shall complete road cleanup and maintenance, as specified in Section 3100, at the completion of logging operations on any roads located in an area separate from the area where logging activities will resume.

3204 The Purchaser shall be responsible for performing post storm inspections and maintenance during the winter season to minimize erosion and potential road or watershed damage.

FINAL MAINTENANCE - 3300

3301 The Purchaser shall complete final maintenance and/or damage repairs on all roads used under terms of their contract within thirty 30 calendar days following the Purchaser’s completion of hauling and in accordance with Sec. 16b of this contract. This work shall include any maintenance and/or damage repairs specified in Sections 3000, 3100, and 3200 necessary to meet the conditions specified in Subsection 3002 and shall be executed in accordance with Subsection 3302 of this section.

ROAD MAINTENANCE SPECIFICATIONS

The Authorized Officer may grant acceptance of Purchaser's maintenance responsibility in part where certain individual roads or road segments are no longer of any use to the Purchaser's remaining removal operations, providing that all contract requirements as specified under Sec. 16b and Special Provisions Sections 3000, 3100, 3200 and 3300 of the maintenance specifications have been completed and a relinquishment of cutting and removal rights on cutting units tributary to these roads is signed by the Purchaser. Request for partial acceptance must be submitted in writing by the Purchaser.

3302 The Purchaser shall perform final road maintenance only when weather or soil moisture conditions are suitable for normal maintenance equipment operations as determined by the Authorized Officer.

If final maintenance is delayed after the date required in Subsection 3301 of this contract by adverse soil moisture or unsuitable equipment operating conditions, the Purchaser will be notified by the Authorized Officer when soil moisture and equipment operating conditions are suitable. The Purchaser shall then be required to complete final maintenance within 30 days.

OTHER MAINTENANCE - 3400

3401 The Purchaser shall repair any damage to road surfaces that was specified under Subsection 3108. This repair includes restoring the roadway to the designed standard and replacement of surfacing with approved surface material. This repair is not limited to use of equipment specified in Subsection 3104.

3402 The Purchaser shall be permitted to remove ice and snow from roads authorized for use under this contract only when prior written approval has been secured from the Authorized Officer. The Purchaser shall submit a written request for permission to remove ice and snow in advance of the date operations are to begin.

Upon receiving written authorization for ice or snow removal, the Purchaser will perform the work according to the conditions and equipment requirements set forth in the authorization.

3405 The Purchaser shall be required to furnish and apply (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives in accordance with these specifications.

This work shall be performed upon acceptance of the required road construction, renovation, or improvement work and be **placed prior to any timber hauling** other than right-of-way timber (and rock hauling).

When timber hauling has commenced during the wet weather season, the Purchaser shall apply the required dust palliative during the subsequent summer hauling season as directed by the Authorized Officer.

ROAD MAINTENANCE SPECIFICATIONS

Other means of dust abatement needed prior to the application of the required dust palliative shall be applied as approved by Authorized Officer.

The specified dust palliative shall be applied evenly over the specified road surface width of the following roads:

Road No.	From Sta./M.P.	to Sta./M.P.	Spread Width
39-11E-26.0	0+00	116+95	15 ft.
39-11E-26.0	266+00	297+00	15 ft.
39-11E-26.0	348+50	362+40	15 ft.

Turnouts and extra widening shall (not) be included in addition to the spread width.

3405a Additional (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliative may be required at the option of the Authorized Officer when the functional qualities of the dust palliative have been reduced or become ineffective due to third party damage, rain, or other events not under the control of the purchaser.

All materials and labor shall be furnished by the Purchaser and placed in amounts and locations designated by the Authorized Officer, in which case a reduction in the total purchase price shall be made to offset the cost. Costs will be based upon the unit prices set forth in the current BLM Road Cost Guide.

If additional dust palliative is required due to events controlled by the Purchaser, such as split hauling season, the Purchaser shall furnish and place such material at his own expense.

3405b The Purchaser shall notify affected residents along the roads to be treated of the planned application of (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives at least (3) days prior to the work. Warning signs shall be posted at key intersections to alert users that the road is being treated. All signs shall be removed by the Purchaser within (thirty) days of treatment.

3406 Prior to the application of (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives, the roadbed shall be bladed and shaped to remove surface irregularities and excess loose material. The prepared surface must (have (1/2) to (1) inch of relatively loose material and) be visibly moist and drying.

3407 The Purchaser shall furnish in duplicate, commercial certification signed by vendor of compliance with the (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives material requirements specified under Subsection (3412b) (3412c). Commercial certification includes the date, identification number of truck or trailer, net mass, and brand name with each

ROAD MAINTENANCE SPECIFICATIONS

shipment. Also provide the net volume and specific gravity at 60 degrees F, percent solids by mass, and PH.

3408 Dust palliatives shall be applied with standard commercial distribution equipment operated in a manner that the material is uniformly applied on variable widths of surface at controlled rates.

3409 The Purchaser shall notify the Authorized Officer a minimum of (3) days in advance of application of required dust palliative.

3410 The Purchaser shall submit an application schedule for all dust palliative work to the Authorized Officer for approval. All work shall be in accordance with the approved plan.

3411 Required (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliatives shall only be applied when the atmospheric temperature is 45° F and steady or rising and when the weather is not foggy or rainy. Do not apply dust palliative if rain is anticipated within 24 hours of application or when the ground is frozen.

3412 The Purchaser shall apply to the prepared roadbed specified under Subsection 3405, a (lignin sulfonate) (magnesium chloride) (calcium chloride) dust palliative conforming to the material requirements of Subsection (3412b) (3412c). The rate of application shall be (0.5) gallons per yd^2 surface. (A second application at the rate of (0.3) gallons per yd^2 shall be applied at a time designated by the Authorized Officer.)

Applied materials not penetrating the road surface shall be blade mixed with additional water into the top 1 to 1½ inches of the surfacing at the Contractor's expense.

3412a If required, the (lignin sulfonate) (magnesium chloride) (calcium chloride) shall be field diluted within the application vehicle and be circulated at least 5 minutes to assure mixing. An air gap shall be provided between any water source and the materials being diluted. Accidental spills shall be contained to prevent entry in water courses or ponded water. The surface of adjacent structures and trees shall be protected from spattering or marring.

A wetting agent may be used in addition to the certified compound or mixed with the road surface preparation watering. A mix of less than 1:6000 is recommended.

Water used to dilute (lignin sulfonate) (magnesium chloride) (calcium chloride) concentrate shall be clean and free of oil, salt, acid, alkali, vegetable matter, or any other substance that contaminates the finished product.

3412b Specifications for Lignin Sulfonate:

Lignin sulfonate shall be the chemical residue produced as a byproduct of the acid sulfite pulping process and supplied as a water solution. The base cation shall be ammonia, calcium, or sodium. The product shall be water soluble to allow field dilution. Dilute with water until the mixture

ROAD MAINTENANCE SPECIFICATIONS

contains a minimum 48 percent concentration with the following properties:

Solids	50%
Specific gravity	1.25
PH, AASHTO T289	4.5 min.

Ensure that the material does not exceed the following chemical constituents:

phosphorous	25.00 ppm
cyanide	0.20 ppm
arsenic	5.00 ppm
copper	0.20 ppm
lead	1.00 ppm
mercury	0.05 ppm
chromium	0.50 ppm
cadium	0.20 ppm
barium	10.00 ppm
selenium	5.00 ppm
zinc	10.00 ppm

Apply when the ambient air temperature is 45° F or above.

3412c Specifications for (magnesium chloride) (calcium chloride):

The material shall consist of a brine containing 29 to 35 percent (magnesium chloride) (calcium chloride) by weight and 62 to 72 percent water by weight. Ensure that the material does not exceed the following chemical constituents:

phosphorous	25.00 ppm
cyanide	0.20 ppm
arsenic	5.00 ppm
copper	0.20 ppm
lead	1.00 ppm
mercury	0.05 ppm
chromium	0.50 ppm
cadmium	0.20 ppm
barium	10.00 ppm

ROAD MAINTENANCE SPECIFICATIONS

selenium	5.00 ppm
zinc	10.00 ppm
sulfate	4.3 percent maximum
nitrate	5.0 percent maximum.

(Concentration specifications for Calcium Chloride)

Calcium chloride shall conform to AASHTO M 144, type L for the specified concentration.

(Concentration specifications for Magnesium chloride)

(1) Magnesium chloride by mass	28% minimum
(2) Water by mass	72% maximum
(3) Specific gravity, AASHTO T 227	1.290 to 1.330)

Apply when the ambient air temperature is 45° F or above.

3413 Sampling of (lignin sulfonate) (magnesium chloride) (calcium chloride) material may be required to validate certificates furnished by the Purchaser. When sampling is directed by the Government, the actual samples will be taken by the Purchaser or his representative in the presence of the Authorized Officer.

DECOMMISSIONING – 3500

3509 Access shall be blocked with barricades as shown on the typical SHEET 2 of Exhibit D and at locations as shown on Exhibit D maps.

Sale: Bryant Mountain T.S.
Sale Date: 07/29/2020
Prep. By : C. Hultz
Tract No: ORL04-TS20-02

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROAD MAINTENANCE AND ROAD USE APPRAISAL WORK SHEET

Summary of Costs

1.1) Road Use - Amortization: $0.00/2488 MBF = $0.00/MBF

Road Maintenance Obligation:

(2.1) BLM Maintenance		$0.00
(2.2) BLM Rockwear	$0.00	
(5.1) Purchaser Maintenance Rockwear	$0.00	
Total Rockwear Payable to BLM		$0.00
(3.1) 3rd Party Maintenance		$0.00
(3.2) 3rd Party Rockwear		$0.00
(4.1) Other Maintenance Payments		$0.00
Total Maintenance Fee Obligation (2.1-5.1)		$0.00

Purchaser Maintenance Allowances:

(5.2A) Move In	$1,317.50
(5.2B) Culverts, Catch Basins, Downspouts	$2,619.49
(5.2C) Grading, Ditching	$6,875.70
(5.2D) Slide Removal and Slump Repair	$0.00
(5.2E) Dust Palliative (Water)	$638.56
(5.2F) Surface Repair (Aggregate)	$0.00
(5.2G) Other	$455.86
Total Purchaser Maintenance Allowances (5.2A-5.2G)	$11,907.11

(2.1-5.2G) Cost ($0.00 + $11,907.11) = $11,907.11
Cost/MBF $11,907.11 / 2488 MBF = $4.79/MBF $4.79/MBF

(5.2H) Decommissioning	$503.38
(5.2H) Cost/MBF $503.38/2488 MBF =	$0.20/MBF

(2.1-5.2H) Cost ($0.00 + $11,907.11 + $503.38) = $12,410.49

Total Cost/MBF (Excluding Road Use) $12,410.49/2488 MBF = $4.99/MBF

1) Road Use Fees - Amortization

Details

R/W Number	Road Number	Rd Use Fee x	Vol MBF =	Road Use Obligation

Subtotal by agreement number

(1.1) Subtotal $0.00

2) BLM Maintenance - Timber Haul

		MAINTENANCE (2.1)					ROCKWEAR (2.2)			
Road Number and Segment	A N	Surf Type	Maint Mi	x Fee x	Vol MBF	= Maint	Fee x	MBF =	Rkwear

(2.1) Subtotal $0.00 (2.2) Subtotal $0.00

3) Third Party Maintenance and Rockwear

			MAINTENANCE (3.1)					ROCKWEAR (3.2)			
Agrmnt Number	Surface Type	Road Number	Mi	x	Fee x	MBF =	Maint	Fee x	MBF =	Rkwear

Subtotal of maintenance fees by agreement number:
Subtotal of rockwear fees by agreement number:

(3.1) Subtotal $0.00
(3.2) Subtotal $0.00

4) Other Maintenance Payments - USFS or Others Perform Maintenance

Agency	Road Number	Miles (Log)	x	Vol (mbf)	x	Fee MBF/MI =	Cost

(4.1) Subtotal $0.00

5) Purchaser Maintenance - Rock Wear

TIMBER HAUL (5.1)

Road No and Segment	A N	Mi	RkWear x Fee x	Vol MBF =	Total RkWear

(5.1) Subtotal $0.00

Purchaser Operational Maintenance

Move In

Equipment	No Units	Move x	Cost/ in x	Dist 50 Mi x	Sub-Factor =	total
Motor Grader:	1	1	$414.00		0.85	$351.90
Back Hoe:	1	1	$308.00		0.85	$261.80
Loader:	1	1	$414.00		0.85	$351.90
Water Truck:			$96.00		0.63	$0.00
Dump Truck:			$91.00		0.63	$0.00
Excavator:			$414.00		0.63	$0.00
Roller:	1	1	$414.00		0.85	$351.90

(5.2A) Total $1,317.50

Culvert Maintenance - Including Catch basins and Downpipes

	Miles	x	Cost/Mi	=	Subtotal
$383.34			$0.00		

Type CMP	No CMPS	x	Cost/CMP	=	Subtotal
Minor Cleaning	41		63.89		$2,619.49

(5.2B) Total $2,619.49

Grading (Includes Ditches and Shoulders)

Miles	x	Cost/Mi	x	Freq	=	Subtotal
Blade w/ Ditch:	7.02		$708.54	1		$4,973.95
Blade w/o Ditch:	4.38		$434.19	1		$1,901.75

(5.2C) Total $6,875.70

Slide and Slough removal, Slump Repair (15 sta-yds. ea.)

Type Equipment	No Slides /Slumps	x	Hours Each	x	Equip Cost	=	Subtotal
Grader:	0		0		$142.72		$0.00
Loader:	0		0		$102.93		$0.00
Backhoe:	0		0		$87.60		$0.00

(5.2D) Total $0.00

Dust Palliative (Water)

Spreading Hours

	No Miles	/	Freq MPH	=	Truck Hours	x	Days	x	/Day	=	Hours
	0.00		0				0		0		0
Load & Haul =					1.0		4		1		4
Return trip =					1.0		4		1		4
Total Hours =					8						

Truck Cost: $79.82/Hr. x 8.0 Hours = $638.56

(5.2E) Total $638.56

Surface Repair (Aggregate)

(5.2F) Total $0.00

Other

Fallen Timber Cutting:	0.0 Hours x $0.00/Hour	=$0.00
Brush Cutting/Tree Trimming:	0.0 Hours x $0.00/Hour	=$0.00
Oil/Asphalt Materials:	Lump Sum	=$0.00
Signing for Dust Palliatives:	Lump Sum	=$0.00
Grading with dozer	Lump Sum	=$455.86
	Lump Sum	=$0.00
	Lump Sum	=$0.00
	Lump Sum	=$0.00
	Lump Sum	=$0.00

(5.2G) Total $455.86

Decommissioning

Other Costs

Road Number	Cubic Yds Pullback Material		Qty Waterbars		Qty Earthen Barriers	= Total
39-11-26.0	(0x$1.80)	+	(6x$55.93)	+	(1x$167.80)	= $503.38

(Other Cost) Total $503.38

(5.2H) Decommissioning Total $503.38

SELECTION CRITERIA DESIGNATION BY PRESCRIPTION
EXHIBIT E

The Selection Criteria shown below shall be used by the Purchaser in determining which trees are to be selected for snags creation. The operator will have responsibility to select trees as described below to create snags in a safe manner for workers on site.

The selection of trees for snag creation shall comply with Sec 41. The Purchaser shall leave all boundary trees marked with orange paint and/or poster tags and all orange marked trees within cutting units. For the Bryant Mountain Timber Sale 220 snags shall be created using the selection criteria below.

TREE SELECTION CRITERIA

- Purchaser shall select trees to become snags and mark each tree with white paint above DBH height (4.5 feet) and at stump height. All snags shall be created within one (1) year of completion of skidding operations.
- Any tree species (including western juniper).
- No orange marked reserve trees shall be selected.
- Minimum diameter of twenty (20) inches measured at DBH (4.5 feet above ground level).
- Within all cutting units, snags shall not be created within falling distance of power lines, structures, or roads that will remain open after harvest operations are completed.
- Fifty (50%) per cent of the trees shall be topped at fifty (50') feet above ground level or above the lowest three (3) live limbs whichever is greater. All snags created shall have a minimum of three (3) live limbs below the cut.
- Fifty (50%) per cent of the trees shall be topped at a minimum of fifteen (15') feet above ground level.
- Top of all trees shall be severed and removed from the tree. Tops of trees are not reserved and can be skidded.
- Snags can be individual or grouped.
- All tree locations shall be mapped by GPS.

Section 15 of this contract provides that the Authorized Officer may, under certain conditions, require fire prevention and control measures in addition to those required by applicable (State) laws and regulations. Accordingly:

(A) The Authorized Officer may by written notice require the Purchaser to restrict operations in accordance with the industrial fire precaution levels below (however, purchaser may also be required to restrict operations in accordance with closures on lands protected by Oregon Department of Forestry (ODF) which include those within the Klamath Falls Resource Area located west of Langell Valley. During declared fire season the industrial fire precaution level will be determined by the Lakeview District Office and will be available daily.

IFPL LEVEL

I	Closed Season	-Fire precaution requirements are in effect. -Watch person is required for one (1) hour.
II	Partial hoot owl	- the following may operate from only between the hours of 8:00 P.M. and 1:00 P.M. local time: Power saws, except at loading sites; Cable yarding; Blasting; Welding or cutting metal.
III	Partial shutdown	- the following are prohibited except as indicated: Cable yarding - except that gravity operated logging systems employing non-motorized carriages may operate between the hours of 8:00 p.m. and 1:00 p.m. local time when all blocks and moving lines are ten (10) feet or more above the ground, except the line between the carriage and the choker. Power saws - except power saws may be used at loading sites and on tractor/skidder operations between the hours of 8:00 p.m. and 1:00 p.m. local time. In addition, the following are permitted to operate between the hours of 8:00 p.m. and 1:00 p.m. local time: ▪ Tractor/skidder operations; ▪ Mechanized loading and hauling of any product or material; ▪ Blasting; ▪ Welding or cutting metal; ▪ Any other spark-emitting operation not specifically mentioned.
IV	General shutdown- All operations are prohibited.	

(B) The Purchaser will provide fire watchman services for three (3) hours after daily shutdowns of areas of operation, including truck haul routes through the sale area and other areas where Purchaser's employees or contractors have worked on or with power driven equipment, whenever any of the following conditions apply:

(1) the BLM industrial fire precaution level is II or greater;
(2) directed in writing by the Authorized Officer;
(3) required by State law.

The fire watchman shall be physically capable, alert and have adequate experience to perform the following duties:

(1) operate Purchaser's communications and fire fighting equipment specified in the contract;
(2) direct the Purchaser's personnel on forest fires;
(3) report any fire detected to the Bureau of Land Management or Oregon State Division of Forestry;
(4) move throughout the operation area constantly on the lookout for fires and take suppression action on any fire detected.

Fire Prevention and Control Equipment Requirements

The Purchaser shall provide and maintain in good repair, in the contract area, the following equipment for use during closed fire season or periods of fire danger:

(a) **F-2** Fire fighting tools shall be kept at each landing or at such other place as the Authorized Officer shall designate whenever people are working in the contract area. All fire fighting tools shall be kept in a sturdily constructed box which shall be painted red and lettered on the front or top in large letters, "FOR FIRE ONLY".

The box shall have a hinged lid and a hasp by which the lid can be sealed. One box may serve two landings not over six hundred (600) feet apart. When filled, the box shall not weight over two hundred (200) pounds. The fire tools shall be in good condition, be tight on strong handles, and have sharp cutting edges. There shall not be less than four (4) tools in each box not less than one (1) tool for each person working in the contract area. The fire tools shall be used only for fighting fire.

(b) **F-2b** A round pointed shovel in good condition which has a face at least 8" wide with a handle at least 26" long, shall be within fifty (50) feet of any power saw when in operation.

(c) **F-2c** At each landing during periods of operation one (1) tank truck or fire trailer. Each truck shall have three hundred (300) gallons minimum capacity or a fire trailer with a minimum of 500 gallons capacity. with five hundred (500) feet minimum of hose and a nozzle acceptable to the Authorized Officer and a mounted or portable pump conforming to the standards set forth in Oregon Revised Statute (ORS) 476.410 through ORS 476.440 and any rule promulgated pursuant to those statutes. All hose couplings shall have the standard thread adopted by the State Fire Marshall pursuant to ORS 476.410 as amended or be provided with suitable adapters. At the close of each working day, all bulldozers and tank trucks shall be filled with fuel and made ready for immediate use. All tank trucks and portable tanks shall be filled with water and made available for immediate use.

(d) **F-2d** Serviceable radio or radio-telephone equipment able to provide prompt and reliable communication between the contract area and Klamath Falls, Oregon. Such communication shall be available during periods of operation including the time watch-service is required.

(e) **F-2e** During declared fire season and if and when harvested chip material is curing on the sale, one dozer complete with qualified operator, angle blade, lowboy, and transport shall be located within one (1) hour transport time, fifteen (15) minute dispatch time during daylight hours, two (2) hours dispatch time nighttime hours, for the suppression of wildfire in the contract area. The Dozer and Transport shall be fueled and equipped for immediate use.

In addition, a pair of headlights capable of being quickly attached to each dozer used in the contract area shall be required. The headlights shall be adequate to provide illumination sufficient to allow use of the dozers for fire fighting and construction of fire trails at night.

(f) **F-2h** A chemical fire extinguisher of at least eight (8) ounces minimum capacity of a type approved by the Oregon State Forester shall be carried during the closed fire season or periods of fire danger by each saw operator using a power saw in the contract area. Such fire extinguisher shall be filled and in effective operating condition and shall at all times be immediately available to the operator when the saw is being fueled or the motor of the saw is running. A size shovel specified above or larger shall be available with each gas can when refueling. Any fueling of a power saw shall be done in an area which has first been cleared of all flammable material. Power saws shall be moved at least twenty (20) feet from the place of fueling before the engine is started. Each power saw shall be equipped with an exhaust system and a spark arresting device which are of types approved by the Oregon State Forester.

Older Juniper Definition

Older juniper: Juniper that originated in the "presettlement" period, before 1870. It is assumed that these trees are growing on sites that they are adapted to, since they began growing there under "natural conditions" when natural processes (including lightning fires) determined vegetation patterns. Older juniper are usually found in rocky areas where vegetation is sparse and natural fire frequency is low. Some typical characteristics of older juniper are:

- Crown is flat, rounded, broad at top, or irregular (as opposed to the more pointed tops of younger trees)
- Spike top
- Numerous dead branches
- Branches covered with a coarse, bright yellow-green lichen (*Letharia*, or wolf lichen)
- Large diameter lower branches
- Large diameter trunk relative to height
- Trunk has spirally-twisted bark, deep furrows
- Hollow trunk

It is rare for an older juniper to have all of the above features, but more commonly will have at least three or four. Also, older junipers are not always the largest trees; on drier, rocky sites, they can be short, stubby, gnarly trees.